Observations on the Flora of Japan.

(Continued from p. 34.)

By

T. Makino.

*Assistant in the Botanical Institute, Science College,
Imperial University of Tokyo.*

Viola (Nomimium) **nipponica** Makino sp. nov.

Acaulescent. Roots white. Rhizome short, thick, erect. Leaves often many, tufted, erect or erect-patent, ovate, broadly ovate, or narrowly ovate, obtuse at the apex, subcordate or truncate at the base, crenate, glabrous, $1\frac{1}{2}$ –5 cm. long, $1\frac{1}{2}$ – $3\frac{1}{2}$ cm. broad; lateral veins 4–5 on each side; petiole longer or shorter than the blade, narrowly winged above, glabrous; stipules long-adnate, the upper free portion linear or subulato-linear, acuminate, very loosely glanduloso-ciliated, thin. Flowers often numerous, about $1\frac{1}{2}$ –2 cm. across, violet-purple; peduncles often exceeding the leaves, glabrous, slender, bracteate in or below the middle, about 5–11 cm. long; bracteoles linear or subulato-linear. Sepals glabrous, lanceolate or linear-lanceolate, obtuse or acute, viridescent, 6–8 mm. long exclusive of the basal auricles; basal auricles short, ovato-oval, truncate and few-denticulate, those of the upper lateral ones small and deltoid with an acute or acutish tip. Petals obovato-oblong, or elliptical-obovate, gradually narrowed below, rounded at the apex; the lateral ones bearded with white hairs; the lower one slightly shorter than the rest, spathulato-cuneate, gradually attenuated below, truncato-rounded or truncate, whitish and deep-purple-striped below; calcar subhorizontal, longer than the sepals, narrow, scarcely arcuate or straight, rounded-obtuse at the apex, somewhat compressed laterally, light purple with minute purple spots, 8–12 mm. long. Anthers $3\frac{1}{2}$ mm. long; connective-tip ovato-

orbicular, rounded-obtuse or acutish at the apex, shorter than the anther-cells; appendages linear-filiform, nearly straight, about 5 mm. long. Ovary ovoid, glabrous; style slightly exceeding the anthers, gradually enlarged above, geniculate below; stigma truncate, subdeltoid. Capsule (immature) ellipsoid, glabrous. Flowers April.

Nom. Jap. *Oka-sumire* (nov.).

Hab. Japan (*T. Makino!*).

Probably a hybrid between *Viola japonica* Langsd. and *V. phalacrocarpa* Maxim. In the dried specimen it is hardly distinguishable from the former.

***Viola* (Nomimium) *Tashiroi* Makino sp. nov.**

Viola sp. Ito in Ito et Matsum. Tent. Fl. Lutch. I. (1899) p. 41.

Acaulescent. Rhizome erect or ascending, rather elongate, about 5–20 mm. in length, thickish, closely reticulated, rooting. Leaves tufted, many, long-petiolate, rhombo-deltoid or rhombic, obtuse at the apex, truncato-cuneate and decurrent to the petiole at the base, few-several-depressed-crenato-serrate, membranaceous, glabrous, green above, paler (and often slightly violaceous?) beneath, 9–20 mm. long, 10–15 mm. broad; petiole gracile, wingless, glabrous, green, 1½ cm. long; stipules short, about 2–2½ mm. long, thin, few-glandular on margins, adnate, the upper free portion subulate. Flower.....

Nom. Jap. *Yaeyama-sumire* (Y. Tashiro).

Hab. YAEYAMA ARCHIP.: Isl. Nishiomote, mountains (*Y. Tashiro!* herb. Sc. Coll. Imp. Univ. Tokyo, July 1887).

A small violet. Though I have seen no flower, I cannot doubt this being a new species, having the leaves of peculiar form.

***Viola* (Nomimium) *Takedana* Makino sp. nov.**

Acaulescent. Roots elongate. Rhizome erect or oblique, short or longish, sometimes thick, purpurascens-thin-vaginate. Leaves few-many-tufted, erect or erect-patent, membranaceous,

deltoid-ovate or lanceolato-ovate, elongato-attenuated above with an obtuse or acutish tip, auriculato-cordate with an open or sub-close deep sinus and oval-orbiculate lobes, depressed-crenate often with concave-margined teeth, thinly piloso-pubescent and sometimes pale-variegated along the nerves above, glabrous and purpurascens beneath, $2\frac{1}{2}$ –5 cm. long, $1\frac{1}{2}$ –3 cm. broad in flower, but attaining about 6 cm. long, 4 cm. broad in fruit; petiole usually longer than the blade, slender, apterous, thinly pilose above with patent hairs, about 3–8 cm. long; stipules membranaceous, adnate below, the upper free portions about 5–10 mm. long, subulate or linear-subulate, acuminate. Peduncles 1 to several, shorter than leaves, about 4–7 cm. long, glabrous, but thinly pilose above in cleistogamous-flowered ones, bibracteolate in or below the middle; bracteoles adpressed, linear-subulate, acuminate, glandulososerrate on the basal margins, 6–7 mm. long. Flowers about $1\frac{2}{3}$ cm. across, pale rose, more or less fragrant. Sepals lanceolate or ovato-lanceolate, acuminate with an acute tip, glabrous, membranaceous, 3-nerved, purplish, 6–10 mm. long; basal auricles oval or elliptico-rectangular, entire, bifid, or irregularly crenatodentate, thinly ciliated or glabrous, about 2 mm. long in those of the lower sepals, but smaller and subulato-deltoid in those of the lateral sepals. Petals oblong, rounded or somewhat bifid at the apex; the upper and lateral ones cuneately attenuated at the base; the upper ones slightly shorter than the lateral ones, about 13–14 mm. long, $6\frac{1}{2}$ mm. wide; the lateral ones beardless, hardly narrower than the upper ones, 14–16 mm. long, $5\frac{1}{2}$ –6 mm. wide; the lower one about equal to the lateral ones in length, about $6\frac{1}{2}$ mm. long; calcar slightly shorter than sepals, oblong or narrowly oblong, rounded at the end, straight, compressed laterally, 5 – $6\frac{1}{2}$ mm. long. Stamens about $3\frac{1}{2}$ –4 mm. long; connective-tip elliptical-ovate, acutish or obtuse, equal to the anther-cells in length; appendages falcately linear, gradually attenuated above with an obtuse tip, slightly curved upwards, about 5–6 mm. long. Style exserted, equalling the ovary in length, enlarged above; stigma obovato-deltoid, convex, produced, marginate. Ovary conico-ovoid, glabrous, about 3 mm. long. Capsule oblong, acute, glabrous, about 10 mm. long.

Nom. Jap. *Hina-sumire* (nov.).

Hab. Japan; middle and northern (*M. Oguma!* *H. Takeda!* *H. Nambu!* *T. Makino!* etc.! etc.!).

This is unquestionably an intermediate species between *Viola violacea* Makino and *V. Selkirkii* Pursh, from which the form of the leaves are different. It is also allied to *V. Tokubuchiana* Makino.

***Viola* (Nomimium) *ovato-oblonga* (Miq.) Makino.**

Viola sylvestris forma *ovato-oblonga* Miq. Prol. Fl. Jap. p. 86.

Viola sylvestris var. *ovato-oblonga* Makino in Bot. Mag, Tokyo, XVI. (1902) p. 137.

Viola sylvestris var. *montana* Yatabe in Bot. Mag., Tokyo, VI. (1892) p. 131, non *V. montana* Linn.

? *Viola Thibaudieri* Franch. et Sav. Enum. Pl. Jap. I. p. 43. et II. p. 290; Maxim. in Mél. Biol. IX. p. 756.

Nom. Jap. *Nagaba-tachitsubosumire*.

Hab. Japan.

var. *obtusa* (Miq.?) Makino.

? *Viola sylvestris* forma *obtusa* Miq. Prol. Fl. Jap. p. 86.

Viola sylvestris var. *odorifera* Makino (1904).

Caulescent. Rhizome erect or ascending, short, hard; roots hard, numerous, branched. Stems erect or ascending, hard at the base, few to several, simple, leafy, puberulous with minute patent hairs, or glabrous, attaining about many centimetres in length with cleistogamous flowers after vernal anthesis. Leaves alternate, long-petiolate, reniform, cordato-reniform, or ovato-cordate, obtuse, depressed-crenate, glabrate but puberulous when young, or quite glabrous, slightly thickish, minutely fuliginopunctulate when dried, 1–3 cm. long, 1–2½ cm. broad in flower; petiole angustate, puberulous with minute patent hairs, canaliculate in front, longer than the blade; stipules erect, viridescant, lanceolate or subulato-lanceolate with fimbriato-pectinate linear acuminate lacinae, membranaceous, ciliated or not so, shorter than the petiole, about 10–16 mm. long. Flowers turned downward with an ascending calcar, about 1½–1¾ cm. across,

odoriferous, purpurascent; peduncle exceeding the leaves, erect, gracile, puberulous with minute patent hairs, or glabrous, about 5–11 cm. long, bracteolate above the middle; bracteoles 2, erect and adpressed, linear, acuminate, membranaceous, glandular-margined at the base, 4–7 mm. long. Sepals subulato-lanceolate, acuminate, entire, glabrous, viridescent but scarious on margins, trinerved, about 7–8½ mm. long, the inferior 2 a little broader; basal auricles short, glabrous, truncate or truncato-bifid, but broadly ovate oval or elliptical in those of the lateral ones, but semiorbiculate or ovato-semiorbiculate in that of the superior one. Petals erect-patent; the superior 2 orbicular, rounded at the apex, cuneately long-attenuated below, 9–12 mm. long, 5–8 mm. broad; lateral 2 elliptical, rounded at the apex, cuneately attenuated below, somewhat longer than the superior ones, beardless, about 11–14 mm. long, 5–8 mm. wide; the inferior one equal to the lateral ones in length, elliptical-obovate, retuso-emarginate at the apex, purple above, white and distinctly purple-striped below, about 10–14 mm. long, 5½–8 mm. broad; calcar slightly shorter than the sepals, pointed obliquely upward, cylindrico-oblong, slightly curved upward, obtuse at the apex, compressed laterally, 6–7 mm. long. Anthers 3–3½ mm. long; connective-tip ovato-oval, rounded or obtuse at the apex, shorter than the anther-cells; appendages linear or angustato-linear, slightly curved, 5–7 mm. long. Ovary ovoid, glabrous, about 2 mm. long; style exserted, longer than the ovary, straight, enlarged above, about 3 mm. long; stigma compressed laterally, shortly beaked, rounded at the upper corner. Flowers April.

Nom. Jap. *Nioi-tachitsubosumire*.

Hab. Japan.

This differs from the type, by not having elongated leaves.

Cleisostoma ionosmum Lindl. Bot. Regist. (1847) tab. 41; Walp. Ann. I. p. 791; Ridley in Philip. Journ. Sc. I. Suppl. (1906) p. 39.

Sarcochilus ionosmus Benth. et Hook. fil. Gen. Pl. III. p. 575.

forma lutschuense Makino.

An epiphytic orchid, without pseudo-bulb. Stem erect, elongate, simple, foliose, but free from fallen leaves below, terete but somewhat compressed, green and smooth, glabrous, attaining 10 decim. or more in length, about 9 mm. across; internodes short, 2–3 cm. long, enclosed with sheaths entirely or greatly; roots elongate, terete, about 5 mm. across. Leaves distichous, numerous, spreading, flat, lorate, arcuato-recurved, entire, obliquely emarginate at the apex, thick, coriaceous, deep green and more or less shining above, yellowish green beneath, 11–19 cm. long, $2\frac{1}{4}$ – $3\frac{1}{4}$ cm. broad; midrib angustately grooved above, somewhat prominent beneath; veins inconspicuous superficially in recent; sheath terete, 2– $2\frac{1}{2}$ cm. long, more or less striate in age. Raceme simple or loosely branched, lateral in the upper portion of stem, peduncled, erect or erect-patent, exceeding the leaves, about 7–19-flowered, oblong to rounded, 5–20 cm. long; branches few and short, spreading, about 1– $4\frac{1}{2}$ cm. long; rachis straight, green, glabrous, rather stout, hardly flexuous and slightly striate above; bract very short, lunato-semiorbiculate, obtuse, thickish, thin on margin, greenish, about $1\frac{1}{2}$ cm. long; peduncle terete, green, glabrous, shorter or longer than the simple or branched racemes, about 9–11 cm. long, remotely scaly at the nodes; scale short and vaginate. Flowers medium-sized, laxly disposed, about $3\frac{1}{2}$ cm. across, slightly odorous. Perianth widely patent and then somewhat reflexed, thickish, entire, rounded-obtuse at the apex, somewhat convex, pale greenish-yellow, blotched with large brick-coloured irregular transverse spots in inside. Sepals free; the upper one spatulato-oblancoate, about 17 mm. long, 8 mm. wide; the lateral ones obovate, shorter and broader than the upper one, very slightly adnate to the base of the column, 15 mm. long, 10 mm. wide. Petals free, spatulate, attenuated below, nearly equal in length to the upper sepal. Labellum sessile, continued, adnate to the lower-half sides of the column, shortly calcarate behind at the base, nearly horizontal, scarcely incurved, 15 mm. in whole length including the calcar, narrow, not exceeding the perianth, white, loosely spotted with red, furnished with a large oblong plate at the base under the column (the plate parallel to the labellum-

body and closed the orifice of the calcar by its basal portion, minutely puberulous beneath, about 4 mm. long); side lobes adnate to the column, erect, thin, depressed-deltoid; midlobe much larger, carnose, rhombic, slightly puberulous on lateral margins, beakedly produced at the apex with an eroso-truncate tip, about 6 mm. broad; disk very minutely puberulous and concave in centre; calcar shortly conical, pointed backward, obtuse at the end, thickish-walled, one-celled, about $3\frac{1}{2}$ mm. long. Column short, thick, footless, semiterete, wingless, yellowish, about 5 mm. long; clinandrium truncate, transversely elliptical, puberulous on the dorsal margin, provided with two erect cornicles at the corners in front (cornicles slightly incurved, puberulous and fulvous); rostellum shortly produced; operculum obliquely short-conical, imperfectly 2-locular, very shallowly grooved in the back and very broadly so in front, shortly projected on the front margin, yellowish and shaded with brownish colour below, 3 mm. across; stigma orbicular, placed under the rostellum, concave, perpendicular. Pollinia 2, ellipsoid-globose, somewhat compressed, yellow, waxy, each divided into 2 unequal masses, 1 mm. and a little more long; stipe slightly longer than the pollinia, membranaceous, white, spathulate, revolute; gland vertical, oblong, bifid at one end and rounded-obtuse at the other end, nearly 1 mm. long. Ovary straight, but often somewhat curved above, narrow, 3-angulate, sulcate, glabrous, spreading, white, about $2-2\frac{1}{3}$ cm. long.

Nom. Jap. *Nyūmen-ran*.

Hab. Prov. MUSASHI: Tokyo, cultivated from Luchu (*T. Makino*!)

This differs from the type, merely by the narrower labellum.

Symplocos lucida (Thunb.) Sieb. et Zucc. Fl. Jap. (1835) p. 55, tab. 24, excl. syn. *Myrtus laevis* Thunb., non Wall.

Laurus lucida Thunb. Fl. Jap. (1784) p. 174; Willd. Sp. Pl. II. (1799) p. 484; Pers. Syn. Pl. I. (1805) p. 450; Spreng. Syst. Veg. II. (1825) p. 266.

Hopea lucida Thunb. Ic. Pl. Jap. Decas 2, tab. 4.

Symplocos japonica A. DC. Prodr. VIII. (1844) p. 255; Sieb. et Zucc. Fl. Jap. Fam. Nat. in Abh. Akad. Muench. IV. 3 (1846) p. 133; Miq. Prol. Fl. Jap. p. 265; Franch. et Sav. Enum. Pl. Jap. I. (1875) p. 307; Walp. Ann. III. p. 919; Forbes et Hemsl. in Journ. Linn. Soc. XXVI. p. 73; Brand, Symploc. in Engler's Pfl.-Reich (1901) p. 31.

Bobua japonica Miers in Journ. Linn. Soc. XVII. (1880) p. 306.

Kuroggi seu *Fon Kuroggi*, i. e. *Kuroggi legitima* Kæmpf. Amœn. Exot. (1712) p. 788.

Kuroggi Banks, Icon. Sel. Pl. Jap. (1791) tab. 36.

Nom. Jap. *Kurogi*.

Hab. Japan.

Ilex Othera (Thunb.) Spreng. Syst. Veg. I. (1825) p. 496.

Othera japonica Thunb. Fl. Jap. (1784) p. 61, et Ic. Pl. Jap. Decas 2, tab. 3; Willd. Sp. Pl. I. (1797) p. 671; Pers. Syn. Pl. I. (1805) p. 145; Lam. Illustr. p. 310; Rœm. et Schult. Syst. Veg. III. (1818) p. 300.

Ilex integra Thunb. Fl. Jap. (1784) p. 77; Willd. Sp. Pl. I. (1797) p. 711; Pers. Syn. Pl. I. (1805) p. 125; Rœm. et Schult. Syst. Veg. III. (1818) p. 492; DC. Prodr. II. p. 16; Sieb. et Zucc. in Abhandl. Akad. Muench. IV. 2, p. 148; Miq. Prol. Fl. Jap. p. 269; Franch. et Sav. Enum. Pl. Jap. I. p. 77; Maxim. in Mém. Acad. Sc. Pétersb. 7^e sér. XXIX. (1881) p. 41, excl. β ; Forbes et Hemsl. in Journ. Linn. Soc. XXIII. p. 116; O. Kuntze, Rev. Gen. Pl. I. p. 113.

Prinos integra Hook. et Arn. Bot. Beechey Voy. (1841) p. 261.

Ilex asiatica Spreng. Syst. Veg. I. (1825) p. 496, ex parte.

Too sei, vulgo *Mots no ki* Kæmpf. Amœn. Exot. (1712) p. 907.

Nom. Jap. *Mochi-no-ki*.

Hab. Japan.

(To be continued.)