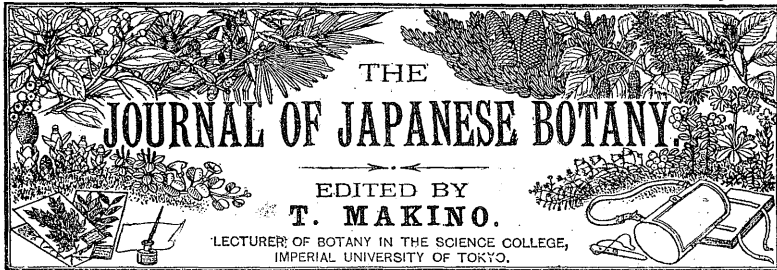


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A Contribution to the Knowledge of the Flora of Japan.

(Continued from p. 18.)

By

Tomitarô Makino.

Primula kisoana MIQ. Prol. Fl. Jap. p. 283.

var. shikokiana MAKINO, nov. var.

Leaves softer; blade light yellowish green above, much paler and denser pubescent beneath; veins and veinlets more shallowly impressed above, less strongly prominent and reticulated beneath; petiole slightly stouter, more villose with a little longer soft hairs, pale greenish, purplish below. Calyx-segments lanceolate or sub-lato-lanceolate, 11–13 mm. long, attaining $2\frac{1}{2}$ mm. broad, at length sub-erecto-patent.

Nom. Jap. *Shikoku-kakkosô* (nov. nom.).

Hab. Prov. IYO in Shikoku (KIMEI FUDZINO! herb. Imp. Mus. Tokyo, May 15, 1884, No. 9899; K. OKUDAIRA!).

Primula Reinii FRANCH. ET SAV. Enum. Pl. Jap. II. p. 428.

forma albiflora MAKINO, nov.

Flower white.

Nom. Jap. *Shiobana-koiwazakura* (nov. nom.).

Hab. JAPAN.

Primula cuneifolia LEDEB. in Mém. Acad. Sc. St.⁺ Petersb. V. (1814), p. 522, et Fl. Ross. III. p. 15, **var. heterodonta** (FRANCH.) MAKINO in Bot. Mag., Tokyo, XVI. (1902), p. 141.

Primula heterodonta FRANCH. in Bull. Soc. Philomath. Paris (8 mai 1886), p. 7, et (14 avril 1888), p. 10.

forma albiflora MAKINO, nov.

Flower white.

Nom. Jap. *Shiobana-michinokukozakura* (nov. nom.).

Hab. Prov. MUTSU: Mt. Iwaki (H. SAKURAI! herb. Imp. Mus. Tokyo, Aug. 1885, No. 9889).

var. hakusanensis (FRANCH.) MAKINO, l. c. p. 141.

Primula hakusanensis FRANCH. l. c. (8 mai 1886), p. 6, et (14 avril 1888), p. 10.

forma albiflora MAKINO, nov.

Flower white.

Nom. Jap. *Shiobana-nankinkozakura* (nov. nom.).

Hab. Prov. IWASHIRO: Mt. Iide (Herb. Imp. Mus. Tokyo, Aug. 16, 1908, No. 14794).

Primula macrocarpa MAXIM. in Mém. Biol. VI. (1867), p. 269.

Primula hayashinei PETITM. in Bull. Herb. Boiss. VII. p. 528.

Flower small, white! with yellow eye.

Nom. Jap. *Hime-kozakura*.

Hab. Prov. RIKUCHÛ: Mt. Hayachine.

Flowers in June. The living specimens in flower were kindly sent me by Mr. T. MOTOYAMA.

Primula Sieboldi MORREN.

a. hortensis TAKEDA in Notes, Roy. Bot. Gard., Edin. XXXVII. (1913), p. 84.

Primula Sieboldi MORREN, Belg. Hortie. XXIII. (1873), p. 97, tab. 6

forma incisa (MIQ.) MAKINO, nov. comb.

Primula cortusoides var. *incisa* MIQ. Prol. Fl. Jap. p. 283.

Nom. Jap. *Kirezaki-sakurasô* (nov. nom.).

Hab. JAPAN, cultivated.

A garden form.

Ilex bonincola MAKINO, nov. sp.

Shrub, evergreen, quite grabrous; branchlet gracile, angulato-striate when dried. Leaves biennial, sparsely alternate, petiolate, elliptical or elliptico-oblong, submarginato-obtuse at the apex, acute at the base, serrate and very narrowly subrevolute towards the under surface when dried, thinly coriaceous, shining above, elevato-nervate on both surfaces when dried, about $2\frac{1}{2}$ -6 cm. long, $2-3\frac{1}{4}$ cm. wide; midrib prominent beneath; veins erect-patent, about 5-7 on each side; veinlets reticulated; petiole about 7-15 mm. long, canaliculated in front.

Nom. Jap. *Ôba-munin-inutsuge* (nov. nom.).

Hab. BONIN ISLAND (Herb. Imp. Mus. Tokyo, No. 1513).

A species allied to *Ilex Matanoana* MAKINO, but the leaves are very much larger.

Ceratophyllum demersum LINN. Sp. Pl. p. 992.

var. quadrispinum MAKINO, nov. var.

Fruit smooth, beaked with a long persistent style at the apex, armed with 4 long patent spines, which 2 are basal and others on the shoulder.

Nom. Jap. *Yotsubari-kingyomo* (nov. nom.).

Hab. Prov. HIGO: Heta-mura in Hôtaku-gôri (M. KÔDZUMA! herb. Imp. Mus. Tokyo, Sept. 22, 1907, No. 22987).

Rhododendron decandrum MAKINO, nov. comb.

Rhododendron dilatatum β . *decandrum* MAKINO, Notes on Jap. Pl. XVIII. in Bot. Mag., Tokyo, VII. (1893), p. 134; MATSUM. Ind. Pl. Jap. II. 2, p. 459.

Nom. Jap. *Tosa-no-mitsubatsutsuji*.

Hab. Prov. TOSA in Shikoku: Ochi (T. MAKINO! April 1887).

Rhododendron Wadanum MAKINO, nov. sp.

Shrub or small tree, deciduous, many-ramose; branches terete, dark-gilvous; branchlets tenuous, often verticillate, erect-patent, griseo-gilvous. Leaves 3 at the top of branchlets, patent, approximate, petiolate, rhombeo-oval lato-ovate or orbiculato-ovate, mucronately acute or short-acuminate at the apex, broadly cuneate towards the

base, entire or very minutely crenulate, thinly coriaceous, green and thinly pilose with depressed glivous hairs but soon glabrate above, pale and pubescent on midrib and veins beneath, 3-5½ cm. long, 2-4 cm. wide; midrib impressed as are veins above, prominent as are veins beneath, densely villosa-tomentose with white hairs below as is the petiole; veins about 3-5 on each side, pinnato-subflabellate, delicate; veinlets finely seticulated, impressed above, finely subbulbate between veinlets; petiole about 4-7 mm. long, densely villosa-tomentose with white (gilvescent when dried) hairs usually as is the branchlet of this year under petioles. Bud ovoid; perulae broad, concave, viscid, fulvous, ciliated, deciduous, semiorbicular to ovate, the interior one longer and attaining about 11 mm. long. Flowers praecocious, usually 2-1 at the top of branchlets of last year, approximate, pedicellate, directing laterally, bright purple, about 4-4½ cm. across; pedicel usually stout, terete, ¾-13 mm. long, about 2 mm. across, viridescent, adpressedly tomentoso-pubescent with white or glivous hairs. Calyx extremely short, 5-angulato-lobed, ciliated. Corolla campanulato-infundibuliform, glabrous, scarcely deep-purple-maculate in face, the spots small, longitudinally linear to oblong, straight or nearly so; tube short, thickish, turbinate, about 6-10 mm. long; limb subbilabiate; lower 2 lobes oblong, rounded at the apex, entire, about 25-28 mm. long, 13-15 mm. wide; upper 3 lobes broader, oval or elliptical-oval, or rarely orbiculate, rounded or subtruncato-rounded at the apex, entire, 23-25 mm. long, 15-19 mm. wide, the posterior one often slightly smaller. Stamens 10, declinate, unequal in length, posterior ones shorter than the corolla, but anterior ones more or less exserted. Style declinate, arcuate upwards, slightly shorter than the anterior stamens; ovary narrowly ovoid, densely pubescent with sericeous hairs, about 4 mm. long. Capsule conico-cylindrical, curved, about ¾-1½ cm. long, 5-sulcate, depressed-pubescent; pedicel straight, pubescent, ¾-1½ cm. long.

Nom. Jap. *Tógoku-mitsubatsutsuji* (nov. nom.).

Hab. JAPAN, eastern, mountains.

Flowers in May. This species is very closely allied to *Rhod. rhombicum* Miq., which is very common on hills and mountains of western Japan. I have named this species in memory of Mr. DZIBÊ WADA, a member of Yokohama Botanical Society.

(To be continued.)