Observations on the Flora of Japan.

(Continued from p. 35.)

By

T. Makino.

Adenophora Takedai Makino sp. nov.

? *Campanula rotundifolia* Hance in Journ. Bot. (1881) p. 90, non Linn.

Perennial, 10–55 cm. in height; rhizome short or narrow. Stem very slender, weak, subflexuous, glabrous, ramose into flowering branches above or simple and uniflorous in depauperated state. Leaves loose, sparse, shortly petiolate, membranaceous, thinly puberulent towards the margin above, glabrous beneath, linear, but lato-linear in the lower ones and angustato-linear in the superior ones, long-acuminate, attenuated below, apertly serrulate, $3\frac{1}{2}$ –16 cm. long, 2–10 mm. broad, the primordial ones long-petiolate, orbicular to lanceolate, dentato-serrate or dupleately serrato-dentate, obtuse or acute at the apex. Flowering branches short, capillary, glabrous, very loosely 1–3-flowered; bracts small, filiform, glabrous, 1–12 mm. long. Flower cernuous, pedicellate; pedicel capillary, usually longer or sometimes shorter than the flower, glabrous. Calyx-lobes spreading, filiform, subcallose-tipped, pauci-serrulate, glabrous, green, 4–10 mm. long. Corolla campanulate, about $2\frac{1}{3}$ cm. long, about $1\frac{1}{3}$ cm. across in the middle part, glabrous, 5-fid, violaceo-ceruleous; segment ovato-deltoid, mucronato-acute, about $\frac{1}{3}$ as long as the tube. Stamens 5, included, much shorter than the style, about 10 mm. long; filament filiform and nearly glabrous, but the lower portion much dilated ovato-lanceolate densely ciliated and shorter than the filiform portion; anther linear, 4 mm. long. Style included but a little longer than the corolla-tube, puberulent above; stigma 3-fid, arms patent-recurved, narrowly oblong, obtuse, pubescent dorsally but densely and minutely papilloso-pubescent on face. Disk conspicuous, tubuloso-cupuliform, erect, thick, 1 mm. long, orange-coloured. Ovary shortly obconical, glabrous, green, 3 mm. long, 3-celled, with thin carpel and many oblong ovules.

Nom. Jap. *Iwa-shazin*, *Iwa-tsuriganesō* (H. Takeda and T. Makino).

Hab. Prov. SAGAMI: Near Shoshidaira in Ashigaramami-gōri (H. Takeda ! Sept. 24, 1905).

This species has an apparent similarity to *Campanula rotundifolia* Linn., but belongs to the different genus. *C. rotundifolia* Linn. is not yet found in Japan; plant which reported under that name by Henry F. Hance in Trimen's Journal of Botany, 1881, is not probably Linne's species, but ours; it was found by J. Bisset on Mt. Oyama in prov. Sagami, and our specimens were also collected in a locality (as cited above) not far from that mountain.

Adenophora Maximowicziana Makino, Notes Jap. Pl. XV. in Bot. Mag., Tokyo, VI. (1892) p. 54.

Adenophora marsupiiiflora var. Maxim. in litt.

Adenophora verticillata var. *marsupiiiflora* Makino in Bot. Mag., Tokyo, XII. (1898) p. 61 (Jap.), non Trautv. excl. syn. syn.

Perennial, about $2\frac{1}{2}$ –7 decim. in height. Stem very slender, weak, patently piloso-pubescent then glabrate or subglabrate, ramose into flowering branches above forming a panicle. Leaves loose, sparse, sessile or subsessile in the upper ones but petiolate in the lower ones, membranaceous, usually glabrous on both surfaces but sometimes subpuberulent towards the margin above or thinly piloso-pubescent along the midrib beneath, linear and often falcate, gradually long-acuminate, gradually attenuated towards the base, distantly minutely mucronato-serrulate, 6–20 cm. long, 3–7 mm. broad, green above, paler beneath, the upper ones passing into bracts, the primordial ones long-petiolate, reniform, cordate, oval, ovate, oblong, oblong-lanceolate, or lanceolate, crenate, serrate, or subduplicately serrate. Panicle pyramidal, loose, about 9–28 cm. long; rachis slender, glabrous as well as the branches pedicels bracts and bracteoles; bracts leafy and linear or angustato-linear in the lower ones, but the middle ones smaller and linear-filiform, the upper ones much smaller and capillaceo-filiform, the smallest one about 3 mm. long; branches several to many, erect-patent, longer than bracts, gracile, the lower ones ramulose into few pedicels and about 3–5-flowered, but upper ones simple and single-flowered, the longest one about 13 cm. long; 2nd bracts capillaceo-filiform, about 2–4 mm. long. Flowers small, cernuous, pedicellate; pedicel capillary, spreading, longer than flowers, about $2-4\frac{1}{2}$ cm. long, very loosely few-bracteolate; bracteoles minute, capillary, 1–3 mm. long. Calyx-lobes spreading, capillary, entire, glabrous, green, $4\frac{1}{2}$ – $6\frac{1}{2}$ mm. long. Corolla tubuloso-campanulate, 5-fid, glabrous, with finely anastomosing venation, 10–11 mm. long, about 6 mm. across, white; segments deltoid, acute, $\frac{1}{5}$ as long as the tube. Stamens 5, hardly shorter

than the corolla, erect, the upper filiform portion glabrous, the dilated portion slightly longer than the upper, linear-lanceolate, narrowed above, densely and patently short-villose on margin, one-nerved; anther subulato-linear, erect, truncate at the base, cuspidate with the connective-tip at the apex, about 3 mm. long. Style exerted, about 18 mm. long, filiform, thinly and minutely papilloso-puberulent above; stigma thick and clavato-cylindrical, glabrous, shortly trifid, arms ovato-oblong, obtuse, recurvo-erect-patent, glabrous. Disk tubular, truncate and crenate at the mouth, 2 mm. long. Ovary obovoid-globose, glabrous, green, about $1\frac{1}{2}$ mm. long, 3-celled, with thin carpels.

Nom. Jap. *Hina-shazin* (J. Matsumura).

Hab. Prov. TOSA: Mt. Yokogura (*T. Makino!* 1883, 1884, 1885); Mt. Irazu (*Y. Yoshinaga!*).

Rare. It grows in crevices of perpendicular lime-stone cliffs on Mt. Yokogura.

Adenophora verticillata (Linn. f.) Fisch. *a. typica* Regel, Tent. Fl. Ussur. p. 108, n. 319.

forma hirsuta (Fr. Schm.) Makino.

Adenophora verticillata var. *hirsuta* Fr. Schm. Reis. im Amur. u. Ins. Sachal. (1862) p. 155; Makino in Bot. Mag., Tokyo, XII. (1898) p. 60 (Jap.).

Adenophora verticillata *z. canescens* Franch. et Sav. Enum. Pl. Jap. II. (1879) p. 422; Matsum. Catal. Herb. Coll. Sc. Imp. Univ. Tokyo, (1886) p. 116.

Adenophora verticillata var. *pilosissima* Engl. in Engler's Bot. Jahrb. VI. (1886) p. 68.

Nom. Jap. *Shirage-shazin*.

Hab. Japan, middle and northern.

Adenophora verticillata Fisch. *a. typica* Regel, Tent. Fl. Ussur. p. 108, n. 319.

lusus alternifolia (Franch. et Sav.) Makino.

Adenophora verticillata *γ. alternifolia* Franch. et Sav. Enum. Pl. Jap. II. p. 422; Matsum. Cat. Herb. Coll. Sc. Imp. Univ. Tokyo (1886) p. 116.

Hab. Japan.

When the verticillate-leaved stem (normal one) is cut from the base before flowering, a new stem often springs again. Such a secondary stem frequently bears alternate leaves on it. We do not know a plant in Japan with the alternate leaves from its beginning. The alternate-leaved one is, therefore, not undoubtedly the normal and permanently fixed form of the plant. It is by no means a varietal, but only an accidental form.

Artemisia glomerata Ledeb. 'in Mém. Acad. Pétersb. V. (1805) p. 564', et Fl. Ross. II. p. 588; Bess. 'Abrot. p. 63'; DC. Prodr. VI. p. 116; Lessing in Linnæa, VI. p. 212; Bess. in Hook. Fl. Bor-Am. I. p. 324; Torr. et Gray, Fl. N. Am. II. p. 423; Maxim. in Mém. Biol. VIII. p. 532 (1872); A. Gray, Fl. N. Am. I. 2, p. 370; Miyabe, Fl. Kuril. Isl. p. 242, non Sieb.

Artemisia leontopodioides Fisch. 'ex Besser, Abrot. (1834) p. 63'; DC. l. c. p. 116; Ledeb. Fl. Ross. II. p. 588.

Artemisia corymbosa Pall. in herb. Reg. Berol. ex Ledeb. Fl. Ross. II. p. 588.

Artemisia corymbosa Fisch. 'ex Bess. 'Abrot. (1834) p. 74'; DC. l. c. p. 118; Ledeb. Fl. Ross. II. p. 589.

Artemisia Steveniana Bess. Abrot. (1834) p. 64, tab. 3, fig. 1'; DC. l. c. p. 116; Ledeb. Fl. Ross. II. p. 588.

Artemisia globularia Ledeb. herb. ex Maxim. l. c., non. Cham.

Artemisia curilensis Spreng. Syst. Veg. III. p. 489, non Bess. nec DC. Nom. Jap. *Hahako-yomogi* (nov).

Hab. Prov. KAI: Mt. Komagatake (*Y. Hihara*! August 1905).

Rare. New to the Honsiu.

Cacalia bulbifera Maxim. **var. lobata** Makino.

Senecio farfaræfolius var. *lobatus* Makino, Notes on Jap. Pl. XV. in Bot. Mag., Tokyo, VI. (1892) p. 55.

Senecio lobatifolius Makino in herb.

Cacalia lobatifolia Makino in Bot. Mag., Tokyo, XII. (1898) p. 80.

Cacalia bulbifera var. *acerina* Makino in Bot. Mag., Tokyo, XIX. p. 154.

Leaves deltoid reniform-deltoid or orbiculato-reniform, broadly cordate or truncato-cordate at the base, acute or acuminate at the apex, 5-lobate

or irregularly coarsely lobato-dentate, attaining about 14 cm. long and broad; petiole longer or shorter than the blade, villose or very thinly so, attaining about 12 cm. long.

Nom. Jap. *Miyama-kōmori*, *Momidzi-tanabuki*.

Hab. Prov. TOSA: Mt. Tebako (*T. Makino*! Aug. 1885); Prov. Awa (ASHŪ): Mt. Tsurugi-san (*D. Nikai*! herb. Sc. Coll. Imp. Univ. Tokyo, Aug. 14, 1901); Prov. HIZEN: Mt. Tara (*Y. Kaneko*! Oct. 30, 1904).

***Aster indicus* Linn. var. *pinnatifida* Maxim. in litt.**

Boltonia indica var. *pinnatifida* Matsum. Catal. Herb Coll. Sc. Imp. Univ. Tokyo (1886), correct. p. 3.

Asteromæa indica var. *pinnatifida* Matsum. Shokubutsu Mei-i (1903) p. 41.

Often taller than the type. Stem erect, viridi-striate, branched towards the top; branches erect-patent, slender, simple or few-ramulose, usually with many bract-like leaves. Leaves denser, usually pinnatifid parted or lobed into narrow lobes, sometimes lobato-dentate. Involucral-scales narrower and more tapering, usually viridescent. Ray-florets pale-cæruleous.

Nom. Jap. *Yūgagiku*.

Icon. Iinuma's Sōmoku-Dzusesu, ed. 2, XVI. n. 50.

Hab. Japan.

Common in the middle and northern parts in this country.

forma *hortensis* Makino.

Disk-florets white or yellowish; corolla at length considerably developed and larger than in those of the original one.

Nom. Jap. *Chōsen-giku*, *Tokiwa-giku*.

Icon. Iinuma's Sōmoku-Dzusesu, ed. 2, XVI. n. 51.

Hab. Prov. TOSA: Sakawa, cult. (*T. Makino*! 1884, June 28, 1887).

A garden form. The flowers appear earlier than those of the variety and last from summer till the end of autumn.

***Lespedeza Buergeri* Miq. Prol. Fl. Jap. p. 235, form *angustifolia* Makino.**

Leaflets lanceolate to angustato-lanceolate, attenuately tapering towards both ends, densely adpressed-pubescent.

Nom. Jap. *Hosoba-kihagi* (nov).

Hab. Prov. Awa in Shikoku: Kamo in Yoshii-mura (Y. Nishimoto! Sept. 15, 1904).

Circæa cardiophylla Makino sp. nov. (An *C. cordata* Royle?)

Circæa mollis Savat. in Inuma's *Somoku-Dzusetsu*, ed. 2, I. n. 37, non Sieb. et Zucc.

Circæa cordata Catal. Herb. Coll. Sc. Imp. Univ. Tōkyo (1886) p. 75.

Stoloniferous. Stem attaining about $9\frac{1}{2}$ decim. in height, erect, terete, patently piloso-pubescent, simple or sometimes ramose. Leaves 5–12 cm. long, 3–8 cm. wide, long-petiolate, cordate, oval-cordate, or ovato-cordate, acuminate, repand-dentate with a callosio-mucronate point, membranaceous, piloso-pubescent between veins and shortly pubescent on veins and midrib on both surfaces, ciliated on margin; veins about 10–13 on each side; petiole usually shorter than the blade, about $1\frac{1}{3}$ – $8\frac{1}{2}$ cm. long, patently piloso-pubescent. Racemes towards the top, loosely placed, terminal and lateral, sometimes forming a loose panicle, many-flowered, the lateral ones spreading or erect-patent; rachis slender, about 2–13 cm. long, slender, patently piloso-pubescent; bract very minute, subtending each pedicel and much shorter than it, filiform, reflexed, the lower few ones sometimes foliaceous and attaining about 11 mm. long. Flowers small, subdense, but laxer in fruit; pedicel patent but deflexed in fruit, about 1– $2\frac{1}{2}$ mm. long, patently glanduloso-pubescent. Calyx-lobes patent then reflexed, elliptical, obtuse, concave, pilose dorsally, green, 2–3 mm. long; the tube obconical, patently pilose, $\frac{2}{3}$ –1 mm. long. Petals white, shorter than the calyx-lobes, broadly obovate, very shortly unguiculate, deeply 2-lobed, $1\frac{1}{2}$ – $2\frac{1}{2}$ mm. long; lobes obovate or obovato-orbiculate. Stamens longer than the calyx-lobes, glabrous, $2\frac{1}{2}$ –4 mm. long; filament filiform; anther orbiculate, about 1 mm. long. Style filiform, glabrous, longer than the stamens; stigma thick, subbilobato-capitate. Ovary rounded, densely covered with hooked long hairs, equal to the pedicel in length, $1\frac{1}{2}$ –2 mm. long, 2-celled, each cell with single ovule. Fruit rounded or oval-subpyriform, rounded obtuse or acute and often hardly unequal at the base, 2–3 mm. long, reflexed, covered with hooked long hairs, slightly longer than the pedicel.

Nom. Jap. *Oranda-goshitsu*, *Ushitaki-sō*.

Hab. HOKKAIDŌ (*L. Boehmer*! herb. Sc. Coll. Imp. Univ. Tokyo, June 1874); Prov. ISHIKARI: Sapporo (*R. Yatabe*! herb. ibid. July 29, 1878),

Mt. Moiwa (*J. Matsumura*! herb. ibid. Aug. 3, 1899); Prov. KITAMI: Isl. Rii-hiri (*T. Makino*! Aug. 1903); Prov. MUSASHI: Tokyo (*R. Yatabe* and *J. Matsumura*! herb. ibid. Aug. 1878), Dōkwan-yama (*T. Makino*! Aug. 17, 1888, July 1900), Yoyogi (*T. Makino*! Sept. 1900); Prov. IWASHIRO: Yumoto in Aizu (*J. Matsumura*! herb. ibid. Aug. 6, 1879); Prov. TOSA: Tokoroyama-mura (*T. Makino*! June 1889); Prov. AWA (=ASHŪ): Shimomyō-mura (*R. Yatabe*! herb. ibid. July 25, 1888); Prov. NAGATO: Higashibun-mura (*D. Nikai*! herb. ibid. Aug. 11, 1893).

Occasionally there occurs a hybrid between this species and *C. quadrisulcata* (Maxim.) Franch. et Sav. (= *C. cardiophylla* × *C. quadrisulcata*). I have a such specimen actually collected by myself at Dōkwan-yama near Tokyo, in Aug. 17, 1888, where the two species are found mixed together.

Ficus pumila Linn. Cod. n. 7725; Makino in Bot. Mag., Tokyo, XVIII. p. 125 cum fig.

Nom. Jap. *Ō-itabi*.

Add. Hab. Prov. TOSA: Kashiwa-zima in Hata-gōri (*H. Nakanishiki*! November 1903).

Ficus Hanceana Maxim. in Mém. Biol. XI. p. 341; Makino in Bot. Mag., Tokyo, XVIII. p. 155 cum fig.

Nom. Jap. *Wase-ōtabi*.

Add. Hab. Prov. TOSA in Shikoku: Kumono in Hata-gōri (*T. Makino*! Oct. 24, 1885), Shimomashino in Hata-gōri (*T. Makino*! Aug. 9, 1889).

Pasania edulis Makino in Bot. Mag., Tokyo, XI. (1897) p. 39, et XIV. (1900) p. 185, ed. separat. p. 8.

Quercus edulis Makino, l. c. p. 38.

Quercus glabra Auct. Auct. non Thunb.!

Nom. Jap. *Mateba-shii*.

Hab. Loochoo, spont. (*H. Kuroiwa*!).

It grows wild in Loochoo, but is planted in Kiusiu and Honsiu.

Original species of *Quercus glabra* Thunb. is *Q. thalassica* Hance, and *Q. glabra* of several other writers comes under this head. See also Bot. Mag., Tokyo, XIV. (1900) p. 186, ed. separat. p. 9.

Listera Yatabei Makino in Bot. Mag., Tokyo, XIX. (1905) p. 8, fig. 3.

Add. descr. Leaves sometimes rhombicly subdeltoid-reniform. Flowers about 7–11 in number. Bract attaining nearly 3 mm. long. Pedicel sometimes erect, attaining about 6 mm. long. Sepal: dorsal one narrowly ovate; lateral ones somewhat longer, ovato-falcate. Petals as long as the dorsal sepal. Labellum about 8 mm. long, 3 mm. wide above, narrowly cuneato-spathulate, 2-lobate above, base rounded-obtuse and naked from projecting points; lobes erect, about $\frac{1}{3}$ as long as the whole length, elliptical or oblong, obtuse or rounded, irregularly sinuato-crispate, very slightly oblique in form, minutely pubescent on the margin; sinus narrow, subclose, with a minute projecting point at the bottom; median vein thick; lateral veins branched on the outside, branches few, simple or forked, running upwards. Column attaining about $2\frac{1}{2}$ mm. long. Ovary attaining about 3 mm. long.

Add. Hab. Prov. SURUGA: Mt. Fuji (*B. Hayata*! August 1905).

The original figures in Bot. Mag., Tokyo, XIX. p. 8, were taken from a flower-bud. Here I show the figures newly drawn from a fully opened flower.

Trisetum subspicatum Beauv. Agrostogr. (1812) p. 88; Hackel in Bull. Herb. Boiss. VII. (1899) p. 703.

Nom. Jap. *Rishiri-kanitsuri* (T. Kawakami), *Takane-kanitsuri* (T. Makino).

Hab. Prov. KITAMI: Mt. Riishiri in Isl. Riishiri (*T. Makino*! Aug. 1903); Prov. SHINANO: Mt. Shirouma (*M. Oriti*! n. 59, Sept. 23, 1902).

New to the Honsiu.

Prunus pseudo-Cerasus Lindl. *a. spontanea* Maxim. in Mém. Biol. XI. p. 697; Palib. Consp. Fl. Koreae, I. p. 88; Makino in Icon. Fl. Jap. I. tab. 1–2.

subvar. humilis Makino.

Prunus pseudo-Cerasus var. *humilis* Makino, Notes on Jap. Pl. XV. in Bot. Mag., Tokyo, VI. (1892) p. 52.

Shrubby, branchlets slender, glabrous even when young, terete, dispersed with lenticels. Leaves petiolate, ovate to ovato-lanceolate, attenuatedly acuminate with a very sharp point, rounded to obtuse at the base, duplicato-serrate with very sharply pointed teeth, membranaceous, glabrous, attaining about $7\frac{1}{2}$ cm. long, 3 cm. broad; veins about 5-8 on each side, erect-patent, arcuate upwarder; veinlets fine; petiole gracile, glabrous, about $\frac{1}{5}$ - $1\frac{2}{3}$ cm. long, 1-2-3-glandular towards the top or naked, the gland often situated at the base of margin of blade; stipules deciduous, usually shorter than the petiole, linear, simple or pauci-laciniate, glandular-fimbriate. Corymb 1-3-flowered; scales villose internally, the inner ones spatulate and sometimes trifid, sometimes the upper 1-3 developed into petiolate leaves with free or more or less adnate stipules; common peduncle often elongate and attaining about 4 cm. long, glabrous as is pedicel; bract obovate or spatulato-obovate, glanduloso-ciliated. Flower $2\frac{1}{3}$ - $2\frac{1}{2}$ cm. across, pale-rosy; pedicel about 6-10 mm. long in flower but attaining about $1\frac{3}{4}$ cm. long in fruit, erect-patent, straight. Calyx glabrous; the tube obconico-campanulate, attenuated to the pedicel below, about 4-5 mm. long; lobes subulato-lanceolate, acuminate, entire, equal to the tube in length. Petals patent, oval to orbiculate, emarginate with a minute point in centre. Stamens numerous, shorter than petals. Style equal to or somewhat exceeding the stamens in height, glabrous, about 12 mm. long including the ovary; ovary ovoid, glabrous. Drupe globose; carnal orbicular, compressed, about 6 mm. long. Flowers in April.

Nom. Jap. *Wakaki-no-sakura*.

Hab. Prov. Tosa: Sakawa, cult. (*T. Makino*! April 1887, 1889, June 1893).

A very curious variety, flaunting the blossom before a few years after the seedling. It differs from the type (*a. spontanea* Maxim.) by the shrubby habit, subirregular serration of leaves, elongate and sometimes foliiferous peduncle, and more densely flowered branchlets. The mother tree was found at a village called Ogawa in the neighborhood of Sakawa.

(*To be continued.*)