Observations on the Flora of Japan.

(Continued from p. 224.)

By

T. Makino.

Cissampelos insularis Makino, sp. nov.

Cocculus sp. Y. Tashiro in sched. herb. Sc. Coll. Imp. Univ. Tokyo.

? *Pericampylus incanus* Ito et Matsum. Tent. Fl. Lutch. I. p. 19, non Miers, excl. syn.

A diœcious voluble shrub; stem elongate, terete, sulcato-striate, contorted, glabrate, umber, loosely ramose; branches slender, terete, sulcato-striate when dried, green in recent, retrorsely pubescent but hairs denser towards the young point. Leaves alternate, petiolate, cordate with rounded lobes and a widely open sinus at the base, mucronato-acute at the apex, entire and ciliolated, peltate at the base, thickly membranaceous, thinly pubescent and green above, softly pubescent but piloso-pubescent on main nerves and paler (glaucous in recent) beneath, 3–9 cm. long, $2\frac{1}{2}$ –8 cm. broad; main nerves 7 and radiate; veinlets rather densely reticulated; petiole shorter than the blade, narrow, retrorso-patently pubescent, $1\frac{1}{2}$ –9 cm. long. Panicles axillary, solitary or sometimes geminate, aphyllous or very rarely 1-leafy at the base, shorter than the leaves, narrow, 1–6 cm. long, very shortly peduncled, with fasciculately racemose short branches, which bear 2 to several pedicellate flowers; rachis and branches adpressed-pubescent, viridescent in recent; bracts minute, ovato-rhombic, abruptly acuminate, shortly petiolate, adpressedly pubescent above and densely adpressed-pubescent with pale-fulvous hairs dorsally, ciliated, shorter than the branches of the panicles; bracteoles lax, very minute, linear-subulate, pubescent. Female flowers minute, viridescent in recent; pedicels very short, stout, thicker towards the receptacle and clavate in form, adpressed-pubescent, viridescent in recent, $\frac{2}{3}$ –1 mm. long. Sepals 2, erect, deciduous, elliptical to orbicu-

late, obtuse or acutish, entire, thickish and concave below, glabrous within, adpressed-pubescent externally, $1\frac{1}{2}$ mm. long. Petal sometimes 1 developed, alternate to or sometimes opposite with the sepals and often smaller or much so than them, free, sometimes entirely or partly connate to the sepal, pubescent dorsally, or glabrous, deciduous. Staminodes none. Ovary solitary, somewhat oblique in shape, ovoid, gibbous on the dorsal side, straight on the ventral edge, erect, sessile, glabrous, nigrescent when dried, nearly 1 mm. long, 1-celled and 2-ovuled; style very short, stout, often arcuate outwards, glabrous, shorter than the ovary, erect from the top of the ventral edge, trifid, the stigmatiferous branches radiately patent-recurved, gracile, pointed; ovules 1 developed and other abortive, linear-ovate, tapering above, slightly curved. Fruit (young) green but black when dry, oval-orbicular, slightly compressed laterally, with a minute lateral short style near its base, even in surface, very scantily pilosulate with patent hairs; endocarp hard, compressed, rounded or obovoid-rounded, tuberculato-muricate dorsally, flatly subexcavate on both sides with tuberculato-muricate horseshoe-shaped border.

Nom. Jap. *Miyakojima-tsudzurafudzi* (Y. Tashiro).

Prov. YAYEYAMA ARCHIPELAGO: Isl. Miyako (*Yasusada Tashiro*! July 1887); Prov. SATSUMA: Near Kagoshima (*B. Fukazawa*! 1909; *Zentaro Tashiro*! Aug. 1910; *Y. Nakano*! Aug. 1910); *T. Makino*! Aug. 1910; Prov. IKI (*K. Chiba*! Aug. 1910).

This seems to come near *Cissampelos Pareira* Linn., from which it differs, however, by having the minute bracts, petals mostly alternate to the sepals in the female flower, glabrous ovary, subglabrous fruits, and the invariably cordate leaves, etc.

***Cacalia kiusiana* Makino, sp. nov.**

Perennial attaining about 8 decim. in height. Stem erect, terete and substriate, flexuous, thinly adpressedly arachnoid-pubescent and pubes denser near the base of the petioles in the nodes. Leaves alternate, long-petiolate but shorter so in the superior ones, subreniform in outline, cordate at the base, 5-sub-

7-lobed or angulate with very wide sinuses, firm in texture, chartaceo-membranaceous, glabrous above, thinly adpressed-arachnoid-pubescent beneath, the lower larger ones attaining about 15cm. long and 18cm. broad; lobes deltoid, mucronoto-acuminate, loosely few-mucronato-dentate and merely mucronate on margin; venation prominent on both surfaces when dried; main-veins palmato-radiate; veinlets numerous reticulated; petiole slender, very thinly arachnoid-pubescent, longer than the blade in the lower ones, often auriculate with the lunato-semiorbiculate lobes in the stipule-form embracing the stem at the base. Panicle terminal, loosely or subdensely subnumerous- or numerous-flowered, about 8-32cm. long, ovato-pyramidal or pyramidal, loosely spreadingly or erect-patently ramose; rachis slender, subflexuous, thinly crisped-pubescent as well as the branches and pedicels, the lower sometimes foliiferous; bracts small or minute, the lower ones often more or less leafy and the upper ones passed into the minute subulate squamiform ones; bracteoles minute and deltoid-subulate, those closed to the involucre deltoid and imbricated. Heads about $1\frac{1}{2}$ cm. long, white, shortly or very shortly pedicellate. Involucre cylindrical, about 1cm. long, glabrous; scales 5, broadly linear, auctish or subobtusely, firmly membranaceous but subhyalinomembranaceous on margins, several-nerved. Florets 5-6, exserted. Corolla glabrous, membranaceous, nearly 10 mm. long; tube gracile, throat subcampanulato-tubular, somewhat longer than the tube; lobes 5, patent-revolute, subulato-linear, acutish and minutely subcorniculato-papillose at the back of the point, entire, delicately 1-nerved, one-half as long as the throat. Anthers exserted, narrowly cylindrical, straight, about $3\frac{1}{2}$ mm. long; cells sagittate at the base; connective-tip oblong-ovate, acutish; filament filiform, glabrous, slightly longer than the anthers. Style exserted, filiform but thicker towards the base, glabrous, branches revolute, filiform, subspathulate at the apex, pubescent. Pappus slightly shorter than the corolla, delicate, subclavellate towards the top, minutely spinulose, drab when dried. Ovary linear, glabrous, about 3mm. long.

Nom. Jap. *Momidzi-kōmori* (nov.).

Hab. Prov. Osumi: Tarumidzu (Y. Nakano! Oct. 15, 1909); Prov. SATSUMA: Mt. Eboshi-dake (N. Nakajima! Aug. 1910).

The leaves have a resemblance to those of *Ainsliaea acerifolia* Schultz-Bip.

Cacalia delphiniifolia Sieb. et Zucc. in Abh. Akad. Muench. IV. 3 (1846), p. 190, excl. syn.; Miq. Prol. Fl. Jap. p. 112, excl. syn.

Senecio Zuccarinii Maxim. in Mém. Biol. IX. p. 298; Franch. et Sav. Enum. Pl. Jap. I. p. 249.

var. *tebakoensis* Makino, var. nov.

Gracile than the type, attaining about 6decim. in height; stem slender. Leaves smaller, firm in texture; veins distinctly prominent beneath; veinlets prominent and densely reticulated on both surfaces. Panicle short and pyramidal, about 7cm. long, 5-7cm. across. Heads smaller, about 6mm. long, very shortly pedicellate; bracteoles under the heads fewer and linear-subulate.

Nom. Jap. *Tebako-momidzigasa* (nov.).

Hab. Prov. TOSA: Mt. Tebako (R. Yatabe! herb. Sc. Coll. Imp. Univ. Tokyo, August 8, 1888).

Listera shikokiana Makino in Bot. Mag., Tokyo, VII. (1893), p. 68, et XIX. (1905), p. 11, fig. V.

A terrestrial Orchid, about 10-18cm. in height; rhizome very short, gracile, obliquely erect, rooting; roots fasciculated, spreading, filiform, more or less tortuous, stramineo-albescent, attaining about 4 cm. long. Stem erect, terete, smooth, fleshy, viridescent, glabrous, about 6-10cm. long, $1\frac{1}{3}$ -2mm. across, the lower portion enclosed with a vagina (probably two); vagina terete, thinly membranaceous, attaining about $2\frac{2}{3}$ cm. long, obliquely truncate at the mouth. Leaves two, opposite, patent, sessile, broadly deltoid-ovate, but often semiorbiculato-ovate in the sterile ones, cuspidato-acuminate or acute at the apex, truncato-subcordate at the base, entire, membranaceous, green, glabrous, 2- nearly 3cm. long, $1\frac{3}{4}$ -2 cm. wide; main

nerves 5 or 3; veinlets delicate, loosely anastomosing. Peduncle erect, narrower than the stem, slightly shorter than the rachis of the raceme, covered with patent short glandular pubescent hairs as well as the rachis, about $2\frac{1}{3}$ – $3\frac{1}{2}$ cm. long. Raceme erect, very laxly about 4-flowered; rachis straight or obscurely flexuous, about 1– $2\frac{1}{2}$ cm. long; bract minute, ovate, obtuse or acutish. Flowers pedicellate, small; pedicel gracile, filiform, glabrous, about 3 – $3\frac{1}{2}$ mm. long in flower but 7–8 mm. long in fruit. Perianth about 2 mm. or slightly more long, glabrous, membranaceous, entire, 1-nerved. Sepals: the upper one (Fig.

XVII. *a*) oblong-ovate, obtuse, concave; lateral ones (Fig. XVII. *b*) hardly longer, somewhat oblique, lanceolato-ovate, acutish. Petals (Fig. XVII. *c*) as long as the upper sepal, narrowly subspathulato-oblong, obtuse. Labellum (Fig. XVII. *d*) much exserted, sessile, about $5\frac{1}{2}$ –7 mm. long, cordato-sagittate with falcato-lanceolate sub-

obtuse lobes which are clasping the gynostemium at the base, bifid with erect-patent straight narrow lobes and a deltoid sinus, which with a minute low projection at its bottom; disk about $1\frac{1}{3}$ mm. broad, 3–5-nerved, with a vertical narrow ridge in centre and its lower end of the ridge shortly very divaricate above the base of the labellum. Gynostemium (Fig. XVII. *e*) short and thick; clinandrium deeply concave, bifid; the dorsal lobes very broad, fornicately concave, very thinly membranaceous,

FIG. XVII. mag

broadly truncato-subemarginate; the front lobe suborbiculate, subemarginate, thicker; anther (Fig. XVII. *f*) sessile, inserted under the apex of the dorsal lobe of the clinandrium, 2-celled, oval-ovate, obtuse, about $\frac{3}{4}$ mm. long; cells linear-oblong. Stigma bordered with a truncate edge in front. Ovary (Fig. XVII. *e*) ellipsoid, glabrous, about 2 mm. long. Capsule fusiform-ellipsoid, 7–8 mm. long, with marcescent perianth and labellum (the lobes shriveled into one); carpels thin, viridescent, glabrous, with a straight pedicel.

Nom. Jap. *Hime-futabaran*.

Hab. AMAMI ŌSHIMA (*Tatsusaburō Kamiya!* April 13, 1910).

Above descriptions are based on the specimens collected in Amami Ōshima by Prof. T. Kamiya of the Zōshi-Kwan in Kagoshima.

***Pasania Sieboldii* Makino, nom. nov.**

Pasania cuspidata β . *Sieboldii* Makino in Bot. Mag., Tokyo, XXIII. (1909), p. 141.

Quercus cuspidata Sieb. et Zucc. Fl. Jap. p. 8; A. DC. Prodr. XVI. 2, p. 103, pro parte, non Thunb.

Quercus cuspidata Sieb. et Zucc. l. c. tab. 2, non Thunb.

Pasania cuspidata Prantl in Engler et Prantl, Nat. Pfl.-Fam. III. 1 (1894), p. 55, fig. 33 H; Shirasawa, Nippon-Shinrin-Jumoku-Dzufu, I. tab. 34, 1–13, non Ārst.

Ssi no ki Banks, Icon. Select. Pl. Kæmpf. (1791), tab. 39.

A species closely allied to *Pasania cuspidata* Ārst. (= *Quercus cuspidata* Thunb.), but the bark even in the inner surface; wood more durable; branchlets stouter; leaves thicker and larger, ferruginous beneath; rachis of the female inflorescence stouter; acorn oblong or ovoid-oblong, acutish at the apex, about 15–18 mm. long.

Nom. Jap. *Suda-jii*.

Hab. Japan.

In habitat this species is always found in the altitude higher than *Pasania cuspidata* (Thunb.) Ārst. *P. cuspidata* (Thunb.) Ārst. has the gracile branchlets, leaves smaller and thinner

with a pale under surface, gracile rachis of the female inflorescence, globular acorn, inner surface of the bark uneven with vertical ridges which fit on grooves on the wood, and wood inferior in durability.

var. pusilla. (Bl.) Makino.

Quercus cuspidata var. β . *pusilla* Bl. Mus. Bot. Lugd. Bat. I. p. 288.

Pasania cuspidata β . *Sieboldii forma pusilla* Makino, l. c. p. 142.

Nom. Jap. *Hime-jii* (T. Makino).

Hab. Japan, cultivated.

var. rotundifolia Makino.

Pasania cuspidata β . *Sieboldii forma rotundifolia* Makino, l. c. p. 142.

Nom. Jap. *Enmeirinka*.

Hab. Japan, cultivated.

Cissus Yoshimurai Makino, sp. nov.

Whole plant glabrous, cirriferous, cirrus dichotomous above; stem scandent, verruculose, slightly prominent at the nodes; branches slender, loosely ramulose, flexuous, striate. Leaves alternate, pedate with 5-leaflets, long-petiolate, membranaceous, green above, slightly paler beneath; leaflets petiolulate, ovato-lanceolate, oblong-ovate, or oblong, shortly acuminate at the apex, obtuse or acute at the base, coarsely depressed-crenate with a mucronate tip, with loosely arranged veins and anastomotic veinlets; central leaflet larger and attaining about 9cm. long, 4cm. broad, the petiolule longer and attains about $3\frac{1}{2}$ cm. in length; lateral leaflets oblique at the base. Cyme long-peduncled, axillary or sometimes leaf-opposite, divaricately divided into loose pedicels. Berries one to few to an inflorescence, pedicellate, sphaerical, smooth, succulent, purplish-red then black when fully matured, about $\frac{3}{4}$ – $1\frac{1}{3}$ cm. across. Seeds 1–4, with a crustaceous thin testa, compressed-triquetrous with subulate and minutely eroso-muricate lateral edges and acute entire ventral edge, broad-ovate, acutish at the apex, subcordate at

the base, about 7mm. long; faces bordered with the intra-marginal muricate broad lines, the ventral 2 faces concave, the dorsal face roundedly curved and with a small vertical ridge in centre.

Nom. Jap. *Akami-no-yabugarashi* (nov.).

Hab. Prov. SATSUMA: Mt. Eboshi-dake, summit, sylvan place (*Shūsaku Yoshimura*! Aug. 22, 1910); Prov. ŌSUMI: Ōkawa-mura, mountain, sylvan place (*Z. Tashiro*! Aug, 1910; *T. Makino*! Aug. 1910).

This is always found growing in sylvan place on mountains. It has a close affinity to *Cissus japonica* Willd. (= *Vitis japonica* Thunb.), but the berry and seeds are very distinct from those of the latter; at same time it seems to be very closely allied to *Cissus corniculata* Planch. (= *Vitis corniculata* Thunb.), which has the dentate leaves. I have named this in honour of Prof. Shūsaku Yoshimura of the Kagoshima Middle School, who was the first collected this species in above cited locality.

(To be continued.)