Plantæ Japonenses novæ vel minus cognitæ.

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Lactuca (Ixeris) **Matsumuræ** Makino, Notes on Jap. Pl., XV. in Botan. Magaz., Tokyo, VI. 1892, p. 56.

An annual lactiferous field herb, flaccid, glabrous except the inferior portion of the upper surface of leaves, 16–55 cm high. Tap-root slender, narrowly tapering downwards, often branched, with short and rather loose rootlets. Stem erect, simple or branched from the base, terete, smooth fistulose, herbaceous, loosely leafy, light green. Leaves thin and herbaceous, flaccid, glabrous, but towards the inferior median portion on the upper surface very thinly arachnoid-villose with white hairs, light green on both surfaces, very narrowly margined with a purplish tint; basal ones linear or linear-lanceolate, acuminate, narrowly attenuate towards the base, slightly stem-clasping, about 25 cm long in the largest ones, entire or remotely runcinate-toothed, the teeth minute or coarse and usually narrow and shortly acuminate; cauline ones a few or several, loosely alternate, lanceolate, gradually tapering to a sharply acuminate apex, entire, sessile, amplexicaul and sagittate at the base with acuminate lobes obliquely pointed downwards or turned outwards. Corymb not large, simple or compound sub-umbellate, terminating the stem and branches; pedicel filiform, mostly erect-patent, usually longer than the head in fructescence, subtended with a minute acuminate subulate and membranaceous often laciniate-denticulate bract. Heads small, sub-approximate, rather numerous, about 1 cm in diam. in blossom. Receptacle shallowly concave, rugged, glabrous. Involucre cylindrical-oblong, about $6\frac{1}{2}$ mm long, 2 mm in diam. in flower, but conico-obpyriform after flowering and 5–6 mm in diameter in fruit, furnished with usually 5 minute subulate-ovate acute scaly bracts at the base; involucral-bracts 8, nearly 6 mm long, linear, smooth, herbaceous, light-green, with hyaline membranaceous margins, obtuse or acutish, each

provided with a longitudinal short and minute prominence at the darkish dorsal part of the apex, becoming lanceolate and increasing in size after flowering, measuring about 8 mm in length and radiately patent in frutescence, but withered soon after and strongly deflexed to expose the white bare receptacle on the flying away of the achenia. Florets 20-35 in each head, spreading in blossom. Corolla small, yellow but often tinged with orange towards the tip externally; ligule ligulate-oblong, thin, membranaceous, 5 mm long, truncate and 5-dentate at the end; tubular part slender, glabrous, $2\frac{1}{2}$ mm long. Anther darkish, manifestly obtuse-ovate at the tip, narrowly and acutely sagittate at the base, nearly equal in length to the filiform glabrous filament; valves very thinly membranaceous. Ovary minute, broadly oblong-obovate, constricted into a short neck below the pappus, sub-lamellate-ribbed, glabrous, $\frac{2}{3}$ mm long; style filiform, slender, blackish, and scabrous above, arms slender, divergent, recurved outwards, blackish, scabrous on the dorsal surface and finely papillose on the ventral surface. Pappus copious, longer than the tubular part of the corolla and also than the body of the achenium, silky white, very delicate, finely scabrous, about 4 mm long, nearly equal in length, simple, horizontally patent in fruit and collectively forming a small transparent ball. Achenium cinnamon-coloured, fusiform, longitudinally 10-lamellate-ribbed, very finely muricate at the edges of the ribs, prolonged above into a setiform beak slightly shorter than the body, 4-5 mm long including the beak. Seed somewhat compressed, narrow.

Lactuca sp. Matsumura Catal. Pl. Herb. Coll. Sc. Imp. Univ. Tokyo, 1886, p. 113.

Nom. Jap. *No-nigana* (Z. Matsumura loc. cit.).

Hab. Prov. MUSASHI: Toda-hara (Z. Matsumura! May 3, 1880, herb. Sc. Coll. Imp. Univ. Tokyo), Setagaya (*T. Makino*! May 6, 1894), Nobitome (*T. Makino*! May 13, 1894), Shimura (*T. Makino*! May 22, 1898), Koiwa-mura (*T. Makino*! May 29, 1898); Prov. SHIMŌSA: Mama (Herb.! Sc. Coll. Imp. Univ. Tokyo, May 9, 1880); Prov. HARIMA: Near Maiko (*T. Makino*! May 1893); Prov. TOSA: Ochi-mura (*T. Makino*! May 1885), Katadzi-mura (*T. Makino*! June 1892); Tadzikawa (*T. Makino*! May 7, 1893), Ryōseki (*T. Makino*! May 11, 1893); Prov. SANUKI: Western part (*T. Makino*! March 31, 1889); Prov. IYO: Matsuyama (*T. Nagasawa*! April 13, 1890).

This species specifically distinct from *L. versicolor* Schultz-Bip., principally in the form of the leaves, size of the flower, aspect of the

achenium, habit of the involucre after blossoming, and the comparative lengths of the beak and the body of the achenium. It extends sparingly throughout Japan, especially grows in field, and perishes early in summer.

Lactuca (*Ixeris*) **chelidonifolia** Makino sp. nov. in sched. herb. Sc. Coll. Imp. Univ. Tokyo, 1896.

A glabrous mountainous annual, branching close to the base, 5–40 cm high. Tap-root often obliquely descending, slender, tapering downwards, sometimes branched, with fine rootlets. Stem and branches slender, terete, smooth, often flexuous, the branches more often spreading. Leaves sparse, petioled, oblong or elliptical-oblong in outline, odd-pinnatisected, nearly glaucous beneath, thin and herbaceous, 2–6 cm broad, 4–12 cm long including the petiole; divisions spreading, generally more or less subopposite, apart from one another, 3–4 on each side of the rachis, obliquely ovate, inferior ones smaller, scantily and coarsely lobato-dentate or sometimes lobate, mucronate-acute, gradually or often rather abruptly narrowed towards the base so as to form a petiolule but abruptly dilated at the base and decurrent-adnate to the rachis, larger ones about 3 cm long, $1\frac{1}{2}$ cm wide, teeth deltoid and mucronate-acute, veins not conspicuous; rachis slender, filiform; petiole slender, rather long, slightly dilated and bears small angular stipulaceous leaflets at the base. Corymb small, terminating the stem and branches. Head small, pedicellate. Involucre cylindrical-oblong, furnished with 3 minute blackish-green deltoid-ovate obtuse scaly bracts close to it below; involucral-bracts 5, linear-strap-shaped, herbaceous, the inner ones much broader and linear-oblong with hyaline margins, even-sided, obtuse and villosulate at the apex, usually trinerved, about 5 mm long in flower and 6 mm in fruit. Receptacle minute, flat. Florets few and 4–5 in each head, all ligulate. Corolla yellow, exceeds the pappus; ligule thin, broadly ligulate, 5-dentate at the end; basal tubular part slender and glabrous. Anther with a broad obtuse tongue at the tip and sagittate at the base, about $1\frac{1}{3}$ mm long. Ovary minute, obovate-oblong, glabrous; style filiform, minutely puberulent above, bifid with 2 slender recurved arms. Pappus many, simple, white but often yellow at the base, finely scabrous. Achenium dark-brown, cylindrical-fusiform, slightly compressed, longitudinally 10-ribbed, not beaked but gradually narrowed above, hispidulous-scabrous above, 4–scarcely 5 mm long.

Nom. Jap. *Kusanoōba-no-kiku* (S. Ōkubo).

Hab. Prov. SHIMOTSUKE: Mt. Nikkō (*T. Makino!* Aug. 1884; Z.

Matsumura! Aug. 16, 1885, herb. Sc. Coll. Imp. Univ. Tokyo; *K. Nemoto*! Oct. 1892); Prov. MUSASHI: Mt. Yōkami-yama in Chichibu (*T. Makino*! July 16, 1888); Prov. TOSA in Shikoku: Mt. Tebako-yama (*T. Makino*! Aug. 1885; *R. Yatabe*! Aug. 8-9, 1888, herb. Sc. Coll. Imp. Univ. Tokyo).

This rare and singular species is found grown especially on mossy rocks under shady trees in mountainous districts, and flowers late in autumn. Sterile specimens present the appearance entirely uncommon to the genus.

***Lactuca* (Ilexis) *denticulata* Maxim. *a. typica* Maxim. *lusus pinnatipartitus* Makino.**

Leaves pinnatipartite, sometimes lyrate, winged-petioled, auricled and amplexicaul at the base, mucronate-obtuse at the apex, flaccid, glaucous beneath; segments patent, few on both sides, unequal in size, cuneato-ovate or oblong, often scantily lobato-dentate or denticulate with mucronate tips, sinuses open and often broadly rounded at the bottom.

Nom. Jap. *Hana-yakushi-sō* (T. Makino nom. nov.).

Hab. Prov. TOSA: Mt. Yokogura-yama (*T. Makino*! Oct. 1892), Tokano-mura (*T. Makino*! June 1893); Prov. MUSASHI: Tokyo (*T. Makino*! June 1898).

This differs from the typical form in the pinnatipartite leaves, and is rarely met with in this country, while the latter is very common.

***Lactuca* (Ilexis) *Thunbergii* Maxim. *var. β. albiflora* Makino.**

Rhizome short, often shortly branched, the branch sometimes shortly slender and stolon-like. Involucre often very slightly thicker. Florets 7-11 in each head. Corolla white, often tinged externally with light lilac-colour. Achenium finely scabrous. Other characters are as in the type.

Nom. Jap. *Shirobana-nigana* (T. Makino).

Hab. Prov. IWASHIRO: Aidzu (Herb! Sc. Coll. Imp. Univ. Tokyo), Mt. Iide-san (l. c. !); Prov. SHINANO: Mt. Togakushi-yama (l. c. !); Prov. ISHIKARI in Hokkaidō: Sapporo (l. c. !); Prov. TOSA: Ochi (*T. Makino*! May 6, 1889), Sakawa (*T. Makino*! May 8, 1889), Godai-san, Kōchi (*T. Makino*! 1892); etc.

Florets of the typical one, *a. flaviflora* m., are usually 6-5 in each head, but sometimes 10-11 in the boreal form, and 7-11 in the white-flowered variety. This variety is found all over this country, though not so common as the type. Asa Gray's *Ilexis albiflora* may be identical to my plant.

Rhamnella berchemiæfolia Makino sp. nov.

A deciduous moderate-sized tree. Branchlets purplish dark-brown. Leaves alternate, petioled, oblong, 3-12 cm long, $1\frac{2}{3}$ -5 cm wide, entire but obscurely repand, very narrowly marginate, acuminate at the apex, obtuse or acute at the base, glabrous but slightly pubescent with fine white hairs along the elevated nerves beneath, chartaceous, deep-green but subglaucous beneath; midrib slender, straight; veins 6-10 on each side of the midrib, regular, erect-patent and reached to the margin; veinlets very fine and close; petiole glabrous, 6-14 mm long; stipule small, subulate, persistent with the deciduous long-acuminate tip. Inflorescence narrow, shorter than the leaves; rachis slender, with short and loose peduncles and minute scaly deciduous bracts and bracteoles. Flowers minute, pedicellate, umbellate, greenish. Calyx connate below to form a short campanulate tube adhering to a verycarinose disk within; lobes 5, valvate in bud, deltoid-ovate, obtuse, thick. Petals 5, orbiculate-ovate, alternate to the sepals, much smaller and shorter than the latter. Stamens 5, included, situated on the margin of the disk, opposite to the petals; anther orbiculate-ovate, introrse; filament short and subulate. Ovary very short, with a short and thick style above, erect-standing at the centre of the disk; stigma very minute, sessile on the top of the carinose style, shortly bifid. Drupe few, shortly pediceled, cylindrical-oblong, rounded at the top, 6-7 mm long, glabrous, smooth, girt with the persistent five-angled and flat calyx-tube at the base, orange-coloured when mature; pyrena only one, oblong, yellowish, nearly smooth, stony, longitudinally 1-striated on both sides, 1-locular and 1-seeded.

Nom. Jap. *Yokogura-no-ki* (T. Makino).

Hab. Prov. Tosa in Shikoku: Mt. Yokogura-yama (*T. Makino*! Autumn 1884, Summer 1889, May 1893; *T. Inoue*! Aug. 27, 1896); Prov. Iyo: South-western part (*Z. Umemura*! Sept. 2, 1896).

A very rare tree yet unknown from other localities than Isl. Shikoku, was first discovered by myself in Mt. Yokogura-yama in the province of Tosa in the island, and the Japanese name was assigned after the name of the mountain. It is entirely distinct from *R. franguloides* (Maxim.) Weberb. (= *Microrhamnus franguloides* Maxim.; *Rhamnella japonica* Miq.) principally in the entire and more hard chartaceous leaves, much longer inflorescence, glabrous petiole, and colour of the bark of the branch. The fruit has the almost similar characters in both species, but that of my plant is a little smaller. The leaves strongly resemble those of some

species of *Berchemia*, and especially of *B. racemosa* var. *β. magna* Makino.

***Styrax Shiraiana* Makino sp. nov.**

A deciduous moderate-sized tree; branchlet glabrous but tomentose in the shoot of this year, flexuous, rather divaricate, purplish-gray, and the outer bark often thinly peeling off. Leaves shortly petioled, mostly 3 on branchlets; the superior one largest, rhomboid-orbicular, cuneate or cuneate-obtuse at the base, shortly projected into a narrowly deltoid mucronate obtuse tooth at the apex, $6\frac{1}{2}$ – $9\frac{1}{2}$ cm long, 5– $9\frac{1}{2}$ cm wide, the inferior two smaller elliptical and usually approximately alternate; unequally and coarsely sinuate-dentate with mucronate deltoid sharp teeth and open deltoid sinuses towards the apex, thinly and sparingly disparsed with stellate hairs on both surfaces, densely pilose with whitish fascicled hairs at the axil of the midrib and veins, green on both surfaces, penninerved, midrib and veins elevated underneath. Raceme terminating the branchlets, much shorter than the leaves; rachis short, several-flowered, hirsute-tomentose with stellate-fascicled drabish-isabel-coloured hairs. Flower very shortly pedicellate, each subtended by a bract, the latter often foliaceous in the inferior one. Calyx shortly campanulate, unequally 5-fid with sharply and narrowly deltoid often bifid lobes, hirsute-tomentose with stellate-fascicled drab hairs, persistent. Corolla..... Stamens..... Style long, filiform, tomentose. Young fruit globose-ovoid, slightly depressed at the top, and with the basal remains of the style, covered with close-pressed holosericeous drab hairs, the carpel coriaceous.

Nom. Jap. *Ko-hakuunboku*.

Hab. Prov. SHIMOTSUKE: Mt. Nikko (*T. Makino*! August 8, 1884); Prov. TOSA: Mt. Tebako-yama (*T. Makino*! Aug. 1885), Oku-nanokawa (*K. Watanabe*! June 11, 1888); Prov. SURUGA: Araizawa in Abe-gōri (Herb! Sc. Coll. Imp. Univ. Tokyo).

A tree sparingly distributed over this country, having remarkably different aspects from the two other species of Japanese *Styrax* already recognized, habit of the leaves and branches especially approaching to that of the *Hamamelis japonica* Sieb. et Zucc. I named in honour of Prof. Mitsutarō Shirai, by whom the presents pecies has previously been noticed.

***Vitis* (Euvitis) *saccharifera* Makino nom. nov.**

Stem scandent. Branches slender, terete, nodose, often slightly flexuous, castaneous-brown, glabrous but rufo-tomentose in the shoot of this

year. Tendril stout, opposite to the leaves, much longer than the petiole, mostly 2-forked. Leaves broadly ovate or broadly deltoid-ovate, 5-13 cm long, 4-10 cm wide, acuminate at the apex, truncate or broadly cordate at the base, incumbent-crenate with the mucronate tip at the fore part, rather densely rufo-tomentose along and thinly rufo-tomentose among the nerves on the under surface when young, often 3-lobed with the open and rounded-obtuse sinus at those of the sterile branches, the basal nerves including the midrib 5, of which the outermost ones are in reality the branches of the inner next ones; petiole shorter than the blade, slender, 2-6 cm long. Inflorescence opposite to and shorter than the leaves; rachis slender, free from the flowers in the lower part, rufo-tomentose, often 2-forked; raceme oblong-cylindrical, rounded at the top; bracts minute, narrow, membranaceous, rufo-villose; fascicled-pedicels in the inferior portion of the rachis on the short horizontal-patent peduncle but superior ones without peduncles, capillaceous-filiform, glabrous, about 3-4 mm long. Flowers minute, numerous, rather dense, obovoid in bud. Calyx minute, sub-annular. Petals 5-6, narrowly oblong, coherent at the top, deciduous. Stamens 5-6, shorter than the corolla; anther broadly ovate, filament filiform, somewhat longer than the anther. Ovary ovoid, attenuated into a short style above, with a disk surrounding the base; stigma terminal, peltate, concave at the centre; ovules very minute, 4, ovate to oblong. Berry small, globose, smooth, black when mature, 2-3-seeded, situated on the top of the thick and sub-clavate pedicel.

V. flexuosa var. *japonica* Makino, Notes on Jap. Plants, XV. in Bot. Magaz., Tokyo, VI. p. 51.

Nom. Jap. *Ama-dzuru*.

Hab. Prov. YAMATO: Kasuga-yama (*Z. Matsumura*! herb. Sc. Coll. Imp. Univ. Tokyo, Aug. 2, 1883); Prov. TOSA: Sakawa (*T. Makino* Autumn 1884, May 1885, May 2, 1887, and 1889).

A common species in the southern part of Japan, coming near to *V. flexuosa* Thunb., though quite distinct. The sweet sap of this climber was in old times employed just as the sugar and honey of the present day. *Ama-dzuru* meaning "sweet climber," is a classical name, and *Otoko-budō* named before by myself shall be dropped here.

***Achyranthes bidentata* Blume var. *longifolia* Makino** in sched. herb. Sc. Coll. Imp. Univ. Tokyo, 1894.

Perennial; elongate stems and prolonged divaricate branches tetragonal

and very thinly pubescent, tumid at the nodes. Leaves opposite, lanceolate, or broadly lanceolate, petioled, narrowly acuminate, attenuated at the base, very obscurely repand and very thinly ciliated, thin, herbaceous, deep green, very thinly pubescent, dispersed with very minute white dots above, well developed ones about 4 cm or sometimes $6\frac{1}{2}$ cm wide and 21 cm long including the petiole. Spike rather long; rachis slender, filiform, villose-pubescent. Flowers $5-5\frac{1}{2}$ mm long, horizontally spreading, strongly deflexed in a later stage to be nearly parallel to the rachis, very shortly pedicellate; bracts ovate, rather gradually tapering into the cuspidate-acuminate apex, scarious membranaceous, glabrous, slightly ciliated, one-nerved, about $2-2\frac{1}{2}$ mm long; 2 bracteoles hardened and spinescent, nearly equal in length, shorter than the sepals, $3\frac{1}{2}$ mm long, glabrous, minutely 2-auricled at the base, the lobe ovate, membranaceous, enerved, glabrous but ciliated at the margin. Sepals 5, greenish, unequal in length, subulate-lanceolate, tapering towards the apex, glabrous but scarcely ciliated, 3-nerved, the midvein strong and the lateral ones obscure. Stamens 5, much shorter than the sepals and included within them, connate into a cup at the base; staminodes square, suberose in front; anther ovate-elliptical; filament filiform. Ovary obovoid-globose; style erect, straight, filiform, slightly longer than the ovary; stigma hairy. Utricle elliptical, a little longer than the persistent style.

Nom. Jap. *Yanagi-inokodzuchi* (T. Makino).

Hab. Prov. TOSA in Shikoku: Godai-san (T. Makino! Sept. 29, 1892); Prov. MUSASHI: Adzusawa (T. Makino! Septem. 1894), Dōkwan-yama near Tokyo (T. Makino! June 19, 1898).

This variety is much less common than *A. bidentata* var. *japonica* Miq., a commonest Japanese weed, in this country. Its elongate and diffusely divaricate branches and Willow-like leaves are the characteristics of my plant.

(To be continued.)