Observations on the Flora of Japan.

(Continued from p. 142.)

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Sanguisorba obtusa Maxim. in Mél. Biol. IX. p. 152.

Poterium obtusum Franch. et Sav. Enum. Pl. Jap. II. 343.

α. typica Makino.

Perennial, about $2\frac{1}{3}$ –6 decim. high. Stem simple or ramose. Peduncle and rachis of leaves crispato-rufopubescent, or glabrous; leaflets very shortly pedicellate or subsessile, or distinctly pedicellate, obtusely or acutely serrate with erect-patent teeth, subglaucous and thinly pubescent along the midrib beneath. Spike 3–7cm. long, erect or cernuous in apical portion. Flowers purple. Stamens long-exserted, 3–4-times as long as the calyx-lobes.

Nom. Jap. *Nambu-tōuchisō*.

Hab. Japan, northern, alpine mountains.

β. albiflora Makino, var. nov.

? *Sanguisorba canadensis* var. *media* Maxim. in Mél. Biol. IX. p. 151, quoad pl. jap.

Tall, ramose above. Petiole and rachis of leaves glabrous. Leaflets distinctly pedicellate, glabrous, orbiculate to oblong, cordate at the base but often obtuse in the superior ones, often retuso-emarginate, subglaucous and glabrous beneath, sometimes minutely stipellate. Spike oblong to oblong-cylindrical, erect, or cernuous, $2\frac{1}{2}$ –6cm. long. Flowers white. Stamens exserted, twice as long as the calyx-lobes.

Nom. Jap. *Shiobana-tōuchisō*.

Hab. Japan, northern, alpine mountains.

Sanguisorba canadensis Linn. Cod. n. 951.

Poterium canadense A. Gray, Man. Bot. ed. 5 (1872) p. 150; Franch. et Sav. Enum. Pl. Jap. I. (1875) p. 134.

var. japonensis Makino, var. nov.

Leaflets oblong or narrowly oblong, truncato-cordate at the base but obtuse or acute in cauline ones, serrate. Spike long-cylindrical. Flowers purple, centripetally expanded. Calyx-tubes elliptical, compressed, not angulate, pubescent with subadpressed hairs. Stamens long-exserted, 3- nearly 5-times as long as the calyx-lobes; filaments filiform, gradually dilated towards the apex, narrower than the anther; anther rounded.

Nom. Jap. *Ezo-tōuchisō*.

Hab. Prov. HIDAHA in Hokkaidō: Horobetsu (*K. Miyabe!* herb. Sc. Coll. Imp. Univ. Tokyo, Aug. 20, 1884).

Sanguisorba riishirensis Makino, sp. nov.

Perennial, 3-4½decim. in height. Rhizome long, erect or ascending, covered with old petioles above, dark-rufous. Stem, petioles, and lower portion of the rachis of leaves crispato-rufopubescent. Leaflets oval-ovate to ovato-oblong, cordate at the base, obtuse at the apex, simply and duplicately serrate with erect-patent acute coarse teeth, subglaucous beneath, 1½-6cm. long, 1-4cm. broad, distinctly petiolulate, sometimes stipellate; petiolule ¼-1½cm. long; cauline leaves few and abbreviated. Spike erect, long-cylindrical, 4-9cm. long, across. Flower about 6mm. across, white, centripetally expanded; bracts angustate, linear, obtuse-tipped, glabrous above and ciliated below, equalling or exceeding the calyx. Calyx-lobes patent, elliptical; tube compressed, rounded, alato-angulate, pubescent. Disk inconspicuous. Stamens 4, long-exserted, 3-5-times as long as the calyx-lobes, gradually dilated and flattened in the upper half, suddenly obtuse under the anther at the apex, narrower than the anther; anther rounded, ochraceous. Style exserted upon the calyx-lobes; stigma manifestly fimbriate.

Nom. Jap. *Riishiri-tōuchisō* (nov.).

Hab. Prov. KIRAMI in Hokkaido: Isl. Riishiri (*T. Makino!* Aug. 1903).

An alpine species. It has a feature resembling *S. obtusa*

Maxim. described in Mél. Biol. IX. p. 152, but differs from the latter by not having the purple and centrifugally expanded flowers. This differs also from *S. canadensis* Linn. by having broader leaflets, longer bracts, thicker spikes and larger flowers. Finally, it seems to be allied to *S. alpina* Bunge, from which it is distinguishable by the filament, style, etc.

***Fragaria Iinumae* Makino, sp. nov.**

Rhizome erect or ascending, often elongate, attaining about 5cm. or more long, rather thick, ligenous, covered with castaneo-fulvous old stipules, loosely rooting; stolons filiform, much elongate. Leaves tufted at the top of rhizome, 3-foliolate; leaflets very shortly petiolulate, chartaceo-membranaceous, usually thinly adpressed-piloso-villose and subglaucous beneath, often very thinly pilose above, thinly ciliated, coarsely dentato-serrate with lato-ovate mucronato-acute teeth; terminal one obovate, cuneate towards the base and entire below, 2–4 cm. long, $1\frac{1}{2}$ –3cm. wide; lateral ones slightly smaller, somewhat obliquely obtuso-cuneate at the base; petiole piloso-villose, 2–8cm. long, often tinged with red as are veins; stipules broad, membranaceous, ovate or falcato-ovate, obtuse or acute, adnate to the petiole below. Scape 1 or few, as long as or shorter than the leaves, erect, adpressed-pilose, 1–2-flowered; bract leafy but small and 1-foliolate, shortly petioled, stipulate, those, if any, in the pedicel minute and stipuliform; bracteoles 7, shorter than the calyx-lobes, lanceolate or linear-oblong, acute or acuminate, thinly pilose. Flower white, pedicellate, $1\frac{1}{2}$ – $1\frac{2}{3}$ cm. in diameter. Calyx depressed, thinly pilose, green; lobes 7, patent, linear-lanceolate or subulato-lanceolate, acuminate, 4–7 mm. long. Petals 7, patent, slightly remote each other, obovato-oblong, rounded at the apex, obtuse or cuneate below, 7–9 mm. long. Stamens much shorter than the calyx-lobes, subulate; anther elliptical, obtuse at the apex, bifid at the base. Ovary-cluster globose; ovaries numerous, elliptical; style erect, lateral, filiform, glabrous, exceeding the ovary and twice as long as it. Fruit ovoid, with reflexed persistent calyx, attaining nearly $1\frac{1}{2}$ cm. long; achenes imbedded in pits

on the fruit, ovate, somewhat compressed, smooth, 1 mm. long, with style.

Nom. Jap. *Nōgo-ichigo* (Y. Inuma).

Icon. Inuma's *Sōmoku-Dzusesu*, IX. n. 28.

Hab. Japan, central and northern, alpine mountains.

This species approaches to *F. vesca* Linn. as regard to the leaves, but differs from the latter by not having the scape exceeding the leaves, 5-petaled flower, and the achene superficial on the receptacle. The Japanese name is derived from Mt. Nōgo in the province of Mino, where this species was first found.

Mosla japonica Maxim. in *Mél. Biol.* IX. p. 437.

var. angustifolia Makino, var. nov.

Stem erect, about 10–14 cm. high, slender. Leaves linear, serrate, petiolate. Bracts subrhombic-oval, cuspidato-acuminate.

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

Hab. Prov. AKI: Near Saidyō (Y. Kimura! Sept. 1907).

Salvia glabrescens Makino.

Salvia nipponica β . *glabrescens* Franch. et Sav. *Enum. Pl. Jap.* I. p. 371, et II. p. 463; Makino in *Bot. Mag. Tokyo*, XXI. p. 33.

Salvia nipponica Yatabe, *Iconogr. Fl. Jap.* I. p. 43, tab. XV. non Miq.

Nom. *Miyama-akigiri*.

Hab. Japan.

Patrinia palmata Maxim. in *Mél. Biol.* VI. p. 267.

α . **typica** Makino.

Corolla-tube calcarate at the base.

Nom. Jap. *Kinrei-kwa*, *Hakusan-ominaeshi*.

Hab. Japan.

β . **gibbosa** Makino.

Flower slightly smaller. Corolla-tube gibbose at the base. Otherwise as in the type.

Nom. Jap. *Ko-kinreikwa* (T. Makino).

Hab. Japan.

Plantago major Linn. β . **asiatica** Decne. in DC. Prodr. XIII. 1, p. 694.

forma rosea Makino.

Spike depressed or abbreviated, sometimes compound; bracts foliaceous, petiolate, imbricately sparse or rosulate. Flowers axillary.

Nom. Jap. *Yagura-ōbako*.

Icon. Inuma's Somoku-Dzusetsu, II. n. 28.

Hab. Japan, rare.

forma contracta Makino.

Leaves smaller, roundish, thicker, coarsely bullate. Spike short and thick, shortly peduncled.

Nom. Jap. *Chabo-ōbako*.

Icon. Inuma's Somoku-Dzusetsu, II. n. 29.

Hab. Japan, cultivated.

forma contorta Makino.

Leaves spirally contorted.

Nom. Jap. *Sazaye-ōbako*.

Icon. Inuma's Somoku-Dzusetsu, II. n. 30.

Hab. Japan, rare.

Plantago japonica Franch. et Sav. Enum. Pl. Jap. I. p. 384, et II. p. 469.

forma polystachya Makino.

Spike ramiparous.

Nom. Jap. *Yatsumata-ōbako*.

Icon. Inuma's Somoku-Dzusetsu, II. n. 32.

Hab. Japan, rare.

(To be continued.)