Spicilegium *Salicum* Japonensium novarum aut imperfecte cognitarum

By

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The most important contribution recently made to our knowledge on the Japanese *Salices* has been Von SEEMEN's Monograph, in which, besides four imperfectly known and seven doubtful ones, thirty-three species, with several varieties and forms, are recognized as occurring in the Archipelago. After that, LÉVEILLÉ and VANIOT have described three from the collections of FAURIE and KINASHI; but their *Salix Kinashii* is identical with *Salix triandra*. My *Salix hondoensis* is a distinct species having the characteristic leaves and the elongated style; I think it is convenient to put this, with *Salix koreensis* ANDERS., into the new section of *Heteradeniæ-Diandræ-Dolichostylæ*. However, the peculiar colouring of hair of the catkin in *Salix vulpina*, is not so important a character as to establish a special section, so I reject the section *Vulpinæ* of SEEMEN, including it in the section *Hastatæ*. It seems to me that, *Salix Sieboldiana*, *S. Buergeriana*, *S. Saidaiana*, and *S. Harmsiana* are but forms or varieties of one species, and at the same time, SEEMEN's *Salix Matsumuraei* and *S. daisenensis* had better be considered as varieties of the *S. vulpina*. In this paper three additional species have been described; thus bringing the number of species of distinctly known *Salices* to thirty-two.

1. **Salix** (Pentandræ) **glandulosa** SEEM. in ENGL. Bot. Jahrb. XXI. (1896), Beibl. LIII. 55; Sal. Jap. (1903) 22;—LEVL. et VNT. in Bull. Akad. Int. Geogr. Bot. XIII. (1904), 208; XVI. (1906) 144, 148;—DIELS in Engl. Bot. Jahrb. XXIX. 276;—NAKAI Fl. Kor. II. 214;—SHIRAI in Tok. Bot. Mag. XVII. (1903) 223, t. 4.

NOM. JAP. *Akame-yanagi*.

DISTR. Japonia australis, Korea, China centralis.

var. **Warburgi** (SEEM.)

S. Warburgi SEEM. in ENGL. l. c. XXIII. (1897), Beibl. LIII. 43 ;—FORB. et HEMSL. Jour. Linn. Soc. XXVI. 534 ;—MATSUM. et HAYAT. Enum. Pl. Formos. 395.

Differt a typo, foliis utrinque secus costas densius, subtus ramulis hornotinisque laxius pubescentibus ; foliis nascentibus saepe densissime brunneo-pubescentibus ; bracteolis fl. ♂. extus glabris.

NOM. JAP. *Takasago-Akameyanagi*.

HAB. Formosa.

2. **Salix** (Subfragiles) **eriocarpa** FR. et SAV. Enum. Pl. Jap. I. (1875), 459 ; II. (1879), 503 ;—SEEM. Sal. Jap. (1903) 76.

S. dolichostyla SEEM. in ENGL. Bot. Jahrb. XXX. (1902), Beibl. 67, (1901) 39 ; Sal. Jap. 26 ;—LEVL. et VNT. in Bull. Akad. Int. Geogr. Soc. Bot. (1904) 208, (1906) 146, 148.

S. dolichostyla var. *hirosakense* LEVL. et VNT. in FEDD. Repert. Nov. Spec. III. 22.

NOM. JAP. *Kogome-Yanagi*.

HAB. Aomori, Hirosaki, Nikko, Hitatsi, Idsu, Suruga, Bittsiu ; Tosa.

“ Arbor ramulis novellis *pubescentibus* ; folia *lanceolata* in petiolo 3–6*mill.* longo *attenuata*, elevato-*punctata*, subtus *pallida*, demum *glabrescentia* : amenta ♀, pedunculo *brevi* (vix 1 cm) cum 2–3 foliis minutis ; squamæ *concolores* : capsulæ *sessiles*, densissime albo-*tomentosae* : stylus *elongatus* ! ” (FR. et SAV. II. 503.)

Folia lanceolata utrinque attenuata, elevato-punctata, iis *Salicis koreensis* ANDERS. simillima ! ” (VON SEEMEN, Sal. Jap. p. 76.)

3. **Salix** (Subalbæ*) **hondøensis** sp. nov.

* **Heteradeniae**, **Diandrae**, **Dolichostylae** Sect. **Subalbæ** nov. sect., Bractea concoloria. Fl. ♂: stamina 2, filamentis puberulis, glandulis 2 ; ♀: ovaria sessilia, stylo elongato, stigmate revoluto-bilobato glandula 1. Arbor foliis serratis stipulatis.

S. alba THG. Fl. Jap. (1784) p. 25, (non LINN.)

Haec species sine dubio *S. jessoensi* SEEM. valde affinis, differt floribus amenti brevioris laxioribus; stylis elongatis, stigmatibus laciniis leviter emarginato-lobulatis; glandulis posterioribus ovatis obtusis.

Arbor; ramulis hornotinis velutino-tomentosis; ramis vetustioribus glabris. Folia lanceolata acuminata serrulata, rarius anguste oblonga acuta, supra atro-viridia minute papillosa, subtus glauca mox glabrescentia; petiolis 2–5 mm. longis velutinis; stipulis oblique ovatis acuminatis; nervis secundariis arcuato-ascendentibus. Amenta circ. 2 cm. longa, foliis coetanea; rhachibus cano-barbatis; bracteis late ellipticis vel ovato-ellipticis, apice rotundatis raro emarginatis, utraque basi villosis. Fl. ♂: stamina 2; filamentis infra medium dense puberulentibus; glandulis 2, anterioribus ovatis obtusis, posterioribus linearibus. Fl. ♀: ovaria lanceolato-ovoidea tomentosa; stylis linearibus glabris; stigmatibus revolutis leviter lobulatis; glandulis 1 ovatis apice obtusissimis.

NOM. JAP. *Siro-yanagi*.

HAB. Yezo: Sapporo. Nippon: Aomori; Yonezawa, Adsumasan; Kuragawahara (Iwasiro); Siobara; Tōkyō, Yokosuka; Hakone.

4. **Salix** (Subalbæ) **koreensis** ANDERS. in DC. Prodr. XVI. 2, (1868) 217.

Arbor glabra; foliis lanceolatis utrinque attenuatis, serrulatis, glabris, subtus glaucis, sub lente punctulatis; amentis sessilibus foliis praecocioribus; fl. ♀: ovaria ovoidea albotomentosa, stylis elongatis, stigmatibus emarginatis, glandulis late ovatis; fl. ♂: stamina 2, filamentis basi barbatis, glandulis 2; bracteolis ovatis obtusis concoloribus pilosis.

HAB. Korea.

5. **Salix** (Hastatae**) **vulpina** ANDERS. in GRAY, Pl. of Jap. in Mem. Amer. Acad. Arts. Sci. VI, (1857) p. 452;—Miq. Prodr.

** Sect. **Hastatae** ANDERS. in DC. Prodr. XVI. 2. (1868) 251.=Sect. *Vulpinae* SEEM. Sal. Jap. (1903) 17!

Fl. Jap. 217 ;—FR. et SAV. Enum. Pl. Jap. I. 461 ;—KAWAK. Tok. Bot. Mag. X. (1896) 50 ;—TOKUB. ibid. 123 ;—LEVL. Bull. Acad. Int. Geogr. Bot. (1904) 208 ; (1906) 144 ;—SEEM. Sal. Jap. 37

S. Miqueli var. *vulpina* ANDERS. in DC. Prodr. XVI. 2, p. 256

S. vulpina var. *discolor* SEEM. l. c. 40.

S. Shiraii var. *vulcanica* LEVL. l. c. (1904) 209.

NOM. JAP. *Kitsune-yanagi*.

HAB. Yezo et Hontō

α typica m.

Ovaria glabra, stigmatē rarius bilobulato ; bracteis brunneo-tomentosis.

HAB. Yezo : Osima ; Nippon : Mutsu, Rikutsiu, Uzen, Iwasiro, Simozuke, Hitatsi, Izumi.

β Matsumuraei (SEEM.)

S. Matsumuraei SEEM. l. c. 71 ;—LEVL. l. c. (1906) 144.

Ovaria stipesque puberula, stigmatē lobulato ; bractea albo vel brunneo-tomentosa ; capsulis puberulis.

HAB. Hontō : Gassan ; Simizutōge ; Oyamada (Hitatsi).

γ nikkoensis m.

Ovaria subsessilia, glabra ; stigmatē obscuriter bilobulato ; bracteis albo-tomentosis, florum ♀ suborbicularibus, ♂ obovato-ellipticis.

HAB. Nikko.

δ daiseniensis (SEEM.)

S. daiseniensis SEEM. l. c. 65.

Stamina 2 rarius 1, filamentis interdum basi vix connatis ; ovaria stipesque puberulento-tomentosa.

HAB. Yezo : Rebunziri ; Nippon : Daisen (Hōki)

ε pubescens m.

Folia adulta utrinque secus costas pubescentia

HAB. Hontō australis.

ζ coriacea m.

Folia rigide coriacea.

HAB. Yezo : Prov. Osima. Honto : Prov. Mutsu.

6. **Salix** (Hastatæ) **japonica** THG. Fl. Jap. (1784) 24 ; Icon. Pl. Jap. Dec. IV. t. 1 ;—GRAY in PERRY Exped. Jap. 2. p. 319 ;—

ANDERS. in A. GRAY, Bot. Jap. App. p. 450 ;—MIQ. Prol. Fl. Jap. 212 ;—FR. et SAV. Enum. Pl. Jap. I. 459, II. 503 ;—SEEM. Sal. Jap. 43 ;—C. K. SCHN. Ill. Handb. Laubh. I. 50.

S. japonica var. *nipponensis* LEVL. in Bull. Acad. Int. Geogr. Bot. (1904) 209.

S. japonica var. *pygmæa* FR. et SAV. Enum. Pl. Jap. II. 503.

S. padifolia ANDERS. in A. GRAY, Bot. Jap. I. c. 451, (1858—59);—DC. Prodr. XVI. 2. p. 255 ;—TOKUB. Tok. Bot. Mag. X. p. 123.

S. Oldhami MIQ. Ann. Mus. Bot. Lugd. Bat. III, (1867) 25.

S. padifolia var. *viridula* ANDERS. in DC. I. c. 256.

S. viridula ANDERS. in GRAY, I. c. 451.

S. babylonica var. *japonica* ANDERS. in DC. I. c. 213.

NOM. JAP. *Siba-yanagi*.

HAB. Yezo, Hontō, et Sikok.

f. 1 **typica** m.

Folia lanceolata, caudato-acuminata.

f. 2 **padifolia** m.

S. japonica var. *padifolia* SEEM. I. c. 45.

Folia oblonga acuta vel subito acuta.

f. 3 **Oldhami** m.

S. japonica var. *Oldhami* FR. et SAV. Fnum. Pl. Jap. I. (1875), 459.

Folia oblonga acuminata.

7. Salix (Phyllicifoliæ) **Reinii** FR. et SAV. Enum. Pl. Jap. I. (1875) 459, II (1879) 503 ;—SEEM. Sal. Jap. 41 ;—LEVL. in Bull. Acad. Int. Geogr. Bot. (1904) 208, (1906) 143.

S. glabra FR. et SAV. I. c. II. 503 ;—KAWAK. Tok. Bot. Mag. X. (1896) 50 ;—TOKUB. ibid. 123. (non SCOP.)

A *S. glabra* SCOP. cui affinis, foliis juvenilibus utrinque pubescentibus ; bracteis florum ♂ intus pubescentibus demum pilosis ; glandulis ovoideo-lanceolatis stipiti ovarii subæquilongis ; ovario stipesque puberulente recedit.

var. **cyclophylloides** m.

Foliis obovalibus vel orbicularibus rarius late ellipticis obtusis

juvenilibus utrinque sæpe ferrugineo-tomentosis ; amentis fructiferis multo brevioribus circ. 15 mm longis ;

NOM. JAP. *Maruba-Mineyanagi*.

HAB. Hontō : Iwatesan et Hayachinesan (Prov. Rikutsiu.)

8. **Salix** (Purpureæ) **purpurea** L. Sp. Pl. (1753) p. 1017.—ANDERS. in DC. Prodr. XVI. 2. p. 306 ;—C. K. SCHN. Ill. Handb. Laubh. I. 68 ;—SEEM. Sal. Jap. 54.

Subsp. **eupurpurea** SCHN. var. **sericea** W. KOCH, Syn. 644 ;—SCHN. l. c. 69.

S. purpurea β *sericea* SEEM. l. c. 56.

NOM. JAP. *Kawa-yanagi*

DIST. in regionibus borealis Gerontogææ.

Subsp. **amplexicaulis** Boiss. Fl. Or. IV. (1879) 1187 ;—C. K. SCHN. l. c. 69.

S. amplexicaulis BORY et CHAUB. Exp. Sci. Mor. III. 2, (1832) 277 ;—HALACSY, Consp. Fl. Gr. III. 138.

S. multinervis FR. et SAV. Enum. Pl. Jap. II. 504.

S. purpurea var. *multinervis* MATSUM., SEEM. Sal. Jap. 56. Folia opposita lineari-oblonga sessilia amplexicaulia.

NOM. JAP. *Inu-koriyanagi*.

HAB. in regionibus borealis Gerontogææ.

var. **petiolata** m.

Foliis oblanceolato-oblongis vel subpandulæformibus, apice obtusis usque rotundatis basi rotundatis magis minusve petiolatis.

NOM. JAP. *Ohba-koriyanagi*.

HAB. Manshuria

subvar. **angustifolia** m.

Foliis linearibus vel anguste lanceolatis, 5-8 raro 12 mm latis.

NOM. JAP. *Hosoba-koriyanagi*.

HAB. Yezo : Prov. Isikari.

9. **Salix** (Subviminalis) **gracilistyla** MIQ. Ann. Mus. Bot. Lugd. Bat. III, (1867) 26 ;—FR. et SAV. Enum. Pl. Jap. I. 461 ;—MIQ. Prol. Fl. Jap. 214 ;—TOKUB. Tok. Bot. Mag. X. 124.

S. Thunbergiana BL. ex ANDERS. in DC. Prodr. XVI. 2, (1868) 271 ;—SEEM. Sal. Jap. 61 :—LEVL. in Bull. Acad. Int. Geogr. Bot. (1904) 210 ;—YABE, in Tok. Bot. Mag. (1903) 174 ;—KOMARO. Fl. Mansh. II. 30 ;—NAKAI, Fl. Kor. II.

NOM. JAP. *Neko-yanagi*.

DISTR. Japonia, Korea, Manshuria.

10. **Salix** (Sieboldianæ) **Sieboldiana** BL. Bijdragen X. (1825) 517 ;—SEEM. Sal. Jap. 63.

S. caloptera MIQ. Ann. Mus. Lugd. Bat. III. 26.

? *S. brachylepis* FR. et SAV. Enum. Pl. Jap. II. 503.

Frutices ; ramulis novellis cinereo-tomentosis ; foliis nascentibus ferrugineo-tomentosis, adultis glabris rigide coriaceis, supra nitide viridibus, subtus glaucinis, argute serratis, oblongis acutis, nervis secundariis utraque latere circ. 11-15 ; fl. ♂: stamina 2 vel 1 ; filamentis basi puberulis liberis vel infra medium rarius usque ad extremum apicem connatis ; ♀: ovaria breviter pedicellata tomentosa ; bracteis albo-tomentosis stipem superantibus.

NOM. JAP. *Iwa-yanagi*, *Yama-yanagi*.

HAB. Japonia australis.

α typica m.

Fl. ♂: stamina 2 raro 1, filamentis liberis vel alte connatis.

β Buergeriana (MIQ.) m.

S. Buergeriana MIQ. Ann. Mus. Bot. Lugd. Bat. III. (1867) 28 ;—SEEM. Sal. Jap. 66.

S. Saidæana SEEM. l. c. 68.

S. Harmsiana SEEM. l. c. 73. 80.

Fl. ♂: stamina 1.

f. 1 *genuina* m.

Amenta præcocia, $\frac{1}{2}$ usque 9 cm longa.

f. 2 **Saidæana** m.

Amenta coætanea.

f. 3 **Harmsiana** m.

Ovaria brevissime stipitata.

γ sikokiana m.

Folia tenuiora subtus pilis laxe persistentibus ; floribus ♀ laxius confertis.

HAB. Sikok : Tsurugisan, Yahazuyama.

11. **Salix** (Amygdalinae) **amygdalina** L. Sp. Pl (1753) p. 1016 ;—MAXIM. Prim. Fl. Amur. 242 ;—RGL. Fl. Uss. nr. 435 ;—FR. SCHMDT. Reis. Amug. nr. 327 ;—C. K. SCHN. Ill. Handb. I. 30.

S. triandra L. l. c. 1016 ;—ANDERS. in DC. Prodr. XVI. 2. p. 202 ;—KORSH. Act. Hort. Petr. XII. 390 ;—HERDER, ibid. XI. 395 ;—FORB. et HEMSL. Jour. Lim. Soc. XXVI. 533 ;—KOMAROV. Fl. Mansh. II. 30 ;—LEVL. Bull. Akd. Int. Geogr. Bot. (1906) 144, 148.

S. nipponica FR. et SAV. Enum. Pl. Jap. II. 502.

S. triandra var. *nipponica* SEEM. Sal. Jap. 27.

S. Kinashii LEVL. Bull. Soc. Bot. Fr. LIII. (1905) 141, Bull. Akd. Int. Geogr. Bot. XVI (1906) 148, 144.

NOM. JAP. *Tachi-yanagi*.

DISTR. in regionibus borealis Geronatogææ.

12. **Salix** (Viminales) **stipularis** SMITH, Fl. Br. III. (1804) 1069 ;—KOIDZ. Pl. Sachal. Nakah. (1910) 45.

S. opaca ANDERS., SCHMDT. Reis. Sachal. in Mem. Ac. Imp. Sc. St. Petrsbg. ser. VII. tom. 12, (1868) p. 172.

var. **sachalinensis** (SCHMDT.)

S. sachalinensis FR. SCHMDT. l. c. (1868) p. 173 ;—KOIDZ. l. c. (1910) 45.

A typo differt, amentis praecocioribus ; foliis versus basin anguste lanceolatis.

NOM. JAP. *Karafuto-Yanagi*.

DISTR. Saghalin, Yezo.

13. **Salix** (Lanatae) **vulpinoides** sp. nov.

Haec planta *Salices vulpina* et *futura* habitu approximatur : ab illis differt foliis subtus adpresse pubescenti-tomentellis, nervis secundariis basilaribus ut in *S. Sieboldiana* parallele rectius marginem attingentibus ; petiolis griseo-tomentosis ; bracteis el-

liptico-ovatis obtusis albo-tomentellis majoribus; ovariis tomentosis sessilibus. Ab hac bracteis ellipticis obtusis brevioribus utrinque albo-tomentosis; amentis longioribus angustioribusque.

Arbuscula; ramulis novellis sordide cinereo-tomentosis usque pubescentibus; ramis vetustioribus glabris cortice fusco vel nigrescente ruguloso non nitente vel ex luteo-fusco nitente obductis; gemmis axialibus parvulis glabris. Folia nascentia utrinque cinereo vel brunneo-tomentosa, adulta tenuiter chartacea vel membranacea, supra opaca atro-viridia laxius pilosa, praesertim ad venas cinereo-tomentella, subtus glaucina vel pallide grisea adpresse sericeo-pubescentia; nervis secundariis utraque latere 5–9 arcuato-ascendentibus sed basilaribus rectiusculis, utraque pagina vix prominulis cinereo-tomentosis, unde albo-lineata videntur; oblonga vel elliptica rarius obovato-elliptica, acuta, basi obtusa usque rotundata rarius subcuneato-angustata; margine crenato-serrata; petiolis 4–13 mm longis cinereo-pubescentibus; stipulis falcato-semiovatis extrorsum denticulatis; lamina (1.5–) 4–9 (–14) cm longa (0.9–) 2–4 (–4.5) cm lata. Amenta praecocia sessilia vel breviter pedunculata, 4–5 cm longa, basi foliis parvis supra glabris subtus sericeo-tomentosis suffulta; bracteis ellipticis apice fusco-coloratis obtusis utrinque villosotomentosis. Fl. ♀: ovaria ovoideo-lanceolata sessilia vel brevissime stipitata, sericeo-tomentosa; stylis mediocribus stigmatate profunde lobato, lacinulis patentibus; glandulis ovoideis parvulis; bracteis minoribus obtusioribus. Fl. ♂: stamina 2; filamentis glabris; glandula ovoidea vel ovoideo-oblonga; bracteis majoribus acutioribus. Amenta matura 8 cm longa, gracile angustata, breviter pedunculata; pedunculis paucifoliatis rhachibusque cinereo-tomentosis; capsulis densius confertis ovoideo-lanceolatis subsessilibus, extus puberulento-tomentellis, intus glabris.

NOM. JAP. *Oh-nekoyanagi* (nov.)

HAB. Hontō: Prov. Sinano, Togakusiyama, prope Nagano; Prov. Kodsuke, Myogisan et Akagisan; Prov. Yechigo, prope Nagaoka.

14. *Salix* (Hastatæ) **Nakamurana** sp. nov.

Haec species affinis *Salix cyclophyllæ* SEEM., sed ab ea differt foliis tenuioribus glabris; ramulis novellis, inflorescentiis pedunculisque glabris; glandulis lineari-lanceolatis; ovario stipitato, apice non attenuato; stigmatе integro. Differt etiam a *Salix pyrolæfolia* LEDEB. et *S. hastata* L. foliis integris glabris subtus minus glaucis tenuioribusque; glandulis lineari-lanceolatis; filamentis basi leviter connatis; ovario brevius stipitato; stigmatibus linearibus integris.

Fruticulus glaber; foliis ellipticis vel obovato-ellipticis integris, longe petiolatis; amentis foliato-pedunculosis coætaneis; bracteolis ellipticis vel oblongis supra medium dilute fuscatis utrinque sericeo-villosis; glandulis 1 lineari-lanceolatis; fl. ♀: stamina 2, filamentis gracile elongatis glabris basi plus minus connatis; fl. ♀: ovaria ovoideo-lanceolata glabra breviter stipitata; stylo mediocri, stigmatе integro.

Fruticulus ramulis novellis laxе villosis cito glabris, vetustioribus cortice fusco vel fusco-purpureo nitidoque vestitis; trunco subterraneo. Gemmæ oblongæ vel ovoideæ. Folia glabra, sed inferiora ramulorum præsertim subtus ad costas laxius villosa, supra dilute viridia, subtus glaucina, elliptica vel obovato-elliptica, rarius oblonga vel obovato-oblonga, integerrima rarissime obscuriter remote serrata; apice rotundata vel oblique obtusiuscula, interdum emarginato-truncata, basi acuta obtusa vel subcuneato-acuta; nervis secundariis versus apicem arcuato-attingentibus; lamina usque 4.5 cm longa, 2.3 cm lata; petiolis glabris ad 15 mm longis; stipulis saltem in ramis fertilibus deficientibus. Amenta 2.5—4 cm longa, foliis coætanea, foliato-pedunculata; rhachibus laxius villosis; bracteolis ellipticis vel oblongis apice rotundatis, supra medium fusco-coloratis, utrinque villosis; floribus laxius confertis; nectariis lineari-lanceolatis. Fl. ♂: stamina 2, filamentis glabris gracile elongatis basi leviter connatis. Fl. ♀: ovaria ovoideo-lanceolata, glabra breviter stipitata; stylis mediocribus; stigmatе lineari integro. Amenta matura haud elongata.

NOM. JAP. *Lenge-iwayanagi* (M. NAKAMURA).

HAB. Prov. Sinano : Dailengezan, (Leg. M. NAKAMURA ! Aug. 1912.)

I have named this interesting species in memory of Mr. MASAO NAKAMURA, who sent me the valuable materials collected by him.

15. **Salix** (Sericeæ) **arctica** PALL. Fl. Ross. II. (1788) 86 ; LEDEB. Fl. Ross. III. 619 ; ANDERS. in DC. Prodr. XVI. 2, p. 286 ; HERDER in Act. Hort. Petr. XI. 438 ; C. K. SCHN. l. c. 41. *S. Pallasii*, ANDERS. l. c. 285 ; LEDEB. l. c. 619.

NOM. JAP. *Chisima-yanagi*.

HAB. Kurile : Simshu, Urup.

DISTR. regionibus arcticis et subarcticis.

16. **Salix** (Urbanianæ) **cardiophylla** TR. et MEY. Fl. Ochot. (1856) 77 ; SEEM. Sal. Jap. 77.

NOM. JAP. *Tokatsi-yanagi*.

HAB. Simizutoge (Yechigo) ; Senjugahama (Nikko) ; Osima, Tokatsi.

DISTR. Sibiria orientalis et Manshuria.

(*Finis*)