

distinct in the roughness of the upper surface of the leaves of the New York plant at the time the flowers open, caused by the bases of the hairs which cover it as the leaves unfold, those of *C. kingstonensis* being always glabrous.

Betula neoalaskana, n. nom.—*Betula alascana* Sargent in Bot. Gaz. XXXI. 236 (1901), not Lesquereux in Proc. U. S. Nat. Mus. v. 446 (1883).

Dr. C. V. Piper calls my attention to this earlier use of the name *Betula alaskana* for a fossil tree necessitating a new name for the existing species.

Gleditsia texana Sargent.

This species was based on a grove of trees growing near Brazoria in the valley of the lower Brazos River in Texas. When these trees were described in 1901 only the Brazoria trees were known but since 1901 specimens of what is evidently the same tree have been collected on the banks of the Red River near Shreveport, Louisiana, at Yazoo City, Mississippi, and by a roadside $\frac{1}{2}$ mile west of Skelton, Gibson County, Indiana (C. C. Deam No. 35,123, September 27, 1921). On the Brazos River *G. texana* grows in company with *G. triacanthos* Linnaeus and *G. aquatica* Marshall and these species occur in the other localities where this tree has been met with; and as only a few individuals have been found in widely scattered localities there seems every reason to believe that *G. texana* is a hybrid of *G. triacanthos* and *G. aquatica*.

The trees have the habit of *G. triacanthos* and the branches of the Texas tree are unarmed but those from Louisiana are furnished with stout simple spines and on the Indiana tree the spines are stout or compound. The leaves of these trees resemble those of *G. triacanthos*, but they all have short thin walled fruit without the pulp of that species and in this resemble *G. aquatica*. On one of the Louisiana specimens the fruit varies in length from 6–11 cm. The longest of these fruits have the straight margins and the rounded base of that of *G. triacanthos*, on some of the shortened fruits the margins are more or less contracted between the seeds and the shortest are one-seeded and generally narrowed into a long cuneate base. The length of the fruits of the Mississippi specimen collected by S. M. Tracy are 10 cm. long with a rounded base, deeply contracted between the three seeds and the shorter is 4 cm. long with a stipe-like base and one seed.

Thomas Nuttall landed in January 1819, on an island in the Mississippi River near the mouth of White River, Arkansas “and for the first time recognized the short podded, honey-locust (*Gleditsia brachycarpa*), a distinct species, intermediate with the common kind (*G. triacanthos*) and the one-seeded locust (*G. monosperma*), differing from *G. triacanthos* in the persisting fasciculated legumes, as well as in their shortness and want

of pulp." (Travels into the Arkansas Territory p. 63). A few days later he saw the three *Gleditsias* growing together on the banks of the lower Arkansas River. Judging by the locality Nuttall's *G. brachycarpa* is the hybrid of *G. texana* and not the *G. brachycarpa* of Pursh which was from the mountains of Southwestern Virginia a region far beyond the range of *G. aquatica*. As a synonym of his species Pursh quotes *G. triacanthos brachycarpus* of Michaux for which Michaux gave no locality.

NEW SPECIES, VARIETIES AND COMBINATIONS FROM THE HERBARIUM AND THE COLLECTIONS OF THE ARNOLD ARBORETUM¹

ALFRED REHDER

Juniperus squamata var. **Meyeri**, var. nov.

A typo recedit habitu erecto vel ascendente foliis dorso eximie glaucis. Frutex humilis, ramis erectis vel ascendentibus dense ramulosis ramulis brevibus erectis vel suberectis; internodia breviter pallide luteo-viridia; folia lineari-lanceolata, 6–10 mm. longa, circiter 1.5 mm. lata, a medio in apicem spinulosam sensim attenuata, dorso fere ad apicem leviter sulcata, ventre fasciis duobus albis stomatiferis notata, nervo medio leviter elevato glauco; fructus plerique ad basin ramulorum, erecti, pedunculo brevissimo dense bracteato suffulti, ovoideo-oblongi, circiter 6 mm. longi (ut videtur non bene evoluti et steriles) medio squamulorum apicibus liberis triangularibus plerumque 3 instructi, apice depressi, atro-brunnei, demum fere atri, levissime pruinosi; semen conico-ovoideum acutum et apiculatum, 2–3-costatum.

Cultivated at the Arnold Arboretum (plants received from Hick's Nursery as "Meyer's Juniper;" specimens collected October 3, 1919, September 15, 1922 (type); U. S. Department of Agriculture, S. P. I. No. 23023, comm. *H. C. Skeels*, November, 1921.

This Juniper was found by Frank N. Meyer in Tientsin, Chili, grown by the Chinese as a pot plant and supposed to have come from southwestern Shantung. The Chinese graft it on *Thuja orientalis*; how this is done is shown by Meyer's photograph No. 12258 taken near Shin yeh, Honan; an older plant of this variety is shown in his photograph No. 12407, taken at Peking. This Juniper is a very handsome form on account of its striking blue-white color and its dense habit. From the commonly cultivated form of *J. squamata* Lambert it is chiefly distinguished by the dense upright or ascending habit and by the bluish white longer leaves. It has proved perfectly hardy at the Arnold Arboretum and fruited this year for the first time, though the seeds were sterile.

¹Continued from p. 51.

Juniperus lucayana var. *bedfordiana*, comb. nov.—*Juniperus Bedfordiana* Loudon, Trees & Shrubs, 1090 (1842), nomen.—Henry in Elwes & Henry, Trees Gt. Brit. Irel. vi. 1437 (1912).—*J. gracilis* Endlicher, Syn. Conif. 31 (1847).—*J. virginiana Bedfordiana* Hort. apud Knight & Perry, Syn. Conif. 12 (1850), nomen.—Parlatore in DeCandolle, Prodr. xvi. 2, 489 (1868), as var.—Veitch, Man. Conif. 284 (1881); Kent Veitch's Man. Conif. ed. 2, 193 (1900).—Koehne, Deutsch. Dendr. 54 (1893), as forma.—*Juniperus virginiana gracilis* Sargent, Silva N. Am. x. 96 (1896).

This form which is usually referred to *J. virginiana* as a form or variety is apparently a juvenile form of *J. lucayana* Britton; and Gordon and some other authors have already united it with *J. barbadensis* Auth., not Linnaeus (*J. virginiana barbadensis* Gord.), which is a synonym of *J. lucayana*. It differs from the type of that species in its acicular leaves; from juvenile forms of *J. virginiana* it may be distinguished by its slenderer pendulous branchlets, slenderer and rather longer leaves and by its tenderness in northern latitudes where *J. virginiana* is hardy. I suspect, however, that at least some of the Junipers grown in European gardens as *J. bedfordiana* and reported to be hardy in northern and middle Europe are forms of *J. virginiana*.

Pinus nigra Arnold var. *cebennensis*, comb. nov.—*P. Laricio* Lapeyrouse, Hist. Pl. Pyrén. ii. 588 (1813), not Poiret.—*P. pyrenaica* Lapeyrouse, Hist. Pl. Pyrén. Suppl. 146 (1818), in part, only as to the locality cited.—Loudon, Arb. Brit. iv. 2209 (1838), in part.—Hort. apud Carrière, Traité Gén. Conif. 390 (1855), as synonym of *P. Salzmanni*.—*P. Laricio* var. *pyrenaica* Loudon, Arb. Brit. iv. 2202 (1838), in part.—Godron in Grenier & Godron, Fl. France, iii. 153 (1855), excl. syn. *P. pyrenaica* Lap.—*P. Salzmanni* Dunal in Mém. Acad. Montpell. ii. 81, tab. 12 (1851).—*P. monspeliensis* Salzmann ex Dunal, l. c. 83 (1851), as synonym.—*P. Laricio* var. *cebennensis* Godron in Grenier & Godron, Fl. France, iii. 153 (1855).—Rehder in Bailey, Cycl. Am. Hort. iii. 1355 (1901).—*P. ebenensis* Hort. ex Gordon, Pinetum, ed. 2, 239 (1875), as synonym of *P. Laricio*.—*P. Laricio* var. *leptophylla* Christ in Bot. Zeit. xxiii. 230 (1865).—*P. Laricio* var. *tenuifolia* Parlatore in DeCandolle, Prodr. xvi.² 387 (1868).—*P. Laricio* var. *Salzmanni* Richter, Pl. Eur. i. 2 (1890).—*P. Laricio* var. *monspeliensis* Koehne, Deutsch. Dendr. 38. (1893).—*P. nigra Salzmannii* Ascherson & Graebner, Syn. Mitteleur. Fl. i. 215 (1897).—*P. cebennensis* Hort. ex Rehder in Bailey, Cycl. Am. Hort. iii. 1355 (1901), as synonym.—*P. horizontalis* Hort. ex Rehder, l. c. (1901), as synonym, not Roetzl.—*P. nigra leptophylla* Ascherson & Graebner, Syn. Mitteleur. Fl. i. ed. 2, 333 (1912).—Teuscher in Mitteil. Deutsch. Dendr. Ges. xxxi. 103 (1921).—*P. nigra* var. *tenuifolia* Schneider in Silva-Tarouca, Uns. Freiland-Nadelh. 262 (1913).

The oldest available varietal name of this variety is apparently *P. Laricio* var. *cebennensis* Godr. *Pinus Laricio* var. *pyrenaica* Loud., though

partly referable to this variety, is based, as its name indicates on *P. pyrenaica* Lapeyrouse which belongs to *P. halepensis* Mill. or more especially to its var. *brutia* A. Henry (*P. brutia* Ten.). This is clearly stated by H. de Vilmorin (in Bull. Soc. Bot. France, XL. LXXVII. [1893]; see also Ascherson and Graebner, Syn. Mitteleur. Fl. I. 219), who shows that Lapeyrouse in 1813 under *P. Laricio* described and under stood a variety of *P. Laricio* found in the Pyrenees, while in 1818 in the Supplement he published under the name *P. pyrenaica* a new description based on a tree growing in his park near Toulouse and supposed by him to be the same as his *P. Laricio* from the Pyrenees. The tree in his park, however, was not the Pine from the Pyrenees, but *P. halepensis* var. *brutia* A. Henry, probably raised from seed received from the Orient

***Potentilla fruticosa* var. *Purdomii*, var. nov.**

A typo recedit praecique foliolis minoribus, 7–10 mm. longis, subtus glaucescentibus ad costam sparse longe pilosis ceterum glabris vel fere glabris floribus pallide luteis.—Frutex erectus ramis tenuibus elongatis laxe pilosis; folia 5-foliolata; foliola elliptico-oblonga vel obovato-oblonga, acuta, margine leviter revoluta, supra obscura viridia laxe longe adpresse pilosa: flores 1–1.8 cm. diam. in corymbis plurifloris; bractee calycinae oblongo-oblancheolatae, sepalis subaequilongae; stamina circiter 25, stylis paullo longiora.

Cultivated at the Arnold Arboretum, raised from seed collected by W. Purdom in southern China and sent under Seed No. 848 in 1911; specimen collected September 6, 1922.

Though this form of *Potentilla fruticosa* L. differing chiefly in the smaller leaflets glaucescent and nearly glabrous beneath and in the pale yellow flowers, is not strikingly different from the type and some of its variations, it cannot be referred to any of the forms described, and is therefore proposed here, though reluctantly in this polymorphous species, as a new variety.

***Rosa Maximowicziana* var. *Jackii*, comb. nov.—*R. coreana* Keller in Bot. Jahrb. XLIV, 47 (1909), not *R. koreana* Komarov.—*R. Kelleri* Baker in Willmott, Gen. Rosa, I. 75 (1910), not Dalla Torre & Sarntheim.—*R. Jackii* Rehder in Mitteil. Deutsch. Dendr. Ges. XIX, 259 (1910); in Bailey, Stand. Cycl. Hort. v. 2998 (1916).—*R. Maximowicziana* Nakai, Fl. Sylv. Kor. VII. 26, t. 3 (1918), only as to tab. 3.**

This Rose differs from typical *R. Maximowicziana* only in the absence of the prickles on the stems and branches which are numerous at least on the more vigorous shoots in the type. When I described *R. Jackii* I knew *R. Maximowicziana* Regel only from the description, and as the species was described as a dense upright shrub, the branches and branchlets armed with prickles and bristles, I concluded that it must be an entirely different plant. Since then, however, we have received material of typical *R. Maximowicziana* from Manchuria as well as from Korea and find that the habit is not upright, but sarmentose as correctly described by Nakai,

who figures typical *R. Maximowicziana* on plate 1 of part VII of his *Flora sylvatica koreana*. The only difference which remains now between the two forms is the absence of bristles on the stems and branches in *R. Jackii* which certainly cannot be considered a specific difference.

***Rosa omeiensis* f. *chrysocarpa*, forma nov.**

A typo recedit fructu luteo majore.—Frutex ramis aculeis basi valde dilatatis armatis, turionibus insuper dense aciculate-setosis: folia ramulorum pleraque 5-juga, turionum 6-7-juga foliolis glabris; fructus stipite carnosus parti superiori subaequilongo incluso circiter 2 cm. longus et 11-12 mm. diam.

Raised from seed sent from western China by E. H. Wilson to the Arnold Arboretum in 1908 or 1910; specimens collected in Hort. H. S. Hunnewell, Wellesley, Massachusetts, by Mrs. S. D. McKelvey, August 8, 1922. (type).

This form differs in its bright yellow fruits from typical *R. omeiensis* Rolfe which has the fruits entirely red or sometimes red with the stalk-like stipe colored orange. The lighter and brighter color of the larger fruits makes this form even more conspicuous at fruiting time than the red-fruited type, though unfortunately the fruit of *R. omeiensis* which ripens early in July and a month later in the yellow-fruited form drops soon after ripening and therefore the display does not last long.

***Hamamelis virginiana* L. f. *rubescens*, forma n.**

A typo recedit petalis praesertim basin versus rubescentibus.

Originated at the Arnold Arboretum; type specimen collected Oct. 31, 1921, C. Vandervoet.

This form differing in the light red flowers from the type was first noticed in the autumn of 1921 by Mr. C. Vandervoet on an old plant probably brought from the woods in eastern Massachusetts and now growing in this Arboretum. When in full bloom this red-flowered form contrasts conspicuously with the typical form with its pale yellow flowers. The form is, however, not entirely new, for a shrub with light red flowers had been observed more than 30 years ago near Malden, Massachusetts, by Edward L. Rand (Sargent, *Silva N. Am.* V. 4, [1893]).

In the color of its flowers *H. virginiana* f. *rubescens* resembles the Japanese *H. incarnata* Makino, a species flowering in winter and early spring closely related to *H. japonica* Sieb. & Zucc., but in that species the sepals are deep red on the inner surface, while in our form they are yellowish green to brownish green.

Skimmia Reevesiana* Fortune, Journ. Tea Countr. China, 329 (1852).—*S. japonica* Lindley in Paxton's Flow. Gard. II. 56, fig. 163 (1851), not Thunberg, except Zuccarini's description; in Gard. Chron. 1852, 183.—Fortune in Gard. Chron. 1852, 739, 789.—Hooker in Bot. Mag. LXXIX. t. 4719 (1853), exclusive of synonyms.—Carrière in Rev. Hort. 1869, 259, fig. 60.—Engler in Engler & Prantl, Nat. Pflanzenfam. III. Abt. 4, 181 (1897), in part.—Pritzel in Bot. Jahrb. XXIX. 424 (1900).—*S. Fortunei

Masters in Gard. Chron. ser. 3, v. 520, fig. 9 (1889).—Dippel, Handb. Laubholz. II. 356, fig. 165 (1892).—Rehder in Bailey, Cycl. Am. Hort. iv. 1671 (1902).—Schneider, Ill. Handb. Laubholz. II. 127, fig. 80c, 81 l-m (1907).

The name given by Fortune to the Chinese *Skimmia* introduced by him in 1849 to England seems to have been entirely overlooked. Though he does not give a technical description of his new species, he states that it is the *S. japonica* as described by Lindley and thus bases his name on a definite description. The change in the name of this species makes necessary the following new combination:

Skimmia Reevesiana* f. *rubella, comb. nov.—*S. intermedia* Carrière in Rev. Hort. 1870, 200; 1874, 311.—Nicholson, Ill. Dict. Gard. III. 440 (1887).—*S. rubella* Carrière in Rev. Hort. 1874, 311, tab.; 1880 57, fig. 12; 1885, 189, fig. 35.—*S. Fortunei* f. *rubella* Voss, Vilmorin's Blumen-gärt. I. 172 (1894).—Rehder, in Bailey, Cycl. Am. Hort. iv. 1671 (1902), as var.

This form differs from the type chiefly in its reddish peduncles, pedicels and flower buds. It was first described by Carrière as *S. intermedia* and stated to be of unknown origin, but four years later he described and figured it as *S. rubella* and stated that it was introduced from China about 1865 by Eugène Simon. Carrière describes it as intermediate between *S. japonica* and *fragrans* which is according to our present nomenclature *S. Reevesiana* and *S. japonica*, but its hybrid origin seems very doubtful.

Skimmia Reevesiana* f. *variegata, comb. nov.—*S. japonica variegata* Anon. in Gard. x. 364 (1878).—Mouillefert, Arb. Arbriss. I. 214 (1891).—*S. japonica argentea variegata* Nicholson, Ill. Dict. Gard. III. 441 (1887).—*S. Fortunei* var. *argentea* Masters in Gard. Chron. ser. 3, v. 553 (1889).

A form with the leaves bordered white.

× ***Skimmia Foremanii* Knight** in Florist & Pomol. 1881, 70 (as *S. Foremanni*)—(*S. japonica* × *Reevesiana*).—Masters in Gard. Chron. ser. 3, v. 553 (1889).—Bean, Trees and Shrubs Brit. Isles, II. 514 (1914).—*S. intermedia* Rehder in Bailey, Cycl. Am. Hort. iv. 1671 (1902), not Carrière.—Schneider, Ill. Handb. Laubholz. II. 127 (1907).

This form is according to Knight a hybrid between *S. japonica* and *S. oblata* (= *S. Reevesiana* × *japonica*) raised by Mr. Foreman of Dalkreith. It was first exhibited in Edinburgh at the Spring Meeting of the Royal Caledonian Horticultural Society in 1881, and was awarded a First-class certificate. As Masters points out, the occurrence of two forms of fruit in the same panicle and their color indicates the hybrid origin of the plant.

× ***Skimmia Foremanii* var. *Rogersii*** comb. nov.—*S. Rogersii* Masters in Gard. Chron. ser. 3, v. 553 (1889).

This form was discovered about 1878 by W. H. Rogers of Southampton among seedlings of *S. oblata*, but shows the influence of *S. Reevesiana*

in its hermaphrodite flowers and the crimson color of its depressed-globose berries.

Cotinus coggygria f. *purpureus*, comb. nov.—*Rhus Cotinus purpureus* Dupuy-Jamain in Rev. Hort. 1870–71, p. 567.—*Rhus Cotinus atropurpurea* Burvenich in Rev. Hort. Belg. xi. 257 (1885).—Voss, Vilmorin's Blumen-gärt. i. 190 (1894), as forma.—*Cotinus coccygea* var. *atropurpurea* Dippel, Handb. Laubholzk. ii. 382 (1892).—*Cotinus coggygria* f. *atropurpurea* Schneider, Ill. Handb. Laubholzk. ii. 146 (1907).

This form differs from the type in the deep purple color of the hairs of its fruiting panicle. The form mentioned in Garden, LXXXV. 283 (1921) under the name *Rhus Cotinus purpureus* and described as having purple leaves, is unknown to me, but if it is distinct from *R. Cotinus purpureus* Dupuy-Jamain, as it appears to be, it should receive a new name.

× *Ilex Beanii*, nom. nov. (*I. Aquifolium* × *dipyrena*).—*I. Aquifolium* var. *elliptica* Nicholson in Kew Hand-list Arb. i. 57 (1894), nomen.—*I. Aquifolium* var. *flammea angustifolia* ex Nicholson, l. c. (1894), as synonym.—*I. dipyrena* var. *elliptica* Dallimore, Holly, Yew & Box, 124 (1908).—*I. elliptica* Bean, Trees & Shrubs Brit. Isles, i. 647 (1914), not Humboldt, Bonpland, Kunth.

SPECIMEN EXAMINED: Kew Arboretum, cultivated, W. J. Bean, November 27, 1920.

As the name *I. elliptica* is preoccupied by the Peruvian *I. elliptica* Humboldt, Bonpland & Kunth, Nov. Gen. Spec. vii. 54 (70) (1825), this interesting *Ilex* may bear the name of Mr. W. J. Bean who first pointed out that it is very likely a hybrid between *I. Aquifolium* L. and *I. dipyrena* Wall.

Ilex vomitoria Aiton, Hort. Kew. i. 170 (1789).—Trelease in Gray, Syn. Fl. i, pt. 1, 389 (1897).—Sargent, Sylva N. Am. i. 111, t. 48 (1891); Man. ed. 2, 671, p. 605 (1922).—*I. Cassine* β. Linnaeus, Spec. i. 125 (1753).—*Cassine Peragua* Linnaeus, l. c. 268 (1753) in part, as to the second native country "Carolina".—*Prinos glaber* Linnaeus, Spec. ed. 2, i. 471 (1762), in part, as to both synonyms.—*Cassine Paragua* Miller, Dict. Gard. i. no. 2 (1768).—*Cassine caroliniana* Lamarck, Encycl. Méth. i. 652 (1782), as to the synon. "Bauh. Pin. 170".—*Ilex Cassine* Walter, Fl. Carol. 241 (1788), not Linnaeus.—Watson, Bibl. Ind. N. Am. Bot. i. 157 (1878).—*I. floridana* Lamarck, Tabl. Encycl. Méth. i. 356 (1791).—Poiret, Suppl. Encycl. Méth. iii. 67 (1813).—*I. Cassena* Michaux, Fl. Bor.-Am. ii. 229 (1803).—*I. religiosa* Barton, Fl. Virg. 66 (1812).—*Hierophyllus Cassine* Rafinesque, Med. Fl. ii. 8 (1830).—*Ageria Cassena* Rafinesque, l. c. 47 (1838).—*Oreophila myrtifolia* Scheele in Roemer, Texas, 432 (1849), not Nuttall¹.—*I. Peragua* Trelease in Trans. St. Louis

¹ This synonym is marked with a query by Watson and Loesener, but as *I. vomitoria* grows near Houston and is the only evergreen shrub there which has a close resemblance to *Oreophila myrtifolia* Nuttall = *Pachistima myrsinites* Raf., there can be little doubt that Scheele's name should be referred here.

Acad. Sci. v. 346 (1889), excl. synonym. *Cassine Peragua* L.—*I. Caroliniana* Loesener in Bot. Centralbl. XLVII. 163 (1891); in Nov. Act. Leop.-Carol. Akad. LXXVIII. 341 (Monog. Aquifol.) (1908), excl. synonym. *Cassine caroliniana* Lam. not Miller, nor Trelease²).

Though a large number of names have been bestowed on the plant best known as *Ilex vomitoria* Aiton, the oldest specific name given to it seems to have escaped notice and is not enumerated in Index Kewensis. This is Miller's *Cassine Paragua* of 1768; Miller cites in his short description the figure published in his Figures of the most beautiful . . . plants (i. 55, t. 83, fig. 2 [1760]), where he also quotes Catesby's plate (Nat. Hist. Car. II. 57 [1743]). and the "*Cassine vera* Floridanorum arbuscula baccifera, Alaterni (not "alterni" as printed in Linnaeus' Spec.) ferme facie" of Plukenet (Mant. 40 [1700]). All these quotations belong to *I. vomitoria* Aiton without any extraneous element being involved. There could be, therefore, no doubt of the validity of Miller's name if it were not for the name *Cassine Peragua* Linnaeus (Spec. i. 268 [1753])³, which should be considered a homonym, as the difference in the spelling is too slight to make them different names. If we reject the name *C. Paragua* Miller as being a homonym of *C. Peragua* Linnaeus the question arises if *Cassine caroliniana* Lamareck should be taken up as the next oldest name, as was done by Loesener who made in 1891 the combination *Ilex caroliniana*.

² The following names referred by some authors as synonyms to *I. vomitoria* should be excluded:

I. ligustrina Jacquin, Icon. Pl. Rar. II. 9, t. 310 (1789?); Collect. IV. 105 (1790).—This is a distinct species and is treated as such by Loesener; the native country is given by Jacquin as "Carolina," but that is probably an error (see Loesener in Nov. Act. Leop.-Carol. Akad. LXXVIII. 319, obs. 2 [Monog. Aquifol.] [1901]).

Winterlia triflora Moench, Meth. 74 (1794). K. Koch (Hort. Dendr. 211 [1853] and Dendr. II. pt. 1, 225 [1875] where he cites the name by mistake as *Winterlia glabra*) and Trelease (in Gray, Syn. Fl. II. pt. 1, 390 [1897]) are apparently right in referring this name to *Ilex glabra* as a synonym. Moench's specific description agrees well with *I. glabra* Gray but in his generic description he characterizes the flowers as 4-merous, and this probably induced Loesener to cite the name as a synonym with a query under his *I. caroliniana*=*I. vomitoria* Ait., though "petalis linearibus . . . sepala . . . petalis breviora" hardly fits that species.

Cassine ramulosa Rafinesque Fl. Ludov. 110 (1817).—This plant can hardly belong to *Ilex vomitoria*, as it is described as having 5-merous flowers and a 3-celled ovary with 3 reflexed stigmas.

Ilex (Emetila) ramulosa Rafinesque, Sylv. Tellur. 45 (1838). This is the same as the preceding plant.

Ageria geminata Rafinesque Sylv. Tellur. 48 (1838). As the leaves are described as acute, thin and deciduous, the peduncles as "unifloris geminatis sparsis" and the habitat given as "Apalachian Mts.", it can hardly represent *Ilex vomitoria*.

³ *Cassine peragua* Linnaeus, Spec. i. 268 (1753) a citation not given in Index Kewensis is to be considered a valid name and antedates *C. capensis* Linnaeus, Mant. 220 (1771) with which it agrees in its principal elements, that is in the figures cited (see also Loesener in Bot. Jahrb. XXVIII. 155 [1891]). The plant, however, called *C. peragua* by Linnaeus in 1771 (Mant. 220) represents *Viburnum obovatum* Walter (Fl. Carol. 116 [1738]) for which the oldest name is *Cassine corymbosa* Miller of 1768, see foot-note 5.

In doing so he apparently overlooked the existence of two older homonyms namely *Ilex caroliniana* of Miller (1768) and of Trelease (1889). According to the International Rules the first of the two homonyms could not invalidate Loesener's combination, as Miller's name is a synonym of *Ilex Cassine* L., but Trelease's name is to be accepted under the International Rules as a valid name⁴. Aside from this, however, another reason why *I. caroliniana* Loesener should be rejected, is the fact that *Cassine caroliniana* Lamarck belongs only partly to *Ilex vomitoria*, as Lamarck confused under *Cassine caroliniana* two entirely different plants namely *Ilex vomitoria* Aiton which having 4-merous flowers would not belong in his genus *Cassine* at all and *Viburnum obovatum* Walter. As the description seems to be chiefly based on Miller's *Cassine corymbosa*⁵ and on the figure representing that species which is identical with *Viburnum obovatum*, *Cassine caroliniana* should be referred according to its chief component as a synonym to the latter species. Therefore *Ilex caroliniana* Loesener, being based on a species the type of which is identical

⁴*Ilex caroliniana* Trelease in Trans. Acad. Sci. St. Louis, v. 347, (1889).—*Cassine caroliniana* Walter, Fl. Carol. 242 (188).—*Prinos ambiguus* Michaux, Fl. Bor.-Am. II. 236 (1803).—*Synstima acuminata* Rafinesque, Sylv. Tellur. 48 (1838).—*Synstima caroliniana* Rafinesque l. c. 49 (1838).—*Ilex ambigua* Chapman, Fl. S. U. S. 269 (1860).—*Nemopanthes ambiguus* Wood, Classb. Bot. Fl. U. S. Can. 497 (1861).—*Synstima ambigua* Rafinesque "Sylv. Tellur. 48" apud S. Watson, Bibl. Ind. N. Am. Bot. 157 (1878).

According to the Philadelphia Code Trelease's combination is invalidated by the older homonym *Ilex caroliniana* of Miller, but that being a synonym of *Ilex Cassine* does not prevent the acceptance of *Ilex caroliniana* Trelease under the International Rules. Neither could Walter's *Cassine caroliniana* be rejected as non-valid on account of the older homonym of Lamarck, which as pointed out below is a synonym of *Viburnum corymbosum* Rehd. (*V. obovatum* Ait.). The point, however, may be raised, if a tentative proposition of a name as in this case where Trelease says under *Ilex ambigua* in a note: "If this specific name (*Cassine caroliniana* Walter) is to be accepted, the plant becomes *I. caroliniana* (Walt.)" should be considered a valid publication. There is nothing in the Rules which covers this point exactly, but the tendency is to accept such names, and therefore, I think, we have to accept *I. caroliniana* Trelease as the valid name for *I. ambigua* Chapman.

⁵*Cassine corymbosa* Miller, has been referred in Index kewensis as a synonym to *Ilex Cassine*, but a glance at Miller's description and the figure and the synonyms cited that it is identical with the plants described later by Aiton as *Viburnum laevigatum* and by Walter as *V. obovatum*. As Miller's name antedates these two names the following new combination becomes necessary.

Viburnum corymbosum, comb. nov.—*Cassine corymbosa* Miller, Gard. Dict. I. no. 1 (1768).—*Cassine peragua* Linnaeus, Mant. 222 (1771).—*Cassine caroliniana* Lamarck, Encycl. Méth. I. 652 (1783), excl. syn. "Bauh. Pin." and remarks.—*Viburnum obovatum*, Walter, Fl. Carol. 116 (1788).—*Viburnum laevigatum* Aiton, Hort. Kew I. 371 (1879).—*Ilex Peragua* Trelease in Trans. St. Louis Acad. Sci. v. 346 (1889), as to the synonym *Cassine peragua* L.—*Ilex caroliniana* Loesener, Bot. Centralbl. XLVII. 163 (1891), as to the synonym *Cassine caroliniana* Lam.

Though the figure published by Miller (Fig. Pl. I. 55, t. 83, fig. 1. [1760]) and cited under his *Cassine corymbosa* is not exactly typical for the species in question, it cannot be referred to any other species than *Viburnum obovatum* Walter, which was in cultivation in England since 1724 and we have under the present rules no choice but to use the oldest specific name, even if published under an entirely wrong genus.

with *Viburnum obovatum* Walter, cannot stand as a valid name in the genus *Ilex* and for the same reason *Ilex peragua* Trelease based on *Cassine Peragua* Linnaeus (Mant. II. 220 [1771] which also represents *V. obovatum* Walt., must be rejected. These two names being excluded from the genus *Ilex*, *Ilex vomitoria* Aiton of 1789 remains the valid name for the species if we consider Miller's *Cassine paragua* a homonym of *C. peragua* Linnaeus.

Ilex Macfadyenii, comb. nov. — *Prinos montana* Swartz, Prodr. 58 (1788); Fl. Ind. Occ. I. 622 (1797).—*Prinos lanceolatus* Macfadyen, Fl. Jam. I. 206 (1837).—*Prinos Macfadyenii* Walpers, Rep. I. 541 (1842).—*Ilex montana* Grisebach in Mem. Am. Acad. Sci. Arts, n. ser. VIII. 171 (Pl. Wright. I) (1860); Fl. Brit. W. Ind. 187 (1864), not Torrey & Gray.—Loesener in Nov. Act. Leop-Carol. Akad. LXXVIII. 118 (Monog. Aquifol.) (1901).

WEST INDIES.

Ilex montana Grisebach is preoccupied by *I. montana* Torrey & Gray (apud Gray, Man. 276 [1848]) which is the oldest name for *I. monticola* Gray (Man. ed. 2, 264 [1856]). Gray changed the earlier name *I. montana* on account of *Prinos montanus* Swartz but as at that time the combination under *Ilex* had not yet been made, the change was not necessary and is not in accordance with our present rules, therefore, *I. montana* Torr. & Gray remains the correct name for the species which is called generally *I. monticola* Gray. If, however, *I. montana* Gray and *I. mollis* Gray are considered varieties of the same species, *Ilex montana* becomes *I. dubia* var. *monticola* Loesener (in Nov. Act. Leop.-Carol. LXXVIII. 485 [Monog. Aquifol.] [1901]), as *Prinos dubius* G. Don. (Gen. Syst. II. 20 [1832]) is the oldest valid name for *I. mollis* Gray.

Euscaphis japonica* var. *ternata, var. nov.

A typo recedit foliis trifoliolatis foliolis ovatis majoribus.

CHINA. Chekiang: South Yentang, H. H. Hu, No. 129, August 24, 1920.

As I have seen of this new form only a single fruiting branch with one pair of leaves which presents no other marked differences from typical *Euscaphis japonica* Dipp. except the 3-foliolate leaves and the larger ovate leaflets which are rounded at base and measure 7–9.7 cm. in length and 3.5–4.8 cm. in width, I hesitate to base a new species on such incomplete material, though the specimen presents a very distinct appearance. The leaflets are glabrous beneath except a few scattered hairs near the base of the midrib and a minute pilose pubescence on the petiolules of the lateral leaflets. The inflorescence is very large, about 15 cm. long excluding the peduncle which is 8 cm. long. Among the 43 specimens examined of *E. japonica* from China, Korea and Japan there is not a single specimen with 3-foliolate leaves except that occasionally the lower branches of the inflorescence are supported by one to 3 small leaflets.

Acer stenolobum (Sect. *Platanoides*), sp. nov.

Arbor vel frutex; gemmae pluriperulatae perulis ciliatis ramuli tenues, annotini brunneo-grisei, vetustiores grisei, lenticellis paucis parvis instructi. Folia profunde trilobata, 3–4.5 cm. lata et 2.5–3.5 cm. longa, base fere truncata lobis subaequilongis angulo circiter 60° divergentibus, anguste oblongo-lanceolatis 4–7 mm. latis marginibus fere parallelis, integris obtuse acuminatis vel apicem versus paucidentatis, subtus ad basin in axillis nervorum villosa et margine initio sparse ciliata, ceterum glabra, laete viridia; petioli graciles 1.5–3 cm. longi, glabri. Flores andro-polygami, ut videtur lutescentes. graciliter et longe pedicellati, in corymbis glabris multifloris cum pedunculo gracili 1–2 cm. longo circiter 5 cm. longis et 3–4 cm. latis terminalibus in apice ramulorum foliis 4 instructorum; sepala 5, ovalia 1.5–2 mm. longa, obtusa, margine vel interdum tantum apice longe et sparse ciliata; petala lineari-oblonga vel oblonga, saepe inaequalia, sepalis subaequilonga vel paullo minora, glabra; stamina 5, inter lobos disci profunde lobati inserta, antheris ovalibus circiter 1–1.2 mm. longis; filamenta in floribus masculis sepalis duplo longiora, in flore fertili stamina sepalis subaequilonga; ovarium minute pilosulum; stylus ad medium fissus stigmatibus papillosis revolutis; in floribus masculis ovarium valde reductum stylis erectis brevibus basi connatis vel nullum; alae in fructibus juvenilibus suberectae basi vix constrictae et plus minusve incurvae. Fructus maturi desideratur.

CHINA. Shensi: west of Yen-an Fu, *Wm. Purdom*, No. 337, 1910.

This very distinct species belongs in the section *Platanoides* Pax, but is easily distinguished from all other species of this group by the small deeply 3-lobed leaves with very narrow lobes of nearly equal length, the lateral ones wide-spreading and sometimes nearly horizontal. It seems nearest to *A. pictum* Thunb., *A. truncatum* Bge. and *A. tenellum* Pax, but differs from them not only in the shape of the leaves, but also in the 5 exerted stamens, in the puberulous ovary and in the longer style.

Acer cappadocicum Gled. f. *rubrum* Nash in 'Jour. New York Bot. Gard. xx. 87 (1919), nomen, as var.—*A. laetum* 2. *rubrum* Kirchner in Petzold & Kirchner, Arb. Musc. 193 (1864).—*A. colchicum rubrum* Hort. ex Kirchner, l. c. (1864), as synonym.—*A. laetum* var. *rubrum* Ruprecht in Mém. Acad. Sci. St. Pétersb. sér. 7, xv. no. 2, 281 (Fl. Caucas.) (1869).—*A. pictum* var. *rubrum* Nicholson in Gard. Chron. ser. 2, xvi. 375 (1881).—*A. Lobelii* subsp. *laetum* var. *colchicum* f. *horticola* Pax in Bot. Jahrb. vii. 237 (1886).—*A. laetum* var. *colchicum* 3. *rubrum* hort. apud Schwerin in Gartenfl. xlii. 459 (1893).—*A. laetum* var. *colchicum* f. *horticola* Pax in Engler, Pflanzenr. iv-163, 48 (1902).—*A. cappadocicum* f. *horticola* Rehder in Sargent, Pl. Wilson. i. 86 (1911).

As the correct combination for this form of *A. cappadocicum* was published by Nash without the citation of any synonyms, the synonyms are cited here to show that there can be no doubt that the varietal name *rubrum* and not *horticola* has the priority.

Acer Buergerianum Miq. var. *trinerve*, var. nov.—*A. trinerve* Hort. apud Dippel, Handb. Laubholz. II. 428, fig. 200 (1892), excl. syn. *A. pycnanthum* K. Koch.—Pax in Bot. Jahrb. xvi. 393 (1892); in Engler, Pflanzenr. iv-163, 12 (1902), in part.—Koehne, Deutsch. Dendr. 376 (1893).—*A. trifidum* Hort. angl. ex Dippel, Handb. Laubholz. II. 428 (1892), as synonym.

This form differs from the type in its more deeply 3-lobed leaves, broader and often rounded or almost truncate at the base and with the lobes more strongly and unequally serrate, placed near or below the middle and spreading, while in typical *A. Buergerianum* the lobes are placed above the middle and point more or less distinctly forward and the margin of the leaf is usually entire or nearly entire. Occasionally one finds, however, on specimens of typical *A. Buergerianum*, e. g. on F. N. Meyer's No. 1427, collected June 4, 1915 near Nanking (herb. Arnold Arb.), leaves which agree exactly with those of the variety. I have seen neither flowers nor fruit of this form which is apparently a juvenile form of typical *A. Buergerianum* as suggested already by Koehne, Pax and Spaeth (in Mitteil. Deutsch. Dendr. Ges. 1896, 25). Under cultivation it seems to retain its juvenile character and it is therefore advisable to distinguish it by a definite name from the type.

In the Herbarium of this Arboretum there is a specimen collected by G. Nicholson in 1880 in the Kew Arboretum and labelled "*A. trinervum* Sieb." which seems to show that this form was originally introduced by Siebold.

Acer Opalus var. *tomentosum*, comb. nov.—*A. neapolitanum* Tenore, Fl. Napol. II. 372, t. 100 (1820); Mem. sugli Acere, 13, t. 4 (1846).—*A. opulifolium* var. γ *tomentosum* Tausch in Flora, XII. 549 (1829).—Koch, Syn. Fl. Germ. 136 (1837), excl. " (β) lobis obtusis."—*A. obtusatum* var. *neapolitanum* Don, Gen. Syst. I. 649 (1831).—Pax in Bot. Jahrb. VII. 223 (1886), as subspec.; in Engler, Pflanzenr. iv-163, 58 (1902).—*A. Opalus* var. *neapolitanum* Henry in Elwes & Henry, Trees Gt. Brit. Irel. III. 664, t. 106, fig. 15 (1908).

The oldest varietal name applicable to *A. neapolitanum* Tenore is that given by Tausch who, though he refers *A. neapolitanum* as well as *A. obtusatum* Kitaibel to his variety *tomentosum* considers *A. neapolitanum* the type of his variety, as he enumerates Tenore's species as (α) lobis acutis" and *A. obtusatum* Kitaibel as " (β) lobis obtusis." Therefore there can be no doubt that if these two species are considered two distinct varieties the varietal name *tomentosum* has to be applied to *A. neapolitanum*, while *A. obtusatum* becomes *A. opalus* var. *obtusatum* Henry in Elwes & Henry, Trees Gt. Brit. Irel. III. 663 (1908).

Acer Hersii (Sect. *Macranthae*), sp. nov.

Arbor gracilis ad 8 m. alta; ramuli ab initio glabri, virides vel annotini et biennes lutescentes, nitiduli, vetustiores longitudinaliter albo-striati; gemmae stipitatae, perulis 2 exterioribus valvatis obtectae, perulis 2

interioribus accrescentibus. Folia ambitu ovata vel late ovata, 3-lobata, raro minoribus indivisis immixtis, basi cordata, minora ovata lobis brevissimis acutis et 6–10 cm. longa et 4–7 cm. lata, majora late ovata lobis longioribus acuminatis interdum lobis basalibus parvis instructa et 8–14 cm. longa et 7–13 cm. lata, lobo medio triangulari-ovato longe acuminato, lobis lateralibus circa medium divergentibus brevissimis acutis vel latissime ovatis acuminatis et interdum ad 3 cm. longis, toto margine inaequaliter et dupliciter serrata dentibus latis brevibus mucronulatis, supra laete viridia, glabra, subtus basin versus ad venas initio ut petioli tomento ferrugineo lanuginoso caduco vestita, mox glabra; petioli graciles, 2.5–6 cm. longi; flores (hermaphroditi tantum visi) in racemis 15–20-floris cum pedunculo circiter 1 cm. longo 4–6 cm. longis glabris; pedicelli 2–4 mm. longi; sepala oblonga, 4 mm. longa et 1.5 mm. lata, obtusa; petala sepalis subaequilonga, obovata; stamina 8, sepala dimidia aequantia, antheris ovalibus 1.25 longis quam filamenta paullo longioribus; ovarium leviter ferrugineo-pubescent, mox glabrescent; stylus brevis, vix 1 mm. longus, stigmatibus recurvis multo longioribus. Fructus in racemis densis pendentibus; pedicelli 3–6 mm. longis; samarae 1.6–2.2 cm. longae, fere horizontales, alis leviter sursum curvatis loculo planiusculo circiter duplo longioribus.

CHINA. Honan: Teng Feng Hsien, Yu Tai Shan, Erh Tsu an, alt. 800 m., *J. Hers*, No. 219 (type) April 23, 1919; Sunghsien, Sankuanmiao, alt. 1200 m., *J. Hers*, No. 533 (co-type; immature fruits); May 24, 1919; Lushish, Lao kiun Shan, alt. 200 m., *J. Hers*, No. 1169, September 21, 1919; Tsi Yuan Hsien, Tien tan shan, *J. Hers*, No. 1739 (sterile), September 21, 1921. Chili: without locality, *Père Chanet*, 1919. Northern Shensi: Mt. Kiu-tou-san, *G. Giraldi*, July 14, 1897. North Central China: Mt. Kian-san, *Rev. Hugh*, 1897; "Thui-kio-tsuen," Mt. Kan-y-san" and Mt. Ngo-san, *Rev. Hugh*, 1899. Northern Hupeh "Ou-tan-scian," alt. 2050 m. *C. Silvestri*, No. 1370, September 1907; "Monte Kian-scian," alt. 2000 m., *C. Silvestri*, No. 1371, September 1907.

This new species belongs to the section *Macranthae* Pax and is closely related to *A. Davidii* Franch. and *A. laxiflorum* Pax. The first species is easily distinguished from it by the undivided, generally oblong-obovate leaves rounded or subcordate at the base and more densely rufous-pubescent beneath and on the petioles when young, and in the usually larger fruits on slenderer pedicels. The second species, *A. laxiflorum* Pax, differs from it chiefly in the caudate-acuminate, more closely and finely serrate leaves with acuminate teeth, glaucescent and glabrous beneath even when young and in the purplish and bloomy branchlets. Specimens of *A. Hersii* with larger more prominently lobed leaves have some resemblance to *A. tegmentosum* Maxim., but the leaves of that species are generally larger and broader with larger lateral lobes and a shorter middle lobe more sharply and doubly serrate with acuminate teeth and glabrous even when young and the anthers are suborbicular.

This new Maple is named in honor of Mr. Joseph Hers to whom the Arboretum is indebted for extensive and interesting collections and seeds of Chinese woody plant chiefly from the province of Honan, a region

hitherto almost unknown botanically. The Chinese name of this Maple "tsin pi tuan" meaning "green bark Linden" refers to the conspicuous smooth green bark of the branches. Young plants of this species raised from seed sent by Mr. Hers are growing in this Arboretum.

Aesculus discolor var **Koehnei**, nom. nov.—*Aesculus humilis* Koehne Deutsch. Dendr. 386 (1893), not Loddiges.—Rehder in Bailey, Stand. Cycl. Hort. i. 228 (1914), as to description.—*A. Pavia* var. *humilis* Voss, Vilmorin's Blumengärt. i. 184 (1894), as to description, not Mouillefert.¹—Rehder in Bailey, Cycl. Am. Hort. i. 32 (1900), as to description.—Schneider, Ill. Handb. Laubholzk. ii. 252 (1909), as to description.

This variety differs from the type in its lower stature forming a shrub only a few feet high, smaller leaflets 6–12 cm. long and smaller panicles usually less than 10 cm. long. The origin of this form is unknown; it was first described by Koehne from cultivated plants growing in Spaeth's nursery near Berlin and plants received from the same nursery are now growing in this Arboretum.

Aesculus turbinata Bl. var. **pubescens**, var. nov.

A typo recedit foliolis subtus tota facie in costa venisque densius breviter villosis, petiolo praesertim apicem versus satis dense pilosulo.

JAPAN. Hondo: "in silvis Aomori," *U. Faurie*, No. 5022 (type), June 1902; Nikko, *C. S. Sargent*; Sept. 2, 1892; Mt. Buko, Musashi, *K. Sakurai*, June 9, 1903.

HOKKAIDO: Mororan, *C. S. Sargent*, September 14 and 25, 1892; common in moist woods, *E. H. Wilson*, No. 7057, July 2, 1914.

This variety differs in the soft pubescent under side of the leaves from the type which is described by Blume as having puberulous petioles and the under side of the leaflets glabrous except bearded in the axils of the veins and puberulous on the midrib and often on the veins. In the type specimen and in Sargent's specimen from Mororan, collected on September 2, the pubescence is so dense that it could almost be called tomentose, while in the other specimen it is less dense. In the Japanese specimens of *A. turbinata* before me the leaflets beneath are either quite glabrous with the exception of axillary tufts of hairs or they represent the

¹ *Aesculus Pavia* var. *humilis* Mouillefert, Arb. Arbriss. ii. 709 (1894).—Voss, Vilmorin's Blumengärt. i. 184 (1894), excl. description.—Rehder in Bailey, Cycl. Am. Hort. i. 32 (1900) and in Bailey Stand. Cycl. Hort. i. 228 (1914), excl. description.—*Aesculus humilis* Loddiges apud Lindley in Bot. Reg. xii. t. 1018 (1826).—*Pavia humilis* G. Don apud Loudon, Hort. Brit. 143 (1830).—Sweet, Hort. Brit. ed. 2, 83 (1830).—G. Don, Gen. Syst. i. 653 (1831).—Spach, Hist. Vég. iii. 31, (1834).—*Pavia rubra* f. *humilis* Loudon, Arb. Brit. i. 470 (1838).—*Aesculus Pavia* var. *nana* Dippel, Handb. Laubholzk. ii. 404 (1892).

Of this form which is easily distinguished from *A. discolor* var. *Koehnei* by its narrower more deeply and irregularly serrate leaflets sparingly pubescent only on the veins and veinlets beneath I have seen specimens collected in 1880 by G. Nicholson in the Kew Arboretum under the names *Pavia rubra humilis pendula*, *Pavia pendula* and *Pavia pumila*, which agree well with Lindley's figures and his description of the pubescence of the leaflets as "subtus praecipue ad venas leviter pubescentia." As Loudon remarks his *A. rubra humilis pendula* (l. c.) is not a distinct variety, but only the var. *humilis* grafted high.

variety described above. The only specimens I have seen which agree exactly with Blume's description are specimens from trees cultivated at Kew, Segrez and in the former Ellwanger and Barry's nursery at Rochester, New York; the tree growing in this Arboretum has the petiole, midrib and veins glabrous, though it was raised from seed of the Rochester tree.

A plant received in 1913 from the nursery of H. A. Hesse in Weener, Germany, as *A. chinensis* has the leaflets densely pubescent beneath and belongs apparently to the variety here described.

Zizyphus jujuba Mill. var. *inermis*, comb. nov.—*Z. vulgaris* var. *inermis* Bunge in Mém. Sav. Etr. Acad. Sci. St. Pétersb. II. 88 (Enum. Pl. Chin. Bor. 14) (1833).—*Z. sativa* var. *inermis* Schneider in Sargent, Pl. Wilson. II. 212 (1914).

The oldest name under the genus *Zizyphus* of the tree named by Linnaeus *Rhamnus Zizyphus* is *Zizyphus jujuba* Miller (Gard. Dict. II. no. 1 [1768]), which antedates *Z. sativa* Gaertner (1788) and *Z. vulgaris* Lamarck (1789). The name for the species called by Lamarck *Z. jujuba* becomes *Z. mauritiana* Lamarck (Encycl. Méth. III. 318 [1789]) which must be considered conspecific; the chief differences Lamarck gives "feuilles moins larges, fruits oblongs et pointus" are scarcely of specific value, for the size of the leaves varies greatly in the species and the fruits though usually subglobose are occasionally oblong and pointed as in Merrill's No. 2779 from the Philippines. It certainly is unfortunate that the name used for more than one hundred years in Lamarck's sense should be transferred to another species, but I do not see how this can be avoided under our rules of nomenclature. Miller's name *Z. jujuba* is the oldest name for *Rhamnus Zizyphus* L. under *Zizyphus* and when Lamarck transferred *Rhamnus jujuba* L. to *Zizyphus* his combination cannot be considered valid on account of the earlier homonym of Miller. Miller could not use the specific name given by Linnaeus, as it duplicated the generic name, and being at liberty to choose any other name he chose the name used by older authors for the same plant; as his species are not based on those of Linnaeus' *Species plantarum* he was under no obligation to accept the specific name *jujuba* for the same species as Linnaeus did under *Rhamnus*, a species not mentioned at all in Miller's enumeration of the species of *Zizyphus*.

Rhamnus Alaternus f. *argenteo-variegata*, comb. nov.—*Rhamnus-Alaternus communis* 3. *argenteo-variegatus* Weston, Bot. Univ. I. 237 (1770).—*Rhamnus alaternus* var. 6. *albo-variegatus* Dumont de Courset, Bot. Cult. ed. 2, v. 259 (1811).—*Rhamnus Alaternus* c. *foliis argenteis* Loudon, Arb. Brit. II. 530 (1838).—*Rhamnus Alaternus* var. *variegata* Bean, Trees & Shrubs Brit. Isls. II. 330 (1914).

This form which is apparently an old inhabitant of gardens is figured by F. Schmidt (Oesterr. Baumz. III. t. 156, upper figure [1800]); it has leaves bordered with a broad irregular white margin. A similar form,

R. Alaternus f. *aureo-variegata* Dumont de Courset (l. c., as var.—*Rhamnus Alaternus communis* 2. *aureo-variegatus* Weston, l. c.) with yellow-margined leaves is also figured by Schmidt on the same plate (lower figure).

× *Ceanothus pallidus* Lindley in Bot. Reg. xxvi. t. 20 (1840).—K. Brandegee in Proc. Calif. Acad. ser. 2, iv. 214 (1894). (? *C. Delilianus*¹ × *ovatus* = *C. americanus* × *coeruleus*² × *ovatus*).—*C. Fontanesianus* γ *cyaneus* Spach, Hist. Vég. II. 460 (1834).—*C. ovatus* 2. *flore cyaneo* H. Bollw. apud Kirchner in Petzold & Kirchner, Arb. Musc. 347 (1864).—*C. ovalis* × *thyrsiflorus* Koehne, Deutsch. Dendr. 396 (1893).—Schneider, Ill. Handb. Laubholz. II. 292 (1909).—*C. hybridus pallidus* Rehder in Bailey, Stand. Cycl. Hort. II. 696 (1914).—*C. intermedius* Hort. ex Koehne, l. c. (1893), as synon.

For this plant which is apparently of hybrid origin, the parentage *C. ovatus* × *thyrsiflorus* has been suggested by Koehne and by Schneider, but I am unable to see any influence of *C. thyrsiflorus* Eschsch. There is no trace of the peculiar angular branches, of the rigid habit, the leathery leaves, the short pedicels and of other characters of that species perceptible in this plant, and, moreover, when this plant first appeared, *C. thyrsiflorus* was not yet introduced. There can be little doubt that *C. pallidus* Lindley is the same as Spach's *C. Fontanesianus cyaneus*, as Lindley states that his plant was received from Messrs. Baumanns of Bollviller under the name of *C. ovatus* and Spach says that his var. *cyaneus* was raised like the following variety by the Baumanns from seed of his *C. Fontanesianus* (*C. ovatus* Desf.).

¹× *Ceanothus Delilianus* Spach, Hist. Vég. II. 459 (1834).—K. Brandegee in Proc. Calif. Acad. Sci. ser. 2, iv. 213 (1894). (*C. americanus* × *coeruleus*.)—*C. americanus* var. *floribus subcoeruleis* Godefroy in Ann. Soc. Hort. Paris. v. 302 (1829).—*C. pulchellus* Delile in Hort. Monsp. ex Spach, l. c. (1834), as synon.—*C. Arnouldii* Carrière in Rev. Hort. 1872, 380.—*C. azureus* Lavallée, Arb. Segrez. 51 (1877), in part, not Desfontaines.—*C. azureus* var. *Arnouldii* Lavallée l. c. (1877).—*C. americanus* × *azureus* (*C. Arnouldii* h.) Koehne, Deutsch. Dendr. 395 (1893).—Schneider, Ill. Handb. Laubholz. II. 294 (1909).—*C. Dillenianus* Marchais in Rev. Hort. 1895, 351.—*C. hybridus* Hort. apud Rehder in Bailey, Cycl. Am. Hort. I. 265 (1900), in part.—*C. hybridus* "Arnouldii" Rehder, l. c. (1900).—*C. versailensis* Schneider, Ill. Handb. Laubholz. II. 294. (1909).

Judging from Spach's description I have no doubt that his statement that this plant is probably a hybrid of *C. azureus* is correct, and *C. americanus* is apparently the only species which could be the other parent. Therefore *C. Delilianus* will be the oldest binomial for the numerous hybrids raised between *C. coeruleus* Lag. (*C. azureus* Desf.) and *C. americanus*, of which may be cited as well known garden forms "Gloire de Versailles," "Léon Simon." "Sceptre d'azur," and "Le Géant."

² *Ceanothus coeruleus* Lagasca, Gen. & Spec. 11 (1816).—Loddiges, Bot. Cab. II. t. 110 (1821).—*C. azureus* Desfontaines, Tabl. Ecole Bot. ed. 2, 232 (1815), nomen nudum.—Ker in Bot. Reg. IV. t. 291 (1818).—K. Brandegee in Proc. Calif. Acad. Sci. ser. 2, iv. 193 (1894).—*C. bicolor* Humboldt & Bonpland apud Willdenow msc. in Roemer & Schultes, Syst. v. 300 (1819).

As pointed out already by Mrs. K. Brandegee (l. c.) the oldest valid name for this species is *C. coeruleus* Lag., as *C. azureus* Desf. published one year earlier is a nomen nudum.

The hybrid shows the influence of *C. ovatus* in the glabrous branchlets, the glabrous or nearly glabrous leaves and in their more oblong or elliptic not strictly ovate shape, while the blue color of the flowers must have come either from *C. coeruleus* or its hybrid with *C. americanus*, *C. Delilianus*. The scantiness or absence of pubescence and the rather large leaves with a tendency toward an ovate shape make it more likely that *C. Delilianus* is the other parent, for a cross with typical *C. coeruleus* would have produced a more pubescent plant with smaller distinctly oblong to elliptic leaves and a smaller inflorescence. The cross between *C. coeruleus* and *C. ovatus* may be represented by *C. Baumannii* Spach (Hist. Vég. II. 460 (1834)) of which I have seen no specimens.

× *Ceanothus pallidus* var. *roseus*, comb. nov.—*C. Fontesianus roseus* Spach, Hist. Vég. II. 460 (1834).—*C. ovatus roseus* Carrière in Rev. Hort. 1875. 30, tab.—*C. azureus* var. *roseus* Lavallée, Arb. Segrez. 51 (1877).—*C. roseus* hort. (? *C. americanus* × *thyrsiflorus*) apud Koehne, Deutsch. Dendr. 395 (1893).—Schneider, III. Handb. Laubholzk. II. 294 (1909).—*C. hybridus roseus* Rehder in Bailey, Cycl. Am. Hort. I. 265 (1900).—*C. hybridus* Hort. ex parte, ex Schneider, l. c. (1909).

This plant as well as *C. pallidus* was raised by Baumann from seed of *C. ovatus* and is apparently of the same origin; in habit, pubescence and shape of leaves there is little or no difference and the variation in color is not an unusually occurrence, as blue, violet and lilac flowers often produce forms with pink, or rose-colored or even red flowers. To this hybrid belongs the form known as "Marie Simon" with flesh-colored flowers.

× *Ceanothus pallidus* var. *plenus*, comb. nov.—*C. flore albo pleno* Jouin in Rev. Hort. 1891, 110.—*C. americanus* var. *flore albo pleno* Grosdemange in Rev. Hort. 1893, 475.—*C. azureus* f. *flore albo pleno* Voss, Vilmorin's Blumengart. I. 179 (1894).—*C. hybridus* "Albus plenus" Rehder in Bailey, Cycl. Am. Hort. I. 265 (1900).—*C. albus plenus* Anon. in Gard. LXXVII. 432, fig. (1913).

This form is similar in habit, pubescence and shape of leaves to the preceding variety, but has double white flowers, pink in bud. Its origin is unknown to me, but it possibly originated before 1890 with Simon-Louis of Plantières near Metz, who raised many other hybrids of *Ceanothus*.

Vitis Thunbergii Sieb. & Zucc. var. *sinuata*, comb. nov.—*V. Labrusca* α-*typica* d. *sinuata* Regel in Gartenfl. XXII. 204, t. 765, p. 1, (1873).—*Vitis Thunbergii* β *partita* Makino in Jour. Jap. Bot. I. 32 (1918).—*V. ficifolia* var. *Thunbergii* Nakai, Fl. Sylv. Kor. XII. 19, tab. 5 (1922), in part.

JAPAN: Buxen prov., K. Sakurai, August 17, 1910. KOREA. Quelpaert Island, common around Saishu on volcanic rocks, E. H. Wilson, No. 9371, October 28, 1917.

CULTIVATED SPECIMENS: Arnold Arboretum, September 7, 1921 (raised from seed of Wilson's No. 9371).

This variety differs from the type in the smaller, more deeply and usually 5-lobed leaves, with short and broad obtusish or rounded lobes

remotely and shallowly dentate or denticulate and much constricted below the middle by the wide rounded sinuses; on vigorous shoots the leaves are up to 8 cm. long, but on the flowering lateral branchlets they are usually only 3.5 to 5 or 6 cm. long. It has some resemblance to the Chinese *V. Thunbergii* var. *adstricta* (Hance) Gagnepain, but the leaves of that variety are more often 3-lobed and the lobes are acute or even acuminate. The rather small deeply divided leaves give to the plant a very graceful appearance and it is well worth cultivation as an ornamental vine.

Vitis Piasezkii Maxim. var. *Pagnuccii*, comb. nov.—*Vitis Pagnuccii* Romanet du Caillaud in Congress Geog. Toulouse (1884), ex Planchon in *Vigne Amér.* ix. 283 (1885).—Bailey, *Cycl. Am. Hort.* iv. 1956 (1902).—Schneider, *Ill. Handb. Laubholz.* ii. 302, fig. 206g-g¹ (1909).—Bean, *Trees & Shrubs Brit. Isles*, ii. 674 (1914).—*Ampelovitis* Carrière in *Rev. Hort.* 1888, 537, fig. 134.—*Ampelovitis Davidi* Carrière, l. c. 1889, 204 tab.—*Ampelopsis Davidii* Mottet in Nicholson & Mottet, *Dict. Prat. Hort.* i. 138 (1892).—*Ampelovitis Davidiana* Carr. ex Bailey, *Cycl. Am. Hort.* iv. 195b (1902), as synonym.—*Ampelopsis Davidiana* Mottet ex Bailey, l. c. (1902), as synonym.—*Vitis Davidiana* Hort. ex Bailey l. c. (1902), as synonym.

CHINA. Shensi: Ho-chen-hao, alt. 1300–1400 m., *A. David* (type locality, ex Planchon). Hancheng Hsien, W. Purdom, No. 372, 1910. Hupeh: north and south of Ichang, thickets, alt. 700–1600 m., *E. H. Wilson*, No. 215 (in part as to the fruiting specimen), September 1907. Honan: Hweihsien, Shansi, border, *J. Hers*, No. 721, June 19, 1919; Lushih, Hiung-eul-shan, alt. 1300 m., *J. Hers*, No. 868, October 9, 1919; Tsi-yuan Hsien, Tien-tan-shan, *J. Hers*, No. 1796, September 21, 1921.

CULTIVATED SPECIMENS: Vineyard T. V. Munson, Denison, Texas, *T. V. Munson*, August 18, 1890. Arnold Arboretum, No. 4565 (plant received from Vilmorin-Andrieux & Cie., Paris), August 23, 1906 and September 13, 1912 and October 10, 1908.

This variety differs from the type chiefly in the absence of the floccose tomentum on the underside of the fully grown leaves and on the young branchlets, otherwise I can find no difference; the variability in the shape of the leaves and the inflorescence and fruit are just the same. Extreme forms, those of the type with dense grayish or tawny floccose tomentum on the more strongly reticulate under side of the leaves and those of the variety with glaucescent under side quite glabrous at maturity except axillary tuft of hairs, look certainly different enough to be taken as distinct species, but intermediate forms exist, as Wilson's Nos. 126a and 248 and Her's Nos. 1214 and 1364, also Wilson's No. 215 referred to the variety is slightly pubescent on the veins and not as glabrous as the cultivated plant introduced from France. The typical form seems to be prevalent in the southwestern part of the range of the whole species and the variety in the northeastern part; among the numerous specimens before me from Hupeh only Wilson's No. 215 has glabrescent leaves, while three of the specimens from northern Honan belong to the variety and two to



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