NEW SPECIES, VARIETIES AND COMBINATIONS FROM
THE COLLECTIONS OF THE ARNOLD ARBORETUM

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Sequoiadendron giganteum (Lindl.) Buchholz f. **pendulum** (Carr.),
comb. nov.*Wellingtonia pendula* Carrière in Rev. Hort. 1870-71: 526 (Sept. 1871).*Wellingtonia gigantea pendula* [Otto in] Hamburg. Gart. u. Blumenzeit. 27: 573 (Dez. 1871).—Bellair in Rev. Hort. 1906: 394, fig. 157 (1906).*Sequoia gigantea* var. *pendula* Lavallée, Arb. Segrez. 271 (1877).—Rehder in Möller's Deutsch. Gärtn.-Zeit. 17: 133, fig. (1902).—Henry in Elwes & Henry, Trees Gt. Brit. Irel. 3: 700 (1908).—Roeding in Gard. Chron. ser. III. 78: 107, fig. 41 (1925).*Wellingtonia gigantea pendula vera* Anon. in Jour. For. Lond. 3: 260 (1879).—Henry in Elwes & Henry, Trees Gt. Brit. Irel. 3: 701, footnote (1908).*Sequoia gigantea pendula* Nicholson, Ill. Dict. 3: 422 (1887).*Sequoia Washingtoniana pendula* (Beissn.) Sudworth in Bull. U. S. Div. For. 14: 62 (Nomencl. Arb. Fl. U. S.) (1897).*Sequoia Wellingtonia* var. *pendula* Kent, Veitch's Man. Conif. ed. 2, 275 (1900).—M. L. Green in Kew Hand-list Conif. ed. 4, 70 (1938).*Sequoia gigantea Barroni pendula* Henry in Elwes & Henry, Trees Gt. Brit. Irel. 3: 701 (1908).

This distinct and striking form was first mentioned by Carrière in 1871, who saw a plant 1.30 m. tall with reflexed branches forming a compact cone. As stated by the writer (l. c.) it was found in a seed-bed by Lalande of Nantes and put on the market by Paillet of Chatenay-les-Sceaux near Paris.

The new combination made above is necessary if one accepts the generic separation proposed by Buchholz (in Am. Jour. Bot. 26: 536. 1939) of *Sequoia Wellingtonia* (Lindl.) Seem. (*S. gigantea* Dcne., not Endl.) and *S. sempervirens* Endl. which appears to be well founded, and in my opinion should be accepted.

The best tree of this form is, or was growing in the Arboretum de la Maulévrier, formerly M. Allard's arboretum, at Angers in France where I saw and photographed it in 1901. At that time, it was 18.5 m. tall and the trunk 80 cm. in girth; in 1907 it was measured by Mr. H. J. Elwes

(See Henry, l. c.) and was found to be 44 ft.¹ tall and around the branches at the base only 13 ft. in circumference. Similar pendulous forms have originated elsewhere and are listed as *Wellingtonia gigantea pendula vera* and *Sequoia gigantea Barroni pendula* (see above).

Besides this form, a number of other forms have been recorded from cultivation under various names, some of them apparently synonyms; the following named forms which appeared in horticultural literature are given under the combination under which they were first mentioned: *Gigantabies Wellingtoniana argentea*, *G. W. aurea*, *G. W. elegantissima* and *G. W. nobilissima* Nelson (1866), *Wellingtonia gigantea aureo-compacta* Carr. (1867), *W. g. flavescens* Beissn. (1884), *W. g. gracilis* Otto (1866), *W. g. pygmaea* Otto (1866), *W. g. stricta* SÉNÉCL. (1868), *W. g. variegata* Hort. ex Carr. (1867), *Sequoia gigantea columnaris* Schelle (1909), *S. g. var. crassifolia* Lav. (1877), *S. g. glauca* Otto (1860), *S. g. Holmesii* P. Sm. ex Beissn. (1891), *S. g. lutea* Beissn. (1891), *S. g. var. nana* Zederb. (1907), *S. g. var. pyramidalis* Lav. (1877), *S. g. pyramidata compacta* Nichols. (1900), *S. glauca pyramidalis compacta* Otin ex Chageraud (1889), *S. Washingtoniana glaucescens pyramidato-compacta* Sudw. (1897). I have seen none of these forms and many have probably disappeared from cultivation, or can now be found only in a few collections.

Betula platyphylla Sukatchev in Trav. Mus. Bot. Acad. Sci. St. Petersb. 8: 220, pl. 3 (1911).—Hara in Jour. Jap. Bot. 13: 384 (1937).

Betula alba L. subsp. 4. *latifolia* α. *Tauschii* Regel in Bull. Soc. Nat. Moscou, 38²: 399, t. 7, fig. 11–14 (1865); in DC. Prodr. 16²: 165 (1868); non *B. latifolia* Tausch.

Betula latifolia sensu Komarov in Act. Hort. Petrop. 22: 38 (Fl. Mansh. II) (1903), non Tausch.

Betula mandshurica (Reg.) Nakai in Bot. Mag. Tokyo, 29: 42 (1915).

Betula platyphylla Sukatchev is apparently the correct name for the group of birches classed by Winkler under Siebold's nomen nudum *B. japonica* which is untenable on account of the earlier homonym *B. japonica* Thunb., a synonym of *Alnus japonica* (Thunb.) Sieb. & Zucc. Early in 1938, when I took up Nakai's binomial *B. mandshurica* (Reg.) of 1915, neither Sukatchev's publication of 1911 nor that of Hara of 1937 was in our library, and I did not know of the combinations made by Hara until we received volume 13 of the Journal of Japanese Botany late in 1938.

¹The two measurements show a considerable discrepancy, the height being less in 1907 than in 1901; either one of the measurements was incorrect or the top of tree had died back which is not unlikely, since my original photograph shows dry branches at the very top, scarcely visible in the reproduction.

Typical *B. platyphylla* occurs according to Sukatchev in eastern Siberia from Transbaicalia and Yakutsk to the northern Amur province. It is near var. *japonica* from which it differs chiefly in the under surface of the truncate or broad-cuneate leaves and the petioles being quite glabrous and in the narrower wings of the fruit.

Of the following varieties enumerated in Jour. Arnold Arb. **19**: 72 (1938) under *B. mandshurica*, the first three have already been transferred by Hara to *B. platyphylla*, but for the last two, new combinations become necessary.

***Betula platyphylla* var. *japonica* (Miq.) Hara** in Jour. Jap. Bot. **13**: 384 (1937).

Betula mandshurica var. *japonica* (Miq.) Rehder in Jour. Arnold Arb. **19**: 72 (1938), which see for further citation of synonyms and literature.

***Betula platyphylla* var. *mandshurica* (Reg.) Hara**, op. cit. 385 (1937), which see for further citation of synonyms.

Betula mandshurica (Reg.) Nakai in Bot. Mag. Tokyo, **29**: 42 (1915).—
Rehder in Jour. Arnold Arb. **19**: 72 (1938).

***Betula platyphylla* var. *kamtschatica* (Reg.) Hara**, l. c. (1937).

Betula mandshurica var. *kamtschatica* (Reg.) Rehder, op. cit. 73 (1938), which see for further citation of literature.

***Betula platyphylla* var. *szechuanica* (Schneid.)**, comb. nov.

Betula japonica var. *szechuanica* Schneider in Sargent, Pl. Wilson. **3**: 454 (1917).

Betula mandshurica var. *szechuanica* (Schneid.) Rehder in Jour. Arnold Arb. **19**: 73 (1938), which see for citation of additional literature.

***Betula platyphylla* var. *Rockii* (Rehd.)**, comb. nov.

Betula japonica var. *Rockii* Rehder in op. cit. **9**: 25 (1928).

Betula mandshurica var. *Rockii* (Rehd.) Rehder in op. cit. **19**: 74 (1938).

This variety resembles in its smaller mostly broadly cuneate leaves *B. pendula* Roth, but in the latter they are generally more cuneate and usually rhombic in outline, not tending to become rounded at base as in *B. platyphylla* var. *Rockii* which further differs in having generally only 3–4 pairs of distinct veins (4 or 5 in *B. pendula*), in the thicker texture and grayish white under surface of the leaves, stouter and shorter petioles, in the narrower catkins about 6 mm. across, in the bracts with ascending lateral rounded lobes about as long as the middle lobe and in the wings about as wide or even narrower than the nutlet.

Berberis Thunbergii DC. f. **erecta**, forma nova.

Berberis thunbergii pluriflora erecta Anon. in *Horticulture*, **13**: 48, fig. (1935).—Cole Nursery Company, Truehedge Columnberry. 16 pp. ill. Painesville, Ohio. 1936.

A typo differt ramis stricte erectis columnam densam formantibus.

Growing in the Arnold Arboretum under nos. 485-32 and 859-36. Specimens of no. 485-32 in the herbarium, collected May 24, 1939.

This form was raised by M. H. Horvath of Mentor, Ohio, sometime before 1932 and distributed by the Cole Nursery Company, Painesville, Ohio. Plants were received from that nursery by the Arnold Arboretum in 1932, and are now about 1 m. tall and 0.6 m. in diameter forming dense bushes with the lateral branches fairly closely appressed to the stems.

Magnolia Proctoriana (*M. salicifolia* ♀ × *stellata*), hybr. nov.

Arbor ramulis gracilibus glabris, annotinis rubro-fuscis vel plus minusve obscure luteo-viridibus; gemmae floriferae dense longe pilosae, foliiferi satis sparse et breviter pilosae. Folia oblonga vel oblongo-obovata, subito breviter obtuse acuminata vel acutiuscula, rarius obtusa, basi cuneata vel late cuneata, 6-9 cm. longa et 2-4 cm. lata, subtus primo praesertim ad costam et venis sparse adpresse pilosa, mox glabra, reticulata, pallide viridia; petioli glabri 0.5-1 cm. longi. Flores praecoces; sepala 3, lineari-lanceolata, 2-2.5 cm. longa, albida; petala 6-13, erecto-patentia, oblanceolata 6-8 cm. longa et 1.5-2.5 cm. lata, alba, extus secus medium basin versus purpurascentia; gynaecium staminibus fere duplo longius; pedunculus brevissimus glaber vel parce pilosus. Fructus valde tortus carpellis paucis evolutis.

Cult. in Arnold Arboretum under no. 874-28 (raised from seed of *M. salicifolia* coll. on the estate of T. E. Proctor, Topsfield, Mass. in 1928), coll. May 7, June 8 and Aug. 11, 1939, *A. Rehder* (type in herb. Arnold Arboretum).

This *Magnolia* was raised from seed of *M. salicifolia* Maxim. from which it is distinguished at once by the more numerous petals (6-13), by the pubescent leaf-buds, by the leaves being generally broader about or above the middle, more narrowly cuneate and green beneath and by other characters. The number of petals, the pubescent leaf-buds and the shape of the leaves indicate the influence of *Magnolia stellata* (S. & Z.) Maxim. which blooms at the same time. From *M. stellata* it differs chiefly in the tree-like pyramidal habit with ascending slender branches, in the narrower smaller and more pointed leaves, in the presence of 3 sepals and in the lesser number (6-12) of broader and larger more

upright petals. It does not flower as profusely as *M. stellata*, but the flowers are more conspicuous than in *M. salicifolia* and it blooms as a smaller plant.

I take pleasure in naming this hybrid for Mr. T. E. Proctor of Topsfield, Mass., who started about 1900 an arboretum on his estate which still contains a large number of interesting trees and shrubs, though in later years little has been added to the original collection.

***Lindera Benzoin* (L.) Bl. f. *xanthocarpa* (G. S. Torrey), comb. nov.**

Benzoin aestivale Nees f. *xanthocarpum* G. S. Torrey in *Rhodora*, **16**: 91 (1914).

Lindera aestivalis (L.) Bl. f. *xanthocarpa* (G. S. Torrey) Rehder in *Jour. Arnold Arb.* **20**: 92 (1939).

When I published the combination cited above as a synonym, I unfortunately accepted the specific epithet generally used under the generic name *Benzoin*. A careful checking of the synonymy, however, showed that the two species proposed by Linnaeus, *Laurus aestivalis* and *L. Benzoin*, were never considered as representing one and the same species until Meissner in 1864 made *L. aestivalis* a variety of *Lindera Benzoin* Bl. All earlier authors had either considered the two Linnaean species as distinct as Blume did, or had based a new name or a new combination on only one of the two names without mentioning the other name as synonymous. Under the generic name *Benzoin* the specific epithet *aestivalis* had to be used to avoid making a tautonym.

The acceptance of *L. Benzoin* as the correct name for the species also makes necessary the following new combination:

***Lindera Benzoin* (L.) Bl. var. *pubescens* (Palm. & Steyermark.), comb. nov.**

Benzoin aestivale var. *pubescens* Palmer & Steyermark in *Ann. Mo. Bot. Gard.* **22**: 545 (Annot. Cat. Flow. Pl. Missouri) (1935).

According to Palmer & Steyermark this pubescent variety has been confused with *Lindera melissaefolia* (Walt.) Bl. which is a rare plant confined to the coastal plain and Piedmont region of the southeastern states and is easily distinguished by the rounded or subcordate base of the smaller leaves.

***Ribes diacanthum* Pallas, Reise, **3**: 722 (1776); Fl. Ross. **2**: 36, t. 66 (1788) "*diacantha*."**

Pallas considered *Ribes* as of feminine gender, as shown by other specific epithets in his *Flora rossica*. Lamarck used *Ribes* as neuter, (*Encycl. Méth.* **3**: 51. 1789), but nevertheless failed to change "*dia-*

cantha" to *diacanthum*; he either overlooked it or did not consider it necessary, since he enumerates the Latin names of species only as synonyms of the French names which take first place. Almost all later authors followed him, apparently without exception, though Ledebour (Fl. Ross. 2: 196. 1844) made an attempt to save the spelling "*diacantha*" by writing it with a capital letter, and thus made it a noun in apposition, and so did Index Kewensis. There is, however, no reason whatever to suppose that Pallas considered it anything else but an adjective and the name, therefore, should be spelled *Ribes diacanthum*; the adjective *diacanthus* to be treated like *macranthus*, *polyanthus*, as adjectives of the second declension of the regular type. On account of the almost universal use of the form "*diacantha*" under *Ribes*, I thought it advisable to give the reasons for the change to *Ribes diacanthum*.

Malus Melliana (Hand.-Mazz.), comb. nov.

Pirus Melliana Handel-Mazzetti in Anzeig. Akad. Wiss. Wien, 1923: 96 (Pl. Sin. Fortsetz. 19: 2); in Beih. Bot. Centrbl. 48, 2: 313, fig. 1² 1931) "*Pyrus*."

This species is closely related to *M. formosana* Kawak., but differs in the more remotely and finely serrulate leaves, in the slender pedicel of the fruit about 4 cm. long, and in the smaller fruit 1.5–2 cm. across and narrowed at the apex into a tube about 3 mm. long crowned by the lanceolate calyx-lobes. I have not seen the type of *Pyrus Melliana*, but a specimen collected by R. C. Ching (Wulsin Exp. no. 2327) Aug. 7, 1924, in the region of King Yunn in southern Chekiang (U. S. Nat. Herb.). This specimen agrees very well with Handel-Mazzetti's description and figure except that the fruit of Ching's specimen is produced at the apex into a distinct tube and the sepals are glabrous outside. Probably at least some of the specimens cited by Merrill in Lingnan Agricultural Rev. 4: 125 (1927) under *P. formosana* belong to this species which may turn out not to be specifically distinct from *Malus formosana*, though distinguishable as a well marked variety.

Prunus Sargentii Rehd. f. **columnaris**, forma nova.

A typo recedit ramis stricte erectis comam angustam formantibus.

This form was raised in 1914 from seed of typical *P. Sargentii* (no. 5777); it appeared in the same batch of seedlings in which $\times$ *P. Juddii* E. Anders., the hybrid with *P. yedoensis*, was found. The only tree is growing in the Arnold Arboretum under no. 22585; it is branching from near the base and is at present about 7 m. tall with a crown 2.5 m. in diameter. Specimens in the herbarium collected May 11, 1939.

× **Cytisus versicolor** Dipp. f. **Hillieri** (Hillier), comb. nov.

Cytisus Hillieri Hillier & Sons, Special Offer Trees Shrubs, p. 11 (1933): "A beautiful new chance hybrid with stout arching branches and large yellow flowers stained pale bronze passing to buff-pink. Doubtless the parents are *C. versicolor* and *C. hirsutus hirsutissimus*."

As *Cytisus versicolor* Dipp. is the name for the hybrids between *C. purpureus* Scop. and *C. hirsutus* L., the hybrid between *C. versicolor* and *C. hirsutus* var. *hirsutissimus* (K. Koch) Boiss. falls within the concept of × *C. versicolor* Dipp.

Indigofera incarnata (Willd.) Nakai f. **alba** (Sarg.), comb. nov.

Indigofera decora alba hort. ex Dieck, Hauptkat. Zöschen, 43 (1885).—Sargent in Gard. & For. 7: 376, fig. 61 (1894).

Indigofera decora var. *alba* Bailey, Cycl. Am. Hort. 2: 804 (1900); Stand. Cycl. Hort. 3: 1645, fig. (1915).—Rehder, Man. Cult. Trees Shrubs 500 (1927).

A white-flowered form of *I. incarnata* which typically has pink flowers. The plant growing in this Arboretum was obtained in 1885 from Veitch & Sons who probably received it from Japan through their collector, Charles Maries about 1877. It was collected wild in Japan by E. H. Wilson, no. 6986, June 10, 1914, Hondo, Otakegawa, alt. 800 m., road-sides.

Rhus aromatica Ait. var. **illinoensis** (Greene), comb. nov.

Schmaltzia illinoensis Greene, Leaflets Bot. Observ. 1: 131 (1905).

Rhus canadensis var. *illinoensis* Fernald in Rhodora, 10: 52 (1908).

Rhus illinoensis Ashe in Bull. Torr. Bot. Club, 55: 465 (1928).

This variety differs from the type of *R. aromatica* chiefly in its upright habit and in the leaflets being obtuse or rounded at the apex with few rounded teeth and pubescent above, more densely so beneath. Since *R. canadensis* Marsh. is a later homonym of *R. canadensis* Mill. which is a synonym of *R. glabra* L., Aiton's name has to be taken up for this species and new combinations for this and the following variety become necessary.

Rhus aromatica Ait. var. **serotina** (Greene), comb. nov.

Schmaltzia serotina Greene, Leaflets Bot. Observ. 1: 131 (1905).

Rhus canadensis var. *serotina* (Greene) Palmer & Steyermark in Ann. Mo. Bot. Gard. 22: 591 (Ann. Cat. Pl. Missouri) (1935); in Rhodora, 40: 133 (1938).

Rhus trilobata var. *serotina* (Greene) Barkley in Ann. Mo. Bot. Gard. 24: 406 (1937).

This variety differs from the type chiefly in its upright habit, in the obtuse or acutish leaflets with few obtuse teeth, in the flowers appearing

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with the leaves, and in the larger fruit. It is somewhat intermediate between typical *R. aromatica* and *R. trilobata* Nutt., but differs from the latter in the larger and thinner leaves, the terminal leaflet with few large teeth, not 3-lobed, the lateral ones broad-cuneate or rounded at base and in the larger densely pilose fruit.

***Rhus radicans* L. var. *Rydbergii* (Small), comb. nov.**

Rhus Rydbergii Small in Mem. New York Bot. Gard. **1**: 268 (1900).

Toxicodendron Rydbergii (Small) Greene, Leaflets Bot. Observ. **1**: 117 (1905).

Rhus Toxicodendron Rydbergii Garret, Spring Fl. Wasatch Reg. ed. 2, 69 (1911).

This variety differs from the type in being always an upright shrub, in the sinuate-dentate thickish leaflets, glabrous or pubescent on the veins beneath and in its larger flowers and fruits. Excellent photographs at the Gray Herbarium of the Gronovian types to which Prof. M. L. Fernald drew my attention, show clearly that the northern usually climbing poison-ivy is *R. radicans* L., while the name *R. Toxicodendron* L. applies to the southern upright species with lobed pubescent leaves usually broad-cuneate at base and is the oldest name for *R. quercifolia* (Michx.) Robins. & Fernald; it is to these authors that the combination *R. quercifolia* should be credited, for *R. quercifolia* Steudel was published only as a synonym and is therefore not valid.

***Rhus chinensis* Mill. var. *Roxburghii* (DC.), comb. nov.**

Rhus semialata γ. *Roxburghii* De Candolle, Prodr. **2**: 67 (1825).

Rhus javanica var. *Roxburghii* Rehder & Wilson in Sargent, Pl. Wilson. **2**: 179 (1914), which see for additional synonyms.

As pointed out by Merrill in Trans. Am. Phil. Soc. **24**, **1**: 244 (Comm. Lour. Fl. Cochinch.) (1935) the oldest name for the plant known as *Rh. semialata* Murr. and *Rh. javanica* Thunb., non Mill., is *Rh. chinensis* Mill.; therefore, the above new combination becomes necessary for this variety which differs from the type chiefly in the upper part of the leaf-rachis being not or only slightly winged.

***Acer Mono* Maxim. f. *ambiguum* (Pax), comb. nov.**

Acer ambiguum Dippel, Laubholzk. **2**: 457, fig. 218 (1892), non Heer (1878).

Acer pictum var. *ambiguum* Pax in Bot. Jahrb. **16**: 401 (1892).—Schneider, Ill. Handb. Laubholzk. **2**: 225, fig. 150A f. (1907).

Acer Dippelii Schwerin in Gartenfl. **42**: 460 (1893).

Acer pictum var. *Paxii* Schwerin l. c. 458 (1893).—Pax in Pflanzenreich, (Heft 8) IV, **163**: 47 (1902).

Acer pictum var. *Paxii* 4. *Eu-Paxii* Schwerin, l. c. 458 (1893).

Acer Mono var. *Paxii* Honda in Bot. Mag. Tokyo, **45**: 43 (1931).—Hara in Bot. Mag. Tokyo, **50**: 248 (1936).

The material referable to this form of *A. Mono* is all sterile and quite variable in the amount of pubescence; in some specimens the lower leaves are short-pilose on the veins beneath and sparingly so on the surface, while the leaves at the end of the same branch are quite glabrous except axillary beards at the base. I can see no difference between the specimens supposed to represent *A. ambiguum* and *A. pictum* var. *Paxii*; also Schneider (l. c.) enumerates both under *A. pictum* var. *ambiguum* Pax. From the Japanese *A. Mono* var. *velutinum* Nakai it differs in the glabrous branchlets.

The epithet *ambiguum*, though based on *A. ambiguum* Dipp. which is invalidated by the earlier homonym of Heer, must stand as the oldest subdivisional name, since at the time Pax made the transfer, no older name was available and he was justified to take over an epithet though it was illegitimate in its previous combination. The variegated lusus of this form would then have to bear the name **A. Mono** [f. *ambiguum*] l. **albo-maculatum** (Dipp.), comb. nov. (*A. pictum* a. *albo-maculatum* Dippel, Handb. Laubholzk. **2**: 455 [1892].—*A. pictum* var. *Paxii* 5. *albo-maculatum* Schwerin in Gartenfl. **42**: 458 [1893].—*A. pictum* var. *Paxii* f. *albo-maculatum* Pax in Pflanzenreich, (Heft 8) IV. **163**: 47 [1902]). This variation is represented in the Arnold Arboretum herbarium by a sterile branch collected by Schwerin in 1903 and differs in the pilose under side of the leaves from f. *marmocratum* (Nichols.) Rehd. which is quite glabrous; the latter is represented in this herbarium by a specimen collected by Nicholson at Kew.

***Ilex crenata* f. *Helleri*, forma nova.**

Ilex Helleri Verkade's Nurseries [Cat. 1936] p. 13.—Craig, Descr. Price-list, 1937: 31.

Ilex crenata Helleri, Fleming in F. & F. Nurseries, 1937: 17; nom. nud.—R. Wyman in Bay State Nurs. Price-list, 1937, p. 21; nom. nud.

A forma typica differt statura compacta humili, foliis congestis ellipticis 8–15 mm. longis obtusiusculis mucronulatis utrinque dentibus 3–4 minutis.

This form resembles in its small leaves *I. crenata* var. *microphylla* Maxim. and in its low dense habit *I. crenata* var. *nummularia* Yatabe but differs from the latter in its elliptic leaves, broad-ovate to orbicular in var. *nummularia* which is of still more depressed and crowded habit. Mr. E. Morell, Peace Dale, R. I., informed me that he has plants eight years old which measure more than $\frac{1}{2}$ m. across and 20 cm. in height.

It was found in 1925 among seedlings of *Ilex crenata* by Mr. Joseph Heller, manager of the Newport Nurseries, Newport, Rhode Island.

Euonymus alata* f. *compacta (Adams), comb. nov.

Euonymus alatus compacta J. W. Adams Nursery Co. Price-list 1928: 19; 1931: 31, fig.; Bay State Nurs. [Cat.] 1929: 24.

Euonymus alatus nana Bay State Nurs. [Cat.] Trees Hardy Pl. [1928], p. 24.

A slow growing compact form forming a subglobose bush with more or less spreading branches with the corky wings absent or only slightly developed.

Koelreuteria paniculata* Laxm. var. *apiculata (Rehd. & Wils.), var. nov.

Koelreuteria apiculata Rehder & Wilson in Sargent, Pl. Wilson. 2: 191 (1914).—Osborn in Gard. Chron. ser. 3, 78: 307, fig. 123 (1925).—Bean, Trees Shrubs Brit. Isls. 3: 200 (1933).

Comparing a large series of specimens, the characters upon which *K. apiculata* was based appear to be variable, and as intermediate forms connect this species with typical *K. paniculata*, it seems better to consider it only a variety of *K. paniculata*, distinguished by the usually bipinnate leaves, the suborbicular to broad-oval sepals with erose or lacerated margin and by the fruit abruptly contracted into a mucro at the rounded or obtuse apex. It seems restricted to central and western China.

Parthenocissus inserta* (Kern.) Fritsch f. *macrophylla (Lauche), comb. nov.

Ampelopsis quinquefolia var. *macrophylla* Lavallée, Arb. Segrez, 34 (1877), nom. nud.

Vitis quinquefolia var. *macrophylla* Lauche, Deutsche Dendr. 470 (1880).

Ampelopsis quinquefolia b. *latifolia* Dippel, Handb. Laubholzk. 2: 574 (1892).

Vitis quinquefolia var. *major* [Nicholson in] Kew Hand-list Trees Shrubs, 1: 79 (1894), nom. nud.

Parthenocissus quinquefolia c. *latifolia* Graebner in Gartenfl. 49: 251 (1900).

Parthenocissus dumetorum var. *macrophylla* Rehder in Sargent, Trees Shrubs, 1: 188 (1905), errore sub *P. quinquefolia*.

Parthenocissus vitacea Hitchc. var. *macrophylla* Rehder in Mitteil. Deutsch. Dendr. Ges. 14: 135 (1905); in Bailey, Standard Cycl. Am. Hort. 5: 2478 (1916).

Psedera vitacea Greene f. *macrophylla* Rehder in Rhodora, 10: 28 (1908).

Vitis vitacea (Hitchc.) Bean var. *macrophylla* Bean, Trees Shrubs Brit. Isls. 2: 679 (1914).

This form differs from the type only in the larger leaflets which are up to 20 cm. long and 10–15 cm. wide. Though the epithet *macrophylla* has figured already under six different binomials, new combinations for this and the two following subdivisions become necessary, since an older specific epithet has come to light which had until recently been overlooked, namely “inserta.”¹

***Parthenocissus inserta* f. *dubia* (Rehd.), comb. nov.**

Parthenocissus hirsuta Graebner in Gartenfl. **49**: 251 (1900), synonym. excl., non *P. quinquefolia* var. *hirsuta* Planchon (1887).

Parthenocissus vitacea var. *dubia* Rehder in Mitteil. Deutsch. Dendr. Ges. **14**: 135 (1905).

Psedera vitacea var. *dubia* Rehder in Rhodora, **10**: 28 (1908).

This form differs from typical *P. inserta* in the young branchlets and the under side of the leaves being sparsely pubescent. No spontaneous specimens have been found in the herbaria consulted.

***Parthenocissus inserta* var. *laciniata* (Planch.), comb. nov.**

Parthenocissus quinquefolia δ. *laciniata* Planchon in DC. Monog. Phan. **5**: 449 (1887).

Ampelopsis quinquefolia var. *laciniata* A. Gray, fide Meehan ex Planchon, l. c. (1887), pro synonym. praeced.

Parthenocissus quinquefolia B. *heptaphylla* sensu Graebner in Gartenfl. **49**: 251 (1900), non *Ampelopsis heptaphylla* Buckl.

Parthenocissus quinquefolia D. *laciniata* Graebner, l. c. (1900).

Parthenocissus quinquefolia E. *serrata* (Spaeth, Cat.) Graebner, l. c. (1900).

Parthenocissus dumetorum var. *laciniata* Rehder in Sargent, Trees & Shrubs, **1**: 188 (1905).

Psedera laciniata Greene, Leaf. Bot. Observ. **1**: 220 (1906).

Psedera vitacea var. *laciniata* Rehder in Rhodora, **10**: 28 (1908).

Vitis vitacea var. *laciniata* Bean, Trees Shrubs Brit. Isl. **2**: 679 (1914).

This variety differs from typical *P. inserta* in the narrower and incisely serrate usually pale yellowish green leaflets. In its typical form it is restricted to the Rocky Mountain region and occurs in Wyoming, Colorado, Utah, Arizona and New Mexico. Several of the synonyms,

¹***Parthenocissus inserta*** (Kerner) Fritsch, Exkursionsfl. Oester. ed. 3, 789 (1922). *Vitis* (*Ampelopsis*) *inserta* Kerner, Pflanzenleben, **1**: 658, fig. (1887); Nat. Hist. Pl. (trans. by Oliver) **1**: 699, fig. 166, 1 (1895).

Parthenocissus vitacea Hitchcock, Key Spring Fl. Manhattan, 26 (1894).

Parthenocissus dumetorum (Focke) Rehder in Sargent, Trees & Shrubs, **1**: 187, t. 89 (1905).

Psedera vitacea Greene, Leaf. Bot. Obs. **1**: 220 (1906).

Vitis vitacea Bean, Trees Shrubs Brit. Isl. **2**: 679 (1914).

Parthenocissus inserens = *inserta* (p. 1087) Hayek, Prodr. Fl. Pen. Balcan, **1**: 617, 1087 (1925), sphalmate.

particularly those described by Graebner, are based on cultivated forms and are more or less intermediate between the variety and the typical species.

Here may be mentioned that *P. heptaphylla* (Buckl.) Small (1903) though based on a later homonym, *Ampelopsis heptaphylla* Buckl. (1861), not Roemer & Schultes (1819), must nevertheless be accepted as a valid name, since at the time Small made the transfer, no older specific epithet was available and Small could use an illegitimate specific epithet which is permissible according to article 69 of the Rules with the provision that the name is to be considered a new name and not a transfer; the name, therefore, should be cited as *P. heptaphylla* Small. The combination *P. texana* Rehd. based on *Vitis hederacea* var. *texana* Buckl. ex Durand (1862) was not made until two years later. *Ampelopsis heptaphylla* Roem. & Schult. based on *Vitis heptaphylla* L. f. is not a *Vitis* but probably an *Araliaceae*.

***Tilia europaea* L. f. *tortuosa* (Bean), forma nova.**

Tilia platyphyllos var. *tortuosa* Bean in Kew Hand-list Trees Shrubs, ed. 2, 71 (1902) nom. nud.; Trees Shrubs Brit. Isles, 2: 596 (1914).

This form with twisted and curled branches was first mentioned in Gard. Chron. ser. 3, 4: 708 (1888) as "Lime with contorted boughs" raised by Mr. G. Swailes, and shown at the December meeting of the Royal Horticultural Society. The Arnold Arboretum received a plant from Kew in 1910, of which specimens collected in 1918 and 1922 are in this herbarium. The specimens show that the plant does not belong to *T. platyphyllos* Scop., because the leaves are perfectly glabrous except axillary tufts of hairs on the green under side, and in this respect agree with *T. europaea* L. (*T. vulgaris* Hayne).

Generally the name *Tilia vulgaris* Hayne has been used for this linden, but Linnaeus considered this linden, as the synonymy clearly shows, the type of his *T. europaea*, enumerating the other plants representing *T. platyphyllos* and *T. cordata*, as varieties under β to ζ . The name *T. vulgaris* Hayne of 1813 could be used only after *T. europaea* L. and *T. officinarum* Crantz (Stirp. Austr. 2: 61. 1762) had been proposed and accepted as Nomina ambigua. As there does not seem to be any strong reason for making these names Nomina ambigua, the name *T. europaea* should be used for the plant which Linnaeus considered the type. By those authors who split the Linnaean concept into two or more species, the name *T. europaea*, if used at all, has been applied to the species corresponding to *T. vulgaris* Hayne, which is usually considered a spontaneous hybrid between *T. platyphyllos* and *T. cordata*.

***Tilia americana* L. f. *dentata* (Kirchn.), comb. nov.**

Tilia longifolia dentata Hort. ex Kirchner in Petzold & Kirchner, Arb. Muscav. 160 (1864).

Tilia nigra 2b. *incisa* Kuntze, Taschenfl. Leipz. 210 (1867).

Tilia americana megalodonta, V. Engler, Monog. Tilia, 139 (1909).

Tilia glabra f. *dentata* Rehder in Jour. Arnold Arb. 7: 32 (1926).

This form differs from the typical form chiefly in its coarsely and sharply serrate leaves with very unequal teeth, the larger ones triangular and often with a small tooth near the base.

To the northern linden with glabrous leaves, the name *Tilia americana* L. has been generally applied, and it seems best to retain this name for the species later described as *T. glabra* Vent. though possibly Linnaeus may have included *T. neglecta* Spach in the conception of his species.

***Tilia americana* L. f. *fastigiata* (Slavin), comb. nov.**

Tilia glabra Vent. f. *fastigiata* Slavin in Am. Midl. Naturalist, 12: 224 (1931).

This form differs from typical *T. americana* in its dense upright branches forming a narrow pyramidal tree. The original tree is described as 8.6 m. tall and 3 m. wide.

× *Actinidia Fairchildii* (*A. arguta* ♀ × *A. chinensis*), nom. nov.

Actinidia arguta × *chinensis* Fairchild in Jour. Hered. 18: 58, fig. 7 (1927).

Frutex scandens, ramulis initio villosis, medulla lamellosa. Folia ovalia vel late obovata vel suborbicularia, 4.5–8 cm. longa, apice rotundata vel fere truncata et subito brevissime acuminulata vel tantum mucronata, interdum breviter acuminata, basi subcordata vel truncata, setoso-ciliata, supra glabra vel fere glabra, subtus ad costam et venas satis dense, in facie sparsissime villosa, petiolo villosa, 2–7 cm. longo; folia in planta juvenili ovata vel anguste ovata, acuminata, basi cordata vel subcordata. Flores masculi (tantum visi) in cymis paucifloris tomentosis 2 cm. diam., flavido-albi, sepalis tomentosis, antheris flavidis, rudimento ovarii parvo rufo-villoso.

Cult. in Washington, D. C., in hort. C. F. Swingle, coll. May 20, 1939, *C. F. Swingle* (cutting from an original plant raised by D. Fairchild); in Arnold Arb. sub no. 18215 (plant received from Dr. Fairchild in 1924), coll. *A. Rehder*, Sept. 18, 1925.

This hybrid between *Actinidia arguta* (S. & Z.) Miq. and *A. chinensis* Planch. is easily distinguished from the former by the broad, often nearly suborbicular leaves, abruptly acuminulate, densely pubescent on the veins beneath, and sparsely so between the veins, by the tomentose

inflorescence and sepals and by the yellow anthers; from *A. chinensis* it differs in the smaller and narrower leaves, usually rounded and abruptly acuminate at the apex, only sparingly pubescent between the veins beneath, and in the smaller flowers. The pistillate flowers and the fruit I have not yet seen; they probably will present additional intermediate characters. It was chiefly for the fruit which is large and edible in *A. chinensis* that Dr. Fairchild raised this hybrid in the expectation that it might be considerably hardier than the tender *A. chinensis* and would produce good edible fruit.

I take pleasure in naming this hybrid in honor of its raiser, Dr. David Fairchild who has successfully introduced to this country many useful and ornamental plants which he collected in his travels over a large part of the world, as related in his delightful book "The world was my garden."

***Hypericum Dyeri*, nom. nov.**

Hypericum lysimachioides Wallich, Num. list. no. 4877 (1831), nom. nud.

Hypericum lysimachioides Wallich ex Dyer in Hooker f., Fl. Brit. Ind. 1: 254 (1874), non Boiss. & Noe (1853).

Hypericum lysimachioides Wall. being a nomen nudum does not invalidate *H. lysimachioides* Boissier & Noe in Boissier, Diagn. II, 1: 106 (1853) and Boissier should not have changed the name to *H. callianthum* in his Fl. Or. 1: 800 (1867), because of Wallich's name. The Himalayan *Hypericum lysimachioides*, therefore, has to receive a new name and *H. lysimachioides* Boiss. & Noe remains the valid name for the Kurdistanian species called by Boissier and by all later authors *H. callianthum*.

***Helianthemum grandiflorum* (Scop.) Lam. var. *obscurum* Pers., comb. nov.**

Cistus hirsutus Thuillier, Fl. Paris, 266 (1799), non Lamarck (1790).

Helianthemum obscurum Persoon, Syn. 2: 779 (1807).

Cistus ovatus Visiani, Fragm. Fl. Ital. 1: 6, t. 8, fig. 2 (1808).

Helianthemum hirsutum Mérat, Nouv. Fl. Envir. Paris, 204 (1812).

Helianthemum ovatum Duval in DC. Prodr. 1: 280 (1824).

Helianthemum vulgare β. *obscurum* Wahlenberg, Fl. Suec. 1: 332 (1824).

Helianthemum vulgare β. *hirsutum* Koch, Syn. Fl. Germ. 81 (1837).

Helianthemum Chamaecistus subsp. *barbatum* (Lam.) Gross. var. α. *hirsutum* Grosser in Engler, Pflanzenr. (Heft 14) IV. 193: 82 (1903), which see for additional literature.

Helianthemum nummularium (L.) var. *obscurum* Schneider, Ill. Handb. Laubholzk. 2: 351 (1909).—Rehder, Man. Cult. Trees Shrubs, 637 (1927).

This variety differs from the type chiefly in the narrower leaves, generally elliptic-lanceolate to linear-lanceolate, hirsute and pilose on both sides, and in the smaller flowers with the sepals hirsute and villous.

In an earlier account of the genus (Man. Cult. Trees Shrubs, 637. 1927) I had referred *H. grandiflorum* and other related forms to *H. nummularium* (L.) Mill. as varieties following Grosser who under the name *H. Chamaecistus* Mill. had united [in Engler Pflanzenr. (Heft 14) IV. 193: 82. 1903] into one species the plants with leaves grayish tomentose beneath and those with the leaves pilose to nearly glabrous and green on both surfaces as belonging to one species. It seems more natural, however, to divide this polymorphous group at least into two species, *H. nummularium* (L.) Mill. and *H. grandiflorum* (Scop.) Lam., as Janchen did in 1908 (in Oester. Bot. Zeitschr. 58: 429–435), though I am not inclined to follow him in his later arrangement of this group (in Engler & Prantl, Nat. Pflanzenfam. ed. 2, 21: 309. 1925) where he distinguishes *H. nummularium* (L.) Mill., *H. tomentosum* (Scop.) Spreng., *H. ovatum* (Viv.) Dun., *H. grandiflorum* (Scop.) Lam. and *H. nitidum* Clem., of which the three last species are united here with *H. grandiflorum* as the oldest name.

***Helianthemum grandiflorum* f. *cupreum* (Sweet), comb. nov.**

Helianthemum hyssopifolium β. *cupreum* Sweet, Cist. 58, t. (1827).

Helianthemum Chamaecistus var. ζ. *cupreum* (Sweet) Grosser in Engler, Pflanzenr. (Heft 14) IV. 193: 84 (1903).

Helianthemum nummularium var. e. *cupreum* Schneider, Ill. Handb. Laubholzk. 2: 352 (1909).

This garden form differs in its copper-colored flowers and lustrous leaves sparingly pilose above.

***Helianthemum grandiflorum* f. *multiplex* (Sweet), comb. nov.**

Helianthemum hyssopifolium γ. *multiplex* Sweet, Cist. 72, t. (1828).

Helianthemum nummularium var. *cupreum* f. *cupreoplana* Schneider, Ill. Handb. Laubholzk. 2: 352 (1909).

A double-flowered form of the preceding.

***Helianthemum grandiflorum* var. *glabrum* (Koch), comb. nov.**

Cistus serpyllifolius Crantz. Stirp. Austr. 2: 101, t. 6, fig. 3 (1769).

Helianthemum vulgare var. *glabrum* Koch, Syn. Fl. Germ. 81 (1837).

Helianthemum nitidum Clementi in Atti Terz. Riun. Sci. Ital. 517 (1841).—Janchen in Engler & Prantl, Nat. Pflanzenfam. ed. 2, 21: 309 (1925).

Helianthemum vulgare α. *glabrescens* Neilreich, Fl. Niederöstr. 763 (1866).

Helianthemum glabrum Kerner, Sched. Fl. Exsicc. Austr.-hung. 3: 72 (1883).—Beck, Fl. Niederöstr. 1: 527 (1890).

Helianthemum Chamaecistus subsp. 1. *barbatum* (Lam.) Gross. var. *β. serpyllifolium* (Crantz) Grosser in Engler, Pflanzenr. (Heft 14) IV. 193: 82 (1903).

Helianthemum nummularium var. b. *glabrum* Schneider, Ill. Handb. Laubholzk. 2: 351 (1909).

This variety differs from the type in the leaves being glabrous or pilose only on the margin and midrib beneath.

***Aralia elata* f. *pyramidalis* (Bean), comb. nov.**

Aralia chinensis var. *pyramidalis* Hort. in Kew Hand-list Trees Shrubs ed. 2, 399 (1902) nom. nud.—Bean, Trees Shrubs Brit. Isles, 1: 197 (1914).

Aralia chinensis fastigiata Skeels & Van Eseltine in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. 50: 64, no. 44378 (1922), nom. nud.

Aralia elata f. *fastigiata* Rehder in Jour. Arnold Arb. 7: 243 (1926).

When I published the combination *A. elata* f. *fastigiata*, I had overlooked the fact that Bean had already published in 1914 what appears to be the same form as *A. chinensis* var. *pyramidalis* which makes necessary the new combination proposed above.

***Rhododendron catawbiense* Michx. f. *tomopetalum*, forma nova.**

A typo recedit corolla ad trientem inferiorem vel interdum fere ad basim in lobos oblongo-lanceolatos utrinque dentibus duobus instructos raro integros partita.

Kelsey-Highlands Nursery, East Boxford, Mass., shrub collected in North Carolina; specimen in Herb. Arnold Arb., coll. by Harlan P. Kelsey, June 14, 1937.

This interesting form with a deeply dissected corolla is comparable to *R. linearifolium* Sieb. & Zucc. and *R. indicum* f. *laciniatum* Wils. and to *Kalmia latifolia* f. *polypetala* (Nichols.) Rehd. As far as I know, it is the first case of this type of variation in the subgen. *Eurhododendron*. The original plant was found in a collection of plants of *R. catawbiense* made in North Carolina for the Kelsey-Highlands Nursery.

***Rhododendron concinnum* Hemsl. var. *lepidanthum* (Rehd. & Wils.), comb. nov.**

Rhododendron yanthinum Franch. var. *lepidanthum* Rehder & Wilson in Sargent, Pl. Wilson. 1: 519 (1913).

Rhododendron pseudoyanthinum Balfour f. ex Hutchinson in Spec. Rhodod. 783 (1930).

This variety differs from the type chiefly in its larger and broader

leaves about 6–7.5 cm. long and 2.5–3 cm. wide and in the larger and dark purple corolla more densely scaly and villous outside. *Rhododendron concinnum* is a very variable species and it seems better to treat the plant in question as a variety of this species, than to separate it as a distinct species on unstable characters.

× ***Rhododendron pennsylvanicum*** (*R. atlanticum* × *nudiflorum*), (Gable) Rehder, comb. nov.

Azalea pennsylvanica Gable (*A. atlantica* × *nudiflora*), Price-list Orn. Trees Shrubs, Spring 1930, p. [10] nom. nud.—Harkness in Nat. Hort. Mag. 11: 55 (1932), nom. nud.

Inter *Rhododendron atlanticum* (Ashe) Rehd. et *R. nudiflorum* (L.) Torr. medium tenens; a priore recedit foliis ellipticis, pedicellis strigosis eglandulosis, corolla extus dense setoso-pilosa pilis eglandulosis vel sparsissime glanduliferis vestita, sine tomento villosa; a posteriore differt foliis subtus glaucis, costa media sparse strigosa et margine ciliata exceptis omnino glabris; corolla tomento villosulo destituta, lobis extus ad costam mediam manifeste et satis dense setoso-pilosis.

PENNSYLVANIA: moist woods, Stewartstown, *Bijhower & Kobuski* 95, May 27, 1928 (topotype); Arnold Arboretum, cult. under no. 291–35 (plant received from J. B. Gable in 1935).

Daboecia cantabrica (L.) K. Koch f. ***pallida*** (Bosse), comb. nov.

Menziesia polifolia Juss. var. *pallida* H. Angl. ex Bosse, Vollständ. Handb. Blumengärt. 2: 521 (1841).

Boretta cantabrica Ktze. var. *rosea* Koopmann in Gartenfl. 47: 258 (1898).

Daboecia cantabrica K. Koch var. *rosea* Rehder in Bailey, Cycl. Am. Hort. 1: 443 (1900).

A form with pale rose flowers.

Lyonia lucida (Lam.) K. Koch f. ***rubra*** (Lodd.), comb. nov.

Andromeda coriacea rubra Loddiges, Bot. Cab. 7: 672 (1822).

Lyonia marginata D. Don var. *rubra* Lodd. ex Loudon, Arb. Frut. Brit. 2: 1110, fig. 901 (1838).

Leucothoë coriacea DC. *flore rubro* Koch, Hort. Dendr. 334 (1853).

Pieris nitida Benth. & Hook. var. *rubra* Rehder in Bailey, Cycl. Am. Hort. 3: 1336 (1901).

Pieris lucida Rehd. var. *rubra* Rehder in Bailey, Stand. Cycl. Hort. 5: 2622 (1916).

Xolisma lucida Rehd. var. *rubra* Rehder, Man. Cult. Trees Shrubs, 712 (1927).

This form differs in the deep pink or nearly red flowers from the type which has white to pale pink flowers.

Lyonia lucida (Lam.) K. Koch is based on *Andromeda lucida* Lamarck, Encycl. Méth. 1: 157 (1783). By Schneider (Ill. Handb. Laubholzk. 1: 530. 1911) this has been considered a later homonym of *A. lucida* Jacquin which he assumed had been published in 1781, because a plate with a very brief description appeared in Jacquin, Icones Plantarum Rariorum, vol. 1, dated 1781–1786. Since in that volume his Collectanea Botanica vol. 1 published in 1786 is cited, while there is neither in his Miscellanea Austriaca, vol. 2 (1781) nor in his Collectanea vol. 1 (1786) any reference to his Icones except in the preface without definite statement whether the work was already published, we may safely assume that the Icones were issued at approximately the same time with his Collectanea vol. 1, if not later, though the plates may have been prepared between 1781 and 1786, as indicated by the fact that plate [79] bears besides the name *Andromeda lucida* the reference “Jacq. Misc. vol. 3”; this is explained by Jacquin in the preface to his Collectanea vol. 1, where he states that vol. 1 of Collectanea was first intended to be published as Miscellanea vol. 3. Most of the other references are to Collectanea vol. 1. The twenty pages of text in vol. 1 of the Icones do not show any sign of having been issued in parts, and moreover, he mentions in the preface issued with the text the Collectanea which were started in 1786, stating that he will continue to give there, as in the Miscellanea, fuller descriptions of the plants figured in the Icones. Therefore the citation of *A. lucida* should read Jacquin, Coll. Bot. 1: 95 (1786); Icon. Pl. Rar. 1 (1781–86): 8, no. 79, t. (1786), which makes *A. lucida* Jacq. a later homonym of *A. lucida* Lam. and *Lyonia lucida* (Lam.) K. Koch the correct name under *Lyonia*, while the correct name for *A. lucida* Jacq. is *Leucothoë populifolia* (Lam.) Dipp.

***Vaccinium angustifolium* Ait. var. *laevifolium* House f. *leucocarpum* (Deane), comb. nov.**

Vaccinium pennsylvanicum Lam. f. *leucocarpum* Deane in Rhodora, 3: 264 (1901).

As *V. pennsylvanicum* Lam. is a later homonym of *V. pennsylvanicum* Mill., this and the following new combinations become necessary, other combinations having already been made by House (in New York State Mus. Bull. 343–4: 61. 1923).

***Vaccinium angustifolium* Ait. var. *nigrum* (Wood), comb. nov.**

Vaccinium Pennsylvanicum β . *nigrum* Wood, Class-book Bot. ed. 1861, 483 (1861).

Vaccinium nigrum (Wood) Britton in Mem. Torrey Bot. Club, 5: 252 (1894); Ill. Fl. Northeast. U. S. 2: 379, fig. (1897).

This variety differs from the type chiefly in the firmer leaves glaucous beneath and in the black fruit devoid of bloom. Britton elevated it to specific rank, and also Dr. W. H. Camp (in litt.) is inclined to separate it specifically, but it seems too close to *V. angustifolium* var. *laevifolium* to be considered a distinct species.

Syringa Wolffi Schneid. var. **hirsuta** (Schneid.), var. nov.

Syringa villosa var. *hirsuta* Schneider in Rep. Spec. Nov. 9: 81 (1910).—

Lingelsheim in Pflanzenreich, IV. 243 (Heft. 72): 80 (1920).

Syringa hirsuta (Schneid.) Nakai in Bot. Mag. Tokyo, 32: 132 (1918).

Syringa formosissima Nakai var. *hirsuta* Nakai, Fl. Sylv. Kor. 10: 56 (1921).

This variety differs from the type in the pilose branchlets, in the under side of the leaves being more or less densely pubescent over the whole surface and in the densely pilose inflorescence and calyx. It is represented in this herbarium by the following specimens:

NORTH KOREA. N. K a n k y o p r o v. : Sha-u-rei, Kanpokdo, T. Ishidoya, June 5, 1918; Shagurei to Mozan, common, E. H. Wilson 8925, Aug. 16, 1917. N. H e i a n p r o v. : Pukchin & Takkori, alt. 830–1000 m., E. H. Wilson 8687, June 22, 1917.

NORTHERN MANCHURIA. K i r i n p r o v. : Koalingtzu, P. H. Dorsett 5989, June 21, 1926; Goalingtze Mts., B. W. Skvortzov, June 16, 1927, Aug. 21, 1927; Schitochetze Sta. of C. E. Ry. on mtn. slopes, June 20, 1927.

Cultivated: Centr. Exper. Farm, Ottawa, Canada, Isabella Preston, June 15, 1939 (plant received from F. L. Skinner, Dropmore, Canada).

Syringa subgen. **Eusyringa** K. Koch Ser. **Pinnatifoliae**, ser. nov.

Frutex ramulorum gemma terminali evoluta ramulum foliiferum proferente; paniculis parvis axillaribus; foliis pinnatis foliolis 7–11. Species unica: *S. pinnatifolia* Hemsl.

This series differs from all other groups of the genus in its pinnate leaves and also in the terminal bud of the flowering branchlets developing into a leafy shoot. It is closest to Ser. *Vulgares* and particularly to *S. persica* L. of that series which has leaves partly entire and partly lobed or pinnatifid with 3–7 lobes, but the flowering branches have no terminal bud. In the Ser. *Villosae*, the terminal bud of the flowering branch develops into a large panicle and there are no axillary inflorescences.

Vitex Agnus-castus L. f. **rosea**, forma nova.

A typo recedit floribus roseis et foliis paullo latioribus.

Cultivated in Sanford Arboretum, Knoxville, Tenn.; specimen in herb. A. A., coll. *A. F. Sanford*, July 16, 1938.

There is also a plant of this form growing in this Arboretum under no. 402-37 received from Chenault, Orléans, France, in 1937 as *V. macrophylla rosea*; the plant in the Sanford Arboretum came from the same source.

The form differs from the type in its pink flowers and somewhat broader leaflets approaching *V. Agnus-castus* f. *latifolia* (*V. macrophylla* Hort.). The plant grown in gardens under the name *V. macrophylla* (see Horticulture ser. 2, **5**: 350; **8**: 352; **11**: 290) differs from the type chiefly in the broader leaflets, generally oblong-lanceolate and up to 2.5 cm. wide, and is a hardier and more vigorous plant. It is apparently identical with *V. Agnus-castus* var. *latifolia* (Mill.) Loud., though de L'Obel's figure (Pl. Stirp. Icon. **2**: 139. 1581) cited by Miller shows all the leaves coarsely dentate, but Loiseleur (in Nouv. Duham. **6**: 116. 1813) states that the leaves have only occasionally a few teeth near the apex. I propose to call it **Vitex Agnus-castus** f. **latifolia** (Mill.), comb. nov., since it scarcely merits the rank of varietas.

Lavandula officinalis Chaix f. **albiflora**, nom. nov.

Lavandula Spica alba Sweet, Hort. Brit. 316 (1827) nom. seminud., not *L. Spica alba* Weston.

As *Lavandula Spica* L. has been proposed as a nomen ambiguum by M. L. Green (in Kew Bull. **1932**: 295; **1935**: 75) and will probably be included in the approved list of such names, it seems advisable to transfer the form known as *L. Spica* var. *alba* Sweet to *L. officinalis*. There is, however, an earlier varietal homonym, namely *L. Spica alba* Weston, Bot. Univ. **1**: 146 (1770), which belongs to *L. latifolia* Vill., as Weston's diagnosis under *L. Spica* shows. Weston enumerates also under his *L. angustifolia* a white-flowered variety, but gives no name to it. I have not seen a white-flowered form of *L. latifolia*; the plant cultivated at Kew belongs to *L. officinalis*, as a specimen before me shows, though some of the leaves are up to 7 mm. broad, as they are in a specimen from Hort. Vilmorin at Verrières.

Campsis grandiflora (Thunb.) Loisel. f. **Thunbergii** (Carr.), comb. nov.

Tecoma Thunbergii [Carrière?] in Fl. des Serr. **12**: 181 (1857).

Tecoma Thunbergii Sieb. ex Siebold, Cat. Rais. Jard. Acclim. **1863**: 37, nom. nud.—Carrière in Rev. Hort. **1876**: 440.—Jouin in Jardin, **13**: 104, pl. fig. 1 (1899).

Tecoma radicans var. *Thunbergii* (Sieb.) Lavallé, Arb. Segrez. 176 (1877), nom. nud.—Sieb. ex Mouillefert, Arb. Arbriss. **2**: 937 (1896), excl. descr.

Campsis chinensis Voss f. *Thunbergii* (hort.) Voss, Vilmorin's Blumen-gaert. 1: 801 (1894), descr. mendosa.

Tecoma grandiflora Del. var. *Thunbergi* Hort. ex Rehder in Bailey, Cycl. Am. Hort. 4: 1778 (1902), descr. mendosa.

Campsis chinensis Voss var. *Thunbergii* Voss ex Schneider, Ill. Handb. Laubholzk. 2: 623 (1911), descr. mendosa.—Rehder in Bailey, Standard Cycl. Hort. 2: 652 (1914), descr. mendosa.

This form of *Campsis grandiflora* (Thunb.) Loisel. was first described in 1857 in Flore des Serres in an anonymous paper probably by Carrière and based on a plant in the nursery of the Paris Museum, and again by Carrière in 1876; of apparently the same plant, a colored illustration of the flowers was published by Jouin in 1899, without doubt from a plant in the nursery of Simon-Louis; from this nursery I have a specimen before me collected by C. Schneider, stated to have been taken from a plant obtained from Siebold who enumerates *Tecoma Thunbergii* Sieb. in his Catalogue raisonné of 1863. It is described as differing from typical *C. grandiflora* in the brick-red color of the inside of the corolla, in the shorter tube and in the 10-ribbed calyx. By Voss, Mouillefert, Rehder and later authors, the flowers are described as scarlet, probably due to confusion with the hybrid *C. Tagliabuana* (Vis.) Rehd.

The oldest specific epithet for the species is "*grandiflora*" based on Thunberg's *Bignonia grandiflora* of 1784.—*Bignonia chinensis* Lamarck appears in the second part (pp. 369–752) of vol. I of Encyclopédie Méthodique which was published in 1785; the title-page dated 1783 was issued with the first half of the volume.

Weigela sect. **Weigelastrum** (Nakai), comb. nov.

Diervilla sect. *Weigelastrum* Nakai, Trees Shrubs Jap. ed. 2, 1: 691 (1927), nom. nud.

Weigelastrum Nakai in Jour. Jap. Bot. 12: 5 (1936).

This section contains only one species, **W. Maximowiczii** (S. Moore), comb. nov. (*Diervilla Middendorffiana* var. *Maximowiczii* S. Moore in Jour. Bot. 16: 129. 1878.—*D. Maximowiczii* Makino in Jour. Jap. Bot. 1: 13. 1917.—*Weigelastrum Maximowiczii* Nakai in Jour. Jap. Bot. 12: 6. 1936.) often placed under sect. CALYPTROSTIGMA from which sect. WEIGELASTRUM chiefly differs in the valves of the fruit not being connate at the apex, in the angular seed with narrow lateral wing and in the connivent, not coherent anthers.

Weigela sect. **Calyptrostigma** (Koehne), comb. nov.

Calyptrostigma Trautvetter & Meyer in Bull. Acad. Sci. St. Pétersb. 13: 220 (1855); in Middendorff, Reise, 1, 2: Fl. Ochot. 46, t. 25^a 25^b (1856).—Ruprecht in Bull. Acad. Sci. St. Pétersb. 14: 93 (1855).—Bailey, Gent. Herb. 2: 45 (1929).—Schneider in Mitteil. Deutsch. Dendr. Ges. 42: 14 (1930).—Non Klotzsch (1844).

Wagneria Lemaire in Ill. Hort. 4: t. 115 (1857); non Klotzsch. (1854).

Diervilla sect. *Calyptrostigma* Koehne, Deutsch. Dendr. 539 (1893).

Macrodiervilla Nakai in Jour. Jap. Bot. 12: 3 (1936).

This section contains only one species, *W. Middendorffiana* (Carr.) Lem., which by most authors has been referred to *Diervilla*, but recently Bailey (l. c.) has taken up again for this species and *W. Maximowiczii* the generic name *Calyptrostigma* Trautv. & Mey. This name, however, is a later homonym of *Calyptrostigma* Klotzsch, and therefore, Nakai proposed the new generic name *Macrodiervilla* limiting it to the type species. As a sectional name, the name is valid, for Koehne (l. c.) could base a new combination on an illegitimate name, since no earlier subdivisional name under the genus was available.

From sections UTSUGIA A. DC. and CALYSPHYRUM (Bge.) A. DC. this section differs chiefly in the 2-lipped calyx, pilose anthers connected in a ring about the style, calyptrate stigma, in the central column of the fruit not persisting and not projecting and in the linear-oblong seed with wings at the ends. In all characters it agrees with the typical section of *Weigela*, to which the section WEIGELASTRUM forms a connecting link; it seems, therefore, better to consider *W. Middendorffiana* as representing only a well-marked section of *Weigela* instead of a distinct genus.

Weigela floribunda C. A. Mey. f. ***grandiflora*** (Dipp.), comb. nov.

Diervilla floribunda grandiflora Dippel, Handb. Laubholzk. 1: 274 (1889).

Diervilla arborescens hort. ex Dippel, l. c. (1889), pro synon.

Diervilla arborea grandiflora hort. ex Dippel, l. c. (1889), pro synon.

Diervilla floribunda f. *grandiflora* Voss, Vilmorin's Blumengärt. 1: 421 (1894).

Diervilla floribunda var. *grandiflora* Hort. ex Rehder in Bailey, Cycl. Am. Hort. 1: 484 (1900).—Schneider, Ill. Handb. Laubholzk. 2: 751 (1911).

A form with rather large, brownish crimson flowers.

Weigela floribunda C. A. Mey. var. ***versicolor*** (Sieb. & Zucc.), comb. nov.

Diervilla versicolor Siebold & Zuccarini, Fl. Jap. 1: 74, t. 33 (1837).—Nakai in Jour. Coll. Sci. Tokyo, 42, 2: 116 (1921).

Diervilla floribunda var. *versicolor* Rehder in Bailey, Cycl. Am. Hort. 1: 484 (1900).—Makino in Bot. Mag. Tokyo, 22: 158 (1908).

A variety differing in the leaves being pilose beneath on the veins and in the flowers changing from greenish white to crimson.

Weigela coraeensis Thunb. f. **alba** (Dipp.), comb. nov.

Diervilla grandiflora alba [hort.] ex Dippel, Handb. Laubholzk. **1**: 271 (1889).

Diervilla coraeensis DC. f. *alba* Voss in Vilmorin's Blumengärt. **1**: 420 (1894).

Diervilla grandiflora Sieb. & Zucc. var. *arborea* Rehder in Bailey, Cycl. Am. Hort. **1**: 483 (1900).

Weigela arborea grandiflora hort. ex Rehder, l. c. (1900), pro synonym. praeced.

A form with greenish white flowers changing to pale rose.

Weigela florida A. DC. f. **alba** (Carr.), comb. nov.

Weigela alba Carrière in Rev. Hort. **1861**: 331, t.

Weigela rosea alba T. Moore in Proc. Hort. Soc. Lond. **3**: 280 (1863).

Weigela amabilis alba Jaeger, Ziergeh. 571 (1865).

Diervilla florida f. *alba* Nakai in Jour. Coll. Sci. Tokyo, **42**, 2: 113 (1921).

Weigela florida DC. var. *alba* Hao in Contrib. Lab. Bot. Nat. Acad. Peiping, **1**: 106 (1932).

Weigela florida var. *glabra* f. *albida* Nakai in Jour. Jap. Bot. **12**: 10 (1936).

Flowers white changing to light pink.

Weigela florida A. DC. f. **candida** (Dipp.), comb. nov.

Diervilla rosea candida Dippel, Handb. Laubholzk. **1**: 269 (1889).

Diervilla florida f. *candida* Voss, Vilmorin's Blumengärt. **1**: 420 (1894), excl. synonym.—Nakai in Jour. Coll. Sci. Tokyo, **42**, 2: 113 (1921).

Weigela florida var. *candida* Rehder in Bailey, Cycl. Am. Hort. **1**: 483 (1900).—Bean, Trees Shrubs Brit. Isles, **1**: 490 (1914).

Weigela florida var. *glabra* f. *leucantha* Nakai in Jour. Jap. Bot. **12**: 10 (1936).

A form with pure white flowers.

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