were carved from hard wood; this is *Quercus coccinea* var. *tuberculata* Sarg. On some trees the cup scales are looser and slightly puberulent, as in the typical form of the eastern states. The winter buds are rather large, full and rounded at the apex, with scales finely puberulent at their tips.

It is interesting to note that Mr. B. F. Bush appears to have also found a tree of this species, a short time ago, near Montier, Shannon County. I have seen specimens of fruit and leaves from this tree, and there can scarcely be any doubt that it is *Quercus coccinea*. There are also two specimens in the herbarium of the Arnold Arboretum, collected by Mr. J. H. Kellogg, near Jerome, Phelps County, which have been referred to this species. This seems to definitely establish the fact that the Scarlet Oak is found in Missouri, although it appears to be a comparatively rare species and, so far as we know now, confined to a few localities in the southern and southeastern parts of the state.

NEW SPECIES, VARIETIES AND COMBINATIONS FROM THE HERBARIUM AND THE COLLECTIONS OF THE ARNOLD ARBORETUM[1]

ALFRED REHDER

Cedrus libanotica Link, Handb. II. 480 (1831).

Cedrus libanitica Trew apud Pilger in Engler & Prantl, Nat. Pflanzenfam. ed. 2, XIII. 329 (1926).

The complete synonymy of this species will be found on p. 205 of the preceding volume of this Journal with the exception of the name now taken up by Pilger. I can, however, not follow Pilger in considering the name *C. libanitica* Trew a valid binomial. Trew's book "Cedrorum Libani historia of 1757" is nomenclatorially a prelinnean publication; he does not use binomial nomenclature and even when he cites (p. 7) from Linnaeus' Species plantarum he omits the "nomen triviale" and cites "Pinus foliis fasciculatis acutis Linn. Sp. pl. 1001, n. 6," which clearly shows that he has no intention to use binomials. Also, when he enumerates (p. 7–8) the Conifers he examined and compared with Cedrus, he cites: Larix folio deciduo conifera, Abies Taxifolio sursum spectante, etc. The binomial credited to him by Pilger is contained in a sentence on p. 4, which reads: "Tab. prior Cedri Libaniticae totus habitus secundum unam ex Chelseanis maioribus delineatus." It is evident that this is only a coloquial designation for the Cedar of Lebanon and not intended as a name proposed for this tree. He does not mention this name, on page 4 and 5 where he enumerates all the names applied to the Cedar of Lebanon with references to literature, nor does he use this name anywhere else in his treatise. Such accidental binomials in publication by authors who did not accept binomial nomenclature have been rejected in other cases, as e. g., the name *Alnus*

[1] Contined from vol. VII. p. 37.

vulgaris which was used in 1756 by Hill in his British Herbal, a work in which Hill had not yet adopted binomial nomenclature; this name is therefore to be considered as belonging to prelinnean nomenclature and should not replace *A. glutinosa* (L.) Gaertn. of 1790 (*Betula glutinosa* L. of 1759).

× **Corylus Vilmorinii** (*C. avellana* × *chinensis*), hybr. nov.

Arbor pyramidalis trunco fere ad basin diviso (semper?) ramis erecto-patentibus; ramuli pubescentes, plus minusve glanduloso-setosi, rubro-fusci, vetustiores fusci vel cinereo-brunnei. Folia obovata vel late elliptica, 5–13 cm. longa et 3–9 cm. lata, vix inaequilatera, subito breviter acuminata, basi cordata vel subcordata, duplicato-serrata, vix vel leviter lobulata, supra laxe pubescentia, subtus molliter pubescentia; petioli 0.5–2.5 cm. longi, pubescentes, pilosi et glanduloso-setosi. Amenta mascula 2–4 in ramulis 1–3 cm. longis, ad 9 cm. longa, bracteis conspicue acuminulatis mucrone glabrescente. Fructus 2–6 aggregati; involucrum pubescens et glanduloso-setosum, nucem superans, tubulosum, sed interdum uno latere ad basin vel ad medium fissum, supra nucem vix vel leviter constrictum, 2.5–3 cm. longum, triente superiore vel fere ad mediam in lobos dentatos vel laciniatos suberectos fissum, parte tubulosa nucem subaequante; nux subglobosa, circiter 1.5 diam., interdum paullulo altior quam lata, hilo carpico tertiam vel vix tertiam partem nucis aequante, pericarpio 1.5–2 mm. crasso.

Cultivated at the Arnold Arboretum under no. 7549 (received as plant from M. de Vilmorin in 1911 under no. 1200); specimens in herbarium: September 1919, August 18, 1921, April 7, 1922, September 23, 1925.

This tree received from M. de Vilmorin as a plant in 1911 under the name *Corylus chinensis* and under number 1200 was apparently raised from seed of the tree numbered 1200 in Vilmorin's Fruticetum at Les Barres. From this tree I collected myself in September, 1911, fruiting specimens which show clearly that it is true *C. chinensis* Franch. The tree, however, in this Arboretum, supposed to be the same, though resembling *C. chinensis* in habit and also somewhat in foliage, differs considerably in its fruits which exhibit characters pointing to the influence of *C. Avellana* L.; also the other characters of the plant confirm this supposition and leave little doubt that the tree represents a hybrid between *C. chinensis* and probably *C. Avellana*. The influence of *C. Avellana* is indicated by the smaller, broader, more sharply serrate leaves, less unequal at base and more abruptly acuminate, by the shorter tube of the involucre, little constricted above the nut and occasionally split to the base, and with longer more laciniate and dentate lobes, and by the larger and higher nut with a smaller shield and thinner shell. Though there is no proof that *C. Avellana* is the other parent, the short occasionally split tube of the involucre indicates that the second parent could not have been a species with a tubular involucre; the size, shape and the thin walls of the nut exclude *C. Colurna* L. and the involucre in its shape, dentation and

size has little resemblance to that of *C. americana* Walt. and *C. heterophylla* Fisch. which are apparently the only other species that might be considered, but it agrees much more with that of *C. Avellana*. For this reason I accept *C. Avellana* as the other parent, until the contrary is proved by experiment.

× **Corylus spinescens** (*C. avellana* × *tibetica*), hybr. nov.

Frutex ramis erectis; ramuli hornotini rubro-fusci, minute et sparse pilosi vel fere glabri, annotini et vetustiores fusco- vel purpureo-brunnei, luciduli, lenticellis conspicuis pallidis notati; gemmae ovatae, perulis glabris vel minute puberulis tenuiter ciliatis. Folia elliptico-obovata, rarius late obovata vel late ovata, 5–10 cm. longa et 2.8–7 cm. lata, subito acuminata, basi subcordata, argute dupliciter serrata dentibus acuminulatis in ramis robustioribus saepe leviter lobulatis, matura costa venisque subtus sparse pilosis exceptis glabra; petioli 5–15 mm. longi, sparse pilosi et interdum stipitato-glandulosi vel subglabri. Amenta mascula sub anthesi 5–6 cm. longa, bracteis fuscis subito acuminatis satis dense pubescentibus ciliolatis apice glabrescentia. Fructus involucrum puberulum ad basin bipartitum, nucem vix superans, ad medium in lobos angustos laciniato-pinnatifidos laciniis linearibus vel subulatis rigidis spinosis fissum, in facie setis partim glanduliferis partim spinescentibus conspersum; nux subglobosa leviter compressa, circiter 1.5 cm. diam., paullulo latior quam alta.

Cultivated at the Arnold Arboretum under no. 19210 (plant received in 1911 from M. L. de Vilmorin); specimens in herbarium: December 5, 1921, March 6, 1922, September 23, 1925.

This Hazel had passed for *Corylus tibetica* which it resembles in general appearance until it bore fruit last autumn, when it became apparent that it was not true *C. tibetica* Batal. A closer examination showed that it was clearly intermediate between that species and *C. Avellana* L. and apparently a hybrid between these two species raised from seed gathered from a plant of *C. tibetica* in M. de Vilmorin's Fruticetum at Les Bares, France, whence our plant was received in 1911. From *C. tibetica* it differs in the leaves being smaller and, particularly those of vigorous shoots, broader and slightly lobulate with less elongated teeth, in the shorter petioles slightly pubescent and often stipitate-glandular, and in the involucre of the fruit which is not densely covered by long much-branched spines, resembling the burr of a chestnut, but is more like that of *C. Avellana* except that the ultimate divisions of the involucre end in rigid spiny points with additional spiny or partly gland-bearing bristles on the face of the involucre. From the latter species it further differs in the glabrescent and, particularly on the fruiting branches, narrower more or less elliptic leaves with closer and sharper serrations, in the dark red-brown branches with conspicuous pale lenticels and in the more acuminate scales of the staminate aments with glabrescent brown tips.

The plant in this Arboretum is a vigorous rather dense shrub now about 3 m. tall with upright branches and brighter and handsomer foliage than that of the common Hazel.

× **Clematis vedrariensis** var. **rosea,** comb. nov. (*C. chrysocoma* var. *sericea* × *montana* var. *rubens*).

Clematis Spooneri rosea Mottet in Rev. Hort. 1922, 214, t.; Arb. Arbust. d'Orn. 27 (1925).

This handsome Clematis which is according to Mottet a hybrid between *C. Spooneri* Rehd. & Wils. and *C. montana rubens* Ktze. raised in Vilmorin's nursery at Verrières, resembles in size and shape of its flowers the first named parent but differs in their rosy color. As I am following Schneider in reducing *C. Spooneri* to a variety of *C. chrysocoma* Franch. as *C. chrysocoma* var. *sericea* (Franch.) Schneid., this hybrid has to be classed with the hybrids between *C. chrysocoma* Franch. and *C. montana* for which the binomial is *C. vedrariensis* Hort. Vilmorin in Jour. Soc. Hort. France, ser. 4, XV. 385 (July, 1914) (*C. verrieriensis* Hort. Vilm. apud Gard. Chron. ser. 3, LV. 393, fig. 179 [June 6, 1914], without sufficient description). Though *C. verrieriensis* has priority by several weeks, I have adopted *C. vedrariensis*, as the latter name is accompanied by a full and detailed description, while the name *C. verrieriensis* was published without adequate description and with a very indifferent figure.

Ribes echinellum, comb. nov.

Grossularia echinella Coville in Jour. Agric. Research, XXVIII. 71, t. 1 (1925).

FLORIDA.

As we do not consider Grossularia Adans. generically distinct from Ribes L., the new combination cited above becomes necessary. Through the courtesy of Dr. Coville this Arboretum has received herbarium specimens of this interesting new Gooseberry and also seeds from which plants were raised. How far north *R. echinellum* will be hardy remains to be tested, but it is to be expected that it will prove hardy much further north than its present distribution indicates, as Ribes and particularly the subgenus Grossularia is essentially a northern group.

\+ **Pyronia Danieli,** comb. nov. (*Cydonia oblonga* + *Pyrus communis*).

Pirocydonia Danieli Hans Winkler apud L. Daniel in Compt. Rend. Acad. Sci. Paris, CLVII. 995 (1913); in Rev. Gén. Bot. XXVI. 312 (1914).

Pyro-Cydonia Danieli Guillaumin in Bull. Soc. Dendr. France, 1925, 63, t., fig. 4.

As I have stated already in this Journal (I. 262 [1919]) I am in favor of placing all forms intermediate between two distinct genera whether of sexual or asexual origin under one generic name. I see no advantage in segregating sexual hybrids and graft-hybrids between the same genera and in some cases even between the very same species under different generic names, though it seems advisable to distinguish sexual hybrids and graft-hybrids between the same species by different binomials. To indicate by convenient signs the origin, whether sexual or asexual, I propose to use the customary sign "×" for sexual hybrids and the sign "+" for graft hybrids.

The names Pyronia and Pyrocydonia have been coined for hybrids between the same species, namely *Cydonia oblonga* Mill. and *Pyrus communis* L.: Pyronia for the sexual hybrid, Pyrocydonia for the graft-hybrid.

As Pyronia Veitch was published first in 1911[1] while Pirocydonia Hans Winkler was not published until 1913[2] by L. Daniel, the latter should be considered a synonym of Pyronia. Under Pyronia there will be two binomials: *P. Veitchii* Guillaumin (in Bull. Soc. Dendr. France, 1925, p. 64) and *P. Danieli;* the former as the name for the sexual hybrids and the latter as the name for the graft-hybrids between *Cydonia oblonga* and *Pyrus communis.*

Another form of *P. Danieli* is the following:

\+ **Pyronia Danieli** var. **Winkleri,** comb. nov.

Pyro-Cydonia Winkleri Daniel in Bull. Soc. Dendr. France, 1925, 63, t. fig. 5.

This form was obtained in 1913 by L. Daniel from the burr of an old tree of the Pear "Bon chrétien Williams" grafted on Quince; it differs from the original form obtained in 1902 in its smaller more pubescent leaves, conduplicate in bud, in the shorter petiole and in the fact that it grows readily from cuttings.

This and the preceding plant as well as *Pyronia Veitchii* var. *luxemburgiana* Guillaumin are represented in this Arboretum by young grafted plants.

Wistaria macrostachya Nutt. f. **albo-lilacina,** f. nov.

Wistaria frutescens c. *albo-lilacina* Dippel, Handb. Laubholzk. III. 694.(1893).
Wistaria frutescens rosea Hort. nonn. ex Dippel, l. c., as synon.

This Wistaria is enumerated by Dippel as a variety of *Wistaria frutescens,* but the plant cultivated at this Arboretum under this name is evidently a form of *W. macrostachya* Nutt. with pale lilac flowers.

Opuntia rhodantha var. **xanthostemma,** comb. nov.

Opuntia xanthostemma K. Schumann in Monatschr. Kakteenk. VI. 111 (1896); Spaeth Kat. no. 98, p. 58 (1896) without adequate description; Gesammtbeschreib. Kakt. 735 (1898).—Rehnelt in Gartenwelt I. 90, fig. (p. 83) (1896).—F. W. Meyer in Garden, LVIII. 67, fig. (1900).—E. Wagner in Monatschr. Kakteenk. XXX. 153, fig. (1920).—Nussbaumer in Gartenschönh. IV. 123, fig. (1923).

This variety differs chiefly in its yellow filaments from the typical *O. rhodantha* K. Schum. which has carmine-red filaments and of which a colored plate was published in 1897 in Spaeth's Katalog, no. 100.

[1] Proc. Roy. Hort. Soc. XXXVII. p. xxxii (1911); XXXVIII. p. xxxiv. (1912); XL. p. clxxviii (1914).

[2] Compt. Rend. Acad. Sci. Paris, CLVII. 995 (1913). Through the kindness of Dr. Mansfeld in Berlin I received a note sent to him by Dr. Hans Winkler in which he states that he first proposed the name *Pirocydonia Danieli* in a letter written to Professor L. Daniel in 1913.