

NEW VARIETIES AND FORMS FROM MISSOURI

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Taxodium distichum* f. *confusum, f. nov., ramulis arcuato-adscendentibus; foliis brevioribus et plus adpressis quam forma typica.

Occasionally found with the typical form, usually in open or sunny situations.

In this form of the bald cypress the tips of the branches curve upwards, which gives a bushy or fastigate appearance to the tree. The leaves are shorter, crowded, and more appressed to the branches than in the typical form, producing a somewhat spruce-like effect. Branches and leaves of normal type are sometimes found on the lower part of the tree.

This form should not be confused with *Taxodium ascendens* Brong. (*T. distichum* var. *imbricatum* Groom), which it somewhat resembles in extreme forms but from which it differs in the usually less subulate leaves and in the smoother bark. *Taxodium ascendens* is not found so far inland.

MISSOURI: Markham Springs, 3 mi. w. of Williamsville, Wayne Co., June 28, 1936, *J. A. Steyermark 11261* (MBG type),¹ *11170* (MBG paratype). ILLINOIS: Shawneetown, Gallatin Co., June 14, 1919, *E. J. Palmer 15482*, and May 12, 1923, *22589*; Metropolis, Massac Co., Sept. 16, 1923, *E. J. Palmer 23752*; McClure, Alexander Co., Sept. 29, 1919, *E. J. Palmer 16625*. ARKANSAS: Fulton, Hempstead Co., June 10, 1909, *B. F. Bush 5813*. Isotype and other specimens, A.A.

Salix sericea* f. *glabra, f. nov., foliis maturis glabris subtus.

Low ground and swampy meadows along streams, north-eastern Ozark region and probably occasionally elsewhere with the typical form.

¹In the citation of specimens the following abbreviations have been used: A.A.—Arnold Arboretum Herbarium; G.—Gray Herbarium; MBG.—Missouri Botanical Garden Herbarium.

This form of the silky willow differs from the normal type in having the under-surface of the mature leaves glabrous. Specimens from other regions have been seen in which the young leaves on new growth are silky while those on the older branches are glabrous as in this form. In some parts of the Ozark region the glabrous form is the only one found.

MISSOURI: along north prong (Hutchins Creek) of Meramec River, between Stone Hill and Indian Trail State Park, Dent Co., Aug. 4, 1936, *J. A. Steyermark 12918* (MBG type); along Brushy Creek, 1 mi. north of Moses Store, Reynolds Co., Aug. 13, 1936, *J. A. Steyermark 12918* (MBG paratype).

***Salix cordata* f. *mollis*, f. nov.** A typo differt foliis pubescentibus praesertim costa media subtus, petiolis ramulisque pubescentibus.

From the ordinary *S. cordata* Muhl. this form differs in the more pubescent under-surface of the leaves, especially along the midrib, and in the pubescent petioles and branchlets.

Swampy meadows and wet open ground along small streams.

MISSOURI: along spring branch of Twin Springs, between Stone Hill and Indian Trail State Park, Dent Co., Aug. 4, 1936, *J. A. Steyermark 12491* (MBG type); along Moline Creek, 7 mi. from St. Louis, April 14 and Sept. 2, 1895, *N. M. Glatfelter 25*; along Turkey Creek, near Joplin, Jasper Co., May 20, 1909, *E. J. Palmer 2043*, and July 18, 1920, *18415*; Oasis, Taney Co., June 2, 1931, *E. J. Palmer 39492*. All specimens except type and paratype in A.A.

***Salix cordata* f. *subintegra*, f. nov., foliis subintegris.**

This odd form differs from normal *S. cordata* in its subentire instead of sharply serrulate leaves.

Wet rocky banks and swampy open ground.

MISSOURI: shore of lake at Yancy Mills Spring, Phelps Co., Nov. 28, 1936, *J. A. Steyermark 20910* (MBG type)

***Carya Buckleyi* var. *arkansana* f. *glabra*, f. nov., foliis glabris; ramulis annotinis glabris vel fere glabris.**

Occasionally found with the common pubescent forms in dry rocky woods, especially on cherty ridges or hillsides.

In typical *C. Buckleyi* and in the varieties *arkansana* and *villosa* the under-surfaces of the leaves and the young branchlets are thickly covered with tawny pubescence mixed with small, scurfy, silvery scales, the pubescence persisting at least along

the veins of the leaves at maturity and on the branchlets to the end of the season. This new form differs in having the mature leaves and branchlets glabrous or essentially so. It can best be distinguished from forms of *Carya ovalis* by the pubescent, scurfy winter-buds and by the fruit which is generally larger with a thicker, scurfy involucre. The amount of pubescence in this and most other species of *Carya* is quite variable, and a complete series of intermediate forms may be found.

MISSOURI: upland cherty pine woods near Cane Creek, 10 mi. southeast of Ellsinore, Butler Co., July 8, 1936, *J. A. Steyermark 11461* (type MBG); 5 mi. northwest of Bunker, Reynolds Co., July 30, 1936, *J. A. Steyermark 12363* (MBG); Campbell, Dunklin Co., Oct. 6, 1912, *B. F. Bush 6897* (A.A. paratype); near Joplin, Jasper Co., Oct. 9, 1909, *C. S. Sargent & E. J. Palmer 2809* (A.A.), and Oct. 8, 1911, *3494* (A.A.). ARKANSAS: Pine Bluff, Jefferson Co., Oct. 7, 1913, *C. S. Sargent* (A.A.).

***Quercus falcata* f. *angustior*, f. nov.** A typo differt foliis angustioribus.

Rarely found with the typical form.

The leaves of the southern red oak are extremely variable in size, outline, and in the number and shape of the lobes. This form is distinguished by the unusually narrow leaves. While the leaves bear some resemblance to those sometimes found on hybrids of *Q. falcata* with *Q. Phellos* (*Q. ludoviciana* Sarg.), their comparatively symmetrical and uniform type and other characters do not suggest such an origin, and it is probably only an extreme form of the species that should be recognized.

MISSOURI: along Eleven-Points River, $\frac{1}{2}$ mi. north of McCormack Hollow, 3 mi. north of Greer, Oregon Co., July 27, 1936, *J. A. Steyermark 12318* (MBG type).

***Cardamine bulbosa* f. *fontinalis*, f. nov.**, foliis basalibus et inferioribus late ovatis vel rotundatis, plus minusve basi cordatis.

This form of spring cress is found in springs and in the running water of spring branches in the Ozarks. The roots of such plants are finely fibrous and seldom develop bulblets as in the typical form. It sometimes looks quite distinct and has been confused with *Cardamine rotundifolia*, but it may be only an ecological form of the normal type.

MISSOURI: perennial branch from Pulltight Spring, Shannon Co., Aug. 2, 1936, *J. A. Steyermark 12414* (MBG type); in spring branch 4 mi. east of Carthage, Jasper Co., May 27, 1906, *E. J. Palmer 844* (MBG); near Reeds, Jasper Co., June 2, 1924, *E. J. Palmer 25272* (MBG); Tip Top, Iron Co., May 19, 1926, *E. J. Palmer 30181* (MBG).

***Amelanchier canadensis* f. *nuda*, f. nov.** A typo differt foliis maturis glabris.

This form differs from typical *A. canadensis* in having the under-surface of the mature leaves and their petioles quite glabrous. It has sometimes been confused with *A. laevis* which apparently does not extend into Missouri or west of the Mississippi River, and the recognition of the glabrous form should obviate this mistake. The type specimen and other collections in northeastern Missouri were taken from large-sized trees (see Ann. Mo. Bot. Gard. 23: pl. 20, fig. 5), but there is no positive evidence that the glabrous leaves and arborescent habit are generally associated.

MISSOURI: 5 mi. south of Linesville, Mercer Co., July 5, 1933, *E. J. Palmer & J. A. Steyermark 40317* (A.A., type); Livonia, Schuyler Co., July 1, 1933, *E. J. Palmer & J. A. Steyermark 41069* (A.A., paratype), and July 2, 1933, *41976*; Larussell, Lawrence Co., Oct. 2, 1908, *E. J. Palmer 1*; Monteer, Shannon Co., Oct. 5, 1920, *E. J. Palmer 19283*; Kahoka, Clark Co., May 19, 1929, *E. J. Palmer 25860*; Viola, Barry Co., Oct. 2, 1935, *B. F. Bush 15260*; LaGrange, Lewis Co., Oct. 9, 1913, *John Davis 2227*; bluffs of Mississippi River, Hannibal, Aug. 8, 1912, *John Davis 2011*; Riverside Park, Hannibal, Oct. 4, 1913, *John Davis 2101*. WEST VIRGINIA: Panther Mountain, Pendleton Co., June 15-19, 1925, *P. A. Rydberg 9052*. ARKANSAS: Magazine Mountain, Logan Co., Oct. 8, 1924, *E. J. Palmer 46431*. OKLAHOMA: Muskogee, Nov. 3, 1916, *E. J. Palmer 11200*; Page, LeFlore Co., Sept. 23, 1920, *E. J. Palmer 20569*. Specimens of all above numbers in A.A.; isotypes in MBG.

***Ludvigia alternifolia* var. *pubescens*, var. nov.**, foliis, caulibus et ovariis dense pubescentibus pilis brevibus patentibus.

Moist, sandy, open ground, southeastern lowlands, Mississippi Co., Mo.

The stem, leaves and ovaries in this form are densely pubescent with short spreading hairs, clearly distinguishing it from the typical variety.

MISSOURI: 4 mi. west of Charleston, July 11, 1933, *E. J. Palmer & J. A. Steyermark 41450* (MBG type; G isotype).

***Sambucus canadensis* f. *rubra*, f. nov.** A typo differt fructibus rubris.

Occasionally found with the typical form, from which it differs only in the bright red fruit.

This form was first observed in northwestern Missouri. Specimens and seeds were sent to the Arnold Arboretum, where it was thought to represent a new species or variety, but as the cultivated plants did not survive, no description was published. More recently it has been collected in the vicinity of St. Louis by Mr. Oscar Petersen and the late Mr. Wendell Shay of that city, both of whom pointed out what they considered distinguishing characters in the number and shape of the seeds and fruit, time of fruiting, and leaf form. However, further study of living material and of a large series of herbarium specimens does not indicate that these slight differences are constant or are characteristic of the red-fruited form, and it seems best to consider it only a form of the common elderberry.

MISSOURI: Watson, Atchison Co., Sept. 3, 1920, *E. J. Palmer 18928* (A.A. type); from cultivated plants in grounds of Normandy High School, St. Louis Co. (originally collected in northern St. Louis Co.), Sept. 14, 1936, *J. A. Steyermark 20068* (MBG paratype).



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