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5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: www.huntbotanical.org

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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

Box 9

Volume 1

Ball, C. R.

Salix

In Little, E. L. - Check list of native and naturalized
trees in the United States.

86 mss. p. 1942 to 1953. Additions, corrections
& suggestions.

Ball, Carleton R., Revision of Salix in Check List of Native
and Naturalized Trees in the United States.

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Dec. 23, 1942.

Dr. Ball:

I am enclosing a revised plan of the contents of the Check list of the native and naturalized trees of the United States, that I prepared a few weeks ago.

I certainly appreciate getting your help on Salix and shall be glad to have you include the ranges for species and varieties.

Elbert L. Little, Jr.

Elbert L. Little, Jr.,
Forest Service,
1404 South Bldg. (Library),
Ext. 2632.

CHECK LIST OF THE NATIVE AND NATURALIZED TREES OF THE UNITED STATES

By Elbert L. Little, Jr., *Forest Service, Room 1404 S. Bldg.*
Oct. 26 1927.

PLAN OF CONTENTS

This publication will be a revision of the Check List of the Forest Trees of the United States, by Geo. B. Sudworth (U. S. Dept. Agr. Misc. Circ. 92. 295 pp. 1927).

The International Rules of Botanical Nomenclature (Ed. 3, 151 pp. 1935.) will be followed for the scientific names. Thus, there will be some necessary changes from the nomenclature of the American Code used in the 1927 Check List.

The nomenclature will be that of conservative, modern usage, with emphasis on names useful to foresters and other field workers rather than on names based upon minute differences distinguished only by specialists in taxonomy.

The publication will be largely a compilation based upon the conservative usage in monographs and regional and state descriptive floras and lists. Because of the limited time available, monographic field and herbarium studies will not be attempted.

The area covered will be the United States, Canada, and Alaska. It seems desirable to include Canada and Alaska with continental United States, as only a few additional kinds of trees are found in these northern areas.

The definition of a tree by Sudworth (p. 10) will be followed, except that the minimum height will be increased to 10 feet (3 m.). "Trees", thus, are woody plants having usually one well-defined, perennial stem or trunk (at least 2 inches in diameter breast height), a definite crown, and a height of at least 10 feet.

Both native and naturalized trees will be included, but cultivated trees will be omitted.

Species, varieties, and natural hybrids having binomial names will be included, but all forms will be omitted. Weak species and varieties merely will be mentioned in notes or listed as synonyms. Plants considered by different authors both as varieties and as forms may be omitted from the synonymy, if desired. Typical varieties and subspecies will not be used.

The commonly recognized and distinct varieties will be treated in the same manner as species but uniformly placed in smaller type.

Naturalized species will be placed in small capitals for ready distinction. In general, varieties of naturalized species will be omitted. Varieties distinguished in cultivation and artificial hybrids will be omitted.

Natural hybrids having binomial names will be treated in the same manner as species and varieties but uniformly placed in smaller type.

Species and varieties generally shrubs or smaller than tree size but which infrequently or in certain places within the area covered become trees will be included.

Shrubby varieties of trees species will be omitted.

Very rare varieties and hybrids, such as those known by only one or a few individuals at one locality, will merely be mentioned in notes.

The citations of the place of publication of each accepted scientific name and of transfers of this combination back to the original name will be included. The original publications will be examined, and the names will be checked with the rules.

An Attempt will be made to account for all new names, including new combinations, of native and naturalized trees (other than forms) proposed in accordance with the rules since January 1, 1921. With this starting point, new names published since the second edition of Sargent's Manual of the Trees of North America (1922) will be made available for ready reference in one publication.

The new names proposed since January 1, 1921 will be classed in four ways:

(a) accepted, if clearly necessary under the rules or if for distinctly new trees.

(b) placed in smaller type, if for less distinct trees, to indicate the new and doubtful status and need for further study and confirmation by conservative workers, especially by foresters in the field.

(c) mentioned in notes, if for trees having very slight differences and for which separate names would not be used by conservative workers.

(d) listed as synonyms, if for trees not distinct or very slightly different from those under other names.

All scientific names recognized in the 1927 Check List (excluding those in footnotes) will be accounted for. If reduced to synonyms, they will be indicated by asterisks or other symbols.

Varieties distinguished in current, standard, regional and State manuals and floras but not accepted in the Check List will be mentioned in notes.

Names used in current, standard, regional and State manuals and floras which are now regarded as synonyms will be listed as synonyms and with citation of place of publication. These regional and State works checked for nomenclature will be listed.

The common or English names approved by the Forest Service Committee on Tree and Range Plant Names will be included for each accepted scientific name. Where the approved common name differs from that in Standardized Plant Names (Ed. 2, 1942), the latter will be included and indicated by a symbol, such as SPN. If the common name has been changed, the name accepted in the 1927 Check List will be included and indicated by suitable symbol. One or two additional common names may be added in parenthesis, if they are in common usage.

Ranges will be compiled from the current, standard, regional and State manuals and floras and from additional publications on range extensions, which will be cited in notes. The ranges will be given briefly by States along the corners and borders of the ranges. No attempt will be made to give ranges within States except where the range is local.

Notes on nomenclature will contain brief notes explaining the more important necessary changes in names.

References for genera will be cited where there are current monographs and useful articles with keys.

The bibliography will contain the complete citations of all the publications where the accepted names were published, including the original names and accepted combinations.

In the text of the Check List, the accepted scientific names with synonymy, ranges, and notes will be arranged by genera in one alphabetical order. The species, varieties, and hybrids within a genus will be in one alphabetical arrangement. For reference there will be a table of contents of families and genera in the usual phylogenetic order. There will be an index containing common names, synonyms, and names mentioned in notes.

There will be a brief introduction, containing such topics as history of lists of trees of the United States, scope of the Check List, rules of nomenclature, definition of a tree, treatment of species, varieties, and hybrids, and common names.

It is planned to issue the revised Check List first in a limited mimeographed edition, perhaps in condensed form, for circulation among Forest Service men and outside foresters and botanists who are interested. Then there will be an opportunity to receive suggestions and to make desirable changes in nomenclature and ranges in the printed edition.

CHECK LIST OF THE FOREST TREES OF THE UNITED STATES

PROPOSED CONTENTS OF REVISION

1942

1. The revision will contain the correct scientific names, under International Rules of Botanical Nomenclature and conservative usage, of the native and naturalized trees of the United States.

2. Species, varieties, and hybrids will be included, but all forms will be omitted. Feeble species and varieties will be omitted or merely mentioned in notes.

3. Varieties distinguished in cultivation will be omitted.

4. The approved common names will be included. One or two additional common names may be added in parenthesis if they are in common usage.

5. The citation of place of publication of the correct scientific name and of transfers of this combination back to the original name will be included.

6. Other synonyms in current use in manuals and floras will be added without citations.

7. Wherever the scientific name or common name of the 1927 Check List has been changed, the old name will be included and indicated by an asterisk or other symbol.

8. New species and varieties described since the publication of the 1927 Check List will be placed in smaller type to indicate their new and doubtful status subject to confirmation by conservative workers.

9. Naturalized species will be placed in small capitals for ready distinction. Species which merely escape from cultivation infrequently without becoming established will not be added.

10. Ranges will be omitted from the revised Check List because of lack of sufficient time to bring the information of distribution up to date.

11. However, ranges of the species and varieties not in the 1927 Check List will be summarized briefly by compilation from the original publications of new names and from monographs. This information will supplement the data on ranges in the 1927 Check List and other references.

2

SPECIAL MATTERS TO BE CONSIDERED IN SALIX

1. In Salix it is difficult to draw the line between a tree and a shrub. The workable definition of a tree used by Sudworth in the 1927 Check List, p. 10, is:

"The general rule applied by the author in defining a tree includes woody plants having one well-defined stem and a more or less definitely formed crown, and attaining a height of at least 8 feet and a diameter of not less than 2 inches. Most truly arborescent plants produce a single erect or ascending trunk. Some species of trees, however, have the habit of producing several trunks from the same root. Examples of this type of growth are to be found among the willows, some of which, on account of their large size, obviously are properly classed as trees. The fact that some species admitted as arborescent are generally shrubby in size has not seemed to the writer a sufficient reason for excluding them from our tree flora, for they occasionally become trees in some part of their range, even though it be outside our border."

2. Are all native tree species and currently recognized varieties included?

3. Have any species been included which are exclusively shrubs and which never become trees? If so, these should be omitted.

4. If a tree species has also shrubby varieties which never become trees, these shrubby varieties should not be listed in the Check List but should merely be mentioned in a note under the species.

5. The list of naturalized tree species in Salix should be checked. Should there be any additions or omissions?

6. Are the tree hybrids in Salix treated satisfactorily? It probably is not desirable to include all the rare hybrids but all those commonly found and widely distributed should be added. Artificial hybrids are excluded from the Check List unless they are naturalized.

7. Several recently described varieties of Salix have no distinctive English names. As a common name is desired for each, suggestions will be appreciated.

CHECK LIST OF THE FOREST TREES OF THE UNITED STATES

1942

3

SALIX L.

willow

SALIX L., Sp. Pl. 1015, 1753; Gen. Pl., ed. 5, 447, 1754.

References,--Schneider, Camillo. Notes on American willows. IV-XII. IV. Bot. Gaz. 67: 309-346, 1919; V. Arnold Arboretum Jour. 1: 1-32, 1919; VI. Arnold Arboretum Jour. 1: 67-97, 1919; VII. Arnold Arboretum Jour. 1: 147-171, 1920; VIII. Arnold Arboretum Jour. 1: 211-232, 1920; IX. Arnold Arboretum Jour. 2: 1-25, 1920; X. Arnold Arboretum Jour. 2: 65-90, 1920; XI. Arnold Arboretum Jour. 2: 185-204, 1922; XII. Arnold Arboretum Jour. 3: 61-125, 1922.

Ball, Carleton R. The willows of the southern States. Castanea 3: 1-9, 1938.

Why not any treatments in MacDougal?

Sudworth, George B. Poplars, principal tree wil-

lows, and walnuts of the Rocky Mountain region. U. S.

Dept. Tech. Bul. 420, 111 pp., illus., 1934.

Various willows of hybrid origin among both the native and introduced species of Salix have been reported and may be met with occasionally in the field. Some of these are known from only a few herbarium specimens, while others are more frequent. Only the more common hybrids between tree species have been included here. A detailed list has been prepared by Schneider (Arnold Arboretum Jour. 3: 78-84, 1922).

substitute (1942)

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4

Salix alaxensis (Anderss.) Cov.

felt leaf willow

Salix speciosa var. alaxensis Anderss. in A.

DC., Prodr. 16 (2): 275, 1868.

Salix alaxensis (Anderss.) Cov., Wash. Acad.

Sci. Proc. 2: 280, 1900.

Besides the variety listed below there ~~is~~
^{is} also a shrubby variety, Salix alaxensis var.

obovalifolia Ball.

Range. — B.C., Alaska, Yukon Terr. Mackenzie

Salix alaxensis var. longistylis (Rydb.) Schneid.

willow

Salix longistylis Rydb., N. Y. Bot Gard.

Thrinose felt leaf

Bul. 2: 163, 1901; not S. Longistyla

Gand., 1890.

(Rydb.)

Salix alaxensis var. longistylis Schneid.,

Arnold Arboretum Jour. 1: 225, 1920.

Range. — Alaska, Yukon Terr.

Salix alba L.

white willow

(*European white willow)

Salix alba L., Sp. Pl. 1021, 1753.

Varieties common in cultivation and as escapes

include Salix alba var. calva G. F. W. May.

(var. *coerulea (Sm.) Koch) and Salix alba var.

vitellina (L.) Koch.

Salix amplifolia Cov.

Yakutat willow

Salix amplifolia Cov., Wash. Acad.

(*bigleaf willow)

Sci. Proc. 2: 282, pl. 15, 1900.

Range. — SE Alaskan coast

Salix amygdaloides Anderss.

peachleaf willow

Salix amygdaloides Anderss., Kongl. Svenska

Vetensk. Akad. Öfvers. Förhandl.

15: 114, 1858; Amer. Acad. Arts

and Sci. Proc. 4: 53 (Salic. Bor.-

Amer. 8), 1858.

Salix amygdaloides var. wrightii (Anderss.)
Schneid.

Wright willow

Salix wrightii Anderss., Kongl. Svenska

Vetensk. Akad. Öfvers. Förhandl.

15: 113, 1858; Amer. Acad. Arts

and Sci. Proc. 4: 55 (Salic. Bor.-

Amer. 9), 1858.

Salix amygdaloides var. wrightii (Anderss.)

Schneid. Bot. Gaz. 65: 14, 1918.

Salix babylonica L.

Babylon weeping willow

(weeping willow)

Salix babylonica L., Sp. Pl. 1017,

1753.

Salix bebbiana Sarg.

Bebb willow

Salix bebbiana Sarg., Gard. and Forest. 8:

463, 1895.

Salix bebbiana var. perrostrata (Rydb.) Schneid.

willow

Salix perrostrata Rydb., N. Y. Bot Gard.

Bul. 2: 163, 1901.

Salix bebbiana var. perrostrata (Rydb.)

Schneid., Arnold Arboretum Jour.

2: 71, 1920.

6

Range.--According to Schneider, var. perrostrata is the form prevailing from w. Neb. and w. S. Dak. through Colo., n. N. Mex., e. Ariz., Utah, ne. Nev., and ne. Ore.; it is connected with the typical form by intermediate forms in Idaho, Wash., B. C., Alta., e. Alaska, Yukon Terr., and w. N. W. Terr.

Salix bebbiana var. projecta (Fern.) Schneid. _____ willow

Salix rostrata var. projecta Fern., Rhodora 16:

178, 1914.

Salix bebbiana var. projecta (Fern.) Schneid.,

Arnold Arboretum Jour. 3: 75, 1922.

Range.--Newfoundland.

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Salix bonplandiana var. toumeyii (Britton) Schneid. Toumey willow

Salix toumeyii Britton in Britton and Shafer,

N. Amer. Trees 187, fig. 145, 1908.

Salix bonplandiana var. toumeyii (Britton)

Schneid., Bot. Gaz. 65: 20, 1918.

Schneider (Bot. Gaz. 65: 18, 1918)

reports also one specimen of the

typical Mexican form of the species.

Salix bonplandiana H. B. K., from

southwestern New Mexico.

Salix caudata (Nutt.) Heller

whiplash willow

Salix pentandra var. caudata

(*western black willow)

Nutt., N. Amer. Sylva 1: 61, pl. 18,

1843.

Salix caudata (Nutt.) Heller, Muhlenbergia 2:

186, 1906.

Range

Range →

*Salix lasioandra var. caudata (Nutt.) Sudw.

One variety, of lower stature and not becoming

a tree, has been distinguished as Salix

caudata var. parvifolia Ball.

no!

No!

Salix chapmanii Small

Chapman willow

Salix chapmanii Small, Man. SE. Flora 414,

1504, 1933.

Range.--Florida and Georgia.

Salix coulteri Anderss.

Coulter willow
(velvet willow)

Salix coulteri Anderss., Kongl. Svenska

Vetensk. Akad. Öfvers. Förhandl. 15:

19, 1858; Amer. Acad. Arts and Sci.

Proc. 4: __ (Salic. Bor.-Amer. __), 1858.

Salix sitchensis var. coulteri Jeps.

Range.--California to B.C.

In the 1927 Check List this species was not

distinguished from Salix sitchensis Sanson.

Salix discolor Muhl.

pussy willow

Salix discolor Muhl., Gesell. Naturf. Freunde

Berlin Neue Schrift. 4: 234, t. 6, fig. 1,

1803.

*Salix discolor subsp. prinoides (Pursh) Anderss.

The name *Salix discolor subsp. prinoides (Pursh)

Anderss. is now considered as a synonym of the

form, Salix discolor f. rigidior Anderss.

8

Salix discolor var. latifolia Anderss.

silver pussy willow
(*pussy willow)

Salix discolor var. latifolia Anderss., Kongl. Svenska

Vetensk. Akad. Handl. 6: 84, 1867.

*Salix discolor subsp. eriocephala (Michx.) Anderss.

Salix discolor var. overi Ball

Over pussy willow

Salix discolor var. overi Ball, Rhodora 26: 137, 1924.

Range.—S.Dak. and Minn.

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52 end

9
Salix exigua Nutt.

Salix exigua Nutt., (*sandbar willow; narrowleaf willow) coyote willow

N. Amer. Sylva 1: 75, 1843.

Salix exigua var. luteosericea (Rydb.) Schneid. _____ willow

Salix luteosericea Rydb. in Britton,

Man. 316, 1901.

Salix exigua var. luteosericea (Rydb.)

Schneid., Bot. Gaz. 67: 334, 1919.

Range.--Oolo., Neb., S. Dak., Alta., E. C.

Salix exigua var. nevadensis (S. Wats.) Schneid. _____ willow

Salix nevadensis S. Wats., Amer. Nat. 7:

302, 1873.

Salix exigua var. nevadensis (S. Wats.)

Schneid., Bot. Gaz. 67: 331, 1919.

Range.--Nevada, California, Utah, Idaho.

Salix exigua var. stenophylla (Rydb.) Schneid. _____ willow

Salix stenophylla Rydb., Torrey Bot. Club

Bul. 28: 272, 1901.

Salix exigua var. stenophylla (Rydb.)

Schneid., Bot. Gaz. 65: 25, 1918.

Salix exigua var. tenerrima (Henderson) Schneid. _____ willow

Salix longifolia var. tenerrima Henderson,

Torrey Bot. Club Bul. 27: 354, 1900.

Salix exigua var. tenerrima (Henderson)

Schneid., Bot. Gaz. 67: 335, 1919.

Range.--Idaho, Wyoming, Montana, Utah.

Salix floridana Chapman (19)
S. Flor. Ch. Fl. Soc. 48. 430, 1860, Ball,
S. *floridana* Chapman a valid sp. Florida W.

Salix fragilis L.

crack willow

Salix fragilis L., Sp. Pl. 1017, 1753.

Native of Europe and western Asia but widely planted and occasionally escaping from cultivation in eastern United States.

x Salix glatfelteri Schneid.

Glatfelter willow

x Salix glatfelteri Schneid., Arnold Arboretum Jour. 3: 79, 1922
1922.

Salix amygdaloides x nigra.

Range.—Apparently a common hybrid.

Salix gooddingi Ball

Dudley willow

Salix gooddingi Ball, Bot. Gaz. 40: 376, pl. 12, figs. 1,
2, 1905.

Salix nigra var. vallicola Dudley

Salix harbisoni Schneid.

Harbison willow

Salix harbisoni Schneid., Arnold Arboretum Jour. 1: 29,
1919.

Salix marginata auth.

Salix hookeriana Barratt

Hooker willow

Salix hookeriana Barratt ex Hook., Fl. Bor.-Amer. 2:

145, t. 180, 1839.

Salix hookeriana var. laurifolia J. K. Henry

willow

Salix hookeriana var. laurifolia J. K. Henry, Fl. S. Brit.

Col. 99, 1915.

Range.—B.C.

Salix hookeriana var. tomentosa J. K. Henry

willow

Salix hookeriana var. tomentosa J. K. Henry ex Schneid.,

Arnold Arboretum Jour. 1: 220, 1920.

Range.—B.C., Wash., Ore.

Salix interior Rowlee

Sandbar willow

Salix interior Rowlee, Torrey Bot. Club Bul. 27: 253, pl.

9, figs. 12, 13, 1900.

*Salix longifolia Muhl., not Lam.

Note on nomenclature.--The name Salix longifolia Muhl.,
under which this species has long been known (1803)

cannot be used for this species and its varieties be-

cause of the earlier Salix longifolia Lam. (1778).

Salix interior var. angustissima (Anderss.) Dayton Texas sandbar

willow
(*sandbar willow)

*Salix longifolia var. angustissima Anderss., Kongl. Svenska
Vetensk. Akad. Öfvers. Förhandl. 15: 116, 1858; Amer.
Acad. Arts and Sci. Proc. 4: 56 (Salic. Bor.-Amer. 10),
1858.

Salix interior var. angustissima (Anderss.) Dayton in Sudw.,

U. S. Dept. Agri. Tech. Bul. 420: 78, footnote 42, 1934.

Salix interior var. pedicellata (Anderss.) Ball

Yukon sandbar
willow
(*sandbar willow)

*Salix longifolia subsp. pedicellata Anderss., Kongl. Svenska
Vetensk. Akad. Handl. 6. 55, 1867.

Salix interior var. pedicellata (Anderss.) Ball, Canad. Field
Nat. 40: 175, 1926.

Salix laevigata Ebb

red willow

Salix laevigata Ebb, Amer. Nat. 8: 202, 1874.

Salix laevigata var. araquipa (Jeps.) Ball

willow

*Salix laevigata f. araquipa Jeps., Fl. Calif. 1: 339, 1909.

Salix laevigata var. araquipa (Jeps.) Ball, Bot. Gaz. 72:

234, 1921.

Range.--Calif., Ariz. Nev.

Salix lasiandra Benth.

Pacific willow
(*western black willow)

Salix lasiandra Benth., Pl. Hartw. 335, 1857.

Salix lasiandra var. abramsii Ball _____ willow

Salix lasiandra var. abramsii Ball, Bot. Gaz. 72: 224, 1921.

Range.--Calif.

Salix lasiandra var. lancifolia (Andress.) Pacific Gray willow
(*western black willow) No!

Bebb

Salix lancifolia Anderss., Kongl. Svenska Vetensk. Akad.

Handl. 6: 34, pl. 2, fig. 23, 1867.

Salix lasiandra var. lancifolia (Anderss.) Bebb in S. Wats.,

Bot. Calif. 2: 84, 1879.

Salix lasiolepis Benth.

arroyo willow
(*white willow)

Salix lasiolepis Benth., Pl. Hartw. 335, 1857.

Salix lasiolepis var. bakeri (Seemen) Ball _____ willow

Salix bakeri Seemen, Torrey Bot. Club Bul. 30: 635, 1903.

Salix lasiolepis var. bakeri (Seemen) Ball, Bot. Gaz. 71:
436, 1921.

Range.--Calif.

Salix lasiolepis var. bigelovii (Torr.) Bebb _____ willow

Salix bigelovii Torr., Rpt. Expl. Surv. Miss. Pacif. 4 (5):
139, 1857.

Salix lasiolepis var. bigelovii Bebb in S. Wats., Bot.

Calif. 2: 86, 1879.

Range.--Calif., Ore., Nev., Ida.

Salix lasiolepis var. sandbergii (Rydb.) Ball _____ willow

Salix sandbergii Rydb., Torrey Bot. Club Bul. 39: 304, 1912.

Salix lasiolepis var. sandbergii (Rydb.) Ball, Wash. Acad.

Sci. Jour. 28: 448, 1938.

Range.--Ida.

→ Salix longipes Shuttlew.

coastal plain willow

Salix longipes Shuttlew. ex Anderss., Kongl. Svenska

Vetensk. Akad. Öfvers. Förhandl. 15: 114, 1858.

Salix amphibia Small

[Salix longipes var. venulosa (Anderss.) Schneid. _____ willow

Salix nigra subsp. longipes var. venulosa Anderss., Kongl.

Svenska Vetensk. Akad. Handl. 6: 22, 1867.

Salix longipes var. venulosa (Anderss.) Schneid., Bot.

Gaz. 65: 14, 1918.

Salix longipes var. wardi (Bebb) Schneid.

Ward willow

Salix nigra var. wardi Bebb in Ward, U. S. Natl. Mus. Bul.

22: 114, 1881.

Salix longipes var. wardi (Bebb) Schneid., Bot. Gaz. 65:

22, 1918.

Salix wardii (Bebb) Bebb.

The hybrid Salix longipes var. wardi x nigra apparently is
common.

Salix lucida Muhl.

shiny willow

Salix lucida Muhl., Gesell. Naturf. Freunde Berlin Neue

Schrift. 4: 239, t. 6, fig. 7, 1803.

Salix ligulifolia Ball in Schneider west to
Range to U.S. + down Can, 1880
Sa. 720 -10- J. H. H. C.

Salix lucida var. angustifolia Anderss. _____ willow

Salix (pentandra) lucida angustifolia Anderss., Kongl.

Svenska Vetensk. Akad. Öfvers. Förhandl. 15: 115,
1858; Amer. Acad. Arts and Sci. Proc. 4: 54
(Salic. Bor.-Amer. 8), 1858.

Salix lucida var. angustifolia Anderss., Kongl. Svenska
Vetensk. Akad. Handl. 6: 32, 1867.

Salix lucida var. intensa Fern. Fernald shiny willow

Salix lucida var. intensa Fern., Rhodora 6: 2, 1903.

Salix lutea Nutt. Yellow willow

Salix lutea Nutt., N. Amer. Sylva 1: 63, pl. 19, 1843.
Range.—Man. to Alta, s. to Neb. and Calif.

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In addition to the two varieties included here, there is
a shrubby variety, Salix lutea var. ligulifolia Ball.

Salix lutea var. famelica Ball Starved Y. willow

Salix lutea var. famelica Ball, Bot. Gaz. 71: 426, 1921.
Range.—S. Dak., N. Dak., Mont.

Salix lutea var. platyphylla Ball Broadleaf Y. willow

Salix lutea var. platyphylla Ball, Bot. Gaz. 71: 430, 1921.
Range.—Utah, Wyo., Ida., Ore., Nev.

Salix mackenziana (Hook.) Barratt Mackenzie diamond willow

Salix cordata var. mackenziana Hook., Fl. Bor.-Amer. 2:
149, 1839.

Salix mackenziana (Hook.) Barratt ex Anderss., Kongl.
Svenska Vetensk. Akad. Öfvers. Förhandl. 15: 125,
1858; Amer. Acad. Arts and Sci. Proc. 4: 65 (Salic.
Bor.-Amer. 10), 1858.

S. lutea Watsoni (Bebb) Lepp

Woollybud Mackenzia

Salix mackenziana var. macrogemma Ball

A willow

Salix mackenziana var. macrogemma Ball in Piper and

Beattie, Fl. NW. Coast 116, 1915.

Range. Wash., Ore. / BC.

Salix missouriensis Bebb

Missouri River willow

→ Salix missouriensis Bebb, Gard. and Forest 8: 373, 1895.Salix nigra Marsh.

black willow

Salix nigra Marsh., Arbustr. Amer. 139, 1785.Salix nigra var. altissima Sarg.

gulf black willow

Salix nigra var. altissima Sarg., Trees and Shrubs 2: 216,

1913.

Lower Mississippi River

Salix nigra var. lindheimeri Schneid.

Texas black willow

Salix nigra var. lindheimeri Schneid., Bot. Gaz. 65: 9, 1918.Salix pentandra L.

bay willow

Salix pentandra L., Sp. Pl. 1016, 1753.

Native of Europe but long cultivated and escaped in eastern United States.

Salix petiolaris Sm.

Meadow willow

Salix petiolaris Sm., Linn. Soc. London Trans. 6: 122, 1802.

Generally a shrub but occasionally a small tree and rarely 20 feet high, according to Ball.

Range.—N. B. to Sask. and s. to Tenn. and Wis. The variety,

Salix petiolaris var. rosmarinoides (Anderss.) Schneid., isshrubby. x Salix neo-forbesii Toepfer (Salix petiolaris xsericea; Salix subsericea (Anderss.) Schneid., not Doell),which is believed to be a hybrid with Salix sericea, probably does not become a tree in size.

Doubt if an-
original form
where escaped

Salix purpurea L.

purple willow

(purple osier, basket willow)

Salix purpurea L., Sp. Pl. 1017, 1753.

Shrub or small tree native of Europe and Asia but cultivated for ornament and basket-work and escaped from cultivation in eastern United States.

Salix pyrifolia Anderss.

balsam willow

Salix pyrifolia Anderss., Kongl. Svenska Vetensk. Akad.

Handl. 6: 162, t. 8, fig. 93, 1867.

Salix scouleriana Barratt

Scouler willow
(*mountain willow)

Salix scouleriana Barratt ex Hook., Fl. Bor.-Amer. 2: 145,

1839.

New Mex. to Calif., no. to Mack, + Alaska.

*Salix scouleriana var. flavescens (Nutt.) J. K. Henry,

now regarded as a form, is omitted here. Two additional varieties are shrubs: Salix scouleriana var.

coetanea Ball and Salix scouleriana var. thompsoni

Ball.

Omit

Salix scouleriana var. crassijulis (Anderss.) Schneid.

Not good var

Every form
occurs in Calif.

California Scouler willow
(*mountain willow)

Salix brachystachys subsp. scouleriana var. crassijulis

Anderss., Kongl. Svenska Vetensk. Akad. Handl. 6:

83, 1867.

Salix scouleriana var. crassijulis (Anderss.) Schneid.,

Arnold Arboretum Jour. 2: 12, 1920.

S. balsamifera Barratt

Salix sericea Marsh.

silky willow
(satin willow)

Salix sericea Marsh., Arbustr. Amer. 140, 1785.

This shrubby species occasionally becomes a small tree up
to 24 feet high, according to Ball, and is here added to
the Check List.

Range.—N. B. to Mich., Mo., and S. C.

Salix sessilifolia Nutt.

Broadleaf sandbar
northwest willow
(*sandbar willow)

Salix sessilifolia Nutt., N. Amer. Sylva 1: 68, 1843.

Salix sessilifolia var. hindsiana (Benth.)

willow

Anderss.

Salix hindsiana Benth., Pl. Hartw. 335, 1857.

Salix sessilifolia var. hindsiana (Benth.) Anderss., Kongl.

Svenska Vetensk. Akad. Öfvers. Förhandl. 15: 117,

1858; Amer. Acad. Arts and Sci. Proc. 4: 56 (Salic.

Bor.-Amer. 11), 1858.

Range.—Ore. and Calif.

Salix sessilifolia var. leucodendroides (Rowlee) _____ willow

Schneid.

Salix macrostachya var. leucodendroides Rowlee, Torrey Bot.

Club Bul. 27: 250, 1900.

Salix sessilifolia var. leucodendroides (Rowlee) Schneid.,

Bot. Gaz. 65: 26, 1918.

Range.—Calif.

Salix sitchensis Sanson

Sitka willow
(*silky willow)

Salix sitchensis Sanson ex Bong., Acad. Sci. St. Petersburg.

Mem., ser. 6, Math. Phys. Nat. 2: 162, 1832.

Salix jepsonii Schneid. (*Salix sitchensis var. angustifolia

Bebb) has been omitted as a shrub not known to be arborescent

17

No. Mexico, So. Ariz. and N.M., and S.W. Texas

Salix taxifolia H. B. K.

yewleaf willow

Salix taxifolia H. B. K., Nov. Gen. et Sp. 2: 22, 1817.

Salix tracyi Ball

Tracy willow

Salix tracyi Ball, Calif. Univ. Pubs., Bot. 17: 403, pls.

69, 70, 1934.

Range. ^{N.W.} Calif. and ^{adjacent} Ore.

Salix viminalis L.

basket willow
(common osier)

Salix viminalis L., Sp. Pl. 1021, 1753.

Native of Europe and Asia but long cultivated for basket-
work and occasionally escaped and naturalized in eastern
United States.

Tree?
tree?

18
June 5, 1943

Dr. Miriam L. Bomberg,
Taxonomy & Range Invest.,
Forest Service, U.S. Dept. Agric.,
Washington, D.C.

Dear Dr. Bomberg:

In further reference to our conversation regarding Mr. Little's manuscript section on the willows, I am inclosing ribbon copy of the manuscript and 8 pages of notes and suggestions.

Personally, I feel that too many species and varieties have been dragged into the "small-tree" classification, especially in the sandbar-willow group, but that is not my personal funeral.

Secondly, as noted in the suggestions later, I feel it quite undesirable to manufacture common names for ~~all~~ species and varieties, out of whole cloth. As that seemed to be desired, however, I have attempted to insure that those already proposed, and those I suggest, be as accurate as possible. I feel that the common name of a variety should be a trinomial, including the name of the species itself, and have so suggested.

Thirdly, our knowledge of actual ranges is so meager, partly because manuals are so faulty, that I hold it very important to get accurate ranges into every possible publication. Accordingly, I have spent much time in correcting and expanding the recorded ranges of these willows. Where the range is peculiar I have named States and portions of States freely. In a few cases, I have not had time to verify possible additional extensions of range, but on the whole these are more accurate than those given in any manual to date.

In giving the ranges, I have not been consistent in the use of abbreviations but assume that you will edit to obtain the style you are using in the volume.

Additions are indicated by "ADD" or "Insert". In a few cases, they were not discovered in time to put them in their proper alphabetical place in my notes. For example, *S. balsamifera* (replacing *S. pyrifolia* (see my p. 7)), should be inserted on my p. 1 or Little p. 3. I have inserted *S. Hindsiana* on my p. 3, but the synonymy and var. *leucodendroides* are mentioned under *S. sessilifolia* on my p. 8 and occur on Little p. 14.

I hope that these notes may be useful to you in preparing this section of the manuscript for publication. I will be glad to try to make clear anything in them which is not clear as it stands. The work has been done under pressure of work and weather, which does not make for clearness.

Cordially yours,

Carleton R. Bell
Executive Secretary

*Many thanks for the
specimens sent with
your letter of June 2.*

Munoz 19

SUGGESTIONS FOR ELBERT P. LITTLE, JR., REGARDING
CHECK LIST OF THE FOREST TREES OF THE UNITED STATES

Submitted by Carleton R. Ball, June, 1943

For ready reference, the notes given below are arranged in order of the pages in Mr. Little's manuscript. This makes easier the indication of insertions.

Page 1

For paragraph 2, substitute the following, as the additional citations are wholly my own contributions to regional floras:

Ball, Carleton R. *Salix*, in Coulter and Nelson, New Manual of Rocky Mountain Botany, pp. 128-139, 1908;-- *Salix*, in Le Roy Abrams, Illustrated Flora of the Pacific States 1:487-507, figs. 1190-1235, 1923;-- The willows of the Southern States, Castanea 3:1-9, 1938.

Page 2

S. alaxensis

Range: Alaska to Mackenzie and No. Ont., south to central B.C. & Alta.

S. alaxensis var. *longistylis*

Common name: Blue-twig felt-leaf willow.

~~RANGE~~ Citation of var. insert "(Hyd.)"

Range: With the species, especially in central part of its range

S. alba L.

To note on the varieties add: "the latter representing mostly a series of hybrids with *S. fragilis*".

S. amplifolia

Range: Southeastern Alaska coast.

Page 3.

S. amygdaloides

Range: NE. U. S. and adjacent Canada, to Ariz., and northward (east of Sierra Nevada & Cascade Ranges) to So. Alta.

S. amygdaloides var. *Wrightii*

Common name: Wright peachleaf willow.

Range: West Texas & N.M.

S. babylonica L.

Common name: Weeping willow. The word "Babylon" is a misnomer, as the species never occurred in the Mesopotamian area.

S. Bebbiana

Range: Northeastern U.S. & Southeastern Can., southwest to N.M., Ariz., & Cent. Calif. and northwest to Alaska; rare west of Sierra-Cascade Range.

S. Bebbiana var. *perrostrata*

Common name: Glabrate "ebb willow.

Range: With the species but most abundant in the drier parts of its western range.

dupl in Dist. app, & Dayton file

add
Page 4

S. Bebbiana var. parvirostrata

Omit Schneider's paragraph on range.

S. Bebbiana var. projecta

Common name: Long-pedicelled Bebb willow.

ADD S. Bonplandiana H.B.K., EM

Bonpland willow.

Salix Bonplandiana Humboldt, Bonpland, & Kunth,
Nov. Gen. & Sp. 2:20. 1817.

Range: Southern Ariz. & N.M. southward to Guatemala.

S. Bonplandiana var. Toumeyii

Common name: Toumey Bonpland willow.

Range: Southern Ariz. to northern Mexico.

S. caudata

Common name: Tailed-leaf willow. (I abominate the idea that a common name must be manufactured out of whole cloth for each species and variety, but if it must be done, and translate the latin name as well, then Tailed-leafed and not the impossible "whiplash". CRB.

~~REMOVED/REMOVED~~

Page 5 and 5a

S. caudata

Range: Northern Utah to Northeastern Calif., and northward to Southern Alta.

Add: S. caudata var. Bryantiana Ball and Bracelin

Salix caudata var. Bryantiana Ball & Bracelin, Jour. Wash. Acad. Sci. 28:445-448, 1938.

Common name: Bryant Tailed-leaf willow.

Range: N.M. to southern Alta., and west to Calif. and southern B.C.

S. Chapmanii

Delete this entirely, as Small deliberately suppressed Chapman's Salix floridana of 1860 and erected a new species on the type specimen. See insertion of S. floridana, below. See also, Ball, Salix floridana Chapman a valid species. Jour. Arnold Arb. 24:103-106, pl. 1, 1943.

S. Coulteri

Range: Calif. to souther B.C.

S. discolor

Range: NE. U. S. and SE. Can., westward to N. D. and central B.C., the var. prinoides to Wyo., Mont., & Alta.

The conclusions on vars. are of doubtful validity. Andersson published both latifolia and rigidior in 1867 as varieties, not rigidior as a form, but he dropped the latter in 1868. He cited no specimens. The vars. based on Pursh and Michaux's species have a valid basis. If Andersson published them as subspecies in 1867, he reduced them to vars. in 1868.

Page 6.

S. discolor var. Overi (p. 5a)

Common name: Over pussy willow

S. exigua Nutt.

Range: Rocky Mtns. of N.M. to Alta., west to Calif. & north to B.C.

S. exigua var. lutescens

Common name: Silvery coyote willow

S. exigua var. nevadensis

Common name: Nevada coyote willow

Range: N. Calif. & So. Ida. to SW. Texas

S. exigua var. stenophylla

Common name: Wire-leaf coyote willow

Range: So. Colo. and N.M. westward.

S. exigua var. tenerrima

Delete here. This is S. melanopsis var. tenerrima (Hend.) Ball, which see under S. melanopsis

Page 7.

Insert Salix floridana Chapman. Fl. Sou. U.S. 430, 1880. Florida willow
See discussion under S. Chapmani Small on Little's page 5 and
also on my page 2. Range: No. Fla. & So. Ga.

S. vitellina

Add: "widely hybridized with S. alba in Europe and America. Such hybrids have been included in the description of varieties of S. alba, i.e., S. alba var. vitellina"

x S. Glatfelteri Schneider.

I suggest that this be omitted. Why include one of the many field hybrids? Furthermore, both Glatfelter and Schneider mixed specimens of S. missouriensis in the supposed hybrid. Also, there are genetically possible not only scores, but hundreds, of different "species" from the hybridizing of only two species. Is each to be described and named?

S. Gooddingii Ball

SW. Texas westward to No. Mex. and Calif.

Common name: Goodding willow, not Dudley willow

Range: So. Nev. & Utah, Ariz., & sou. Calif., the glabrate phase from

To the citation add: (amplified and corrected description by Ball, in Bot. Gaz. 72:227-234, figs. 2-4, 1921.

S. Barbisoni

Range: Ga. to N.C.

Add: Salix Hindiana Benth. Fl. Hartweg. 335. 1857.

Hind Willow.

Range: SW. Oreg., Calif., & Baja Calif. Valleys of

S. Hookeriana

Range: Sandy coast, NW. Calif. to B.C.

Omit S. Hookeriana var. laurifolia Henry, a doubtful variety.

S. Hookeriana var. tanacetosa

Hairy-pod Hooker willow

Common name: see at right

Range: With the species.

Page 8

S. interior

Range: Lower Mississippi River north to Kan. and Va. and northward to the Yukon Valley in Alaska.

S. interior var. angustissima

Range: So. and Sw. Texas

I doubt if this variety attains the "tree size" specified. CRB.

S. interior var. pedicellata

Range: With the species but most common in western and northern part of the range.

Common name: Narrow-leaf sandbar w. (not Yukon, where it is rare)

S. laevigata

Range: Northern Calif. and NW. Nev. to No. Baja Calif. and east to So. Nev. and So. Utah.

S. laevigata var. arauquipa

Common name: Hairy red willow.

Range: With the species but less common northward

S. lasiandra

Page 9

Range: No. N.M. and So. Colo. to So. Calif. and northward to B.C., Alta., and Sask. and sparingly to Alaska and Yukon.

S. lasiandra var. Abramsi

Common name: Abrams Pacific willow or small-leaved Pacific willow.
Range: Sierra Nevada and Cascade Ranges, north to So. Alberta.

S. lasiandra var. lanceifolia

Common name: Hairy Pacific willow (no more "gray" than the species.)

Range: Western Nev. and central Calif. north to Alaska and Yukon.

(S. lasiandra could appropriately be called "Lance-leaf willow")

AED: S. lasiandra var. ~~maximiliana~~ Lyallii Sargent, Gard. & For. 9:463. 1895

Common name: Wide-leaf Pacific or Lance-leaf willow

Range: Northern Calif. to Sou. B.C.

S. Lyallii (Sarg.) Heller, Bull. Torr. Bot. Club 25:560. 1898.

S. lasiolepis

Range: Southern Mex. north to N.M., sou. Utah, and western Ida., and westward to the Pacific in Calif., Willamette Valley in Oreg., and Puget Sound in Wash.

S. lasiolepis var. Bakeri

Common name: Baker arroyo willow.

Range: West-central Calif.

I would delete this, as a freak or at best a form, collected once.

S. lasiolepis var. Bigelovii

Common name: Bigelow arroyo willow

Range: California to Washa.

AED: Salix lasiolepis var. Sandbergii (Rydberg) Ball Sandberg arroyo willow
in Jour. Wash. Acad. Sci. 28:448-450. 1938

Salix Sandbergii Rydberg, in Bull. Torr. Bot. Club 39:304. 1912.

Range: Northern Calif. & NW. Nev to So. Wash. & western Ida.

g. -
I have
it on
p. 10

S. lasiolepis var. Sandbergii

See common page and range on preceding page

ADD: *Salix ligulifolia* Ball, in Schneider, Jour. Arnold Arb. 2:188, Jan'y., 1922 (not April, 1921)

Salix lutea var. *ligulifolia* Ball, Bot. Gaz. 71: 428. ~~1922~~ June, 1921.

Range: Wyo. to N.M. and west to Calif.

S. longipes

Common name: Coastal Plain must have capital initials, as there are coastal plain(s) all around the U.S. but only one geologic Coastal Plain (SE. US.)

Range: Florida to E. No. Car.

S. longipes var. vanulosa

I would omit this as neither Schneider nor any one else can separate it from var. *Wardii*.

S. longipes var. Wardii

Common name: Ward Coastal-Plain willow.

Range: Potomac Valley and Upper Ohio Valley (Pa.), southwest to Mo., Tenn., Ala., and Texas.

S. lucida

Common name: Shining willow (not shiny). Shining refers to a natural character; shiny to acquired character, as shiny coat.

Range: NE. U.S. and Lower Canada westward to Iowa, N.D., and Sask.

I am rather doubtful if *S. lucida* and vars. attain the specified tree size. CRB.

Page 11

S. lucida var. angustifolia

Common name: Narrow-leaf shining willow.

Range: With the species, especially westward.

S. lucida var. intonsa

Common name: Hairy-leaf shining willow (not Fernald s.w.)

Range: With the species

S. lutea

Common name: Yellow willow

Range: Rocky Mts. of N.M. north to Sask. and west to Calif. and B.C.

Omit note on *S. lutea* var. *ligulifolia*

S. lutea var. famelica

Common name: Starved yellow willow

Range: Nebr., S.D., N.D., and Mont.

S. lutea var. platyphylla

Common name: Broad-leaf yellow willow

Range: With the species, especially northwestward

ADD: *S. lutea* var. *Watsoni* (Rebb) Jepson, Man. Flower. Pl. Calif. 266, 1923 (not 1925).

Watson
yellow
willow

Salix cordata *Watsoni* Rebb, Willows of California, 86, 1979
(preprinted with same pagination from Brewer and Watson
Bot. Calif. 2:86. 1880).

Salix ornabyenses von Seemen, in Bull. Torr. Bot. Club
30:635-36. 1903.

Salix Watsoni (Bebb) Rydberg, in Bull. Torr. Bot. Club
33:137. 1906.

Range: ~~MISSOURIANSIS~~ Mtns. of the Great Basin and bordering States.

S. mackenziana

Common name: Mackenzie willow, not "diamond willow", as *S. lutea*, *S. missouriensis*, and *S. alaxensis* produce more diamonds.

Range: No. Utah to No. Calif. and northward to Mackenzie (Great Slave Lake).

S. mackenziana var. ~~macrocarpa~~

Page 12

Common name: Large-bud, or Hairy, Mackenzie willow

Range: Western Oreg. and Washn. and SW. B.C.

INSERT THE FOLLOWING:

--- *Salix melanopsis* Nuttall, Sylva 1:78, pl. 21, 1845. Dusky willow or Gravel-bar willow

Range: Western N.Y. and No. Utah to southern Calif. and northward to southern B.C. and Alta.

Salix melanopsis var. *Bolanderiana* (Rowlee) Schneider, Bolander ---
Bot. Gaz. 67:338. 1919.

Range: With the species but less common southward.

Salix Bolanderiana Rowlee, Bull. Torr. Bot. Club
27:257. pl. 9, f. 9 (?). 1900.

Salix melanopsis var. *tenerrima* (Henderson) Bell, Marrow-leaf dusky w.
Proc. Nat. Acad. Sci. 21:182. 1935.
(See synonymy there and on Little, p. 6,
under *S. exigua* var. *tenerrima*)

S. missouriensis

Range: Western Tenn. & Ky. to western N.D., in Missouri and Mississippi River valleys.

S. nigra

and immediately adjacent Canada,

Range: Eastern U.S., west to central Texas, eastern Kan., SE. Nebr.,
Des Moines R. drainage of N.W. Ia. and SW. Minn.

S. nigra var. *altissima*

Common name: If "Gulf, then with capita G. Preferable Tall b. w.
Range: Lower Mississippi River.

S. nigra var. *Lindheimeri*

Common name: Lindheimer, or Southwestern, b. w., not Texas b. w.
Range: Sou. Texas north to SE. Kan. and western Tenn.

S. pentandra

Note: very sparingly escaped

S. petiolaris

Common name: Meadow willow

Range: NN. U.S. and SE. Can., west to No. Mebr., Long's Peak, Colo.,
Black Hills of S.D., and Sask.

Note. Becomes of small-tree size only in the northern part of its range.

In re your note on *S. petiolaris* "var. *rosmarinoides* (Anders.) Schneider" please note that Schneider was wholly in error. Andersson made the combination: *S. gracilis* var. *rosmarinoides* at the place cited and nowhere made the combination with *petiolaris*. The plants treated by Andersson under the names "*gracilis*, *rosmarinifolia*, and *rosmarinoides*" are all the same thing, and he made the combination: *S. ~~gracilis~~ petiolaris* var. *gracilis* in DC. Prod. 16(2): 236, in 1868. This must be used if the variety is included, but I am sure that it never reaches the proportions of even a small tree. Suggest it be deleted.

The same holds true for *S. subsericea* (And.) Schneider and it should be deleted without raising the question of its hybridity or other relationships.

PAGE 13

ADD: *Salix pseudomonticola* Ball, in F. C. Standley, Contr. U. S. Natl. Herb. 22:321. 1921.

Common name: Service-berry willow.

Range: Colo., Mex. and S.D. (Black Hills), north to Alta., Sask., Mackenzie, Yukon, and Alaska.

S. purpurea

I have seen no escaped plants which were of small-tree size, and doubt if they ever attain such size.

S. pyrifolia Andersson, 1867, is antedated by *S. pyrifolia* Schleicher, 1815.

The species should be inserted on p. 3 of Little's list as *Salix balsamifera* (Hooker) Barratt, in Hooker, Flora Bor.-Am. 2:149. 1838. (as synonym of *S. cordata balsamifera* Hooker).

Range: New England to Minnesota and adjacent Canada, thence northwestward to Sask. & Alta.

S. Seculeriana Barratt

Range: N.M. to Calif. and northward to Alaska and Yukon

S. Seculeriana var. crassijulis

This var. should be inserted only as a synonym of *S. Seculeriana*. Neither Schneider nor Henry made the study necessary to designate the vars. of this complex species and it is not desirable to fix, by publication, taxonomic ideas which almost certainly are erroneous. Certainly this var., if valid, should not be called "California" willow because practically all of the recognizable variations occur in California.

Page 14

S. sericea

Range: N.B. to Sask., and south to Mo., Tenn., and S.C.

S. sessilifolia

~~XXXXXXXXXXXX~~ Common name : Broadleaf sandbar willow
Range: Riverbanks, western Oreg. to SW. B.C.

S. sessilifolia var. Hindsiana

This is S. Hindsiana Benth., which I already have entered on p. 3 above
and to which this synonymy should be transferred.

S. sessilifolia var. leucodendroides

This should be inserted with S. Hindsiana on p. 3 as
Salix Hindsiana var. leucodendroides (Howell) Ball, in Madrono 6:232-236, 1948
with these citations as synonyms thereof.
Common name: Southern Hinds willow.
Range: Southern California and Baja Calif.

S. sitchensis

Range: N.W. Calif. to Alaska, east in the Columbia River drainage to western
Mont.

S. toxicifolia

Range: Southern Ariz. and N.M., SW. Texas, and northern Mexico

S. Tracyi

Range: Northwest Calif. and adjacent Oreg.

S. viminalis

Doubtful if this arrives at small-tree size.

27
Dr. Elbert L. Little, Junior,
Forest Service Herbarium,
U.S. Dept. of Agriculture,
Washington 25, D.C.

10 May, 1952.

Dear Dr. Little:

Here are the remaining pages (2-5) of my suggestions on the Checklist of American Trees.

As I neared the end, I discovered that I did not have the place of publication of *S. rigida* Muhl., var. *vestita* Anderson, if that combination really has been made.

Will mail these now and keep on looking. Will phone you what I find out.

Cordially yours,

Carleton R. Ball
Collaborator.

Ball, Carleton R. ~~THE~~ Salicaceae. The Willow Family (exclusive of Populus), pp. 34-45, pls. 10-14, in Deam, Charles S. G., Trees of Indiana, 1st. rev. ed., pp. 1-317, pls. 1-137. April, 1921
2nd. rev. ed., do., do., (pp. 40-48, pls. 10-14, maps. 9-10), pp. 1-326, pls. 1-140, maps 1-118. 1932.

Ball, Carleton R. Salicaceae. The willow Family. (pp. 35-66, pls. 7-21) in Charles C. Deam, Shrubs of Indiana, pp. 1-351, pls. 1-146. Dec., 1924.
Ed. 2. (pp. 37-70, pls. 7-21, maps 7-24) in Deam, Charles C. Shrubs of Indiana, Ed. 2., pp. 1-380, pls. 1-153, maps 1-155. 1932.

Ball, Carleton R. Salix, in Davis, Ray J., Flora of Idaho (pp. 216-235). 1952.

Ball, Carleton R. Salix, in Britton & Brown, Illustrated Flora of - - - ?, v. 1: pp. ??, pls. ?? (in press).

Davis, H. A., and Carleton R. Ball. The Willows of West Virginia. Castanea 12(3):94-100. 1947.

Massey, A. B., and Carleton R. Ball. The Willows of Virginia. Va. Polytechnic Inst. Bull. 37(9): 1-31, frontisp., 1944.

Salix alaxensis (Andersson) Coville. Could be called Hairy-twig Feltleaf W.

S. alaxensis, var. longistylis (Rydb.) Schneider.

Could be called Bare-(Hairless, Glabrous-) twig Feltleaf W.

Digitized by Hunt Institute for Botanical Documentation

S. arbusculoides Andersson (too low to consider including)

S. amygdaloides Andersson.

RANGE: NE. N.Y. and adjacent Que. west to So. B.C. and so. to Pa., Ky. Tex. and Ariz.

S. Bebbiana Sargent. Should

S. rostrata Richardson, in Franklin, Journey Polar Sea 753. 1823. (not Thuill. 1799), be entered as a synonym?

S. cordata Muhl.

If considered tall enough, it will be listed as S. rigida Muhl.

S. discolor Muhl.

This reaches a height of 30 ft., with 3-6 stems 3-5 or 6 inches in diam. in northern Alberta (Edmonton area)

S. discolor var. eriocephala (Michx.) Andersson.

Fernald determined that this Species of Michaux was founded on a specimen of S. missouriensis Bebb (properly S. rigida Muhl, var. vestita Andersson)

It should be replaced by

S. discolor var. latifolia Andersson., a more or less hairy form.

Salix caroliniana Michaux. Insert thereunder

S. longipes Shuttleworth and its var. Wardii (Bebb) Schneider and all their synonyms;

Range: Fla. to Tex., no. to Potomac and Ohio Valleys (Pittsburgh, Pa., and so Ind. in latter), not Kan.

Salix discolor Muhlenberg.

This shrub or small tree reaches a maximum height of 30 ft. (9 m.), with few stems 3-5 or 6 inches in diameter, in the Edmonton area of central Alberta.

Salix discolor, var. *latifolia* Andersson, Monog. Salix. 84. 1867.

Delete var. *ericocephala* (Michx.) Andersson and substitute the above. Fernald has determined that *S. ericocephala* Michx. was based on *S. cordata* var. *vestita* Andersson (*S. missouriensis* Bebb) and hence is not a variety of *S. discolor*. Var. *latifolia* has the more or less pubescent twigs, buds, petioles, and young leaves which characterize the form to which the name var. *ericocephala* has been wrongly applied.

Salix discolor, var. *prinoides* (Pursh) Andersson.

I now feel inclined to regard this as not sufficiently distinct from the species to warrant recognition.

Salix exigua Nuttall.

S. exigua var. *lutescens* (Rydberg) Schneider should be reduced to synonymy under *S. exigua*. I am unable to distinguish between the supposed variety and the species. A portion of the material previously assigned to var. *lutescens* has the narrower longer leaves of var. *stenophylla*, and will require an extension of the range of that variety. ~~THIS MATERIAL IS NOT AVAILABLE AT DAYTON'S FOOTNOTE~~

Present knowledge extends the range of *S. exigua* somewhat, as follows:

RANGE: California north to British Columbia and east to Alberta and western portions of South Dakota, Nebraska, and Texas.

Salix exigua, var. *stenophylla* (Rydberg) Schneider.

RANGE: Common from western Texas to California and sparingly northward to southern Wyoming and Idaho, southeastern Oregon, and northeastern California.

The few densely hairy specimens from western Nebraska have the shorter wider leaves of the species and are so assigned. This takes care of Dayton's footnote.

Salix floridana Chapman.

It has been found recently in some new localities in Early Co., Ga., but lumbering and other operations already have destroyed some of the sites.

Salix fluviatilis Nuttall.

Silva 1:73. 1943.

A shrub or small tree 2-6 or 7 m. high, with very restricted range.

Range: Lower Columbia River; common from the mouth of the Deschutes River (Wasco Co.) to the lower Willamette Valley (Multnomah Co.) in Oregon; sparingly up the Willamette Valley to Lane Co., Oregon, and in the Columbia Valley in Klackit Co., Wash.

X *Salix glatfelteri*

See discussion of hybrid willows.

Salix Gooddingii Ball

RANGE: Utah, southern Nevada, Arizona, southern California, and adjacent Baja California, Mexico.

Salix Gooddingii, var. *variabilis* Ball

Salix Gooddingii Ball (in part), Bot. Gaz. 40:376. 1905. The "glabrate phase" mentioned in previous edition of the Checklist.

Salix Gooddingii, var. *variabilis* Ball, Journ. Wash. Acad. Sciences 40:324. 1950

RANGE: California (Shasta Co. southward) and commonly eastward in Arizona, southern Utah, New Mexico, western Texas, and adjacent Mexico (Chihuahua and Sonora).

Salix Harbisoni Schneider.

Some questions arise. Should it be spelled *Harbisonii*?

Small referred to *S. marginata* "Weimer", but Andersson published *S. nigra* * *marginata* "Wimmer", not "Weimer".

Schneider says that *S. marginata* Wimmer is *S. longipes* var. *venulosa* (p. 8).

He says that *S. marginata* Weimer of Small is his *S. harbisonii* (p. 7).

Under *S. Harbisonii* (p. 29) he lists "*S. marginata* Small, Fla. Shrubs 9 (1913) non Wimmer". Does this constitute a valid publication of an "*S. marginata* Small", as seemingly indicated by the note in Checklist?

Salix interior Rowlee.

Heights of 8-15 ft., with diameters of 1.5-3 inches are reported commonly.

Dean, Shrubs of Indiana, p. 44, refers to it as a midtall shrub with clustered stems, 1.5-4 or rarely 5.5 m. high and 2.6 or rarely 10 cm. in diameter. The labels of Indiana specimens, however, sometimes list it as a small tree, or tree, and give heights to 18 ft. For four Nebr. specimens a height of 20 ft. is given, and they are called "slender trees". (6 m.)

interior, var.

Salix angustissima (Andersson) Dayton.

See expression of my doubt in Checklist. On the labels of 4 specimens it is recorded as a small tree and one is recorded as 20 ft. high and 6 inches in diameter, in the Rio Grande Valley.

Club

Salix Thurberi Rowlee, Bull. Torr. Bot. Garden 27:252. 1900. (The two specimens cited by Rowlee as Thurber's actually were collected by Berlandier)

RANGE: Rio Grande drainage of southcentral and southwestern Texas and adjacent New Mexico and Mexico.

There is a considerable varietal synonymy in Anderson, not mentioned above.

Salix laevigata Bebb.

RANGE: Northern California and northwestern Nevada south to southern Utah, ~~northern~~ Arizona, and Northern Baja California, Mexico. (ARIZ: Mohave, Maricopa, Greenlee Cos.)

Salix lasiandra, var. *lanceifolia* (Andersson) Bebb

"(Andersson)" omitted in both title and citation in previous Checklist.

Salix lasiolepis Benth.

RANGE: Southern California and adjacent Mexico north to Washington and eastward to northern Arizona, Nevada, and western Idaho.

Salix lasiolepis, var. *Barcelinae* Ball.

Narrow-leaf Arroyo Willow.

Salix lasiolepis, var. *Bracelinae* Ball, Journ. Wash. Acad. Sciences 40:331. 1950.

RANGE: Southern California and adjacent Mexico eastward in southern Nevada and Utah most of Arizona and New Mexico, western Texas, and adjacent portions of Chihuahua and Sonora, Mexico.

Salix ligulifolia (Ball) Ball

Salix ligulifolia (Ball) Ball, apud Smith (Willows of Colorado), Amer. Midland Nat. 27:236. 1942. (Ball in Journ. Wash. Acad. Sciences 40:329-331. 1950.)

RANGE: Southeastern Wyoming (Laramie Co.) south to New Mexico and west to California and southwestern Oregon.

(*S. longipes* and var. *Wardii* (*S. Wardii* Bebb))

insert as synonyms under *S. caroliniana* Michx., above.

(Hybrid of *S. longipes* Shuttleworth)

See separate discussion of *Salix* hybrids.

Salix lucida Muhlenberg

RANGE: Delaware to Lower Canada and west to northern Iowa, North Dakota, and Saskatchewan (lat. 54° N.); outlying stations in Roanoke Co., Va., and Weeping Water, Nebr.

Salix lutes Nuttall

Range: New Mexico north to eastern parts of Nebraska, South Dakota, and North Dakota, Saskatchewan, and west to California and British Columbia.

Salix lutes, var. *famelica* Ball

Range: Colorado north to Saskatchewan, and east to ~~western~~ western Nebraska, South Dakota, and North Dakota.

Salix Maccalliana Rowlee.

Salix Maccalliana Rowlee, Bull. Terr. Bot. Club 34:158. 1907.

(it was named for Dr. W.C. McCalla, Calgary, Alt.)

This species varies in height from 6-15 ft. and in diameter from 1-3 inches.

It is doubtfully submitted for consideration. If included the range is:

RANGE: British Columbia to Saskatchewan (lat. 50° - 55° N.) and sparingly eastward in southern Manitoba (Komarna) and at Lake Mistissini, Quebec.

Salix Mackenzieana (Hooker) Barratt

RANGE: Northern Utah to northern California and northward to Mackenzie (Great Slave Lake) and northern Alberta.

Salix Mackenzieana, var. *macrocarpa* Ball

Correction of Range: Southwestern British Columbia (Vancouver Id.) to western Washington and Oregon.

Salix melanopsis Nuttall

Range: British Columbia south to southern California and east to southern Alberta, western Montana and Wyoming, and northern Utah.

Salix melanopsis, var. *tenerrima* (Henderson) Ball

RANGE: Sparingly with the species.

~~(*Salix missouriensis* Bebb)~~

Delete here and enter as synonym under *S. rigida*, var. *vestita*.

Salix nigra Marshall

Range: Southern portions of New Brunswick, Quebec, and Ontario west to east-central Minnesota, and southwest to southwest Minnesota, southeast Nebraska, and on to west-central Texas, and sparingly east to Florida.

Hybrids of *Salix nigra* Marsh.

see separate discussion of *Salix* hybrids.

Salix pellita Andersson.

A shrub or small tree, 3-5 m. high, on alluvial or gravelly river banks, shores and swamps.

RANGE: Northern New England, Nova Scotia, and Newfoundland, north to Labrador and Quebec (northern Ungava), and west to northern Michigan, central Manitoba, and southern Saskatchewan.

Salix petiolaris J. E. Smith

Salix gracilis, var. *textoris* Fernald, Rhodora 48:46. 1946.

RANGE: New Jersey north to New Brunswick and the James Bay area in Canada, west to Colorado (Longs Peak), northern Nebraska, Black Hills of South Dakota and central Alberta. Sporadic occurrence in Virginia and Oklahoma.

Shrub or small tree, reaching a height of 22 ft. in central Alberta.

Salix pseudomonticola Ball

RANGE: Colorado and South Dakota (Black Hills) west to Idaho, and north to Saskatchewan, Alberta, Mackenzie, Yukon, and Alaska.

Salix pyrifolia Andersson.

RANGE: New England and adjacent Canada, west to Minnesota, and north to Labrador, James Bay area, northern Alberta, and northeastern British Columbia.

Salix rigida Muhlenberg.

Salix cordata Muhlenberg, Neue Schrift. Gesell. Naturf. Fr. Berlin 4:236, pl. 6, fig. 3. 1803, not Michaux.

Salix acutidens Rydberg, apud Britton, Man. 315. 1901.

Salix rigida Muhlenberg, Neue Schrift. Gesell. Naturf. Fr. Berlin 4:236, pl. 6, fig. 4. 1803.

~~*Salix rigida* (Muhl.) Andersson, in DC. Prodr. 16(2):252. 1868.~~
Cefv.

Salix cordata Muhl., subsp. *rigida* (Muhl.) Andersson, in Svensk. Vet.-Akad. handl. 6:158. 1867.

Salix cordata Muhl., var. *rigida* (Muhl.) Andersson, in DC. Prodr. 16(2):252. 1868.

RANGE: Delaware north to New England and adjacent Canada, west to Virginia, Kentucky, Missouri, northwest Nebraska, northeast Montana, and eastern Saskatchewan (lat. 53° N.). Occurs locally in Georgia, Alabama, and Arkansas.

Salix rigida Muhl., var. *vestita*

Salix cordata Muhl., subsp. *rigida* (Muhl.) Andersson, var. *vestita* Andersson, l.c. above 6:159. 1867.

Salix cordata Muhl., var. *rigida* (Muhl.) Andersson, forma *vestita* Andersson, in DC. Prodr. 16(2):252. 1868.

Salix ericocephala Michaux, Fl. Bor.-Amer. 2:225. 1803.

Salix discolor Muhl., subsp. *ericocephala* (Michx.) Andersson, l.c. above, 6:85. 1867.

Salix discolor Muhl., var. *ericocephala* (Michx.) Andersson, in DC. Prodr. 16(2):226. 1868.

Salix rigida Muhl., var. *vestita* Andersson

Salix missouriensis Bebb, in Garden & Forest 8:373. 1895.

RANGE: Missouri River Valley from North Dakota to eastern Kansas, and Missouri; Mississippi River Valley southern Illinois, Missouri, and western Kentucky and Tennessee.

Salix sericea Marshall

A shrub or small tree, 3-6 or 7 m. high.

RANGE: Nova Scotia and New Brunswick west to Michigan and eastern Iowa, south to South Carolina, Georgia, Tennessee, and Missouri.

Salix sitchensis Sanson

Range: Northwestern California to Alaska, and east in the Columbia River drainage to northern Idaho and western Montana. (It does not occur in the Snake River Valley of Idaho)

Salix viminalis Linne.

SILKY OSIER

Few-stemmed shrub or tree to 15 m. high. Widely introduced from Europe for basketry and ornament. since early days and occasionally escaped in the eastern United States and Lower Canada.

At three points in this Checklist, reference is made to the prevalence of certain willow hybrids, namely, under *X S. Glatfelteri*, under *S. longipes*, and under *S. nigra*. I would suggest that these references be omitted and that a single statement regarding hybrids be inserted, either at the beginning or at the end of the series of *Salix* species. A general statement on hybrids might read something like this:*

Hybrids of pairs of willow species are found occasionally throughout North America. They occur more commonly in temperate areas, where the flowering season is longer and where winds from varying directions carry the abundant pollen widely. It is possible that hybrids of a previous hybrid with a third species sometimes occur, but it is almost impossible to be certain of more than two, and often of only one.

Hybrids preferably should be designated, for example, as *Salix nigra X S. amygdaloides*, placing first the name of the one most closely resembled. Where the identity of the second parent is doubtful, the citation should read: *Salix nigra X (probably) (or(possibly) X amygdaloides*, or *S. nigra X S. amygdaloides* or *S. caroliniana*.

It does not seem desirable to apply binomial names to hybrids, as they are not "species". Fertile seeds from a cross of any two species should produce plants of widely varying characters. To name such plants as species, would require many different names for the progeny of the same bispecific cross. It is certain that the intercrossing of two widely distributed European species has produced plants to which 50 or more different specific names have been applied. One author insists that the number is at least 100.

The craze for naming *Salix* hybrids originated in Europe more than 100 years ago. Four different methods of indicating simple hybrids (two parents) have been used there. Some authors name them as species, just as non-hybrids are named. Others name them in followed by the names of the parents in parentheses. the same way but place an X before the name, to indicate a hybrid species. Still others do not regard them as species and so do not use binomial names. One such group uses the names of both parents, separated by and X, as recommended above. Another group separated the two specific names by a hyphen, which may ~~imply~~ suggest but does not specify hybridity.

The matter has gone so far that in many herbariums, both in Europe and America, the European *Salix* material from one-third to two-thirds of the specimens of is designated as hybrid. Most of the specimens are incomplete, many juvenile, and different botanists seldom agree as to both the species involved one of and often disagree as to both.

The late Dr. Floderus of Sweden carried the idea of universal hybridity among willows to its final idiocy. Postulating that practically all present-day willows are hybrids, he asserted that, from dried fragments in herbariums, he could recognize up to as many as five parents in a single such specimen, and so annotated many specimens. Any geneticist knows the absolute impossibility of such recognition. When asked how there could be so many hybrids if there were no species to produce them, he replied that hybrids possessed different characters, which enabled them to exterminate the parents by competition, or to move to new areas.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
TROPICAL REGION



ADDRESS REPLY TO
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RD
DENDROLOGY
Taxonomy
Salix

May 27, 1952

AIR MAIL

Dr. Carleton R. Ball
Collaborator
Extension Service, USDA
Washington 25, D. C.

Dear Dr. Ball:

Please accept my late thanks for your valuable, detailed notes on Salix sent with your letter of May 10. These notes were incorporated into the manuscript of the Check List of Native and Naturalized Trees of the United States which was formally submitted for publication on May 16. It has since gone to the Government Printing Office and should appear in print early next year.

The enclosed extra copy of the portion on Salix was typed for you to keep. It was prepared before your notes were received, but these were inserted as indicated. Some of your changes had already been anticipated. You raised a few questions, and I have a few. Any necessary changes can be made when the proof is corrected. However, I have come to Puerto Rico for three months to continue work on the publication on trees of Puerto Rico (and where I shall be safe from any criticism of the manuscript).

In nearly all cases the names you accept have been used. The principal change is the omission of all varieties in Salix. In the new Check List only important varieties have been retained, and there has been drastic reduction in number of varieties. Most of the varieties in Salix do not appear important, at least to foresters. For example, I question the desirability of distinguishing by a varietal name the glabrate phase of Salix gooddingii while a few of the more conservative botanists put S. gooddingii as a variety of S. nigra.

I like your comments on willow hybrids. The mimeographed Check List of 1944 had some notes on hybrids at the beginning of Salix, and I have inserted further notes from your remarks. The named hybrid Salix Xglatfelteri Schneid. has been left in to conform to the general plan of the Check List. As explained in the introduction, hybrids with binomial

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names are included, though it is suggested there that in most cases it is satisfactory to use the names of parent species connected by the times sign.

OK

Now, to mention your questions and mine. The citation of your treatment of Salix in the new Illustrated Flora will be added after that work appears. The Indiana references were omitted because of the later Flora of Indiana.

Salix amygdaloides Anderss. Is Chihuahua, Mexico, correct for range, as I added? Mexican ranges were given where known.

Salix arbusculoides Anderss. You listed it as too low to consider including. Earlier I had put it in Pocket Guide Alaska Trees on basis of herbarium labels (20-25 feet tall and 4 inches in diameter) and Hultén's Flora of Alaska and Yukon, and thought that you agreed.

Mr. Dayton asks if Salix argophylla Nutt. should be added as a small tree. Any information on this point will be welcome.

I have wondered if Salix coulteri Anderss. is a tree but left it in. I suppose S. sitchensis var. parvifolia (Jeps.) Jeps. and var. ralphiana (Jeps.) Jeps. belong here.

Salix exigua Nutt. Your range did not mention Mexico. Is this correct: Also in northern Mexico (Lower California to Chihuahua).

Salix harbisonii Schneid. I put this in a note under S. caroliniana following Massey and Ball. Is this disposition correct? The name now should be written "harbisonii". A recommendation added to the International Code at the Stockholm Congress in 1950 permits correction of original spelling uniformly to -ii except for -i after vowels and after -er. If S. harbisonii is maintained as distinct, I think it should be called S. marginata Wimm. ex Small (Fl. Southeast. U. S. 341. 1903; as "Weimer."). Small first published the name in 1903, not 1913 as cited by Schneider. Apparently the earlier, different (?) S. marginata Wimm. was published only in synonymy by Andersson. Thus, Small's publication of S. marginata with description in 1903 stands as a new name.

Salix interior Rowlee. Sargent (Man. Trees No. Amer. Ed. 2, 153. 1922) reported this species as occasionally 60-70 feet high and 2 feet in diameter. Are these figures in error? Do you have data on the range in northern Mexico by States of this species and varieties together?

Salix lasiandra Benth. You asked why "(Andersson)" was omitted in Salix lasiandra var. lancifolia Bebb in mimeographed Check List. It is unnecessary to cite Andersson because Salix lancifolia Anderss. is rejected as a

3-Carleton R. Ball-May 27, 1952

later homonym and has not status in nomenclature. S. lasiandra var. lancifolia Bebb technically is a new name, not a new combination. For precision "(Andersson)" could be cited in synonymy in brackets as in the new manuscript like this: Salix lasiandra var. lancifolia [(Anderss.)] Bebb. But I thought Salix lucida macrophylla Anderss. was an older name for this variety and made the new combination S. lasiandra var. macrophylla (Anderss.) Little (Amer. Midland Nat. 33: 496. 1945).

✓ Salix lasioplepis Benth. Does range including varieties extend to Coahuila, Mexico?

Salix ligulifolia (Ball) Ball. I was about to omit this because you called it a shrub in 1950 (Wash. Acad. Sci. Jour. 40: 329-331. 1950). How big does it get? Do you now call it a tree? In new Check List I have tried to set a minimum height of 12 feet and diameter of 3 inches at breast height.

Salix lutea Nutt. I have a note that this is recorded from northern Ontario. Do you agree?

Thank you for the information about Salix maccalliana Rowlee, which has been inserted in a note. This species is not in the Checklist of Native Trees of Canada issued by the Canada Dominion Forest Service.

Salix nigra Marsh. Is my statement of range in Mexico (Coahuila to Tamulipas) correct?

Salix pellita Anderss. Added as a small tree, at your suggestion.

Salix rigida Muhl. and var. vestita (Anderss.) ined. (?). I put these both under Salix eriocephala Michx. According to your detailed list of synonymy, Salix eriocephala Michx. and S. rigida Muhl. are varieties of the same species. According to Fernald, Michaux's book appeared in March 1803 and has priority over Muhlenberg and Willdenow's article published after May of the same year. Thus, the species would be called S. eriocephala and you can make the new combination Salix eriocephala var. rigida (Muhl.) if you wish, provided nobody else has done it first. I added Mississippi and North Carolina to range from Fernald. Coker and Totten had North Carolina also. If you disagree, please let me know.

Salix sitchensis Sanson. I added "also in eastern Asia" to range, from Hultén, I believe. Is this correct?

Salix viminalis L. Added at your suggestion. Is it really naturalized, or merely an occasional escape? The Check List includes naturalized trees but not occasional escapes.

Fernald (Gray's Man. Bot. Ed. 8, 511-512. 1950) listed two additional species as trees: S. glaucophylloides Fern. and S. laurentiana Fern.

4-Carleton R. Ball-May 27, 1952

Rehder (Man. Cult. Trees Shrubs 105. 1940) listed the former as a tree also. Do you have any information on whether these two are trees and merit inclusion in the Check List?

I am in no hurry for the answers, and you may wait until my return about September, if you wish.

Sincerely yours,

Elbert L. Little, Jr.

Elbert L. Little, Jr.
Forester (Dendrology)

Enclosure

Salix L. (Family Salicaceae)

willow

Salix L., Sp. Pl. 1015. 1753; Gen. Pl. Ed. 5, 447. 1754.

Derivation.--The classical Latin name.

Other common names.--sauce, sauz.

Salix is one of the largest genera of native woody plants in number of species and also one of the most difficult for identification. More than 100 species are distinguished in North America, but most of these are shrubs and some are low, almost prostrate shrubs of arctic regions or alpine mountain summits.

^{all} ³⁶³³ ³⁴
~~altogether~~, native species and naturalized species of Salix are accepted here as trees. It has not seemed practicable to distinguish varieties in this ~~difficult~~ genus, but the varietal names in use are cited in synonymy under their respective species. Most of the numerous named varieties are based on minor differences, such as degree of hairiness of foliage and twigs and the shape of leaves.

Carleton R. Ball, of the United States Department of Agriculture and specialist on the genus Salix, ~~Navy~~ has examined the manuscript of Salix and has made many helpful suggestions. He has also contributed the ranges, based upon his detailed notes from his large herbarium of this genus. These ranges are believed to be the most accurate records available.

In Salix it is difficult to draw the line between a tree and a shrub. Some of the willows with several trunks from the same root system reach a large size and are regarded as trees. The species recorded as trees and having the minimum dimensions for trees have been included. Ball suggests that this list contains too many species and varieties in the "small-tree" classification, especially in the sandbar willow group.

insert on p. 791

Hybrids ~~from two species~~ of Salix are found sparingly throughout North America, according to Ball. They occur most commonly in temperate areas, where the flowering season is long and where varying winds carry the abundant pollen widely. In Europe the recognition and naming of alleged hybrids in Salix has been given much attention. Ball suggests that hybrids be designated merely by the names of the two parent species connected by the times sign (X), rather than as binomials, and with the parent most closely resembled cited first. Often the identity of one of the two parents is uncertain, and if a hybrid should possibly cross with a third species, the latter would scarcely be recognizable. A single named hybrid of two native tree species is included here, as hybrids without binomial names are omitted in this Check List.

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insert p. 791A

A few additional introduced species of Salix are reported in manuals as shrubs or small trees occasionally escaping from cultivation. Ball states that it is doubtful whether Salix purpurea L., purple-osier willow, ^{which is} ~~and Salix viminalis L., basket willow, both~~ cultivated for basket-work and escape^{es} ~~///~~ ever attain^s tree size. The European tree species Salix pentandra L., laurel willow, has escaped from cultivation only very sparingly, according to Ball, and has not been added here.

Various supposed hybrids among the native and introduced species of Salix have been reported, though actual hybrids ~~/// /// /// ///~~ according to Ball. Some of these supposed hybrids are known from ~~///~~ just while a few herbarium specimens ~~///~~ only a few have been given binomial names.

A detailed list of more than fifty hybrids ~~/// /// ///~~ among the North American willows ^{mostly shrubby,} was prepared by Schneider (Arnold Arboretum Jour.

13: 78-84, 1922). ~~Most of these are shrubby and only a few have been given binomial names. Only the tree hybrids with binomial names are mentioned here.~~

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Insert 791A here →

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IV. Bot. Gaz. 67: 309-346. 1919. V. Arnold Arboretum Jour. 1: 1-32. 1919. VI. Arnold Arboretum Jour. 1: 67-97. 1919. VII. Arnold Arboretum Jour. 1: 147-171. 1920. VIII. Arnold Arboretum Jour. 1: 211-232. 1920. IX. Arnold Arboretum Jour. 2: 1-25. 1920.

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Logger indicates
a scientific name or
common name accepted
in Index 1927 Check
List

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Salix acutidens Rydb., see S. eriocephala Michx.

Salix alaxensis (Anderss.) Cov.

~~Feltleaf~~ willow

Salix speciosa β alaxensis Anderss. in A. DC., Prodr. 16 (2): 275.

1868.

~~F~~Salix alaxensis (Anderss.) Cov., Wash. Acad. Sci. Proc. 2: 280.

1900.

Salix longistylis Rydb. in Britton & Rydb., N. Y. Bot. Gard. Bul.

2: 163. 1901. Not Salix longistyla Gand., Fl. Eur. 21: 243.

1890.

Salix alaxensis var. longistylis (Rydb.) Schneid., Arnold Arboretum

Jour. 1: 225. 1920.

Salix alaxensis var. obovalifolia Ball, Wash. Acad. Sci. Jour. 28:

443. 1938.

Derivation.—Of Alaska, from an old Russian spelling, Alaska.

Range.—Northwest Territories from northwestern side of Hudson Bay west to Yukon and almost throughout Alaska, south to central British Columbia and Alberta. Also in eastern Asia. Not in United States.

Salix alba L.

white willow

~~F~~Salix alba L., Sp. Pl. 1021. 1753.

Derivation.—White, referring to the white-silky leaves.

Other common names.—^{+dagger}European white willow, golden osier, golden willow, yellow stillow, yellowstem white willow.

Range.—Escaped from cultivation and naturalized in southeastern Canada ^{+turn} Nova Scotia to Ontario and south in eastern United States to Iowa, Missouri, Tennessee, and North Carolina. Also in Colorado. Native from Europe and northern Africa to central Asia.

Salix amphibia Small, see S. caroliniana Michx.

Salix amplifolia Cov.

Yakutat willow

Salix amplifolia Cov., Wash. Acad. Sci. Proc. 2: 282, pl. 15. 1900.

Derivation.--~~Large-leaved~~ Ample-leaved, or full-leaved.

Other common name.--~~bigleaf~~ willow.

Range.--Local in Yakutat Bay area at northern end of southeastern Alaska coast. Reported also west to Prince William Sound in southern Alaska. Not in United States.

Salix amygdaloides Anderss.

~~peachleaf~~ willow

Salix amygdaloides Anderss., Svenska Vetensk. Akad. Öfversigt af ...

Förhandl. 15: 114. 1858. Amer. Acad. Arts and Sci. Proc. 4:

53 (Salic. Bor.-Amer. 8). 1858.

Salix wrightii Anderss., Svenska Vetensk. Akad. Öfversigt af ...

Förhandl. 15: 115. 1858. Amer. Acad. Arts and Sci. Proc. 4:

55 (Salic. Bor.-Amer. 9). 1858.

Salix amygdaloides var. *wrightii* (Anderss.) Schneid., Bot. Gaz.

65: 14. 1918.

Derivation.--Resembling *Amygdalus*, peach, referring to the shape of the leaves.

Other common names.--almond willow, almondleaf willow, peach willow, southwestern peach willow, Wright willow, Wright peachleaf willow.

Range.--Southern Quebec and New York west to southern Ontario, Michigan, Minnesota, southern Manitoba, southern Saskatchewan, southern Alberta, and southeastern British Columbia, south to Washington, eastern Oregon, Idaho, Nevada, and Arizona, and east to New Mexico, Trans-Pecos Kentucky, and northwestern Texas, Kansas, Missouri, ~~1111~~ and Pennsylvania. Local in Massachusetts and Vermont. Also in northern Mexico (Chihuahua).

Hybrid.--*Salix Xelatifelteri* Schneid. (S. *amygdaloides* X *nigra*).

Salix arbusculoides Anderss.

littletree willow

Salix arbusculoides Anderss., Svenska Vetensk. Akad. Handl. 6:

147, pl. 8, fig. 81. 1867.

Derivation.--Like a little tree.

Range.--Northwest Territories from west side of Hudson Bay to Yukon and interior Alaska to northwestern Alaska, south to British Columbia and Saskatchewan. Not in United States.

This species is an erect shrub 5 to 10 feet high or sometimes a small tree as much as 20 to 25 feet tall and 4 inches in diameter. It was recorded as a tree in Alaska by Hultén (Fl. Alaska Yukon. Lunds Univ. Årskr. N. F. 39 (1): 549-550. 1943) and by Taylor and Little (Pocket Guide to Alaska Trees. U. S. Dept. Agr. ~~for~~ Handb. 5: 38-39, fig. 19. 1950).

Salix astatulana Murrill & Palmer, see S. floridana Chapm.

Salix babylonica L.

weeping willow

~~Salix babylonica~~ L., Sp. Pl. 1017. 1753.

~~Derivation.--Of Babylon, erroneously thought to have been the home of this tree long cultivated in Europe but native of China.~~

Other common names.--Babylon weeping willow (SPN), Napoleon willow.

Range.--Escaped from cultivation and naturalized locally in eastern United States. Native of China.

Salix bakeri Seemen, see S. lasiolepis Benth.

Salix balsamifera Barratt, see S. pyrifolia Anderss.

Derivation.--Of Babylon, erroneously thought to have been the willow at Babylon where the exiled Jews sat down and wept (Psalms 137: 1-2), now known to be the willow-like Euphrates poplar, Populus euphratica Oliv.

Salix bebbiana Sarg.

Bebb willow

Salix rostrata Richards. in Franklin, Warr. Jour. Polar Sea 753.

1823. Not Salix rostrata Thuillier, Fl. Paris, Ed. 2, 516.

1799.

*Salix bebbiana Sarg., Gard. and Forest 8: 463. 1895.

Salix perrostrata Rydb. in Britton & Rydb., N. Y. Bot. Gard. Bul.

2: 163. 1901.

Salix rostrata Richards. var. luxurians Fern., Rhodora 9: 223. 1907.

Salix rostrata var. capreifolia Fern., Rhodora 16: 177. 1914.

Salix rostrata var. projecta Fern., Rhodora 16: 178. 1914.

Salix bebbiana var. perrostrata (Rydb.) Schneid., Arnold Arboretum

Jour. 2: 71. 1920.

Salix bebbiana var. projecta (Fern.) Schneid., Arnold Arboretum

Jour. 3: 75. 1922.

Salix bebbiana var. capreifolia (Fern.) Fern., Rhodora 26: 123.

1924.

Salix bebbiana var. luxurians (Fern.) Fern., Rhodora 26: 122. 1924.

Derivation.--In honor of Michael Schuck Bebb (1833-95), American specialist on willows.

Other common names.--beaked willow, long-beaked willow.

Range.--Widespread from Newfoundland and Labrador west to Hudson Bay and across Canada to Yukon and interior Alaska, south to northern end of southeastern Alaska, British Columbia, south in mountains of western United States from Washington to central California, Arizona, New Mexico, western Nebraska, and Montana, and south in northeastern United States from North Dakota and South Dakota to Iowa, Indiana, Ohio, Pennsylvania,

Maryland, New Jersey, and New England.

Salix bigelovii Torr., see S. lasiolepis Benth.

Salix bolanderiana Howles, see S. melanopsis Nutt.

Salix bonplandiana E. B. K. Bonpland willow
~~Salix bonplandiana~~ H. B. K., Nov. Gen. Sp. 2: 20, pls. 101, 102.

1817.

Salix toumeyi Britton in Britton & Shafer, No. Amer. Trees 167,
 fig. 145. 1908.

~~Salix bonplandiana~~ var. toumeyi (Britton) Schneid., Bot. Gaz. 65:
 20. 1918.

Derivation.--In honor of its discoverer, Aimée Bonpland (1773-1858),
 French botanist who with Alexander von Humboldt made important collections
 of plants in Mexico and other Spanish colonies in the New World.

Other common name.--Toumey willow.

Range.--Extreme southeastern New Mexico to southeastern and central
 Arizona. Also from northern Mexico (southern Lower California, Sonora,
 Chihuahua, and Coahuila south to Oaxaca) south to Guatemala.

Salix caroliniana Michx.

coastal plain willow

Salix caroliniana Michx., Fl. Bor.-Amer. 2: 226. 1803.

Salix longipes Shuttlew. ex Anderss., Svenska Vetensk. Akad.

Öfversigt af ... Förhandl. 15: 114. 1858. Amer. Acad.

Arts and Sci. Proc. 4: 53 (Salic. Bor.-Amer. 7). 1858.

Salix nigra [subsp.?] longipes [var.?] venulosa Anderss., Svenska Vetensk. Akad. Handl. 6: 22. 1867.

Salix nigra γ longipes 1° venulosa Anderss. in DC., Prodr. 16(2): 201. 1868.

Salix nigra var. wardi Bebb in Ward, U. S. Natl. Mus. Bul. 22: 114. 1881.

Salix wardi (Bebb) Gard. and Forest 8: 363. 1895.

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Salix marginata ~~Wimm.~~ ~~Wimm.~~ ex Small, Fl. Southeast. U. S. 341. 1903; as "Weimer."

Wimm.
Not Salix marginata ~~Wimm.~~ ex Anderss., Svenska Vetensk. Akad. Handl. 6: 21. 1867; as synonym.

Salix amphibibia Small, Fl. Miami 61, 200. 1913.

Salix longipes var. venulosa (Anderss.) Schneid., Bot. Gaz. 65: 14. 1918.

Salix longipes var. wardi (Bebb) Schneid., Bot. Gaz. 65: 22. 1918.

Salix herbisonii Schneid., Arnold Arboretum Jour. 1: 29. 1919; as "herbisoni."

Derivation.--Of Carolina.

Other common name.--Ward willow.

southwestern

Range.--Maryland and Pennsylvania to West Virginia, southern Indiana, southern Illinois, Missouri, and Kansas, south to eastern Oklahoma and eastern Texas, and east to southern Florida. Also in Cuba.

~~This species hybridizes with Salix nigra Marsh.~~
 (Arnold Arboretum Jour. 1: 29. 1919; as
~~Salix harbisonii Schneid. // which was published as a new name~~
 "harbisonii") was rejected as a doubtful species
~~for Salix marginata Wimmer ex Small, was listed by Massey and Ball (Va.~~
 Polytech. Inst. Bul. 37(9): 30. 1944) ~~as a rejected and doubtful~~
species. They noted that most specimens so named could be referred to
S. caroliniana (S. longipes) or S. nigra. Schneider himself was
 doubtful of the status of this willow and thought it might be S. car-
oliniana (S. longipes var. venulosa) or possibly a hybrid between that
 species and S. nigra. Coker and Totten (Trees Southeast. States, Ed.
 3, 67-69, fig. 1945) retained S. harbisonii Schneid. as a species
 of the Coastal Plain from southeastern Virginia to northern and
 northwestern Florida. ~~W~~

Reference.--Fernald, M. L. Rhodora 48: 28-31. 1946.

Salix caudata (Nutt.) Heller whiplash willow

Salix pentandra β caudata Nutt., No. Amer. Sylva 1: 61, pl. 18.
 1843.

~~Salix lasiandra var. caudata (Nutt.) Sudw., Torrey Bot. Club Bul.~~
 20: 43. 1893.

Salix caudata (Nutt.) Heller, Muhlenbergia 2: 186. 1906.

Salix caudata var. bryantiana Ball & Bracelin in Ball, Wash.

Acad. Sci. Jour. 28: 445. 1938.

Derivation.--Caudate, or tailed, referring to the very long-pointed
 leaves.

Other common name.--~~western~~ black willow.

164 However, an older name apparently available is S. marginata Wimm. ("Weimer"
 ex Small, Fl. Southeast. U. S. 341. 1903. Not S. marginata Wimm. ex
 Anderss., Svenska Vetensk. Akad. Handl. 6: 21. 1867; as synonym).

1000 on p. 800.
insert on p. 800

Salix coulteri Anderss.

49
Coulter willow

Salix coulteri Anderss., Svenska Vetensk. Akad. Öfversigt af ...

Förhandl. 15: 119. 1858. Amer. Acad. Arts and Sci.

Proc. 4: 58 (Salic. Bor.-Amer.). 1858.

Salix sitchensis f. parvifolia Jeps., Silva Calif. 182. 1910.

Salix sitchensis f. ralphiana Jeps., Silva Calif. 182. 1910.

Salix sitchensis var. coulteri Jeps., Man. Fl. Pl. Calif. 265. 1923.

Salix sitchensis var. parvifolia (Jeps.) Jeps., Man. Fl. Pl. Calif.
265. 1923.

Salix sitchensis var. ralphiana (Jeps.) Jeps., Man. Fl. Pl. Calif.
265. 1923.

Derivation.--Named for its discoverer, Thomas Coulter (1793-1843),
Irish botanist and physician who collected plants in Mexico and California.

Other common name.--velvet willow.

In the 1927 Check List this species was mentioned in a note as a
form of Salix sitchensis Sanson.

Range.--Northwestern Montana and northern Idaho to southern British
Columbia and south to Washington and west central California.

insert p. 800A

Range.--Southern Alberta, southern British Columbia, and Washington south to southern California, east to northern New Mexico, and north to Idaho.

Salix chapmani Small, see S. floridana Chapm.

Salix columbiæ A. Nels. & Macbr., see S. pyrifolia Anderss.

Salix cordata Muhl., see ~~S. rigida~~ Muhl. S. eriocephala Michx.

Salix discolor Muhl. pussy willow

~~Salix discolor~~ Muhl. in Muhl. & Willd., Gesell. Naturf. Freunde Berlin Neue Schr. 4: 234, pl. 6, fig. 1. 1803, ^{after} (May).

~~?Salix eriocephala Michx., Fl. Bor.-Amer. 2: 225. 1803 (March).~~

Salix discolor [subsp.?] eriocephala (Michx.) Anderss., Svenska Vetensk. Akad. Handl. 6: 86. 1867.

?Salix discolor [var.?] latifolia Anderss., Svenska Vetensk. Akad. Handl. 6: 84. 1867.

~~?Salix discolor β ? eriocephala (Michx.) Anderss. in DC., Prodr. 16 (2): 226. 1868.~~

Salix prinoides Pursh, Fl. Amer. Sept. 2: 613. 1814.

Salix discolor [subsp.?] prinoides (Pursh) Anderss., Svenska Vetensk. Akad. Handl. 6: 86. 1867.

~~?Salix discolor β ? prinoides (Pursh) Anderss. in DC., Prodr. 16(2): 225. 1868.~~

Salix discolor var. overi Ball, Rhodora 26: 137. 1924.

Derivation.--Of different colors, referring to the leaves, which are bright green above and whitish beneath.

The varietal name Salix discolor var. latifolia Anderss. has been adopted by Fernald (Gray's Man. Ed. 8, 515. 1950) and by Ball for the hairy variation formerly known as ~~?Salix discolor~~ var. eriocephala (Michx.) Anderss. The latter name was based upon S. eriocephala Michx., which is accepted here as a different species.

Insert
Salix coulteri
p. 800A

Salix eriocephala Michx.

Missouri River willow

Salix eriocephala Michx., Fl. Bor.-Amer. 2: 225. 1803 (March).

Salix cordata Muhl. in Muhl. & Willd., Gesell. Naturf. Freunde
Berlin Neue Schr. 4: 236, pl. 6, fig. 3. 1803 ^{after} (May). Not

Salix cordata Michx., Fl. Bor.-Amer. 2: 225. 1803 (March).

Salix rigida Muhl. in Muhl. & Willd., Gesell. Naturf. Freunde Berlin
Neue Schr. 4: 236, pl. 6, fig. 4. 1803 ^{after} (May).

Salix cordata [subsp.?] l. S. rigida (Muhl.) Anderss., Svenska
Vetensk. Akad. Handl. 6: 86. 1867.

Salix cordata [subsp.?] l. S. rigida [var.?] d. vestita Anderss.,
Svenska Akad. Handl. 6: 159. 1867.

Salix discolor [subsp.?] eriocephala (Michx.) Anderss., Svenska
Akad. Handl. 6: 86. 1867.

Salix cordata α rigida (Muhl.) Anderss. in DC., Prodr. 16 (2):
252. 1868.

Salix cordata α rigida γ^o vestita Anderss. in DC., Prodr. 16 (2):
252. 1868.

Salix discolor β ? eriocephala (Michx.) Anderss. in DC., Prodr.
16 (2): 226. 1868.

Salix missouriensis Bebb, Gard. and Forest 8: 373. 1895.

Salix acutidens Rydb. in Britton, Man. Fl. North. States Canada
315. 1901.

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insert on p. 801

~~Salix eriocephala Michx.~~ Continued

7, Salix eriocephala Michx. includes variations formerly known as two distinct species, S. cordata Muhl. and S. missouriensis Bebb. Fernald (Gray's Man. Bot. Ed. 8, 511-512. 1950), after determining in the reference cited the dates of names published in 1803, maintained two species under the names S. rigida Muhl. and S. eriocephala Michx. However, when the two are united as varieties of one species, S. eriocephala Michx. has priority.

Derivation.--Woolly-headed, the catkins resembling those of pussy willow.

Other common names.--cordate willow, diamond willow, heartleaf willow, Missouri willow.

Range.--Southern Newfoundland to Nova Scotia, Maine, Ontario, Minnesota, North Dakota, eastern Saskatchewan, and northeastern Montana, south to northwestern Nebraska, Kansas, Missouri, Kentucky, western Tennessee, and Virginia. Also local in Arkansas, Mississippi, Alabama, Georgia, and North Carolina.

References.--Ball, Carleton R. More plant study: fewer plant names. Arnold Arboretum Jour. 27: 371-385. 1946.

Fernald, M. L. Rhodora 48: 13-16, 27-28, pl. 996. 1946.

This shrub or small tree attains its maximum size of 30 feet in height and 3 to 6 inches in diameter in central Alberta.

Other common name:--glaucous willow, silvery pussy willow.

Range.--Newfoundland and Labrador west to central Alberta and central British Columbia, south to Idaho, Montana, Wyoming, Black Hills of South Dakota, Nebraska, Iowa, northeastern Missouri, Indiana, Maryland, and Delaware, and south in mountains to eastern Kentucky, eastern Tennessee, and western North Carolina.

Insert
Salix ericecephala
pp. 801A, 801B.

~~Salix ericecephala Michx., see S. discolor Mühl.~~

Salix exigua Nutt.

coyote willow

~~Salix exigua~~ Nutt., No. Amer. Sylva 1: 75. 1843.

Salix nevadensis S. Wats., Amer. Nat. 7: 302. 1873.

Salix lutescens Rydb. in Britton, Man. Fl. North. States

Canada 316. 1901.

Salix stenophylla Rydb., Torrey Bot. Club Bul. 28: 271. 1901.

Salix exigua var. stenophylla (Rydb.) Schneid., Bot. Gaz. 65:

25. 1918.

Salix exigua var. lutescens (Rydb.) Schneid., Bot. Gaz. 67:

334. 1919.

Salix exigua var. nevadensis (S. Wats.) Schneid., Bot. Gaz. 67:

331. 1919.

Derivation.--~~Short, or small~~ Scanty, hence small-sized.

Other common names.--acequia willow, basket willow, gray sandbar willow, narrowleaf willow, ~~sandbar~~ willow, slender willow.

Range.--Alberta and British Columbia, and Washington south to southern California, east to Trans-Pecos and ~~central~~ western Texas, and north to western Kansas, ~~and~~ western South Dakota. Also in northern Mexico (Lower California to Chihuahua).

insert p. 801 b

Inser. on p. 802.

insert on p. 802

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Salix fluviatilis Nutt.

river willow

Salix fluviatilis Nutt., No. Amer. Sylva 1: 73. 1843.

Derivation.--Of rivers.

Range.--Very restricted, lower Columbia River Valley in Klickitat County, southern Washington, and Wasco and Multnomah Counties, Oregon, and south in Willamette Valley of northwestern Oregon to Lane County.

Commonly shrubby but also becoming a small tree 20 to 23 feet in height, according to Carleton R. Ball.

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Generally a shrub less than 12 feet high with clustered stems, becoming a tree rarely to 25 feet and only in eastern Washington, according to Sargent (Man. Trees No. Amer. Ed. 2, corr. 152. 1926).

Salix falcata Pursh, see *S. nigra* Marsh.

Salix floridana Chapm.

Florida willow

Salix floridana Chapm. Fl. South. U. S. 430. 1860.

Salix chapmanii Small, Man. Southeast. Flora 414, 1504. 1933.

Salix natutulana Murrill & Palmer, Arnold Arboretum Jour. 22:

580, illus. 1941.

Derivation.--Of Florida.

Range.--Southern Georgia (Pulaski and Early Counties) to north-western and central Florida (Jackson, Levy and Lake Counties). A rare species apparently on the verge of extinction.

Reference.--Ball, Carleton R. Salix floridana Chapman a valid species. Arnold Arboretum Jour. 24: 103-106, illus. 1943.

~~Salix fluviatilis Nutt., see note under *S. interior* Rowles~~

Salix fragilis L.

crack willow

Salix fragilis L., Sp. Pl. 1017. 1753.

Derivation.--Fragile, referring to the brittle, easily broken twigs.

Other common names.--brittle willow (SPN), snap willow.

Range.--Widely planted and escaped and locally naturalized in southeastern Canada and eastern United States from Maine to Minnesota and South Dakota south to Kansas and southeastern States. Native of Eurasia.

insert from p. 802a

Widely hybridized with Salix alba L. in Europe and America.
Such hybrids have been included under varieties of that species,
such as Salix alba var. vitellina (L.) Stokes.

Salix Xglatfelteri Schneid.

Glatfelter willow

Salix amygdaloides X nigra

Salix nigra X amygdaloides Bebb, Gard. and Forest 8: 363. 1895.

Salix Xglatfelteri Schneid., Arnold Arboretum Jour. 3: 79. 1922.

Derivation.--Named for its discoverer, Noah Miller Glatfelter
(1837-1911), physician of St. Louis, Mo., who studied willow hybrids.

Reference.--Glatfelter, N. M. A study of the relations of Salix
nigra and Salix amygdaloides, together with the hybrids arising from
them as these species exhibit themselves in the vicinity of St. Louis.
Acad. Sci. St. Louis Trans. 6: 427-431, illus. 1894.

Salix gooddingii Ball

Goodding willow

Salix nigra var. vallicola Dudley in Abrams, Fl. Los Angeles 100.
1904.

Salix gooddingii Ball, Bot. Gaz. 40: 376, pl. 12, figs. 1-2.

1905; as "gooddingii". Bot. Gaz. 72: 227-235, figs. 2-4. 1921.

Salix vallicola (Dudley) Britton in Britton & Shafer, No. Amer.
Trees 184, fig. 141. 1908.

Salix gooddingii var. vallicola (Dudley) Ball ex S. S. White,
Lloydia 11: 278. 1948; without basonym.

Salix gooddingii var. vallicola (Dudley) Ball, Wash. Acad. Sci.
Jour. 40: 324, 1950; as synonym.

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Salix gooddingii var. variabilis Ball, Wash. Acad. Sci. Jour. 40:
324. 1950.

Closely related to Salix nigra Marsh. and regarded by some authors as a variety of that species.

Derivation.--In honor of Leslie Newton Goodding, botanist of the United States Department of Agriculture, who collected the type specimen.

Other common names.--black willow, /Dudley willow, western black willow.

Range.--~~Southern~~ Utah to southern Nevada and northern and southern California, east to Arizona, New Mexico, and northwestern Texas to Trans-Pecos and southern Texas. Also in northern Mexico (Sonora and Chihuahua).

Reference.--Ball, Carleton R. Salix gooddingii Ball and its glabrous-capsuled variety. Wash. Acad. Sci. Jour. 40: 324-329. 1950.
under
Salix harbisonii Schneid., see /S. caroliniana Michx.

Salix hindsiana Benth.

Hinds willow

Salix hindsiana Benth., Pl. Martw. 335. 1857.

Salix sessilifolia [var.?] ^h*hindsiana* (Benth) Anderss., Svenska

Vetensk. Akad. Öfversigt af ... Förhandl. 15: 117. 1858.

Amer. Acad. Arts and Sci. Proc. 4: 56 (*Salic. Bor.-Amer. 11*).
1858.

Salix macrostachya var. *leucodendroides* Rowlee, Torrey Bot. Club

Bul. 27: 250, pl. 9, fig. 6. 1900.

Salix sessilifolia var. *leucodendroides* (Rowlee) Schneid., Bot.

Gas. 65: 26. 1918.

Salix hindsiana [var.] *leucodendroides* (Rowlee) Schneid. ex Ball

in Abrams, Illus. Fl. Pacif. States 1: 491. 1923; nom. provisor.

Salix hindsiana var. *leucodendroides* (Rowlee) Schneid. ex Munz, Man.

South. Calif. Bot. 105. 1935; without basonym.

Salix hindsiana var. *leucodendroides* (Rowlee) Ball, Madroño 6: 232.

1942.

Derivation.--In honor of Richard Brinsley Hinds, English botanist who collected plant specimens along the western coast of America on a surveying expedition with the ship Sulphur in 1836-42.

Other common names.--sandsbar willow, valley willow.

Range.--Southwestern Oregon, California, and northern Lower California, Mexico.

A shrub or small tree to 30 feet in height.

Salix hookeriana Barratt

Hooker willow

Salix hookeriana Barratt ex Hook., Fl. Bor.-Amer. 2: 145, pl. 180.
1839.

Salix hookeriana var. *laurifolia* J. K. Henry, Fl. South. Brit. Col.
99. 1915.

Salix hookeriana var. *tomentosa* J. K. Henry ex Schneid., Arnold
Arboretum Jour. 1: 220. 1920.

Derivation.--Honoring William Jackson Hooker (1785-1865), English
botanist, in whose work, *Flora Boreali-Americana*, the description was
published.

Other common name.--coast willow.

Range.--Pacific coast from extreme southwestern British Columbia,
Vancouver Island, and western Washington south to northwestern California.

Salix interior Rowlee

Sandbar willow

~~Salix~~ longifolia Mühl. in Mühl. & Willd., Gesell. Naturf. FreundeBerlin Neue Schr. 4: 238, pl. 6, fig. 6. 1803. Not E.longifolia Lam., Fl. Franç. 2: 232. 1778.Salix longifolia angustissima Anders., Svenska Vetensk. Akad.

Öfversigt af ... Förhandl. 15: 116. 1858.

~~Salix~~ longifolia var. angustissima Anderss., Amer. Acad. Arts and

Sci. Proc. 4: 56. 1858.

Salix interior Rowlee, Torrey Bot. Club Bul. 27: 253, pl. 9, figs.

12-13. 1900.

Salix longifolia [subsp.?] pedicellata Anderss., Svenska Vetensk.

Akad. Handl. 6: 55. 1867.

~~Salix~~ longifolia pedicellata Anderss. in DC., Prodr. 16 (2):214. 1868. (Spelled "pedunculata" in the 1927 Check List.)Salix interior wheeleri Rowlee, Torrey Bot. Club Bul. 27: 253, pl.

9, fig. 14. 1900.

Salix thurberi Rowlee, Torrey Bot. Club Bul. 27: 252. 1900.~~Salix~~ interior [var.] pedicellata (Anderss.) Ball, Canad. Field

Nat. 40: 175. 1926.

Salix longifolia var. wheeleri (Rowlee) Schneid., Bot. Gaz. 67: 342. 1919.Salix interior angustissima (Anderss.) Dayton in Sudw., U. S. Dept.

Agr. Tech. Bul. 420: 78. 1934.

Salix interior var. exterior Fern., Rhodora 48: 38. 1946.

Derivation.--Inland, from its extensive range in the interior.

Range.--Eastern Quebec, New Brunswick, and Maine, west across Canada to Manitoba, Northwest Territories, Yukon, and central interior Alaska, south to eastern Montana, Wyoming, eastern Colorado, Kansas, southeastern New Mexico, and western and southern Texas, east to Louisiana, western Tennessee, Kentucky, and Maryland. Also in northeastern Mexico. ⁹¹ Commonly shrubby with clustered stems 8 to 15 feet high and rarely a small tree to 20 (or 30) feet in height.
~~Formerly and in the 1927 Check List known as~~ Salix longifolia Mühl.,
 a name which must be rejected as a later homonym, and earlier referred to Salix fluviatilis Nutt., river willow, which is a ~~shrubby~~ species of Washington and Oregon.

note under

Salix jepsonii Schneid., see S. sitchensis Sanson

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Delete this page

Salix Xjesupii Fern.

Jesup willow

Salix alba X lucida

Salix alba X lucida Bebb, Gard. and Forest 8: 423-424, fig. 57. 1875.

Salix Xjesupii Fern., Rhodora 48: 38. 1946; as "jesupi."

Derivation.--Named for its discoverer, Henry Griswold Jesup (1826-1903), botany professor at Dartmouth College, Hanover, N. H.

Range.--A frequent hybrid, according to Fernald (Gray's Man. Ed. 8, 506. 1950), though one of the parents is introduced.

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Salix laevigata Bebb

/red willow

Salix laevigata Bebb, Amer. Nat. 8: 202. 1874.

Salix laevigata f. *araguipa* Jeps., Fl. Calif. 1: 339. 1909.

Salix laevigata var. *araguipa* (Jeps.) Ball, Bot. Gaz. 72: 234.

1921.

Derivation.--Smooth, the foliage typically hairless and shining.

Other common name.--polished willow (SPN).

Range.--Southern Utah to northwestern Nevada and northern California, south to southern California and Arizona. Also in Lower California, Mexico.

Salix lancifolia Anderss., see *S. lasiandra* Benth.

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Salix lasiandra Benth.

Pacific willow

Salix lasiandra Benth., Fl. Hartw. 335. 1857.

Salix lancifolia Anderss., Svenska Vetensk. Akad. Handl. 6: 34,

pl. 2, fig. 23. 1867. Not *Salix lancifolia* A. Braun, Neues Jahrb. Mineral Geogn. Geol. Petref. 1845: 170. 1845 (fossil, Miocene, Switzerland); A. Braun ex Unger, Gen. Sp. Foss. Pl. 419. 1850. Not *Salix lancifolia* Ludw., Palaeontographica 5: 157, pl. 35, fig. 9. 1858 (fossil, Miocene, Hesse). Not

Salix lancifolia Doell, Fl. Grossh. Baden 112. 1862.

Salix lucida [subsp.?] ~~*macrophylla*~~ Anderss., Svenska Vetensk. Akad. Handl. 6: 32. 1867.

Digitized by ~~United States Department of Agriculture~~ *Salix lucida* *macrophylla* Anderss. in DC., Prodr. 16 (2): 205. 1868.

~~*Salix lasiandra*~~ var. *lancifolia* ~~X~~ ^(Anderss.) ~~X~~ *Rebb* in S. Wats., Bot. Calif. 2: 84. 1879.

Salix lasiandra var. *lyallii* Sarg., Gard. and Forest 8: 463. 1895.

Salix lyallii (Sarg.) Heller, Torrey Bot. Club Bul. 25: 580. 1898.

Salix lasiandra var. *abramsi* Ball, Bot. Gaz. 72: 224. 1921.

Salix lasiandra var. *macrophylla* (Anderss.) Little, Amer. Midland Nat. 33: 496. 1945.

Derivation.--With ^{shaggy-} ~~hairy~~ stamens, the stamens pubescent at base.

Other common names.--black willow, red willow, ~~western~~ black willow, yellow willow.

Range.--Saskatchewan and Alberta to Yukon and interior Alaska, south in southeastern Alaska and British Columbia and from Washington to southern California, east to Arizona and New Mexico, and north to Wyoming and Idaho.

Reference.--Little, Elbert L., Jr. [□] Wash. Acad. Sci. Jour. 33: 131. 1943.

from p. 812.

insert on p. 812

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Salix ligulifolia (Ball) Ball

strapleaf willow

Salix lutea var. ligulifolia Ball, Bot. Gaz. 71: 428. 1921.

Salix ligulifolia Ball ex Schneid., Arnold Arboretum Jour. 2:

188. 1922; nomen subnudum.

Salix ligulifolia (Ball) Ball ex E. C. Smith, Amer. Midland Nat.

27: 236. 1942.

Derivation.—With strap-shaped leaves.

Range.—Black Hills of South Dakota and southeastern Wyoming to southern Utah, western Nevada, and southwestern Oregon, south to central California, Arizona, and New Mexico.

Commonly a shrub with clustered stems less than 10 feet high, rarely to 16 feet, according to Ball.

Reference.—Ball, Carleton R. Wash. Acad. Sci. Jour. 40: 329-331.

1950.

Salix lasiolepis Benth.

arroyo willow

Salix lasiolenis Benth., Pl. Hartw. 335. 1857.

Salix bigelovii Torr., Rpt. Expl. Surv. Miss. Pacif. 4(5): 139. 1857.

Salix lasiolepis var. bigelovii Bebb in S. Wats., Bot. Calif. 2: 86.
1879.

Salix bakeri Seemen, Torrey Bot. Club Bul. 30: 635. 1903.

Salix sandbergii Rydb., Torrey Bot. Club Bul. 39: 304. 1912.

Salix lasioplepis [var.] bakeri (Seemen) Ball, Bot. Gaz. 71: 436.
1921.

Salix lasiolenis var. sandbergii (Rydb.) Ball, Wash. Acad. Sci.
Jour. 28: 448. 1938.

Salix lasiolepis var. *braceliniae* Ball, Wash. Acad. Sci. Jour. 40: 331. 1950.

Shaggy

Derivation.--~~7/11/11~~-scaled, referring to the densely white-hairy
 es of the flowers.

Other common name.--white willow.

Range.--Idaho to Washington, south to southern California,^{Utah,}
western Texas.
~~and southwester~~ New Mexico, and ~~AAAAA A A A A A~~. Also in northern Mexico
and
(Lower California, ~~A A~~ Sonora, ~~A A~~ Chihuahua, and Coahuila).

~~Salix ligulifolia Ball, see note under S. lutea Nutt.~~

Salix longifolia Muhl., see S. interior Rowlee

Salix longipes Shuttlew., see S. caroliniana Michx.

Salix longistylis Rydb., see S. alaxensis (Anderss.) Cov.

Salix lucida Muhl.

shining willow

~~/~~*Salix lucida* Muhl. in Muhl. & Willd., Gesell. Naturf. Freunde

Berlin Neue Schr. 4: 239, pl. 6, fig. 7. 1803.

✓ *Salix* (*pentandra*) *lucida* [var.?] *angustifolia* Anderss., Svenska

Vetensk. Akad. Öfversigt af ... Förhandl. 15: 115. 1858.

Salix (*pentandra*) *lucida* var. *angustifolia* Anderss., Amer. Acad.

Arts and Sci. Proc. 4: 54 (*Salic. Bor.-Amer.* 8). 1858.

Salix lucida var. *angustifolia* Anderss., Svenska Vetensk. Akad.

Handl. 6: 32. 1867.

~~/~~*Salix lucida* var. *intensa* Fern., Rhodora 6: 2. 1904 (pre-

printed Dec. 29, 1903).

Derivation.--Shining, referring to the leaves and twigs.

Other common name.--shiny willow.

Range.--Newfoundland and Labrador west to Quebec, Ontario,

Manitoba, and Saskatchewan, south to North Dakota, South Dakota, Iowa,

Indiana, Ohio, Maryland, and Delaware.

Commonly a shrub but rarely reaching tree size, becoming a small tree up to 20 feet high, according to Ball (*Canad. Field-Nat.* 40: 149. 1926) and to 30 feet in height, according to Fernald (*Gray's Man. Bot. Ed.* 8, 505. 1950).

Salix lutea Nutt.

yellow willow

Salix lutea Nutt., No. Amer. Sylva 1: 63, pl. 19. 1843.

Salix cordata watsoni Bebb in S. Wats., Bot. Calif. 2: 86. 1879.

Salix watsoni (Bebb) Rydb., Torrey Bot. Club Bul. 33: 137. 1906.

Salix lutea var. famelica Ball, Bot. Gaz. 71: 426. 1921.

Salix lutea var. platyphylla Ball, Bot. Gaz. 71: 430. 1921.

Salix lutea var. watsoni (Bebb) Jepson, Man. Fl. Pl. Calif. 266.

1923.

Derivation.--Yellow; the twigs yellow and the leaves yellow-green.

Saskatchewan.

Range.--northern Alberta, southwestern Northwest Territories, and

British Columbia, south to Washington and Oregon east of the Cascades and to southern California, east to Arizona and New Mexico, and north to eastern Nebraska and eastern North Dakota. Also recorded from northern Ontario.

A shrub or sometimes a small tree to 20 feet high.

Salix ligulifolia (Ball) Ball (ex E. C. Smith, Amer. Midland Nat. 27: 236. 1942), strapleaf willow, is a shrub with clustered stems, commonly less than 10 feet high, rarely to 16 feet, according to Ball (Wash. Acad. Sci. Jour. 40: 329-331. 1950), and apparently does not reach tree size. It is closely related to S. lutea and by some authors is placed as a variety of that species, Salix lutea var. ligulifolia Ball (Bot. Gaz. 71: 428. 1921). Ranges from Black Hills of South Dakota and southeastern Wyoming to southern Utah, western Nevada, and southwestern Oregon, south to central California, Arizona, and New Mexico.

Salix lutea var. ligulifolia Ball, see S. ligulifolia (Ball) Ball
Salix lutescens Rydb., see S. exigua Nutt.

Salix lyallii (Sarg.) Beller, see S. lasiandra Benth.

Insert after p. 814

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Salix maccalliana Rowlee (Torrey Bot. Club Bul. 34: 158. 1907)
is a shrub of Canada 6 to 15 feet high and 1 to 3 inches in diameter
which doubtfully may also become a small tree, according to Carleton R.
Ball. Its range is from southern Manitoba and Saskatchewan to British
Columbia and local at Lake Mistassini, Quebec.

Digitized by Hunt Institute for Botanical Documentation

Salix mackenziana (Hook.) Barratt

Mackenzie willow

Salix cordata ^Y *mackenziana* Hook., Fl. Bor.-Amer. 2: 149. 1839.

Salix mackenziana Barratt ex Hook., Fl. Bor.-Amer. 2: 149. 1839;
as synonym.

[/]*Salix mackenziana* (Hook.) Barratt ex Anderss., Svenska Vetensk.
Akad. Handl. 6: 160. 1867; as "mackenziana."

Salix mackenziana var. *macrogemma* Ball in Piper & Beattie, Fl.
Northwest. Coast 116. 1915; as "mackenziana."

Derivation.--In honor of Alexander Mackenzie (1755?-1820), Scotch
fur trader and explorer in Canada; the type was collected along the
Mackenzie River, which he discovered.

Range.--Southwestern Northwest Territories south to British Columbia,
western Washington, and northern California, east to northern Nevada,
northern Utah, and north to western Montana and northern Alberta.

^{Wimm,}
Salix marginata [^] ~~Weimer~~, see *S. caroliniana* Michx.

Salix melanopsis Nutt.

dusky willow

Salix melanopsis Nutt., No. Amer. Sylva 1: 78, pl. 21. 1843.

Salix bolanderiana Rowlee, Torrey Bot. Club Bul. 27: 257, pl. 9,
fig. 9. 1900.

Salix longifolia tenerima Henderson in Torrey Bot. Club Bul. 27:
354. 1900.

Salix melanopsis var. bolanderiana (Rowlee) Schneid., Bot. Gaz.
67: 338. 1919.

Salix exigua var. tenerima (Henderson) Schneid., Bot. Gaz. 67:
335. 1919.

Salix melanopsis var. tenerima (Henderson) Ball, Nat. Acad. Sci.
Proc. 21: 182. 1935.

Derivation.--With dark or black appearance, the twigs brown to
black.

Other common name.--dark sandbar willow.

Range.--Southern Alberta and southern British Columbia south to
Washington, Oregon, and southern California, east to Utah, western Wyoming,
and western Montana.

This species is a shrub or small tree to 16 feet high.

Salix missouriensis Bebb, see ~~S. rigida~~ S. eriocephala Michx.

Salix monticola Bebb, see note under S. pseudomonticola Ball

Salix nevadensis (S. Wats.), see ~~S. exigua~~ S. nevadensis (S. Wats.)

Schneid.

insert on p. 817

Salix pellita Anderss.Salix chlorophylla [subsp.] * S. pellita Anderss., Svenska Vetensk.

Akad. Handl. 6: 139, pl. 7, fig. 72. 1867; in part.

Salix chlorophylla ♂ pellita Anderss. in A. DC., Prodr. 16 (2):

244. 1868; in part.

Salix pellita Anderss. ex Schneid., Arnold Arboretum Jour. 1: 82.

1919.

Derivation.--Of skins.

Range.--Newfoundland and Labrador to Quebec (northern Ungava),
 Ontario, central Manitoba, and southern Saskatchewan, south to northern
 Michigan, northern New England, and Nova Scotia.

A large shrub or small tree 10 to 16 feet high.

Digitized by Hunt Institute for Botanical Documentation

**Salix nigra* Marsh.

/black willow

/*Salix nigra* March., Arbustr. Amer. 139. 1785

Salix falcata Pursh, Fl. Amer. Sept. 2: 614. 1814.

Salix nigra var. *falcata* (Pursh) Torr., Fl. N. Y. 2: 209. 1843.

/*Salix nigra* var. *altissima* Sarg., Trees and Shrubs 2: 216. 1913.

/*Salix nigra* var. *lindheimeri* Schneid., Bot. Gaz. 65: 9. 1918.

Derivation.--Black, perhaps from the dark brown to blackish bark.

Other common names.--willow, swamp willow.

Range.--New Brunswick and southern Maine to New York, southern Ontario, Michigan, Wisconsin, and eastern and southern Minnesota, south to Iowa, southeastern Nebraska, eastern and southern Kansas, Oklahoma, and central and southern Texas, and east to northern Florida. Also in northeastern Mexico (Coahuila to Tamaulipas).

Hybrid.--*Salix Xglatfelteri* Schneid. (*S. amygdaloides* X *nigra*).

Salix nuttallii Sarg., see *S. scouleriana* Barratt

Salix radophylla Rydb., see *S. pseudomonticola* Ball

Salix perrostrata Rydb., see *S. bebbiana* Sarg.

~~*Salix reticularis* Sm., see note under *S. gracilis* Anders.~~

~~*Salix prinoides* Pursh, see *S. discolor* var. *prinoides* (Pursh) Anders.~~

Insert
Salix pedata
p. 817A

insert
p. 817a

J. E.

Salix petiolaris Sm.

meadow willow

Salix petiolaris J. E. Sm., Linn. Soc. [London] Trans. 6: 122. 1802.

Salix gracilis Anderss., Svenska Vetensk. Akad. Öfversigt af ...

Forhandl. 15: 127. 1858.

Salix gracilis var. textoris Fern., Rhodora 48: 46. 1946.

Fernald (Gray's Man. Bot. Ed. 8, 516, 1950) adopted the later

name Salix gracilis Anderss. for this species, interpreting S. petiolaris as a European willow. However, Ball concluded that Salix petiolaris should be retained.

Petioled.

Derivation.--~~Slender, from the slender upright branches.~~

Other common name.--slender willow.

Range.--New Brunswick, Maine, and ~~southern~~ Quebec west to Saskatchewan

and Alberta, south to Colorado (Long's Peak), Black Hills of South Dakota, northern Nebraska, northern Iowa, Indiana, Ohio, Pennsylvania, and New Jersey. Also local in Oklahoma and Virginia.

in central Alberta

Generally a shrub but in the northern part of its range/occasionally a small tree and rarely 15 to 22 feet high, according to Ball (Castanea 3: 7. 1938; Torrey Bot. Club ^{Bull.} 75: 181. 1948).

References.--Ball, Carleton R. Salix petiolaris J. E. Smith: American, not British. Torrey Bot. Club Bul. 75: 178-187. 1948.

Fernald, M. L. Rhodora 48: 46-48. 1946.

Fernald, M. L. Rhodora 51: 7. 1949.

Salix principis Pursh, see S. discolor Muhl.

Digitized by Hunt Institute for Botanical Documentation

Salix pseudomonticola Ball

serviceberry willow

Salix pseudomonticola Ball in Standl., U. S. Natl. Mus. Contrib.

U. S. Natl. Herbarium 22: 321. 1921.

Salix padophylla Rydb., Torrey Bot. Club Bul. 28: 272. 1901.

Salix pseudomonticola var. padophylla (Rydb.) Ball, Wash. Acad. Sci. Jour. 28: 450. 1938.

Derivation.--False and monticola, or living in mountains, from the resemblance to Salix monticola Bebb.

Other common names.--park willow (SPN), false mountain willow.

Range.--Saskatchewan to northern Alberta, Northwest Territories, Yukon, and central interior Alaska, south to Oregon, Idaho, Colorado, and Black Hills of South Dakota.

Commonly a shrub but becoming a small tree in Saskatchewan.

Salix pyrifolia Anderss.

balsam willow

Salix cordata β balsamifera Hook., Fl. Bor.-Amer. 2: 149. 1839.

Salix balsamifera Barratt ex Hook., Fl. Bor.-Amer. 2: 149. 1839;

as synonym.

Salix pyrifolia Anderss., Svenska Vetensk. Akad. Handl. 6: 162,

pl. 8, fig. 93. 1867. Not Salix pyrifolia Schleicher, Cat.

pl. Helvet. Ed. 3, 26. 1815; nomen nudum.

Salix balsamifera Barratt ex Bebb, Bot. Gaz. 4: 190. 1879.

Salix columbie A. Nels. & Macbr., Bot. Gaz. 56: 473. 1913. ✓

Derivation.--Pear-leaved.

Other common name.--bog willow.

Range.--Newfoundland and Labrador west to Hudson Bay, Saskatchewan, and northeastern British Columbia, and south in northeastern States from Minnesota to Michigan, New York, and Maine.

Salix rigida Muhl., see S. eriocephala Michx.

~~Missouri River willow~~

~~Salix rigida Muhl. in Muhl. & Willd., Gesell. Naturf. Freunde~~

~~Berlin Neue Schr. 4: 236, pl. 6, fig. 4. 1803 (May).~~

Salix cordata Muhl. in Muhl. & Willd., Gesell. Naturf. Freunde

Berlin Neue Schr. 4: 236, pl. 6, fig. 3. 1803 (May). Not

Salix cordata Michx., Fl. Bor.-Amer. 2: 225. 1803 (March).

~~Salix missouriensis Bebb, Gard. and Forest 8: 373. 1895.~~

Fernald (Gray's Man. Bot. Ed. 8, 512. 1950) adopted Salix

eriocephala Michx. (Fl. Bor.-Amer. 2: 225. 1803; March) as the name of this species.

Derivation.--Rigid, or stiff.

Other common names.--diamond willow (SPN), Missouri willow.

Range.--Minnesota and North Dakota south to northeastern Kansas,

Missouri, western Tennessee, and Kentucky.

References.--Ball, Carleton R. More plant study: fewer plant names.

Arnold Arboretum Jour. 27: 371-385. 1946.

~~Fernald, M. L. Rhodora 46: 26-27. 1946.~~

Salix rostrata Richards^o, see S. bebbiana Sarg.

Salix sandbergii Rydb., see S. lasirolepis Benth.

Salix scouleriana Barratt

Scouler willow

~~/~~*Salix scouleriana* Barratt ex Hook., Fl. Bor.-Amer. 2: 145. 1839.

Salix brachystachys [subsp.] *scouleriana* [var.] *crassifolia*

Anderss. Svenska Vetensk. Akad. Handl. 6: 83. 1867.

Salix nuttallii Sarg., Gard. and Forest 8: 463. 1895.

~~/~~*Salix scouleriana* var. *flavescens* (Nutt.) J. K. Henry, Fl. South.

Brit. Columb. 98. 1915.

~~/~~*Salix scouleriana* var. *crassifolia* (Anderss.) Schneid., Arnold

Arboretum Jour. 2: 12. 1920.

Salix scouleriana var. *poikila* Schneid., Arnold Arboretum Jour. 2:

12. 1920.

Salix scouleriana var. *costanea* Ball, Wash. Acad. Sci. Jour. 24:

73. 1934.

Salix scouleriana var. *thompsoni* Ball, Wash. Acad. Sci. Jour. 24:

75, fig. 1. 1934.

Derivation.--From its discoverer, John Scouler (1804-71), Scotch naturalist and physician who made collections of plants on the northwest coast of North American in 1825-27.

Other common names.--black willow, fire willow, ~~/~~mountain willow, Nuttall willow.

Range.--Saskatchewan to Yukon and southern Alaska to Kodiak Island, south through southeastern Alaska and British Columbia, and from Washington south in mountains to southern California, east to Arizona and New Mexico, and north to Black Hills of South Dakota and Montana.

Salix sericea Marsh.

silky willow

Salix sericea Marsh., Arbustr. Amer. 140. 1785.

Derivation.--Silky, referring especially to the young leaves.

Other common name.--satin willow.

Range.--^{Western} Nova Scotia to Maine, ^{Michigan,} southern Quebec, ^{eastern} Wisconsin, and Iowa, ^{Georgia,} south to Missouri, Tennessee, and South Carolina.

This shrubby species occasionally becomes a small tree up to 24 feet high, according to Ball (Castanea 3: 8. 1938).

Salix sessilifolia Nutt.

northwest willow

Salix sessilifolia Nutt., No. Amer. Sylva 1: 68. 1843.

Derivation.--Sessile-leaved.

Other common names.--velvet willow (SPN), sandbar willow, soft-leaved willow.

Range.--Southwestern British Columbia, western Washington, and western Oregon.

Salix sitchensis Sanson

Sitka willow

~~/~~Salix sitchensis Sanson ex Bong., Acad. Imp. Sci. St. Petersburg
Mém., Sér. 6, Math. Phys. Nat. 2: 162. 1832.

Derivation.--Of Sitka, in southeastern Alaska, where it was first collected.

Other common name.--~~/~~silky willow.

Range.--Pacific coast region from Kodiak Island in southern Alaska southeast through southeastern Alaska and western British Columbia to in Columbia River drainage to northern Idaho and Washington and northwestern California, and east ~~1/2~~ western Montana. Also in eastern Asia.

Salix jepsonii Schneid. (~~/~~Salix sitchensis var. angustifolia Bebb)
has been omitted as a shrub not known to be arborescent.

Salix coulteri Anderss. (~~S. sitchensis~~ var. coulteri Jeps.),
Coulter willow, likewise is a shrub 6 to 13 feet in height, though mentioned as a tree to 25 feet high by Jepson (Man. Fl. Calif. 265. 1923; as S. sitchensis var. coulteri Jeps.). That statement apparently

Salix sitchensis var. coulteri Jeps., see S. coulteri. Anderss.

insert on p. 284

Salix viminalis L.basket willowSalix viminalis L., Sp. Pl. 1021. 1753.

Other common names.--osier, common osier, silky osier.

Derivation.--Of osiers, or flexible twigs, referring to the use in basketry and wicker work.

Range.--Escaped from cultivation and naturalized locally from Newfoundland and Quebec to New England, other northeastern States, and Nova Scotia. Native of Eurasia.

A shrub or tree to 50 feet high widely introduced long ago for basketry and ornament and occasionally escaped.

Digitized by Hunt Institute for Botanical Documentation

was based upon a similar earlier reference under S. sitchensis by Jepson (Fl. Calif. 1: 342. 1909).

Nutt.

~~Salix stenophylla Rydb., see S. exigua var. stenophylla (Rydb.) Schmidt.~~

Salix taxifolia H. B. K.

Yewleaf willow

Salix taxifolia H. B. K., Nov. Gen. Sp. 2: 22. 1817.

Salix taxifolia var. limitanea Johnston, Arnold Arboretum Jour. 25: 432. 1944.

Derivation.—Yew-leaved, the leaves very small and narrow.

Other common name.—yew willow.

Range.—Trans-Pecos Texas, extreme southwestern New Mexico, and southeastern Arizona. Also south through Mexico (Sonora, Chihuahua, and Coahuila southward) to Guatemala.

Salix tracyi Britton, see S. bonplandiana H. B. K.

Salix tracyi Ball

Tracy willow

Salix tracyi Ball, Calif. Univ. Pubs. Bot. 17: 403, pls. 69, 70. 1934.

Derivation.—Named for its discoverer, Joseph P. Tracy, botanist of Eureka, Calif.

Range.—Southwestern Oregon and northwestern California.

A shrub or small tree 7 to 20 feet high, closely related to Salix

lasiolapis Benth., arroyo willow.

Salix wardi (Bebb) Bebb, see S. caroliniana Michx.

Salix watsoni (Bebb) Rydb., see S. lutea Nutt.

Salix wrightii Anderss., see S. amygdaloides Anderss.

Insert
Salix minimales
P824A

insert for
p. 824a

Dr. Elbert L. Little, Jr.,
Forest Service, U. S. Dept. Agric.,
Washington 25, D.C.

3814 Jeceelynn St., N.W.,
Washington 15, D.C.

12 March, 1953.

Dear Dr. Little:

Salix nigra Marshall (represented by var. lindheimeri Schneider.

For the permanent record I am repeating the information left on the handwritten slip on March 10.

This variety extends southward across our border into Mexico. It occurs rather commonly in the border States of Chihuahua, Coahuila, and Nueva Iren, and Tamaulipas, and extends into northern Durango.

There are some other specimens from Simalea, Nayarit, and northern Jalisco, which seem to represent this variety also. Schneider discussed these from Simalea and expressed uncertainty as to whether they were var. lindheimeri or a possibly new variety of S. nigra. He leaned to the belief that they were nearest to var. lindheimeri, and I agree with him. The few from Nayarit and Jalisco seem to be the same. Most of the specimens are juvenile or fragmentary, or both, which makes certain separation from S. Humboldtiana very difficult in several cases.

Salix Coulteri Andersson.

var. Ralphiana (Jepson) Jepson (form Ralphiana Jepson). I am quite certain that this represents S. Coulteri Andersson.

var. parvifolia (Jepson) Jepson. (form parvifolia Jepson). I have no data on this, and have not seen the material on which it was based. It seems likely that it belongs to S. Jepsonii Schneider, altho Schneider did not mention it in describing and discussing his new species.

Regretting the delay in making this information available to you, and with all good wishes for your sojourn in Latin America, I am

Cordially yours,

Carleton R. Bell

Carlsten R. Ball, March 6, 1953.

83

Salix amygdaleoides Andersson. and Varieties.

Dr. Little (ms) cites: "Also in northern Mexico (Chihuahua)." and asks if this Mexican range is correct. Stanley (Willows of Mexico, 1920) cites ~~XXXX~~ Salix Wrightii Andersson. (S. amygdaleoides var. Wrightii (Andersson) Schneider) from "northern Chihuahua". This probably was based on the doubt expressed by him and by Schneider (1918) as to whether Wright's type collections/ was from New Mexico or adjacent Mexico. Neither of them cites any specimens certainly collected in Mexico.

I have searched my herbarium and my determination lists of Mexican but find no collections of the species or variety from Mexico. Have not yet searched U.S.N.H. The variety could easily cross the border. No Mex. specimens in USNH.

S. arbuscula Andersson.

I had said in May that this species was too low to consider including as a tree. Dr. Little says that it was included in Pocket Guide to Alaska Trees on basis of labels reading: "20-25 ft high and 4 in. in diam."; also because of Hulten's Flora, which reads: "sometimes a small tree, reaching a height of 6 m.".

I am not personally familiar with this species but labels on specimens in my herbarium read: "Tree 35 ft. high" and "18-20 ft. high, 6 inch diam." (both by J.G. Jack, Alta.); also "Tree to 6 m. high, 1 dm. in diam." and "Tall, slender tree" (bet Alaska). These data, and yours, indicate tree height and size. USNH. "Occ. shrub about 15 ft tall. Yukon."

S. argephylla Nuttall.

Dr. Little says the Dr. Dayton has asked if it should be included as a small tree. Most of my specimens do not have labels showing heights or diameters but I know that it is a border-line species. From Wye. I recorded it as 5-12 ft. high, and from Ida. as 10 ft. high and 1 inch diam. Hervey records it as a "Tree" at Osoyoos, B.C. and Eastham as a "shrub or small tree 12 feet high" at Canoe, B.C. It would seem safe to include it with appropriate comment. USNH. 6-12 ft. High. Washn. E. Nelson.

S. Coulteri Andersson.

Dr. Little has retained it but wonders if it really is a tree. In my herbarium there are more than 100 sheets. On numerous labels it is recorded as a shrub or small tree and on some as 10-12 ft. high. Specific records of tree size are: "Tree 20 ft. high (Seneca Co., Calif., Annetta Carter); "Shrub or small tree to 9 m. high" and "Trunk to 9 inch diam. and 60-70 ft. high" (Humboldt Co., Calif., UC collectors, including CRB); "20 ft. tall" and variously 3, 4, and 6 inches in diam. (all Oregon). These records would seem to prove tree height and size. USNH. "Small rounded tree" or "Small tree" (3), Humboldt & San Mateo Cos. Calif. "Tree 15 ft. high; San Francisco, Bolander. "20 ft. high, 4 inch diam." Linnton, Ore; Ball. "Clump 20 ft. high, 6 inch diam. (forgot to record State).

S. exigua Nuttall, and varieties.

Dr. Little cites (ms.): "Also in northern Mexico (Lower California to Chihuahua)" Stanley (Willows of Mexico, 1920) cites: "Chihuahua to Baja California".

Schneider in 1918 (p. 25) and 1920 (p. 333) refers to specimens of S. exigua var. stenophylla (Rydborg) Schneider as occurring in northern Chihuahua. In my herbarium, I find but one specimen of S. exigua Nutt. (var. stenophylla) from Mexico and it is from Baja California.

It would seem safe to say: "Sparingly in northern Mexico (Chihuahua to Baja California)." USNH. 3 colls from Baja Calif.; 1 from San Pedro Martir Mts. (probably Baja Calif.) Goldman.

S. glaucophylloides Fernald and S. laurentiana Fernald.

Not listed by Dr. Little, but he notes that both are listed as trees by Fernald in new Gray Man. 511-512, and the former by Rehder, (in Manual of Cultivated Trees and Shrubs, p. 105, 1940), as a tree. I am well acquainted with the earlier S. glaucophylla Bebb, of the Great Lakes region and it never became a tree there. I do not know the eastern plants of northern New England and the St. Lawrence Valley. But in writing the willows for the new Illustrated Flora I am sure that I studied all available material, including USNH, which has more northeastern material than I, and I there recorded S. glaucophylloides as "Shrub 1-4 or 5 m. high". At that height, some specimens might well be small trees. Fernald named both of these and should know whether they become trees, although the latter term has varied interpretations and I doubt if Fernald would have called a 12-foot plant a tree unless it had very few stems. USNH. None with tree heights given. ca.

S. laurentiana is not a species, however. The type represents a pubescent-capsuled hybrid of S. glaucophylloides with some unidentified species. Most of small the other collections so-named are merely S. glaucophylloides or its variety. var. albevestita (Ball) Fernald

S. Gooddingii Ball, including var. vallicola, which is same as the species, and var. variabilis, the glabrate-glabrous southern and eastern form.

Dr. Little cites (ms.): "Also in northern Mexico (Sonora and Chihuahua)". There are several collections from Chihuahua and Sonora in Herb. GRB., under var. variabilis Ball. There also are 14 specimens of this variety from Baja California mostly in GRB. but a few in USNH., according to my determination lists, so this third Mexican State should be added.

Schneider (p. 13, 1918) cites Rose, Standley, & Russell 13415 from San Blas, State of Sinaloa as in "W" (USNH). I do not seem to have cited it under either species or variety. Will look it up in USNH; also Baja Calif., 9-Sonora, 3 Chihuahua.

S. Harbisenii Schneider.

Dr. Little states: "I put this in a note under S. caroliniana following Massey and Ball. Is this disposition correct?" I do not think that either S. Harbisenii or S. caroliniana were mentioned by Massey and Ball in Willows of Virginia. This may refer to Davis and Ball, Willows of West Virginia P. 97. 1947). P.S. I see that I did mention S. Harbisenii in willows of Va., under excluded spp. (p.30).

I am not prepared at the moment to discuss your statements regarding what may be represented by any S. marginata.

S. interior Rowles, and varieties.

I have no idea where Sargent got the basis for a statement that this species is "occasionally 60-70 ft. high, and 2 ft. in diameter". It certainly is not true of S. interior or even of such normally tree-like species of Longifoliae as S. Hindiana Benth.

Under the extremely southern var. angustissima (Andersson) Dayton, I find two specimens from Mexico in my herbarium, both from Chihuahua. None from Mex. in USNH.

S. lasiantha Benth., and vars. lancifolia and macrophylla.

Without much fuller study, I cannot discuss with certainty what you have said. Andersson named and renamed the entities now generally recognized as S. lasiantha Benth. and S. lancifolia Andersson, and their various varieties. However, he kept var. macrophylla under S. lucida, in 1858, 1867, and 1868, and insisted that the leaves were green beneath, while S. lancifolia had glaucous leaves. The species now recognized as having leaves green beneath, in the western U.S., is S. caudata Nutt. and its var. Broyantiana Ball & Bracelin. It would seem that if there is to be upsetting of accepted names, further study of the types would be in order.

S. lasiandra Benth
 var *lanceifolia* [(Anderson)] Benth
 Anderson's *S. lanceifolia* is a homonym
 + has no standing in nomenclature.

Little supposed that *S. lasiandra* Benth
 was the same as *lanceifolia* and
 made the combination

S. lasiandra var. *macrophylla* (And.) Little
 Ann. Midland Nat 33: 496 1945

Check on var. *macrophylla*

Anderson 1867 cites 2 collections

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Byan, Arizona Bot. 49
 Bourgeau Red R.

(2) "costa vinnigula supra tenuissime alba-
 pilosa"

Bell Herb 2 forms (Calif. - Can)

1 bot of form pubescens

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