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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.

Ball, Carleton R. - Notes for revision of:

Taylor, R. F. & Little, E. L. - Pocket guide to Alaska trees. U.S.D.A.
Forest Service, Agr. Handbook 5 (Revision of Miscel Publ. 55), 61 p.,
June, 1950.

<u>Contents</u>	<u>page</u>
Correspondence	1-2
Botanical language for non-technical readers . .	3-4
Key to Alaska tree willows	5
Notes on species	6-9

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

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RE

PUBLICATION

Pocket Guide to Alaska Trees

May 4, 1949

Dr. Carleton R. Ball
381A Jocelyn Ave., N. W.
Washington, D. C.

Dear Dr. Ball:

Yesterday, when you were in my office, I mentioned that I would like to have you examine the manuscript of Salix for my revision of "Pocket Guide to Alaska Trees," by Raymond E. Taylor (U. S. Dept. Agr. Misc. Pub. 55, 39 p., illus. 1929). This is a nontechnical booklet with a drawing of each species. It is hoped that the revision will be ready by the middle of this month, so that it can be printed and distributed.

In order to save time, I am sending you now herewith the manuscript and key to Salix. Your corrections, suggestions, and additional notes, which may be inserted in the manuscript or written on the margins, will be greatly appreciated. If convenient, please bring the manuscript whenever you come to the South Building next week.

Sincerely yours,

E. M. LITTLE, JR.
Dendrologist

Enclosure



C O P Y

3814 Jocelyn St., N.W.,
Washington 15, D.C.

Dr. Elbert L. Little, Jr.,
Dendrologist, Forest Service,
U.S. Dept. of Agriculture.

10 May, 1949.

Dear Dr. Little:

Replying to your letter of May 4, I would note that I left on your desk last Friday some suggestions regarding the non-technical manuscript on Alaska Trees.

Herewith are brief descriptions of the seven species, arranged more or less according to the form you are using. You are at liberty to make such use of them as you wish, to alter or discard them at will. I have tried to make clear the characters which distinguish the leaves, especially. Have also noted some things about the scales, and twigs.

I have entered each recognized variety at the end of the description, with summary of its distinguishing characters, and some note of abundance (relative).

On one or two species I have made some additional notes about the original description. Your manuscript is attached.

The seven species are numbered and entered here in the order in which they generally appear in manuals. It was not the order you had and you will arrange them as you prefer.

I find that I have made some notes on the key but have not tried to revise it. I do not have time to attempt that before leaving for an appointment. I would think that leaf-shapes would be better key characters than leaf pubescence, which is so variable with age, in both quantity and color.

Cordially yours,

Carleton R. Ball

3814 Jocelyn St., N.W.,
Washington 15, D.C.

Dr. Elbert L. Little, Jr.,
Dendrologist, Forest Service,
U.S. Department of Agriculture,

11 May, 1949.

Dear Dr. Little:

Here is a rough draft of proposed key to the 7 Alaskan tree willows. Chew it up as you please. Hope it helps a little.

In my brief description of *S. Scouleriana*, I note that I referred to the leaves as "silvery- or gray-hairy beneath". I think that it will be best to change "silvery-", in that case, to "white-". The hairs are shining on young leaves but do not have the silvery color of those on *S. sitchensis*.

Cordially yours,

Carleton R. Ball,
Collaborator

The primary purpose of publication is to convey ideas. Words are the mediums we use for that purpose. Selection and arrangement of words may help or hinder, and so deserve consideration. The following notes may have some value in connection with the discussion of Alaskan willows.

1. "Other Names". Names may be either popular or scientific. Popular names may be in actual use by non-technical persons, or, where none exist, they may be created by a writer in the hope that they may become used. Often the same plant has different popular names in different regions, or is given different popular names by different writers. Cumbersome names, of two, or three, or four words certainly are not desirable and will not be used. Names which obviously are misleading should not be adopted and, if cited, should be quoted. Where there is no popular name in use, but merely book designations, it may be questioned whether it is desirable to use them at all.

I have not checked on the popular names used in your manuscript, but think that many of them were applied by Coville. Sitka willow is good. Felt-leaf willow is good for Alaskans, but those who live elsewhere and work with *S. Drummondiana*, *S. pellita*, *S. candida*, and *S. humilis* may think that they have felt-leaf willows also. Alaska willow would seem a good name for *S. alaxensis*. Yakutat willow is satisfactory for *S. amplifolia*, but Big-leaf willow, as Coville called it, is a relative matter. The leaves of *S. alaxensis* often are larger than those of *S. amplifolia*. Seculer W. and Mountain w. are suitable names for *S. Scouleriana* but "Black willow" does not seem so and I do not know where it so called. Pacific willow seems satisfactory for *S. lasiandra*, in view of its range from Mexico to Alaska. Little-tree willow for *S. arbusculoides* seems to be a book name which will never be used. Bebb willow and slender willow are established names. Whether the alternate name should be "Beak" or "Beaked" is a matter for thought.

Inserting the scientific names of recognized varieties as "other names" for a species seems undesirable. They certainly are not synonyms of the specific name. To use them in this way seems confusing, as indicating that they are not valid varieties. It would seem better to merely refer to them in the text, as has been done under *S. alaxensis*, *S. Bebbiana*, and *S. lasiandra*. *S. sitchensis* var. *demidata* Andersson might be so inserted, as also *S. arbusculoides* var. *glabra* Andersson, and *S. interior* var. *pedicellata* (Andersson), all, which has still narrower leaves and occurs in Alaska. The variety of *S. lasiandra* is var. *lanceifolia* (Andersson) Bebb.

2. Descriptive terms to be used. In non-technical writing, descriptive terms are needed which will be exact in meaning and also understood by non-technical readers. If exact terms are not used, the reader certainly will not understand. Perhaps we under-estimate the ability and willingness of the non-technical public to assimilate new terms. Almost every man, woman, boy and girl in America has learned a raft of new terms in connection with automobiles, radio, television, etc., and use them accurately. Let's try that out in botany.

In describing leaf shapes in willows, only about nine basic terms are needed: linear, oblong, elliptical, lanceolate, oblanceolate, ovate, obovate, oval, and rounded or circular (this last not needed in your manuscript). All variations can be covered by prefixing the words narrowly or broadly, or by combining any two of the basic terms. These 8 terms have but 7 ideas because ob- in two terms is one idea. Leaf shapes are quickly noted by the non-technical, and exact terms will be appreciated. I note that you use oblong, elliptical, lance-shaped (lanceolate), and oval. Only four more words and three more ideas are needed. If illustrations are made with care, the new ideas will be grasped and remembered.

Without such terms, the descriptions are likely to be misleading. Take that of *S. sitchensis*, for example. Its leaf is primarily oblanceolate or obovate rather than oblong or lanceolate. To say that they are "broadest beyond the middle" or "gradually narrowed toward base" does not dispel the confusion because these are relative phrases. The leaf of *S. cordata* Muhl and many of its relatives, and of *S. nigra* and its relatives, are broadest above the middle and somewhat narrower at base but still are distinctly lanceolate. The basic idea for *S. sitchensis* is "ob-", which forms the correct mental picture.

3. Use of the Term "Smooth." Smooth really means the absence of roughness, as in the bark of trees. If we use it also to mean absence of teeth and absence of hairs much confusion is sure to occur. We have exact terms for these meanings. If we use "smooth" with all three meanings how will the reader ever get the facts? For example, *S. sitchensis* is said to have leaves "with smooth edges". The margins actually are entire, but hairy. Why not say entire when we mean that, or else use "without teeth" or "toothless"? In the case of hairs, why not fix the term "glabrous" in the popular mind, to insure accurate understanding, or else say "without hairs" or "hairless"? Coville certainly did not make meanings clear by his confused usage.

4. "Scaly Clusters" to designate willow flowers. Everybody knows "pussy" willows. Either catkins ~~wax~~ or aments would be readily learned and remembered. "Clusters" may be of various shapes, in flowers and fruits. The stem-circling flowers of the mints are in clusters, as are the flat-topped circular groupings of the pink family, or the panicles of the goldenrods. A catkin or ament is a slender, elongated, ~~wire~~ cylindrical, and sometimes drooping, cluster. Let's teach the readers that.

"Scaly" clusters suggests stiff overlapping scales such as occur on fishes and snakes, or in Oxalis bulbs, or sunflower heads, or California artichokes. In willow catkins, the scales are small and mostly inconspicuous, and in some sections promptly deciduous, so that observers would scarcely think of them as scaly in the ordinary sense

KEY TO ALASKAN TREE WILLOWS

- O. Leaf stalks mostly less than $\frac{1}{2}$ inch long, leaves mostly more than twice as long as broad, edges finely toothed to entire; winter buds covered by a single scale. Willow (*Salix*).
- P. Leaf edges finely and distinctly toothed from base to apex
- Q. Leaves 2 to 5 inches long, long-pointed, mostly rounded at base. 1. *S. lasiandra* ^{Bth}
- QQ. Leaves 1-to 3 inches long, mostly short-pointed, at both ends. 4. *S. arbuscula* ^{Bth}
- PP. Leaf edges entire or only/indistinctly toothed ^{usually} *oides* Andersson.
- Q. Leaves mostly oblanceolate to obovate, short-pointed at apex and/tapering to the narrow base
- R. Leaves thick, mostly white-felted or white- to gray-furry beneath; catkins stoutish.
- S. Leaves densely white-felted beneath; catkins stoutish, 2 to 4 inches long. 2. *S. alaxensis* (Andersson) Coville
- SS. Leaves densely to thinly white- or gray-furry beneath; catkins stout, 1-2 inches long. 6. *S. Scouleriana* Barratt
- RR. Leaves thin, rather thinly silvery-silky beneath; catkins slender
5. *S. sitchensis* Sanson
- QQ. Leaves broadly elliptical, or oval, or obovate-oval, broadly pointed to rounded at both ends, more or less gray-hairy
- R. Leaves large, up to 3 by 2 inches, mostly oval, hairy on both sides ~~when~~ while young, becoming glabrous (hairless). 3. *S. amplifolia* Coville.
- RR. Leaves mid-sized, elliptical and somewhat pointed at both ends to oval ^{blunt?} or obovate-oval and rounded at both ends, gray-hairy and mostly roughly net-veined beneath; catkins loose in fruit; capsules long-stalked.
7. *S. Bebbiana* Sargent.

catkins dense in fruit; capsules short-stalked.

For Little, Alaska Tree Willows 1949

Pacific Willow. *S. lasiandra* Benth.

Leaves lanceolate to broadly lanceolate, 2 to 4 or 5 inches long and $\frac{1}{2}$ to 1 inch wide, long-pointed, base mostly rounded, edges finely toothed, shining green above, whitish to white beneath. Catkins on leafy stalks, appearing with the leaves, 2 to 4 inches long in fruit; capsules glabrous (hairless); scales yellowish. Older twigs stoutish, chestnut to reddish, shining, glabrous.

In var. *lanceifolia* (Andersson) Rebb, the young twigs and lower side of leaves are more or less hairy. This variety is more common than the species in Alaska.

~~(The descriptive word "fissured" seems to be a technical term~~

(For describing bark, the word "fissured" seems to be a technical term and "furrowed" to be the corresponding popular term.)

(It seems hardly proper to say "covered with a bloom" in speaking of lower leaf surfaces, because a "bloom" can be rubbed off, as from a plum or a pruinose twig, but glaucousness cannot be rubbed off). I think that this is popular understanding for "bloom").

For Little, Alaska Trav, 1949

2. Alaska or Felt-leaf Willow. *S. alaxensis* (Andersson) Coville

Leaves elliptical or mostly elliptical-oblancoate, 2 to 4 inches long and $\frac{1}{2}$ to $\frac{3}{4}$ inches wide, short-pointed, usually tapering to base, edges entire or nearly so, above dull green and sometimes somewhat short-hairy, beneath covered with dense, a white or creamy-white felt, midvein yellowish. 1-year and two-year twigs stoutish, while woolly (See var. below)

Catkins stoutish, not stalked, appearing before the leaves, up to 3 or 4 inches long in fruit; scales blackish; capsules long, pointed, white-woolly.

Variety longistylis (Rydberg) Schneider has glabrous (hairless) young twigs and buds, often with a bluish-white bloom.

(Many willows shed the twig epidermis with attached hairs in spring and so are glabrous until the new crop of hairs comes out later in season)

3. Yakutat Willow. *S. amplifolia* Coville.

Leaves oval or obovate-oval to broadly obovate, or rarely the uppermost ovate, $1\frac{1}{2}$ to 3 inches long and $\frac{1}{2}$ to 2 inches wide, broadly pointed to rounded at apex, mostly rounded at base, edges entire or sparsely wavy-toothed (crenate), pale green above, whitish beneath, more or less hairy on both sides while unfolding, but becoming glabrous. Catkins on leafy stalks, appearing with the leaves, up to 2 to 4 inches long in fruit; capsules long, glabrous; scales brownish to blackish. Twigs stoutish, brownish, densely white- or gray-wooly for 2 or 3 years.

Reported also from Copper River, opposite Childs Glacier.

For Little, Alaska Trees, 1949

4. Little-Tree Willow, *S. arbusculoides* Andersson.

Leaves narrowly elliptical-lanceolate, 1 to 3 inches long, $1/3$ to $2/3$ inches wide, often oblanceolate while unfolding, usually sharp-pointed at both ends, edges finely but shallowly toothed, green and glabrous above, whitish to white and finely silvery-hairy beneath, veins closely parallel. Catkins small, on very short stalks, appearing slightly before or with the leaves, 1-2 inches long in fruit; scales blackish; capsules small, ^{thinly} silvery-hairy.

Twigs slender, much branched, the younger yellowish-brown and sometimes thinly short-hairy, the older reddish brown, ~~and~~ glabrous, and shining.

Variety *glabra* Andersson has the leaves
cast to central Quebec,
glabrous (without hairs) beneath. Much less common than the species.

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5. Sitka Willow, *S. sitchensis* Benson.

Leaves oblanceolate or narrowly obovate, or sometimes elliptical, usually short-pointed at apex, mostly tapering to a narrow base, edges entire or sparsely and inconspicuously wavy-toothed, dark green and the younger thinly short-hairy above, paler and short-silvery-hairy beneath. Catkins slender, on short leafy stalks, appearing with the leaves, 2-4 inches long in fruit; scales small, brown; capsules short, silvery hairy. Twigs slender, the younger sometimes thinly hairy, older glabrous, dark reddish-brown.

Variety *demidata* Andersson has the leaves nearly or quite glabrous (without hairs) beneath. Not common.

For Little Alaska Trees 1949

6. Scouler Willow. *S. Scouleriana* Barrett.

Leaves very variable, mostly oblanceolate to narrowly obovate, with oblong or elliptical variations of these shapes, mostly very short-pointed at apex and tapering to the base, 2 to 4 or 5 inches long and $\frac{1}{2}$ to $1\frac{1}{2}$ inches wide, edges entire to sparsely wavy-toothed, dark green and nearly glabrous above, whitish to white and more or less ^{white} silvery- or gray-hairy beneath, or the older rusty-hairy, stalkless or

Catkins stoutish, ~~stalkless~~ or very short, stalks, appearing before the leaves, and dense 1-2 inches long/in fruit, scales obovate, black; capsules long, ~~pinkish~~ slender, gray-woolly; Twigs stoutish, the younger yellowish and densely hairy, the older reddish to dark brown and nearly glabrous.

7. Bobb Willow, *S. Bobbiana* Sargent.

Leaves narrowly elliptical or elliptical and pointed at both ends to broadly oblanceolate or obovate-oval and very short-pointed at apex and broad at base, 1 to $2\frac{1}{2}$ or $3\frac{1}{2}$ inches long and $\frac{3}{8}$ to 1 inch wide, edges entire or somewhat wavy, dull green above and whitish or white with rough net-veining beneath, more or less pubescent on both sides but becoming less so with age; Catkins on short leafy stalks, appearing shortly before or with the leaves, ~~leaves~~ ^{and leaves} 1 to 2 or 3 inches long in fruit; scales narrow, reddish yellowish with ~~pink~~ tips, hairy; capsules long, very slender, short-hairy, on long, slender, thinly hairy stalks. Twigs slender, branching at wide angles (divaricate), yellowish to brown, the younger gray-hairy, the older glabrous.

Variety *perrostrata* (Rydberg) Schneider has smaller leaves, glabrous or nearly so beneath, and often less roughly net-veined. Less common than the species.

For Lath, Alaska June 1949