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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.

S. Wash. Acad. Sci. 29: 492-495
1939

SALIX GLAUCOPHYLLA BEBB, VARIETY ALBOVESTITA BALL, N.VAR.

A NEW VARIETY, ALBOVESTITA, OF SALIX GLAUCOPHYLLA BEBB.

Carleton R. Ball

Recently the writer received from Dr. Otto E. Jennings, Curator of Botany in the Carnegie Museum at Pittsburgh, their Pennsylvania Salices for determination and verification before use on the State distribution maps. Among the specimens were some 40 sheets, mostly from Erie County, which represent a hitherto-unrecognized variety. Curiously enough, the earliest collection had been made 60 years ago, in 1879, and nearly all are more than 30 years old.

At first glance, the plant seems to be a robust and very hairy S. cordata, with the broad, cordate leaves of Muhlenberg's type. In fruiting characters, however, it is ~~much more~~ like S. glaucophylla Bebb, a sand-dune plant of the Western Great Lakes area. This new form is regarded as a variety of that species. Because of the confusions concerning it, discussed below, a very full description is given.

~~S. cordata~~

N. sp.

Straggling, divaricately branched shrub, probably 1.5-3 or more m. high; branchlets stout, yellowish-brown to reddish-brown to darker, often drying black, the seasonal shoots densely white-pilose, the 1-year and 2-year branchlets more or less gray pubescent or puberulent to glabrous, dull; bud-scales stout, ovoid or ovoid-lanceolate, 5-7 or 10 mm. long, colored and clothed as subtending the branchlets; stipules semi-ovate to broadly reniform, 0.5-2 cm. long, to 1 cm. wide, rounded to acutish or acute at apex, subentire to shallowly crenulate-serrulate, colored and clothed as the leaf-blades. petioles 7-15 or 20 mm. long stoutish, channeled, pubescent;

Leaves stipulate, petiolate, unfolding with the aments; blades lanceolate to broadly lanceolate, ovate-lanceolate, or sometimes ovate, rounded to deeply cordate at base, short-acuminate to acuminate at apex (narrowly to broadly elliptical and acute at both ends while unfolding), 7 to 8-10 or 12 cm. long and 2-3 or 4 cm. wide on ordinary seasonal shoots, averaging smaller on fruiting twigs and much larger, up to cm. on vigorous shoots and sprouts, closely (6-10 projections per cm.) to less closely (2-5 projections per cm.) and sharply to shallowly crenate-serrate to subentire (all on one shoot), dark green and dull above (or darkening in drying) and glaucous to white-glaucous beneath when fully unfolded, thickish, finely to coarsely reticulate with raised veins on both surfaces at maturity (as in *S. cordata* and *S. glaucophylla*), densely to thinly white-pilose on both surfaces when unfolding, becoming less so by expansion, and finally glabrate at maturity except for pubescent petioles, mid-veins, and sometimes the laterals, on both surfaces and especially above.

Aments short-pedunculate, ascending to spreading, appearing with the leaves.

Staminate aments 2.5-3.5 or 4 cm. long, 1-1.3 or 1.5 cm. wide, dense, deciduous when the leaves are half grown; the peduncles stout, dense ^{ly} pilose, 0.5-1.0 cm. long and bearing 2-4 or 5 oblong or elliptical, entire or subentire, glabrate, green, leaf-like bracts 1-2 cm. long; flower scales obovate or the lower oval, obtuse, 1.3-2 mm. long, dark brown or blackish, densely pilose with straight hairs longer than the scale; stamens 2, filaments free, about 5 mm. long, sparingly pubescent on the lower fifth to half; anthers oval, yellow, the stamens sometimes browning in drying.

Pistillate aments 3 or 3.5 - 5 cm. long and 12 - 16 mm. wide in anthesis, rather lax, becoming 4 or 5-7 or 8 cm. long and 2.0-2.4 cm. wide in fruit; peduncles as in the staminate but 0.8-1.5 cm. long and bearing 2-4 elliptical, entire to shallowly crenulate-serrulate, leaf-like bracts 1-2.5 or 3 cm. long and 0.6-1.0 cm. wide; flower scales brownish to black, 1.3-2 mm. long, ^{ly} narrowing to broadly obovate, obtuse or occasionally acutish, densely clothed with straight hairs exceeding the scale in length; gland 1, filiform, capitate, 0.7-1 mm. long; capsules lanceolate and 4-5 mm. long in anthesis, becoming 6-9 mm. long, broadly lanceolate from a round base, and brown in fruit, glabrous; pedicels 1.5-2.5 mm. long in anthesis, 2-3 mm. long in fruit, glabrous, stoutish, becoming brown; styles stoutish, 0.5-0.8 mm. long, stigmas short, divided.

Variety albovestita differs from S. glaucophylla in broader, more cordate, and more acuminate leaves, and in hairiness. The blades are more definitely lanceolate, with rounded to deeply cordate bases and short-acuminate to acuminate apices. In the species the leaves mostly are oblanceolate or elliptic-lanceolate, acutish to rounded but seldom cordate at base (except in var. latifolia), and are merely acute to short-acuminate at apex. In variety albovestita, the young shoots are more or less densely white-pilose. This applies to branchlets and bud scales and to the petioles, midribs, and sometimes the lateral veins of full grown leaves. During expansion both stipules and leafblades usually are covered with white hairs. In the species the young branchlets often are gray-pubescent but the other organs named usually are glabrous or glabrate. The filaments likewise are hairy in the variety and glabrate or glabrous in the species.

From S. cordata the new variety is separated by larger anthers and capsules, longer scale hairs, and longer styles, as well as by broader leaves, and more dense hairiness. From S. adenophylla, ~~var. albovestita~~ this variety is readily separated by the longer and more acuminate leaves, loosely crenate-serrate, and becoming glabrate except on the midveins. In S. adenophylla the leaves are more nearly ovate, closely beaded on the margin with small, almost perpendicular, gland-tipped teeth, and permanently densely hairy.

Geographic Distribution

The full geographic range of this variety is not yet known. It occurs along the south shore of Lake Erie at least from Erie County, in extreme northwestern Pennsylvania, to Erie County, on Lake Erie in north-central Ohio. A single typical collection has been made in Beaver County, Pennsylvania, near the Ohio River northwest of Pittsburgh and about 100 miles south of Presque Isle.

A sterile autumnal specimen from Huron County, Michigan, on Lake Huron, and two sterile specimens from the mountains of southwestern Virginia (Roanoke and Montgomery Counties, respectively), are very similar and are referred to this variety somewhat doubtfully, pending more complete collections.

The specimens examined are listed below. The containing herbariums are designated by initials, as follows: CRB, Carleton R. Ball; CM, Carnegie Museum; OES, Ohio Agricultural Experiment Station; OSU, Ohio State University; USN, U. S. National Herbarium; VPI, Virginia Polytechnic Institute.

PENNSYLVANIA: Erie County, Presque Isle (unless otherwise stated), all CM.

Staminate flowering: Otto E. Jennings, May 15, 1905 (2 sheets, Acc. No. 2898; Jennings, May 8-9, 1906 (8 sheets, Acc. No. 3130); Gustave Guttenberg, see below.

STAMINATE TYPE

Pistillate flowering: Gustave Guttenberg 2621a, Cummins' Bank, April 28, 1879 (Acc. No. 251, bearing both staminate and pistillate twigs); Otto E. Jennings, May 8-9, 1906 (5 sheets, Acc. No. 3130).

PISTILLATE TYPE

Pistillate fruiting: Gustave Guttenberg 2621, May 28, 1879 (Acc. No. 251); Otto E. Jennings, May 15, 1905 (Acc. No. 2898); Guttenberg (old fruit) June 11, 1881 (Acc. No. 251); Jennings (old fruit) June 8-9, 1906 (Acc. No. 3130); Jennings (old fruit) June 2-3, 1908 (6 sheets, Acc. No. 3711).

Foliage: Gustave Guttenberg 26267, Big Bend, Presque Isle, Aug. 4, 1882 (Acc. No. 251); J. A. Shafer, Sept. 9 (2 sheets), Sept. 10 (enormous ovate leaves to 5.7 x 13 cm.), Sept. 11 (4 sheets, one with enormous ovate leaves to 6.3 x 15 cm.), Sept. 12, 1900 (all Acc. No. 1560); Otto E. Jennings, Aug. 24, 1905 (Acc. No. 2898); Jennings, Sept. 20-22, 1906 (2 sheets, Acc. No. 3130); James R. Farrell, just back of Winter Wave Strand, July 15, 1930 (as *S. rostrata*, glabrate, Acc. No. 10127); B. H. Patterson, Northeast, Erie County, Aug. 22, 1908 (2 sheets, glabrate, Acc. No. 6210).

Beaver County, ravine, Beaver, abundant in woods and roadsides, W. R. Van Dersal 1229, May 3, 1930 (Acc. No. 10571, CM).

OHIO: **Erie County.** Castalia, R. F. Griggs 638a, July 10, 1900 (OSU, as *S. cordata* x *candida*). Cedar Point, A. D. Selby 1449, 1450 ("7 ft., densely woolly"), 1451 ("4 ft., densely woolly"), 1456 ("4-5 ft."), 1458 ("8-10 ft."), all May 18, 1900 (all OES); On a sand dune, Griggs, Aug. 14, 1900 (OSU, as *S. cordata*, sprout with leaves up to 6.5-7 cm. wide and 11.7 cm. wide, also in CRB); F. O. Grover, June 9, 1902 (OSU, as *S. cordata*); Griggs, June 28, 1904 (2 sheets, as *S. adenophylla*, OSU).

The following sterile specimens are referred somewhat doubtfully to the new variety, pending collection of fruiting material from these or other localities remote from Lake Erie.

MICHIGAN: **Huron County.** Single clump of small sprouts 3-4 ft. high on land side of second row of dunes on Sand Point, Bay Port, C. R. Ball 70b, Sept. 17, 1902 (CRB, as *S. glauconophylla*).

VIRGINIA: **Roanoke County.** Back Creek, near Starkey, "much whiter looking than ordinary willow", J. Fauntleroy 663, Aug. 8, 1914 (USN, as *S. cordata*). The leaves are rather large, lanceolate, cordate at base, closely beset with incurved teeth, branchlets white-pilose, also the bud-scales, petioles, midribs, and blades of younger leaves. **Montgomery County.** Norris Run, near New River, A. B. Massey, Sept. 28, 1938 (VPI, as *S. cordata*, the leaves white pubescent and white-glaucous).

and more than 15 cm. long

Ecological Habitat

Dr. Jennings, of the Carnegie Museum, contributes the following notes (letter of June 21, 1939) regarding this variety in its native haunts:

"As to the new one (S. glaucophylla var.), there is a great deal of it in the "sand plain" back of the dunes and shore area on Presque Isle. It is a rather sparsely branched shrub, ranging from three or four feet up to perhaps seven or eight feet tall. It seeds into the wet sand around the edges of beach pools along with the Cottonwood, and as a general thing these pools are left inland with the further accumulation of the beach sands, so that ecologically I have designated the outer zone of vegetation around these pools as the Populus-Salix association (as "Populus-Salix Formation" in Jennings "Botanical Survey of Presque Isle, Erie, Pennsylvania," Annals Carnegie Museum, 5:289-421, 1909). Some of the plates in this article show early stages of these ponds. Some of the ponds become filled by drifting sand thus leaving the willows and cottonwoods more or less buried, but the cottonwoods and many of the willows surviving this ordeal and thus constituting part of the vegetation of the sand plain. As the habitat grows older other vegetation comes in and the willows gradually die out. They here apparently need fresh wet sand as a seed bed.

"I might add as an "aside" remark that these S. glaucophylla var. plants have a terrible time of it with insects. They are usually very badly infested with scale insects, with small leaf galls, and with a borer at the base of the stem. We have often marvelled that they survive as well as they do."

Obviously the typical specimen from Beaver County, Pennsylvania, was not collected from a sand-dune or sand-plain habitat. Neither were the two specimens from the mountains of southwestern Virginia, presumably at elevations of 1500 to 2000 feet. It seems possible that we are dealing with a relic plant once occupying a much larger territory but now hanging on where local competition with other plants permits. It is possible also that further search will discover this variety at many other points, both north and south.

Previous History

Although herbarium specimens of this variety have lain for 60 years without description, the plant has not escaped discussion in botanical literature. Such discussion began more than 45 years ago.

In January, 1894, Wm. C. Werner (4), publishing on new phaenogams for the Ohio flora, listed the following:

"Salix intermediate in character between S. cordata and S. adenophylla. Cedar Point, Ottawa Co., Aug. D. Selby. The finding of S. cordata with adenophylla characters in this region is as yet unexplained, since the latter has not yet been found within our limits." (p. 172)

In the next year, Kellerman and Werner published their "Catalogue of Ohio Plants" (3), with the following statement under S. cordata (p. 190):

"A willow intermediate between S. cordata and S. adenophylla was collected at Cedar Point (Ottawa Co.) by Aug. D. Selby."

Nearly 30 years later, in correspondence with the writer (letter of

July 3, 1922), Mr. Werner discussed this plant again, as follows:

3 "There is one willow in regard to which there seems to be a difference of opinion. It was found at Cedar Point, near Sandusky, by A. D. Selby. He divided the material with me and so far as I know nothing of the sort has since been found there. I thought it might be a hybrid S. cordata x S. adenophylla. I wrote to Prof. Moseley of Sandusky to find out if S. adenophylla had ever been found anywhere in that region. He said it had not. That seemed to preclude a hybrid origin. I send an old reprint (4) to show how I disposed of it at the time. In the catalogue of Ohio plants, prepared by Prof. Kellerman and myself (2) the willows were left for me to work up. I included this form with S. cordata, calling it intermediate between S. cordata and S. adenophylla."

"After preparing the manuscript for the list of new plants for Ohio, I sent the specimen to Mr. Bebb. I remember saying in my letter to Mr. Bebb that to me it appeared to be a cordata with a decided squint toward adenophylla. I have kept Mr. Bebb's letter with the specimen. I send it in full."

"Had your No. 554 been sent to me from the vicinity of Chicago, I should without hesitation have pronounced it a hybrid between S. cordata and S. adenophylla, but coming as it does from a locality unknown to me, but presumably on the south shore of Lake Erie, and in which I have no evidence that genuine S. adenophylla occurs there would be an obvious objection to predicating a hybrid character to a plant found in a region where one of the supposed parents was wanting. I think we must say of this 'intermediate in character between S. cordata and S. adenophylla' without any conjecture whatever as to how it came so, whether by cross fertilization or by variation, or S. cordata varying in the direction of S. adenophylla. I think on the whole your plant is nearer to the former than the latter." Yours cordially, (s) M. S. Bebb"

~~The writer has not seen either the Ohio Station or the Werner portion of this early Selby collection from Cedar Point. It was not among the specimens sent by the herbariums of Ohio Agricultural Experiment Station or Ohio State University, for use in preparing this paper.~~

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In the meantime, Griggs (1) published his monograph of Ohio willows, in 1905. Therein he misinterpreted our variety as S. adenophylla Hooker. His description (pp. 310-11) and the right-hand shoot in plate 14 are of true adenophylla. The left-hand plant portions are quite different and these, with the discussion in his final paragraph, quoted below, unquestionably are referable to S. glaucophylla var. albovestita.

"Salix adenophylla is our rarest willow. Until recently it was not supposed to extend into Ohio but I have seen several specimens collected at Erie, Pennsylvania. It should therefore extend the whole length of the Ohio Lake Shore. But it is very scarce indeed. Though I have hunted for it on Cedar Point and in Ashtabula County I have seen from Ohio but a single undoubted specimen which was taken by A. D. Selby on Cedar Point."

In 1909, Jennings (2) published an extensive paper on the plant ecology of Presque Isle, as noted in the letter quoted above. In his discussion of the Populus-Salix Formation (pp. 348-56) he describes and illustrates the conditions under which the new variety, there called S. syrticola, is found at the type locality.

Unanswered Questions

From Werner (4) in 1894 we know that Selby had collected this variety, or something very similar to it, on Cedar Point in Ohio before the autumn of 1893 when Werner's paper was written. Neither Werner (4) nor Kellerman and Werner (3) give the date of collection. No such early collection was among the specimens from Ohio State University and Ohio Agricultural Experiment Station studied in preparing this paper. Griggs (1) does not indicate which one of Selby's several Cedar Point specimens he regarded as "a single undoubted specimen" of S. ~~adenophylla~~ adenophylla, or if he had ever seen the early Selby collection. Nor did he recognize his own Cedar Point and Castalia plants as identical with any or all of Selby's specimens now referred to this variety. In fact, the enormous leaf shown in the middle of his plate 13 of S. cerdata almost certainly was taken from his Cedar Point specimen of Aug. 14, 1900, belonging to this new variety.

The writer has been puzzled by Griggs' statement (1:307) that he had seen S. cerdata with leaves "all the way from linear-lanceolate to orbicular. No members of the Cerdatae have leaves normally orbicular in shape. Among the Presque Isle specimens annotated by Dr. Griggs (as "a peculiar form of S. adenophylla") is the Guttenberg plant from Big Bend. One of its vigorous sheets bears some normal leaves and some on which, by reason of injury by insects, climate, or mechanical means, the apical portion of the leaf never developed.

The apex of the remaining basal half is rounded, giving the fragment and orbicular or suborbicular outling. Three such measure 3.2 x 3.5, 3.2 x 4.0, and 3.8 x 4.5 cm., respectively. It seems possible that this specimen, at first regarded as S. cordata, or a similar condition in true cordata, was the basis for the statement regarding "orbicular" leaves. A similar condition is noted frequently in the introduced S. fragilis, although the basal fragments usually are oval.

At some time after 1885, Dr. M. S. Bebb, the noted American salicologist, distributed an extensive series of specimens of American and European willow hybrids grown by him at Fountaindale, Ill., from cuttings received from many sources. No. 60, labelled as Salix cordata x adenophylla, consists of branchlets bearing pistillate aments, staminate aments, and mature foliage (CRB, 2 sheets; OES; USN). The peduncular bracts and opening leaves on the staminate sheets and the leaves on the mature sheets show the close-set, almost perpendicular gland-tipped teeth indicating an adenophylla mixture. The full-sized leaves on the pistillate shoot, however, show the more open crenate serrations, the hairiness, and the ament and capsule length of the

Literature Cited

1. Griggs, Robert F. The willows of Ohio: A monograph. Proc Ohio ~~Acad.~~ State Acad. Sci. 4:257-314, pls. 1-16, 1905.
2. Jennings, Otto E. A Botanical survey of Presque Isle, Erie, ^{County,} Pennsylvania. Annals Carnegie Museum ~~22~~ 5:289-421, pls. 22-⁵¹ ~~31~~, figs. 1909.
3. Kellerman, W.A., and Wm. C. Werner. Catalogue of Ohio plants. Geol. of Ohio 7(2):56-406. 1895.
4. Werner, Wm. C. New Phaenogams for the Ohio flora. Journ. Cincinnati Soc. Nat. Hist. 16:170-172. Jany., 1894.

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new variety under discussion and may belong to it. The label date^s the collection as 1880 but does not show geographic origin of the cutting. Bebb described his S. cordata var. glaucophylla in 1873 and raised it to specific rank in 1881. However, he did not recognize the Selby plant as related to S. glaucophylla when he saw it in 1893. It is barely possible, of course, that pistillate No. 60 represents the Selby plant sent to him earlier by Selby himself.

Salix glaucophylla Bibb, var. *alborectita*
Bebb, n. var. Jour. Washn. Acad. Sci 29: 492-
495, 1939).

It is hoped that this substantial "valid-
ation" thro a few words of Latin may
appease the fierce wrath of the gods of
taxonomic botany. Some weeks were
spent in assembling material, in taking
ing large numbers of specimens, and in
discussing the findings. When all was
well and faithfully done, lo, it was not
"valid". Tens of thousands of species ^{and very} pub-
lished without Latin diagnoses, previous
to a certain arbitrary deadline, are per-
fectly "valid". Those so published after that
deadline are not. The man establishing
the rule may not be able to read a word
of Latin, or reading it, they (like myself)
may not be able to construct a Latin de-
scription.

One of them may have a new species or a single fragmentary herbarium specimen of extreme expression, but, with the aid of a Latin phrase, it miraculously becomes "valid". He may describe as new a well-known described by 22 others before him, but his pathos is "valid" if accompanied by a few words of Latin. He may even know that it has been described previously, but a Latin description makes "valid" a synonym to kurdish taxonomists for 58 million years. Hard work, careful study, exact comparison, full description, abundant material, and sound judgment go for nothing, if a few Latin words are lacking. Pseudo-science, shoddy work, inadequate material, and self-seeking all are "validated" by a minimum extent from a dead language. "Simt Latin grand!"

It is hoped that this belated Latin
brevity may appease the fierce wrath
of the gods of taxonomic botany. The
rule requiring some Latin description
of novelties was adopted as a measure
of self defence by men who could not
read Chinese, Japanese, Russian and
other Slavic languages, Persian, Tur-
kish, etc. Probably it was necessary
in the interest of stabilization.

These same botanists, however have
ignored ^{or refused to act upon} a much larger problem.
Synonymy now has become a ~~field~~
~~of labor~~ equal in ~~scope~~ difficulty, and
expense to taxonomy itself. There is no
profit to science in it, ^{it is} ~~only~~ a dead
weight on progress. Whence has it
come?

probably was desirable.

In origin, however, it was purely selfish.
It was not adopted ~~to~~ in order to make
the great majority of descriptions readily
understood by all taxonomists. It was
a defense measure by men worried
over taxonomic publication in Chin-
ese, Japanese, Russian and other
Slavic tongues, Turkish etc, which
they could not read at all.

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It is a pleasure to name the women for
Mrs. Henry O. (Mrs. H. O. Henry) who
who has done much for the cause of
looking on the world as a whole
the part of the community in the
had done much to explain the
when examining of the
without the least delay

Werner, W. C., July 3, 1922; excerpts from letter in Ball Archives.

A typescript, by Ball, of the original letter because of disintegrating paper.

Some of this included in mss. - New variety of the willow Salix glauco-
phylla Bebb. Jour. Wash. Acad. Sci. 29: 492-495. 1939.

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S.

e/ 2
"There is one willow in regard to which there seems to be a difference of opinion. It was found at Cedar Point, near Sandusky, by A. D. Silby. He divided the material with me and so far as I know nothing of the sort has since been found there. I thought it might be a hybrid *S. cordata* x *S. adenophylla*. I wrote to Prof. Mosely of Sandusky to find out if *S. adenophylla* had ever been found anywhere in that region. He said it had not. That seemed to preclude a hybrid origin. I send an old reprint to show how I disposed of it at the time. In the catalogue of Ohio plants, prepared by Prof. Kellerman and myself, the willows were left for me to work up. I included this form with *S. cordata*, calling it intermediate between *S. cordata* and *S. adenophylla*.

Prof. R. F. Griggs in his Willows of Ohio (which I have recently received from the Ohio State University) mentions this same willow and calls it *S. adenophylla*. After preparing the manuscript for the list of new plants for Ohio, I sent the specimen to Mr. Bebb. I remember saying in my letter to Mr. Bebb that to me it appeared to be a *cordata* with a decided squint toward *adenophylla*. I have kept Mr. Bebb's letter with the specimen. I send it in full.

"Had your No. 554 been sent to me from the vicinity of Chicago, I should without hesitation have pronounced it a hybrid between *S. cordata* and *S. adenophylla*, but coming as it does from a locality unknown to me, but presumably on the south shore of Lake Erie, and in which I have no evidence that genuine *S. adenophylla* occurs, there would be an obvious objection to predicating a hybrid character to a plant found in a region where one of the supposed parents was wanting. I think we must say of this "intermediate in character between *S. cordata* and *S. adenophylla*," without any conjecture whatever as to how it came so, whether by cross fertilization or by variation, or *S. cordata* varying in the direction of *S. adenophylla*. I think on the whole your plant is nearer to the former than the latter."

Yours cordially,

(S) M. S. Bebb

* I sent a copy of my manuscript notes to Mr. Bebb, just as printed here, that accounts for the underscoring.

I have two specimens of *S. adenophylla*. One from Lake County, Indiana, Coll. E. J. Hill. One from sandy shore of Lake Michigan, Coll. H. H. Babcock.

dupl in dupl Sp.

The willow in question cannot in my judgment be referred to straight S. adenophylla, yet I think it just as certain that it has adenophylla characters in its general make up. Now the question is "how come", or to use one of Mark Twain's sayings "Why is this thus." I will make the same suggestions that in a subsequent letter I offered to Mr. Bebb that he thought might explain the matter. Nelumbium luteum does not exist anywhere near the lake east of the Sandusky region. I once found a Nelumbium pod on the beach near here (about 30 miles east of Cleveland). In a correspondence with a Michigan collector, I can not remember who, I was informed by that S. adenophylla had been found on the shores of Lake Huron. If a Nelumbium pod can be carried from Erie County to our vicinity here why could not some willow branches be torn loose by ice and water, or both, carried along and finally lodged on the Cedar Point peninsula, which may really be called a sort of "catch all."

-X
O I have just noticed the plate of S. adenophylla in the Griggs "Willows of Ohio." There are two types of leaves, one similar to my specimens from northern Indiana, the other branch with narrow somewhat lanceolate leaves $\frac{1}{2}$ " - $\frac{5}{8}$ " wide, very suggestive to my Cedar Point specimen. In my specimen, the leaves, however, are more acuminate. I am writing to Selby to find out if these two types of leaves are from the one plant. I doubt it. It may be that Selby at a later time found typical adenophylla in that region and the plate represents two collections.

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Wm. C. Werner, 422 N. St. Clair St., Painesville, Ohio,
in letter July 3, 1922.

x = S. adenophylla, margins closely glandular-ciliate
O = ? " remotely crenulate."

Carn. Mus.

Address: Extension Service
June 12, 1939.

Dr. Otto M. Jennings,
Curator of Botany and Director of Education,
Carnegie Museum,
Pittsburgh, Pennsylvania.

Dear Dr. Jennings:

Your letters of June 2 and 7 were duly received and the two packages of willows arrived safely by express on June 9. I have signed the receipt therefor and am returning it herewith, although I made no attempt to count the number of specimens included.

I was able to very nearly complete the determinations of this material on Saturday, and I expect to ship it to Dr. Fogg at the University of Pennsylvania not later than tomorrow. I will send him also the key for the lock on the shipping case.

I have derived considerable satisfaction and some real scientific value from examining this material and I think you will be gratified with your collection when it is returned to you. As you will recall, there was a very large percentage of unnamed material, and from it, and from incorrectly named material in some of the covers, I have added at least three native species to those recognized on your named covers. These three I discuss further below. I have been able also to determine varieties in such species as *S. lucida*, *S. interior*, *S. cordata*, *S. discolor*, and *S. humilis*.

The white willow, *S. alba*, and the crack willow, *S. fragilis*, were widely introduced into this country for sentiment, ornament, and the making of gunpowder in colonial days and thereafter. Some of the material introduced represented hybrids between these two species and some such hybrids have arisen in this country since their introduction. From fragmentary material it is oftentimes difficult to indicate these hybrids with accuracy. However, I have done the best I could with the material submitted. I also found some other introduced species besides those for which you had named covers. Among these were *S. dasy-clados*, *S. incana*, and *S. pentandra*.

One of the finds of very great interest to me is *S. longipes* Wardii (Bebb) Schn. of which five collections from Alleghany County were sent. These are all mature foliage and there can be no question whatever of their identity. This variety ranges from the Potomac Valley west to the Ohio River and southward into the mountains. It has been found twice in Indiana on or near the Ohio River. These specimens from Alleghany County, Pennsylvania, therefore, extend the range far north of any previously known collections. I am sending the list of these and trust that some search for it may be made this summer. It is not yet too late to find fruit. It may be significant that all these collections were made between 1886 and 1905. It is quite possible that some of the plants have been destroyed either by floods or by human activities. This variety almost always is found on rocky river and creek banks and usually either below or not far above high water level. The closely related black willow, *S. nigra*, prefers alluvium.

Another species for which you had no cover is *S. tristis* Aiton, the little brother to the prairie willow *S. humilis*, but it does not occur as abundantly in most areas. I was rather surprised that your collection contains this species from only four counties. Further south it occurs commonly on the bald tops of mountain ranges. I enclose a list of your specimens of this species for your immediate information.

The third species added to the State flora by this collection is *S. glaucophylla* Bebb. This is the plant which you had in the cover marked *S. adenophylla* Hooker (*S. syrticola* Fernald) and a considerable number of unidentified sheets. Superficially it resembles *S. cordata* but has broader leaves somewhat remotely crenulate on the margins and decidedly glaucous beneath. The aments also are much larger than those of *cordata* and the hairs on the flower scales are very long and silky. Your material is all from Presque Isle, Erie County, with the exception of one specimen from Beaver County. It is a plant of the sand dunes and occurs commonly around Lake Michigan in Wisconsin, Indiana and Michigan. It has been found at a few points along Lake Erie in Ohio and also along Lake Huron in Michigan and Canada. I do not have any record of *S. adenophylla* from Lake Erie or Lake Ontario although it occurs farther north around Hudson Bay as well as elsewhere in Quebec, and in Newfoundland.

In adding this species to the list represented in your collection it removed *adenophylla* from that list, so that the net gain is only two species.

dupl. in var *alboovstylis*

Since writing the first two pages of this letter I have examined the material which I had set aside as *S. glaucophylla* Bebb and find that it is not that species. So far as I can determine without additional study, it is undescribed but whether to be considered as a new species or a new variety of *glaucophylla* I cannot say at the moment. It is based on your series of specimens from Presque Isle. I wish to congratulate you most heartily on this splendid series showing all stages of development of both sexes from flowering to autumnal foliage. It is a rare treat to have such abundant and representative material when undertaking to describe a new form. There is some similar material from Cedar Point near Sandusky Ohio and I am writing to the herbarium of the University of Ohio to get their collections from that area.

The necessity of studying this material thoroughly and describing before shipping to Dr. Fogg will delay the shipment for a day or two longer. I enclose copy of list of the species referred to, *S. longipes*, *S. tristis*, and the new willow.

I wish you would give me as much information as possible about the size and habit of this shrub, its local habitat, its relative abundance as compared with other specimens growing there, and the extent of its distribution in miles along the Lake and back from the Lake shore. I shall wish to quote this information with your permission in my description of the plant.

Cordially yours,

Carleton R. Ball,
Executive Secretary,
Coordinating Committee

Jennings OE June 21, 1939 extract

S. glaucophylla albovestita Ball, n. var., ined.

S. glaucophylla (?) surprises me, for I have been calling my Presque Isle plants adenophylla for years; there is a great deal of it in the "sand plain" back of the dunes and shore area on Presque Isle.

As to the new one (S. glaucophylla ?): It is a rather sparsely branched shrub, ranging from three or four feet up to perhaps seven or eight feet tall. It seeds into the wet sand around the edges of beach pools along with the Cottonwood, and as a general thing these pools are left inland with the further accumulation of the beach sands, so that ecologically I have designated the outer zone of vegetation around these pools as the Populus-Salix association (as "Populus-Salix Formation" in Jennings "Botanical Survey of Presque Isle, Erie, Pennsylvania", Annals Carnegie Museum, 5:289-421, 1909). Some of the plates in this article show early stages of these ponds. Some of the ponds become filled by drifting sand thus leaving the willows and cottonwoods more or less buried, but the cottonwoods and many of the willows surviving this ordeal and thus constituting part of the vegetation of the sand plain. As the habitat grows older other vegetation comes in and the willows gradually die out. They here apparently need fresh wet sand as a seed bed.

Guttenberg's Evans Woods specimen must be mistakenly labelled. Evans Woods was back of Erie on the mainland and not the right kind of a habitat. Guttenberg's Aug. 4, 1882 specimen was from Big Bend, this being the curving south shore of the peninsula of Presque Isle.

Patterson's "Northeast, Erie County" specimens might easily have been collected along the beach, where conditions occur to a limited degree similar to those on Presque Isle.

VanDersal's "ravine, Beaver" specimens puzzle me. I'll try to find out more about them.

I might add as an "aside" remark that these S. glaucophylla? plants have a terrible time of it with insects. They are usually very badly infested with scale insects, with small leaf galls, and with a borer at the base of the stem. We have often marvelled that they survive as well as they do.

Otto E. Jennings, Carnegie Museum, in letter, June 21, 1939

dupl in Pa

" " dupl JFF

copies to
Jannsen
Young (Rumels)

500 P68A

Washington Academy of Sciences

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E. W. PRICE
BUREAU OF ANIMAL INDUSTRY
MEETINGS
AUSTIN H. CLARK
NATIONAL MUSEUM

July 20, 1939.

Dr. Carleton R. Ball,
Executive Secretary, Coordinating Committee,
Extension Service,
Washington, D. C.

Dear Doctor Ball:

Your manuscript on "*Salix glaucophylla* Bebb variety *albo-vestita* Ball, n. var." has been sent to me by Doctor Swallen.

I have read the article with interest but it seems to me rather over-extended for launching a variety. I am not unappreciative of the stimulus that flows from unraveling confused historical treatment of botanical specimens but to publish your paper in its present form would establish a precedent likely to embarrass the editors of the Journal who are already under heavy fire for accepting too many taxonomic papers.

Specifically I suggest that pages 8, 9, and 10 be condensed into a single paragraph simply citing previous references without long quotations. I would propose also that instead of puzzling over Professor Griggs' statement on the shape of the leaves of *S. cordata* he be interrogated directly. It seems unnecessary where the author is living in the same city and available for consultation to burden the literature with uncertainties that could be removed by personal interview. No doubt after you and Professor Griggs have discussed your differences the material on pages 10 and 11 can be reduced to two or three sentences.

If you can adopt these suggestions or in any other manner condense the article to five or six pages it will be accepted for publication at the earliest date consistent with the material now on hand.

The manuscript is being returned herewith.

Sincerely,

J H Kempton

Extension Service

July 22, 1939

Mr. J. H. Kempton,
Bu. of Plant Industry,
U. S. Department of Agriculture.

Dear Mr. Kempton:

Your letter of July 20 and the Salix manuscript sent to Dr. Swallen are received.

I have removed pages 7-11, inclusive, and inserted a new paragraph near the top of page 5. Pages 1-6 are returned herewith.

Do I understand from your discussion that you believe scientific journals should accept and publish papers containing inaccurate and misleading statements but should refuse papers pointing out such inaccuracies? That attitude doubtless accounts for the many misstatements which have been handed down through the decades in botanical literature.

Cordially Yours,

Carleton R. Ball,
Executive Secretary

July 22, 1939

Mr. J. H. Kempton,
Bu. of Plant Industry,
Department.

Dear Mr. Kempton:

Your letter of July 20 and the Salix manuscript sent to Dr.
Swallen are received.

I have removed pages 7-11, inclusive, and inserted a new paragraph
near the top of page 5. Pages 1-6 are returned herewith.

I still think it desirable that scientific journals should publish
corrections of false or misleading statements.

Cordially Yours,

Carleton R. Ball
Executive Secretary
Coordinating Committee

Washington Academy of Sciences

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E. W. PRICE
BUREAU OF ANIMAL INDUSTRY
MEETINGS

AUSTIN H. CLARK
NATIONAL MUSEUM

July 25, 1939.

Dr. Carleton R. Ball,
Executive Secretary,
Coordinating Committee,
Extension Service,
Washington, D. C.

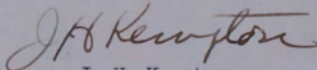
Dear Doctor Ball:

Digitized by Hunt Institute for Botanical Documentation

Your article has been sent to the senior editor and accepted

as of July 20. We appreciate your cooperation in condensing the
paper.

Sincerely,



J. H. Kempton.

JHK/V