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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.

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY,
AND VALLEY-STATES AGRICULTURAL COLLEGES

ADDRESS: EXTENSION SERVICE, U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

October 9, 1932

Dr. Jihn M. Fogg, Jr.,
Dept. of Botany, Univ. of Pennsylvania,
Philadelphia, Pennsylvnsai.

Dear Dr. Fogg:

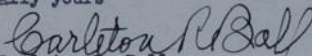
Many thanks for your kind letter of October 6. Rally it is the accumulated labors of you men in the States and Provinces that helps me. in material, in records of distribution, and in occasional novelties.

As I may have said before, I am retiring next June and then, among ~~ft~~ four major activities already well advanced, will be a monograph of the genus *Salix*. All of this work is part of the job.

My sympathy on *Crataegus*. To my mind it was a crime, rather than an exercise in systematic botany. I ceased counting after the number of species, so-called, passed 1500, so dont know where it stopped. I note, however, that it has not stopped among the plant pathplogists in Florida.

Deloghted to have Wood's specienn of *S. lucida*. I can hardly believe yet that it occurs in Roanoke Co.

Cordially yours


Carleton R. Ball
Executive Secretary

Ball, Carleton R.

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY
AND THE VALLEY STATES AGRICULTURAL COLLEGES
WASHINGTON, D. C.

Address: Extension Service
U. S. Dept. Agri.
May 16, 1939.

For a drawing.

Dr. John M. Fogg, Jr.,
Curator, Herbarium,
Department of Botany,
University of Pennsylvania,
Philadelphia, Pennsylvania.

Dear Dr. Fogg:

In the issue of Science for May 12, I note the proposed plan for recording distribution of plants of Pennsylvania. This seems to me a very worthwhile project.

If you wish to have the willows in this herbarium examined and verified as to identification before cards are made, I will be glad to do it for you if desired. I have just done it for Dr. Frank C. Gates of Kansas State College in connection with his mapping of the flora of that State and will be glad to do it for others.

It is quite possible to name all the species of willows both native and introduced from foliage specimens alone, so that the absence of flowers and fruits will not render the work less accurate except in the case of a few varieties distinguished by flower characters.

Cordially yours,

Carleton R. Ball
Carleton R. Ball,
Executive Secretary

May 17, 1939

Dr. Carleton R. Ball
Executive Secretary
Extension Service
U. S. Dept. Agriculture
Washington, D. C.

Dear Dr. Ball:

Thank you for your letter of the 16th in which you so kindly offer to examine our Pennsylvania specimens of Salix. As I told you at the Richmond meetings I should be delighted to avail myself of your critical judgment on this difficult group.

I am at present deeply involved in studying the various families of monocotyledons not only in our own herbarium but from the collections at Harrisburg and Pittsburgh which have been placed at my disposal. Later on when I reach the willows I shall forward for your examination, specimens of the more critical species such as S. humilis, S. discolor, S. fragilis etc. I should of course like to have you see our entire collection but as that would involve the handling of many hundreds of sheets, I hesitate to impose on your kindness to that extent.

As I told you at Richmond I am also working on a check list of the plants of Mountain Lake, Virginia. During the course of this study I have been laying aside for you, duplicates which I hope will add to the records you are keeping on willows of the South Eastern United States.

Thanking you again for your willingness to help us and with warm personal regards, I am

Sincerely yours,

John M. Fogg, Jr.

JMF:CF

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY
AND THE VALLEY STATES AGRICULTURAL COLLEGES
WASHINGTON, D. C.

Address: Extension Service
U. S. Dept. Agri.
May 18, 1939

Mr. John M. Fogg, Jr.,
University of Pennsylvania,
Botanical Laboratory,
38th St. and Woodland Ave.,
Philadelphia, Pennsylvania.

Dear Mr. Fogg:

Your letter of May 17 is received. At the moment of writing you I had forgotten that the matter was mentioned during the Richmond meetings.

I appreciate your consideration in offering to send only critical species. It may be wisest, however, to send all State material. In the first place, there do not seem to be any critical species so far as the determinations of *Salix* in the herbariums of America are concerned. In the second place, if you are going to all the recorded labor and expense it is worthwhile to have a thoroughly good job done. Besides, I frequently pick up extensions of range while examining local material.

All are critical

The handling of even hundreds of sheets representing relatively few species from a wellknown area does not require as much time as seventy-five or a hundred sheets of critical material from little known areas, so when you are ready send me what you have either in a single shipment or in successive shipments as most convenient to you.

Many thanks for remembering me with the Virginia material which you are collecting.

Cordially yours,

Carleton R. Ball

Carleton R. Ball,
Executive Secretary

June 2, 1939

Dr. Carleton R. Ball
Executive Secretary
Extension Service
U. S. Dept. Agriculture
Washington, D. C.

Dear Dr. Ball:

In the course of my studies on the flora of Pennsylvania, I am examining and recording not only the material in our own herbarium but also that in the other large institutions throughout the state. For instance, Dr. Jennings at the Carnegie Museum at Pittsburgh is kindly sending us, a carton at a time, the entire Pennsylvania series in that herbarium. I have seen all of the material up to the end of the Monocotyledons and am now ready to begin on their dicots. Taking advantage of your kind offer to help us with the willows I have suggested to Dr. Jennings that he send all his specimens of *Salix* direct to you. You can then examine them and forward them to me to be recorded on our index cards. I understand from Dr. Jennings that he will make shipment in the near future.

If this arrangement is convenient to you I should suggest that we follow a similar procedure when it comes to studying the material in the state museum at Harrisburg and in the collections of the Pennsylvania State College.

I cannot tell you how greatly I appreciate the opportunity of having these difficult specimens passed upon by such a critical and competent authority.

Sincerely yours,

John M. Fogg, Jr.

JMF:CF

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY
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WASHINGTON, D. C.

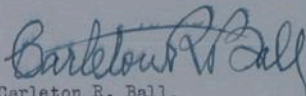
Address: Extension Service
U. S. Dept. Agri.
June 3, 1939.

Dr. John M. Fogg, Jr.,
University of Pennsylvania,
Botanical Laboratory,
38th St. and Woodland Ave.,
Philadelphia, Pennsylvania.

Dear Dr. Fogg:

Your letter of June 2 is just received and the arrangements you have made with Dr. Jennings, and suggest making with others, for sending Pennsylvania willow collections directly to me is wholly satisfactory. I note your further desire that after determinations have been verified the material be sent direct to you for recording. This will be done.

Cordially yours,


Carleton R. Ball,
Executive Secretary

UNITED STATES DEPARTMENT OF AGRICULTURE

EXTENSION SERVICE

WASHINGTON, D. C.

July 18, 1939.

Dr. John M. Fogg, Jr.,
Department of Botany,
University of Pennsylvania,
Philadelphia, Pennsylvania.

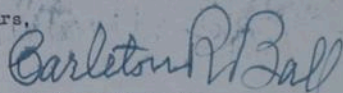
Dear Dr. Fogg:

Since receiving the three hundred odd willows from Dr. Jennings of the Carnegie Museum and finding a hitherto undescribed variety among them, I have completed a paper describing this variety and discussing its previous history in botanic literature. In order to do this I have been obliged to get herbarium material from Ohio State University and Ohio Agricultural Experiment Station, all of which has caused considerable delay.

My work with these willows now is finished and I am sending them to you in two large packages by express collect in accordance with the instructions received from Dr. Jennings when the material was sent to me. One of the packages is a locked cabinet and I am enclosing the key for its padlock.

I trust that your program of mapping is going forward satisfactorily.

Cordially yours,



Carleton R. Ball,
Executive Secretary,
Coordinating Committee

*Acknowledged
July 22*

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY
AND THE VALLEY STATES AGRICULTURAL COLLEGES
WASHINGTON, D. C.

Address: Extension Service, U.S. Dept. Agric.

August 12, 1939

Dr. John M. Fogg., Jr.
Botanical Lab., 38th St & Woodland Ave.,
Philadelphia, Penn.

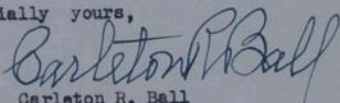
Dear Dr. Fogg:

On my return to Washington I find your letter of July 21. I will be glad to name the Pa. willows as well as those from other areas at any convenient time after October 15.

I am just about to drive to California on vacation and expect to return in time for a confernece in Chattanooga, Tenn., on Oct. 3.

Please address as typed above.

Cprdially yours,



Carleton R. Ball
Executive Secretary

Feb. 17, 1940

Dr. Carlston R. Ball,
Extension Service,
U.S. Dept. Agric.,
Washington, D.C.

Dear Dr. Ball:

At last I am taking advantage of your kind offer to examine our collection of Salix.

There are going forward to you, by pre-paid express, two cartons which contain about one half of our material. I am enclosing a key which will open both of the locks and which you may retain, since I have a duplicate here.

You will observe that our Pennsylvania specimens are in green covers, the rest of the material being in white ones. I am at present more interested in the former, and if you do not wish to take the time to study the extra-local material please do not hesitate to say so. I shall naturally want you to make any notations you wish on the sheets. Later on I shall forward a series of duplicate willows which I have been saving for you.

Did you ever publish the description of the new variety from northeastern Penna., which you found in the Carnegie collection? If so, I should be very grateful for a reprint, if you can spare one.

I am deeply appreciative of your kindness in looking at our series and assure you that due acknowledgement will be made in the published work.

Sincerely yours,

John M. Fogg, Jr.
Asst. Prof. of Botany
Curator of the Herbarium

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY
AND THE VALLEY STATES AGRICULTURAL COLLEGES

ADDRESS:
EXTENSION SERVICE
U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

February 20, 1940.

Dr. John M. Fogg, Jr.,
Curator of the Herbarium,
Botanical Laboratory,
University of Pennsylvania,
38th St. and Woodland Ave.,
Philadelphia, Pennsylvania

Dear Dr. Fogg:

Your letter of February 17th with enclosed key is here and the two packages arrived safely before the letter came.

I have determined the material in box number one and find many things of interest to me. I am making distribution records of some of the southern material and of some of the Labrador specimens which I had not seen elsewhere.

As you will have suspected, some of the material was not correctly named and you will have quite a bit of shifting to do when it comes back to you. For example, there were no specimens of true *S. sessilifolia* in the cover so labeled. Most of them were *S. Hindsiana* and were so labeled when first distributed. It is a species distinct from *sessilifolia*.

All specimens labeled *S. nigra falcata* are *S. nigra*. Variety *falcata* is of no taxonomic value because the mature leaves on practically all plants of *S. nigra* are *falcate*. For this reason most mature specimens are called variety *falcata* and most juvenile are called *nigra*, which is rather ridiculous.

In going through the material in a cover I have had my initials put in the corner of the label of those which were correctly named. For the others, I have written a determination label and stuck it under a twig of a specimen. In a few cases where there was more than one specimen of the same thing to be relabeled, I have attached all the determination labels to the top sheet of the series.

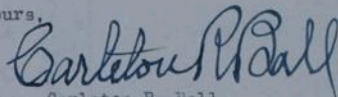
- 2 -

In most cases I have left this redetermined material in the cover in which I found it, but have placed it in a newspaper sheet for emphasis. In a few cases I have taken out the material of some species in order to have it for comparison when I come to the cover where it belongs.

I have just determined the material in the undetermined cover and have added to that cover a few specimens which had been left out of other covers for further study. I hope that this method of handling the material will be satisfactory to you. As soon as I have finished the second box I will return both boxes to you, keeping the key for use on later shipments.

I have reprints of my paper covering the new variety chiefly from Presque Isle but have been too busy to distribute them. I am sending three copies under separate cover and will send more if you have need for them. I already have found three specimens of this variety in your collection and probably will find others when I come to the cordata cover.

Cordially yours,



Carleton R. Ball,
Executive Secretary

10. Ekblaw
10.30 Ellsbury
11.00 Stephansson
11.30 Lee.
12.00 Bartlett

7099 14619
S. sericea

5521 e 5520
Longipes Wardii

COORDINATING COMMITTEE
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UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY
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ADDRESS:
EXTENSION SERVICE
U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

February 21, 1940.

Dr. John M. Fogg, Jr.,
Curator of Herbarium,
University of Pennsylvania,
Philadelphia, Pa.

Dear Dr. Fogg:

In further reference to my letter of February 20, I have finished the determination of both cartons of willows and am returning them by express collect today with an assigned value of \$300 which appeared on the shipping tag attached to one of the cartons.

Regarding the material which was labeled *S. glauca* L., I would say that in North America forms of *S. glauca* apparently are confined to Alaska and adjacent Arctic area. The abundant material occurring in the Rocky Mountains and the Wasatch Ranges in the United States and Canada belongs to what formerly was called *S. glaucops* Andersson. It is a group which includes what must be eventually recognized as several varieties and possibly more than one species. The oldest name for this complex is *S. desertorum* Richardson which I think is represented by the single specimen collected by Raup. The form of the southern Rocky Mountains has been named *S. pseudolapponum* von Seemen and other names have been applied at different times. It will take a complete monographic investigation of this group to determine the proper specific name and the alignment of varieties. For the present they may as well be left under *S. glauca* or *S. glaucops*.

I have segregated some of your specimens of *S. humilis* as representing variety *rigidiuscula* (Andersson) Robinson and Fernald. Unfortunately, I am able to separate this variety only by fairly mature foliage and therefore the flowering specimens of the variety have not been recognized. The variety is distinguished by elliptical or elliptical-oblongate leaves quite acute at the apex as compared

- 2 -

with oblanceolate to narrowly obovate leaves in the species with their apex less produced. The narrow-leaved form becomes progressively more common as we go westward and southward.

In a few cases specimens of two species occur in a single sheet. Cases will be found in your covers of *S. glauca* and *S. herbacea*. I hope it is the custom of the University Herbarium to cut these up and remount them in order that the specimens of both species will be findable when specialists are working with the material. Such separation, of course, is very simple when the two species have different labels. When the original specimen was a mixture of two species it becomes necessary to give one a new label and to explain that it was a mixture in a sheet of the other species.

As noted yesterday, when I have found other species in a given cover, I have determined the specimens correctly and left them in the original cover but in a separate newspaper folder for your convenience when sorting the material.

There is a large cover of what came to me as undetermined material which now has been determined and is placed in the top of box two. There is a Pennsylvania cover near the top of box one which also contains miscellaneous specimens held out from other covers for fuller study. This cover which is unlabeled, contained three additional specimens of *S. purpurea* and they still are in it.

In accordance with your instructions I am retaining the key for use on your second shipment.

Cordially yours,

Carleton R. Ball
Carleton R. Ball,
Executive Secretary

Feb. 24, 1940.

Dr. C. R. Ball,
U.S. Dept. Agriculture,
Washington, D.C.

Dear Dr. Ball:

The two boxes of willows, followed by your two letters, reached me safely and both were very welcome. I have had an exciting time going over the willows and can not even begin to tell you how greatly I appreciate your kindness in studying our material.

I am delighted to learn of your opinion concerning Salix nigra, var. falcata. I have long regarded this as a trivial entity and had already planned to throw it over before the publication of the flora.

I have finished re-sorting the specimens according to your annotations. The determination labels have been properly affixed and in the case of a mixture on the same sheet I have, as is our custom, taken steps to have the separate elements remounted on individual sheets with proper comments.

You express an interest in some of the Labrador numbers. Most of these were collected by a student of mine who accompanied MacMillan a few summers ago. I believe that he has a set of undistributed willows and, when he returns from a six weeks collecting trip in Florida, I shall ask him to send them to you for your own collection.

Many thanks for the reprints, which I am indeed glad to have. I do not know whether I have sent you any of my papers; but I shall forward a set for you to do with as you please.

I am sending the two boxes back to you in a day or so, with the rest of our material. I am taking the liberty of including several hundreds of unnamed Carnegie specimens from Pennsylvania. As you may know, we are mounting something like 20,000 sheets of Pa. material for Jennings. It is all undetermined and I have to name it before it is recorded and returned to him. I hope you will not feel I am imposing too much by asking whether you would name these too, so that we might be able to include them on our record cards.

The present sending completes our representation of Salix. In the case of future accessions I am confident that with the splendid reference set we now have, thanks to you, I shall be able to work much more intelligently. If anything particularly puzzling turns up, I may call upon you for assistance.

I should say that in one the cases I am now returning are two folders of miscellaneous species in alphabetical order. These represent usually just single sheets for which I have not yet had individual species covers made, often because the synonymy was uncertain and I dislike exceedingly making out a species cover until I know that it does not duplicate other material under another name. I have worked in too many herbaria where the same entity was scattered in two or more covers, merely because no one had ever taken the trouble to see whether any of the names were synonyms. As the material comes back from you I am seeing that every valid species and variety receives its own cover, even if there be only one sheet of it.

I should be glad to know whether you are interested in receiving duplicates of Salix. If so, I shall be glad to lay material aside for you as opportunity arises. I have already accumulated a small set and shall be pleased to add to it. I shall be in the mountains of southwestern Virginia again this summer and shall be happy to keep you in mind.

Again let me thank you most heartily for your very great kindness.

Sincerely yours,

John M. FONG, Jr.
Asst. Prof. of Botany
Curator of the Herbarium

COORDINATING COMMITTEE

OF THE

UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY
AND THE VALLEY STATES AGRICULTURAL COLLEGES

ADDRESS:

EXTENSION SERVICE
U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

February 29, 1940

Dr. John M. Fogg, Jr.
Dept. Botany, Univ. Penn.,
Philadelphia, Pa.

Dear Dr. Fogg:

Your letter of Feb. 24 and the two cases of specimens arrived safely. Before I forget it, let me hasten to say that reprints are wasted on me unless they refer to *Salix* species, their ecology, utilization, etc.

I have completed determination of the two cartons and am returning them today by express collect. Thus they arrive safely. Key herein.

When you get the material sorted you will have a very workable collection of willows. Should you get to the stage of having State maps engraved with dots showing distribution of species, I would like to purchase a set of those covering willows.

You will not be too happy with *S. alba* and *S. fragilis* as they come back to you. Juvenile specimens are difficult to separate with certainty sometimes. Hybrids were brought over from Europe through the centuries and others have occurred here. Hard to handle them from fragments.

S. alba var. *vitellina* is a horticultural myth, so far as American material is concerned. And var. *coerulea* is nearly as bad. Mostly they "ain't". *S. fragilis* was the basis of our gunpowder industry from early colonial days until smokeless powder appeared.

As previously, I have kept the material in the same cover in which received, with exceptions noted below. Specimens with annotation labels usually are in newspaper sheets.

One packet in the top of box 2 contains specimens of *S. longipes* Wardii and *S. glaucophylla* albovestita, with one aberrant *S. lucida* from Alta. These collections extend the range of both varieties in NW Penn. Most of them are Carnegie Museum collections but I did not receive them with the Museum willows last year, for some reason. We need more collecting of these two in the northwest counties.

I am always glad to get duplicates, as it facilitates determinations, so whatever you send will be most welcome. But remember that I always am glad to determine, duplicates or not. Was glad to have the Museum material in your shipment (maybe it was with you for mounting when J. sent me the Museum willows).

In re E. Perot Walker numbers, those in your collection scarcely duplicate those in herb. Catholic Univ. of Am. Apparently no institution got all of them.

Cordially yours

Carlotta F. Hall

Carlotta F. Hall

March 4, 1940

Dr. C. R. Ball
Extension Service
U. S. Department of Agriculture
Washington, D. C.

Dear Dr. Ball:

The two boxes of willows have arrived safely and needless to say I am delighted to see what you have done for us. The material is already correctly arranged and in proper covers, and I feel that we have, thanks to you, a fairly adequate working series, at least for this part of the world.

When we finish the work of mapping the individual species in Pennsylvania, I shall be very glad to have duplicate maps made and sent to you. No need to think of purchasing them. This will be but a slight return for the great kindness you have already done us.

I agree with you that the Northwestern portion of the state is greatly in need of exploration. This is on our program for this year and I hope that we shall be able to extend some of the ranges.

The unnamed Carnegie material which you saw for the first time is, as you supposed, part of the 18,000 specimens which we are mounting for Dr. Jennings.

What you say concerning the E. P. Walker specimens bothers me considerably. I had assumed that he had given us the complete first set. It appears as though he had not done so and upon his return from Florida, I shall inquire into the matter to ascertain just how he distributed his material. At any rate I shall see that you receive a series of the available duplicates of Salix.

Finally, may I thank you again most heartily for the invaluable assistance which you have rendered us and which will go far towards making our studies comprehensive and trustworthy.

Sincerely yours,

John M. Fogg, Jr.,
Director of Botanical

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY
AND THE VALLEY STATES AGRICULTURAL COLLEGES
WASHINGTON, D. C.

Extension Service, U. S. Dept. Agric.

March 9, 1940

Dr. John M. Fogg, Jr.,
Botanical Laboratories, Univ. of Pa.,
38th and Woodland Ave., Philadelphia.

Dear Dr. Fogg:

On returning to Washington today I find your letter of March 4 and am glad to know that the willows arrived safely and have been rearranged.

Thanks for the offer of duplicate maps of the Salix distribution when and if these are made.

If you are going to have a field party in the NW part of the State this summer, you probably can use a copy of the lists I made showing specimens of *S. longipes* Wardii and *S. glaucophylla* albovestita in the herbariums of Carnegie Museum and Univ. of Pennsylvania. I inclose copies. and have sent same to Jennings.

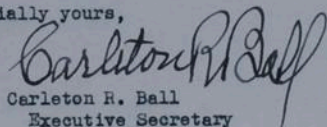
No Ohio collections so far examined show specimens of either in adjacent portions of Ohio.

I certainly did not intend to be unfair to Mr. Walker but may have given you an erroneous impression regarding discrepancies between the sets of his Labrador willows in Herb. Univ. Penn. and in Herb. Catholic Univ. of America. At first, there were many differences but gradually closed up.

I inclose list of both. The tail end of list of Univ. Penn. specimens is written on the bottom of the Catholic Univ. list, to save a third page. I did not repeat on your list, those of his which I already had named in the Catholic Univ. herbarium, which came first. I have noted on their list, the ones which were "also in Herb. Univ. Penn."

The Numbers in theirs and not in yours are Nos. 303, 613, and 782, as you will note. No. 719, *S. leirolepis*, is in both but The Cath. Univ. spec. is all *S. leirolepis* while, as noted, yours is mostly *S. anglorum* kophophylla, with some *leirolepis* and some *reticulata*. No. specimens of *anglorum* kophophylla appears in the Cath. U. list under any number.

Cordially yours,


Carleton R. Ball
Executive Secretary

August 31, 1943.

Dr. C. R. Ball,
Extension Service,
U. S. Department of Agriculture,
Washington, D. C.

Dear Dr. Ball:

You will recall that more than two years ago you very kindly examined the material of the *Salix* from our Herbarium. Since then a considerable amount of additional material has accumulated, most of it resulting from our studies on the Flora of Pennsylvania, and I am taking the liberty of inquiring whether you would again be willing to examine and annotate these specimens. I hesitate to approach you for such a purpose when I know that there are many other important things to be done at this time and shall not in the least resent your telling me that what I am asking is out of the question. Since, however, you have seen the bulk of our material, I would be highly gratified if these additional collections could pass before your critical eyes.

Sincerely yours,

Associate Professor of Botany.

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY,
AND VALLEY-STATES AGRICULTURAL COLLEGES

ADDRESS: EXTENSION SERVICE, U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

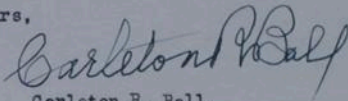
September 2, 1942

Professor John M. Fogg, Jr.,
University of Pennsylvania,
Philadelphia, Pa.

Dear Professor Fogg:

Your letter of August 31 is here and I am glad to know that additional willow material is accumulating as your study of the flora of Pennsylvania progresses. Send the specimens along and we will get them done presently.

Cordially yours,


Carleton R. Ball,
Executive Secretary

from Figg

September 18, 1942.

Dr. G. R. Ball,
Extension Service,
U. S. Department of Agriculture,
Washington, D. C.

Dear Dr. Ball:

I am now taking advantage of your kind offer to examine additional material of *Salix*, and am to-day forwarding you, by prepaid express, a shipping case containing 140 sheets from our herbarium. I am also including in the shipment 103 sheets from the Carnegie Museum and 8 sheets from St. Vincent's College. These two lots are here on loan and may be returned to us for recording when you have finished with them. In addition, I inserted at the last moment 8 unmounted specimens collected by Mr. C. E. Wood, one of my graduate students, who is working on the flora of Roanoke County, Virginia. Mr. Wood would be grateful for your opinion concerning the identity of these specimens.

I am enclosing herewith a key to the padlock on the case, which you may return when you have finished with it.

Thanking you again for your cooperation, I am

Sincerely yours,

Associate Professor of Botany.

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY,
AND VALLEY-STATES AGRICULTURAL COLLEGES

ADDRESS: EXTENSION SERVICE, U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

September 25, 1942

Dr. John M. Fogg, Jr.,
Department of Botany,
Univ. of Pennsylvania,
Philadelphia, Penna.

Dear Dr. Fogg :

Your letter of Sept. 18 and the carton of willow specimens arrived safely. I have given them immediate attention and will finish them early next week, as I am leaving the city soon for a field trip.

At the moment I am writing about Mr. Wood's No. 3870 from Roanoke Co., Va. It is *Salix lucida* Muhl., Common in the Northeast and North-Central States but unheard of so far south. Two questions are in mind.

Can Mr. Wood give more information as to number of plants observed, habit of growth as to number of stems in clump (he calls it "shrubby tree"), with a height of "15-20 ft." which is unusual for *S. lucida*. Would also like to know the nature of habitat, whether floodplain, open or shaded, etc. Were his plants dried with artificial heat?

My second question is selfish. There are two specimens of this number, one paper being marked "duplicate". I would very much like to have this duplicate specimen, unless it is definitely scheduled ~~for~~ for some other.

Again, could Mr. Wood find this plant again? Or draw a map which would enable me to find it?

One find in your material is an old specimen of *S. longipes* Wardii ^{var.} from Westmoreland Co, apparently first record for that County.

Cordially Yours,

Carleton R. Ball
Carleton R. Ball
Executive Secretary

Enclosed is copy of recent letter to Wahl.

COORDINATING COMMITTEE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY,
AND VALLEY-STATES AGRICULTURAL COLLEGES

ADDRESS: EXTENSION SERVICE, U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C

September 30, 1942

Mr. John M. Fogg, Jr.,
Dept. Botany, Univ. Pennsylvania,
Philadelphia, Penna.

Dear Dr. Fogg:

I have finished the determinations of your willows and am returning the locked carton today by express, collect. Key is inclosed.

I am very glad to have seen this material, as it has helped with distribution records, and raised a few questions.

Salix longipes var. *Wardii* from Westmoreland is a new county for the variety and the Jack's Island specimen from Alleghany Co., was not in the previous shipments from you or Jennings. Evidently this plant had a considerable distribution in the Ohio bottoms there. It is just too bad that it has not been found in recent years. Perhaps it can be recovered at the Westmoreland Co. locality, even if the Ohio-Alleghany River localities have been destroyed. Perhaps Jacks Island remains.

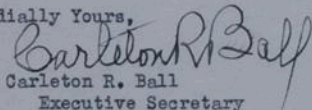
S. lucida and *S. petiolaris* from Lancaster Co., and *S. petiolaris* and *S. discolor* from Bucks Co., indicate that we may expect them to occur across the line in Maryland.

Miss Earle's 2245, which was received as *S. rostrata* (*S. Bebbiana*) and which I have determined as *S. humilis* form, is most deceptive and interesting. I was fooled by it at first. I have added some notes on the annotation label. I greatly hope that it can be relocated and collected when in flower and/or fruit.

Just now, as I locked your carton for return, came a letter from Mr. Wood giving me permission to keep the duplicate *S. lucida* from Roanoke Co., and inclosing maps showing place of collection. I am just leaving for a field trip but will acknowledge his letter before I go. When I return, some 8 days hence, I will give him my data on willows in Roanoke Co.

Appreciating the help you have given me, I am

Cordially Yours,


Carleton R. Ball
Executive Secretary

From Ball

Dr. Fogg

COORDINATING COMMITTEE

OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE, TENNESSEE VALLEY AUTHORITY,
AND VALLEY-STATES AGRICULTURAL COLLEGES

ADDRESS: EXTENSION SERVICE, U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

September 23, 1942

Professor Herbert A. Wahl
Department of Botany
The Pennsylvania State College
State College, Pennsylvania

Dear Professor Wahl:

Your letter of September 19 arrived today but the box of specimens came yesterday and was given immediate determination. Where the determination already was correct, as in most cases, I merely attested that fact with my initials on the label. Where the specimens were undetermined or incorrectly determined, I have attached a correction label.

All the species were those that might be expected in central Pennsylvania and none of them is sufficiently rare so that special collection would be desirable. Only a few comments need be made.

You will note that most of the foliage specimens of *S. humilis* represented the variety *rigidiuscula* (Anderss.) Schneider. Presumably most of the flowering specimens of this species represented the same variety but I know of no way of determining the variety in the flowering stage.

You will note that one very young specimen of *S. nigra* had been determined as *S. cordata*. They look much alike in the juvenile stage but the leaves of the former have very tiny vein islets and this can be seen under the lens in very young leaves.

I thank you for the unmounted specimen of your own collecting which proves to be *S. petiolaris*, as you supposed.

I am very glad that you sent back the specimen of *Prunus* for my inspection. I have added some notes to the sheet which will explain my reaction. Even at that, I must have been partly asleep because, without regard to peculiarities of leaf shape, the crenate margin is completely unlike that of *S. longipes*. Apparently, I was obsessed

- 2 -

by the beautiful display of tiny vein islets, which are characteristic of this species and its relatives.

I appreciate your giving me an opportunity to see the material, which I returned today by franked mail for deliverance.

Cordially yours,

Carleton R. Ball
Executive Secretary

CRBall:MCM

From Page
October 6, 1942.

Dr. C. R. Ball,
Extension Service,
U. S. Department of Agriculture,
Washington, D. C.

Dear Dr. Ball:

This will acknowledge the return in good condition of the carton of *Salix* sent to you recently for study. I cannot begin to thank you for your kindness in checking this material. The work which you have done for us will contribute immeasurably to our published Flora, if we ever succeed in completing it. I could only wish that there were in existence comparable experts in such genera as *Crataegus* and *Rosa*.

Mr. Wood tells me that he has already written you concerning his *Salix lucida*. I was greatly excited when he first showed me this specimen for I knew nothing of the occurrence of this plant that far south. Indeed, it was at my suggestion that he included a duplicate for you, but I stupidly neglected to mention that fact in my earlier letter.

Miss Earle tells me that she can easily re-locate her plant from the Eastern Shore of Maryland but until she or her family get some extra gasoline it will be impossible for her to make the trip.

Your remarks on *S. longipes*, var. *Wardii* are indeed interesting and I shall definitely keep this plant in mind when conditions permit the resumption of field work in the southwestern corner of the State.

Again, many, many thanks,

Sincerely yours,

Associate Professor of Botany.

UNITED STATES DEPARTMENT OF AGRICULTURE

EXTENSION SERVICE

WASHINGTON, D. C.

Dr. John M. Fogg, Jr.,
Or the Curator of the Herbarium,
Dept. of Botany, Univ. of Pennsylvania,
38th and Woodland Ave., Philadelphia.

August 6, 1944

Dear Dr. Fogg:

Not knowing where any one is in these war days, I address as above.

On Feby. 2, 1943, Mr. Carroll E. Wood, Jr., then with you, sent me a list of all the willow specimens he had collected in Roanoke Co., Virginia. Just afterward, I went into hospital for two months and two major operations. Apparently his letter never was answered.

In the meantime, Dr. A.B. Massey and I are getting a bulletin on the willows of Virginia and citing all available specimens. We have cited his *S. lucida*, because it was sent to me for verification, and his *S. purpurea* because it recently was reported in his *Rhodora* paper.

I have copied the list and sent it to Dr. Massey today. I have sent a copy to Mr. Wood, at your herbarium, asking him for help in two ways:

First, I asked that the collection dates be inserted on the list, for all the specimens of his in herb. Univ. Penn. (UP).

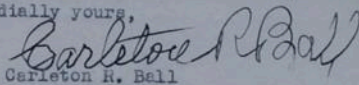
Second, I asked if he would send me the listed specimens of *S. cordata* and *S. humilis*, so far as they are in herb. UP.

Some specimens of *S. cordata* from that general area are unusually hairy and I would like to check on his. The collections of *S. humilis* may include some of var. *rigidiuscula*, and would like to check on them.

If he is there and gets my letter mailed with this, you can disregard this letter. If he is not there, I will be very grateful if you can help out on the two points noted. A copy of the list is inclosed for your use.

I hate to trouble you with this request, but I believe these data can still be inserted in the manuscript. This is penalizing you or him for my oversight, for which I apologize.

Cordially yours,



Carleton R. Bell
Collaborator.

P.S. I am working on the Willows of Alaska to be published in Anderson's series next fall. Also on the revision of *Salix* for Britton and Brown. And, of course, on my monograph of American *Salix*.

August 11, 1944.

Dr. Carleton R. Ball,
Extension Service,
U. S. Department of Agriculture,
Washington, D. C.

Dear Dr. Ball:

I have your letter of August 6th with the information for Mr. Carroll E. Wood, Jr. Wood entered the Army last winter and after undergoing training in Oklahoma was assigned to Camp Meade, Maryland, where, so far as I know, he is still located. He frequently comes to Philadelphia on weekend passes and my guess is that he has by this time received your letter and will accede to your requests in the near future, if he has not already done so.

Since you indicate that there is still some urgency in securing this information, I think that I can serve you best by inserting the desired dates on the list which you submit and asking my Assistant to forward you his specimens of *Salix cordata* and *S. humilis*.

Since I have collected a good deal in Virginia, I shall indeed be eager to see the bulletin which you and Dr. Massey are preparing. As a matter of fact, I am tempted to forward you material of *Salix* which I collected in 1940 but have never found time to work over. Since I have duplicates of nearly everything, I may try to get a package off to you within the next day or so.

I am delighted to learn that you are working on the Willows of Alaska and look eagerly forward to seeing that publication as well as your larger work on American *Salix*.

Sincerely yours,

Professor of Botany.

UNITED STATES DEPARTMENT OF AGRICULTURE

EXTENSION SERVICE

WASHINGTON, D. C.

August 24, 1944

Dr. John M. Fogg, Jr.,
Dept. Botany, Univ. Pennsylvania,
Philadelphia, Pennsylvania.

Dear Dr. Fogg:

Several days ago I received a letter from you, in answer to mine of Aug. 6. Shortly afterward, I received the packet of Virginia willows. I went over these immediately and mailed them back to you on the same day. I have not been able to find your letter and so have delayed reply until now.

I was very glad to see these willows, most of which I had seen before, and hope that you received them promptly and safely.

I was surprised to note that Fernald had determined Fernald and Long 3888 from Norfolk Co. as *S. humilis*. It seems quite typical *S. tristis* to me. I wrote to Dr. Fernald of my conclusion but have had no reply yet.

I was glad to have Wood's *S. humilis* and your *S. cordata* specimens from Giles Co. for review, but sorry that the Wood specimen of *S. cordata* from Roanoke was not included.

Please pardon this delayed acknowledgement of your courtesy.

Cordially yours,

Carleton R. Ball
Carleton R. Ball
Collaborator



UNITED STATES DEPARTMENT OF AGRICULTURE

EXTENSION SERVICE

WASHINGTON, D. C.

Dr. John M. Fogg, Jr.,
Dept. Botany, Univ. of Pennsylvania,
Philadelphia, Penna.

September 18, 1944

Dear Dr. Fogg:

I received your box of mounted Pennsylvania willows (with a few from Md.) and have given them immediate attention. Most of them were correctly named, much more so than in the average collection. The two problems seemed to be the distinguishing of juvenile *S. cordata* and the separation of juvenile *S. discolor* and *S. humilis*.

I am sending the box back by express collect, today. After I had sealed and tied it I discovered that I had not tied the individual covers within the box. They are very tight, however, in all directions, and I believe that they will come through safely.

I was very glad to see this material, not only because it shows that you were getting good State coverage in your survey, but because it gave me some records of southerly extension to the south border of the State, which will be of value to me in listing distribution.



Cordially yours,

Carleton R. Ball
Carleton R. Ball
Collaborator

September 19, 1944.

Dr. Carleton R. Ball,
Extension Service,
U. S. Department of Agriculture,
Washington, D. C.

Dear Dr. Ball:

You certainly work fast! Last Friday my herbarium assistant gave me a memorandum to the effect that she was forwarding to you 101 sheets of *Salix*, largely from Pennsylvania, for your examination. I had it on my pad to write informing you of this fact to-day when I received your letter saying that you had not only received and examined this material but that it was already on its way back. Again I am indebted to you for your kindness in being willing to study our specimens, which thereby acquire a much greater value than they had possessed before.

I still have it in mind when time permits to go through my rather large 1940 collections from Giles County, Virginia, with a view of pulling out all specimens of *Salix* to submit to you for scrutiny.

With warm personal regards, I am

Sincerely yours,

Professor of Botany.

UNITED STATES DEPARTMENT OF AGRICULTURE

EXTENSION SERVICE

WASHINGTON, D. C.

September 22, 1944

Dr. John H. Fogg, Jr.
Dept. Botany, Univ. Pennsylvania,
Philadelphia, Penna.

Dear Dr. Fogg:

In reference to your letters of Aug. 11 and Sept. 19, I will be glad to see your willows from Giles Co., Va., at any time convenient to you. I always learn something each time I tackle a pile of willows.

Just had a letter from Carroll Wood. On furlough, he got back briefly to the Roanoke Co. locality for *Salix lucida*, the southernmost station known. He found 20-30 plants scattered along for half a mile, so there can be no doubt as to its being endemic there. These data will not be in the Virginia Bulletin just appearing.

Cordially yours,

Carleton R. Bell
Carleton R. Bell
Collaborator



4/4/47

Dr. Fogg:-

The Salix's are packed up ready for the expressman, but I will hold them until your letter is written and ready for the mail so both letter and box will arrive at approximately the same time.

The box contains

54	mounted Pa.
25	unmounted Pa.
<u>38</u>	mounted outstate
117	

Dr. Ball, Carleton R.
3814 Jocelyn St., N.W.
Washington 15, D.C.

November 19, 1947

Dr. Carleton R. Ball,
Extension Service,
U. S. Department of Agriculture,
Washington, D. C.

Dear Dr. Ball:

Assuming that you are still interested in examining material of *Salix*, I am taking the liberty of forwarding to you a package containing 136 sheets from our Herbarium. Most of these are from the State of Pennsylvania but a few are from other areas. Also, a few are duplicates belonging to the Herbarium at Pennsylvania State College which are here on loan but which I have included because I would greatly appreciate having your comments on them.

I trust that I am not trespassing on your good nature in sending this material without more warning, but you have always been so wonderfully cooperative in examining specimens that perhaps I have come to take your interest for granted.

With warm personal regards, I am

Sincerely yours,

Professor of Botany.

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

Dr. John M. Fogg, Jr.,
Dept. Botany, Univ. of Penna.,
Philadelphia ? Penna.

December 8, 1947

Dear Dr. Fogg:

I am returning the carton of willows by express, collect, and trust it arrives promptly and safely. I am glad to have seen this material and especially that by Berkheimer from Bedford Co., which is on the line of southward migration. Some of his species and varieties from there have been found in adjacent Maryland and in West. Va. just beyond. Some shew not.

3-4 ft. tall.

One of the specimens apparently is not a Salix. It is in a cover between the two uppermost packets, which are tied together. It is Adams 5063, wooded NW slope of Sideling Hill, 3 miles N.E. of Shorty's Place, Fulton Co., June 22, 1941, and distributed as *S. nigra* Marsh., from which the glaucous leaflets would separate it. It has the leaflets in clusters from several-scaled buds. I will be glad to know what it is and, if by any chance there are duplicates, I would like to have one. I have one cover devoted to plants ~~misleadingly~~ mistaken for willows and would like to add this one.

To the shipment I have added a few duplicates of my own collecting

7 Nos., 11 sheets from Md.-Pa. in 1946

5 Nos., 5 sheets from Ont. Mich. in 1947.

Hope that they may of some interest.

Cordially yours,

Carlton R. Ball
Carlton R. Ball

December 18, 1947

Dr. Carleton R. Ball,
3814 Jocelyn Street, N.W.,
Washington 15, D. C.

Dear Dr. Ball:

The package containing the willows has arrived back here in good condition and I have derived considerable pleasure and enlightenment from going over the sheets which you so kindly annotated.

With respect to Mr. Adams' No. 5053, I share your bewilderment. The plant certainly looks superficially like a *Salix*, but on closer inspection I can see that it is not. I have asked Mr. Adams, who is my herbarium assistant at the Morris Arboretum of the University, to go through his duplicates and to send you an extra sheet of this number if he still has one. He is particularly keen about woody plants himself and it may be that he will be able to suggest something which will throw light on the identity of this specimen.

There is a question in my mind concerning two sheets which you have called *S. discolor* var. *latifolia*, adding the comment, "erroneously called var. *ericocephala*." Does this mean that you have abandoned the use of *ericocephala* entirely and that material of ours which you have previously called that should now be referred to var. *latifolia*?

Thank you so much for the duplicates, which we are delighted to have for our collection. I am not sure whether these are to be regarded as a donation or a continuation of exchanges, but perhaps this is not an important point in your estimation. We shall, however, unless I hear from you to the contrary, enter them as an exchange accession and shall hope to return your kindness by sending you duplicates of *Salix* from here as they accumulate.

With best wishes and warm regards, I am

Sincerely yours,

Professor of Botany.

Dr. John M. Fogg, Jr.
Dept. of Botany,
University of Pennsylvania ~~XXXXX~~.
Philadelphia, 4, Penna.

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

December 19m 1947

Dear Dr. Fogg:

Your letter of Dec. 18 is here and I am glad to know that carton of willows arrived safely after its incursion to this wicked city.

You are right in your surmise regarding *S. discolor* var. "eriocephala" (Michx.). It was described from male plants from near junction of Miss. & Ohio Rivers, which really were specimens of *S. cordata* Muhl. var. *vestita* Andersson (*S. missouriensis* Bebb). Later a female plant was invented to be company for the male.

The name "eriocephala" being invalid for this variety of *S. discolor*, the next name is var. *latifolia* Andersson, which included hairy young twigs and young leaves in the description. These are the characters which separate the variety and not any difference in leaf shape.

If you dig up a duplicate of that "non-Salix", I'll be glad to have it. If not I hope you get the specimen identified and let me know what it is so that I can add it to the list of gay deceivers.

As to the duplicates I sent, I collect when I can and distribute where I think they may have value. Its like my determining specimens for botanists. I am always glad to do it because I learn much in the process and one never learns too much about a variable group like the willows. If I get to keep any of the material, it is what much more useful to me in future. If not, the learning is sufficient "pay". In exchange or gift of specimens the same principle holds. If they help others, that is sufficient reward. If I get some later, that enables me to know more and do better work thereafter.

Cordially yours,

Carleton R. Ball
Carleton R. Ball

December 6, 1948

Dr. Carleton R. Ball,
3814 Jocelyn Street, N. W.,
Washington 15, D. C.

Dear Dr. Ball:

There will go forward to you shortly a carton containing 139 sheets of *Salix*, most of them collected in Pennsylvania, concerning which I would like very much to have your comments. In sending this material I am taking advantage of your generous offer to continue examining willows from our collection and I venture to hope that you may possibly find some interesting records in the present lot.

In addition to material which you will not have seen before, I am including six sheets of *S. capraea*, which you may have seen before but only one of which bears your annotation. I should be glad to know what you think of these sheets for there seems to be some confusion regarding the occurrence of this species in our area. I found it once years ago on a waste heap, where, unfortunately, it did not persist, and I would be interested to learn something concerning the distribution of this European species in Eastern North America.

Thank you again for your very generous cooperation.

Sincerely yours,

Professor of Botany.

Dr. John M. Fogg, Jr.,
Dept. Botany, Univ. of Penna.,
Philadelphia 4, Penna.

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

13 December, 1948

Dear Dr. Fogg:

Your letter of 6 Dec. came promptly and the carton of willows was delivered on the 10th. I have given them immediate attention because I am working on manuscripts and, if I waited to clear them out, the willows would be here for weeks. I don't like to have them waiting around.

The specimens have all been examined and annotated (in ink), as I unintentionally ran out of slips.

Most of them were correctly named. *S. cordata* Muhl. (not Michx.) had to be changed to *S. rigida* Muhl. One change made in the ~~specimens~~ cover of non-Penna. specimens was on Carroll Woods No. 1906 from Roanoke Co., Va. It was named *Salix nigra* Marsh., probably when originally identified by me. It is really a very juvenile specimen (both sexes) of *S. rigida* Muhl., and thus belongs with the two foliage specimens from the same County.

The carton will go back by express tomorrow. I forgot to look up reprints not sent you recently and include them, but will mail them, if any.

With all good wishes for the holidays and the whole coming year, I am

Cordially yours

Carleton R. Ball

Carleton R. Ball

January 5, 1949

Dear Dr. Ball:

The carton of willows has been received in prompt order and I am writing to thank you for your very great kindness in examining and annotating the specimens which it contained. It is extremely helpful to us in our work to have your authoritative comments on our material and I am more than ever grateful to you for your continued cooperation.

Sincerely yours,

Professor of Botany

Dr. Carleton R. Ball,
3814 Jocelyn Street, N. W.,
Washington 15, D. C.

from Fogg

January 16, 1951

Dr. Carleton R. Ball,
3814 Jocelyn Street, N. W.,
Washington 15, D. C.

Dear Dr. Ball:

You have been so good about examining sheets of *Salix* for us in connection with our studies of Pennsylvania flora that I am tempted to impose upon you again to the extent of asking whether you would be willing to look at about 125 specimens on which we would like your opinion. If you are willing to see this material I shall have it forwarded to you at once.

With best wishes, and warm regards, I am

Sincerely yours,

Professor of Botany
and Curator of the Herbarium

Dr. John M. FOGG, Jr.,
Dept. of Botany, Univ. of Pennsylvania,
Philadelphia 4, Penna.

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

29 January, 1951.

Dear Dr. Fogg:

I have purposely delayed answering your letter of 16 January until I could see how other lots were getting cleared up. Good progress has been made and you may send the material at any time.

I always am much interested in Penna. specimens because some of the northern species extend but little farther south in the Coastal Plain and therefore their distribution in Penna. is a guide as to where to look for them in Maryland.

Also, Pennsylvania contains none of the highly controverted or misunderstood species of the Arctic and so will not take very long to determine. I will not be able to follow Fernald in the new Gray's Manual, in the treatment of *S. tristis* as a variety of *S. humilis*, or in his renaming of *S. humilis* var. *rigidiuscula* (Andersson) Robinson & Fernald as var. *hyperbys* Fernald.

I hope that your State Flora is progressing well. Such volumes are much needed. Prof. Ray J. Davis of Idaho has finished his 20-year labors and now cannot find a publisher. I have made some suggestions. Dr. Porter of Wyoming is busy on a State Flora, but with no plan for a revision of Coulter & Nelson.

Trusting that all goes well with you, I am

Cordially yours,

Carleton R. Ball

Carleton R. Ball

Dr. John M. Fogg, Jr.,
Dept. of Botany, Univ. of Pennsylvania,
Philadelphia 4, Penna.

2814 Jocelyn St., N.W.,
Washington 15, D. C.,

15 February, 1951.

Dear Dr. Fogg:

The return of your carton of willows from Pennsylvania and elsewhere was held up by the rail strike but they finally got away on Feby. 13 and I trust that they have reached you safely. I was very glad to have a chance to look over this material.

I have recorded the specimens from Bedford Co., Pa., because that is where the northern species work south and the southern work north. You had one of *S. caroliniana* from that Co. but it extends farther into Pa. along the Ohio R.

In the two sheets from the Keewatin Expedition of 1947, one had been incorrectly determined by Dr. Forsild, as it proved to be *S. arbusculoides* instead of *S. planifolia*. This may be a new eastern extension for *S. arbusculoides*, at least in that latitude, but I have not yet had time to check on it.

The specimen of *S. nigra* var. *lindheimeri* from Meade Co., Kansas, may be a northern extension that far west. It occurs in the Texas Panhandle to the south and in one county of southern Kansas farther east.

I must look further into that specimen of *S. rigida* (*S. cordata* Muhl.) which was labelled var. *myricoides*. There has been some mix-up in the way that name has been applied as a varietal name, but apparently the original species had narrow leaves.

If any letter from you came with the carton, I cannot locate it now, but have yours of Jan. 16, to which I replied on Jan. 29.

Congratulations on the "Vice-Provost" job. Apparently botanists seldom go up the administrative ladder and I'm glad to see one there. Hope you don't get dizzy.

Cordially yours,

Carleton R. Ball
Carleton R. Ball

from Fogg

February 22, 1951

Dr. Carleton R. Ball,
3814 Jocelyn Street, N.W.,
Washington 15, D. C.

Dear Dr. Ball:

Not until this afternoon did I have an opportunity to go over the shipment of willows which you so kindly examined for us a week or so ago. I was delighted to see your comments on these specimens and am once again deeply grateful to you for your willingness to examine and annotate our material.

I certainly agree with you concerning the desirability of maintaining S. tristis, as well as the other interpretations in which you differ from Fernald's treatment in the new Manual.

We are still engaged in mounting material collected last season, especially in Pennsylvania, and it may be that by the end of the spring term I shall have another small batch to send to you, if you are willing to submit to this further imposition upon your time. I cannot tell you how gratifying it is to realize that you have seen all of our material of this genus and I hope that I may continue to count upon your willingness to subject our material to critical scrutiny.

Please don't worry about the Vice-Provostship. It has not gone to my head and as a matter of fact, I am giving more time to botany now than when I was Dean some years ago. I am concentrating my field work in northwestern Pennsylvania and Dr. Wahl of Penn State is cooperating with me in the Flora, so that we hope within a year or so to begin putting the manuscript into final shape.

With best wishes and warm regards, I am

Sincerely yours,

Dr. John M. Fogg, Jr.,
Dept. of Botany, Univ. of Pennsylvania,
Philadelphia " 4, Penna.

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

23 March, 1951.

Dear Dr. Fogg:

Your letter of 22^d Feb. was promptly received but neglected since. I am interested to learn that your State collecting will center in N.W. Penna. during this season.

Species having a spotted or sparse range in that area, as I remember them are: *S. serissima*, *S. caroliniana* (*S. longipes* var. *Wardii*; *S. Wardii*), *S. glaucophylloides* (*S. glaucophylla*) and its vars. *albovestita* and *brevifolia*; and *S. tristis*. You may wish to look especially for them.

When Dr. Jennings of Carnegie Museum at Pittsburgh was collecting so widely 10 years and more ago, I named the willows and I think that you received copies of the lists.

At one time I assembled the list of known collections of *S. caroliniana* from N.W. Penna. and I am sure that you got a copy of that, some of the specimens were in Herb. U.P. I think that he said that some of the localities had been destroyed by erosion by the Ohio R. and tributaries. Two Alleghany Co. and 1 Westmoreland Co. specimens were in the mounted lot I determined for you in Sept., 1942. There were 6 from Alleghany Co. and 1 from Lawrence Co. in the list mentioned in line 1.

Nowhere else has it been found so far north. Feel perfectly free to send in specimens of *Salix* whenever you have any needing attention.

Cordially yours,

Carleton R. Ball
Carleton R. Ball

February 18, 1954

Dr. Carleton R. Ball
3814 Jocelyn St., N.W.
Washington 15, D.C.

Dear Dr. Ball:

I am taking the liberty of forwarding to you for identification 150 specimens of Salix from Pennsylvania and elsewhere. You have been so good about naming our material that I hate to impose further on you, but would be very grateful if you can give your attention to the present lot.

Sincerely yours,

John H. Fogg, Jr.
Prof. of Botany

Dr. John W. Fegg, Jr.,
Botanical Laboratory, Univ. of Penna.,
38th St. and Woodlawn Ave.,
Philadelphia 4, Pa.

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

24 February, 1954.

Dear Dr. Fegg:

Your letter of 18th Feby. and the carton of Penna. and Quebec willows came safely. I now have completed the determinations and repacked the carton. The Express Co. probably will get it tomorrow, and you seen after.

Don't worry about bothering me with willows, for several reasons. First, I like to help others with their problems. Secondly, I like to feel that future students in many States, Provinces, and institutions will benefit from this constant determination of specimens for these institutions and collectors. Thirdly, I always learn something worth while from these determinations, whether specimens are returned or kept. And there is plenty yet to be learned, you may be sure.

This year, my 81st., I am devoting ^{my} to completion of my treatment of the Willows of Alaska, and as much more of monograph of the American species of *Salix* as is humanly possible.

In the case of the single (Colorado) specimen of *S. serissima* you sent, I have expressed doubt on my annotation label. I have written to the collector, Dr. Wm. A. Weber, to ask him to check his specimen for any trace of glaucousness on the leaf. When I hear I will write you further.

In repacking, I have arranged all of the specimens in alphabetical order of the names assigned. I hope that this will not cause you extra labor. I have kept the Penna. specimens separate, as they were when received.

With all good wishes for this New Year, and those that follow, I am

Cardially yours,

Carleton R. Ball
Carleton R. Ball

RECEIVED FEB 25 1954
BOTANICAL GARDEN UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA 4, PENNSYLVANIA

March 2, 1954

Dr. Carleton R. Ball,
3514 Jocelyn St., N.W.,
Washington 15, D.C.
Dear Dr. Ball,

Many thanks for your very great kindness in looking over our series of willows which have now safely returned to us. It means a great deal to us to have your annotations on our specimens and we are more than grateful to you for your critical and prompt attention.

It is indeed good to know you are continuing your active studies of this genus and we are gradually accumulating a set of duplicates which will be sent to you in the near future.

Sincerely,

John M. Fogg, Jr.

Dr. John M. Fegg, Jr.,
Dept. Botany, Univ. Pennsylvania,
Philadelphia 4, Penna.

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

4 March, 1954.

Dear Dr. Fegg:

I appreciate your letter of March 2, just received. I find that I may have failed in one determination. I found a note, after returning the carton, to check a specimen named *S. hebbiana* var. *carreifolia*, but I do not recall that I did check it. Apparently I discovered that it bore no annotation label when I was arranging the material for packing.

That variety has leaves mostly oval or broadly oval, with the apex from short apiculate to rounded and the base rounded to retuse or cordate. You probably can tell if it meets these requirements, and can compare it with other specimens in the herbarium under the varietal name. I'm sorry if I forget to finish the job.

Cordially yours,

Carleton R. Ball

Carleton R. Ball

AMERICAN BOTANICAL SOCIETY
PUBLISHED BY THE AMERICAN BOTANICAL SOCIETY
1915 317 L ST. WASHINGTON, D. C.

3814 Jecelyn St., N.W.,
Washington 15, D.C.
Dr. John M. Fogg, Jr.,
Dept. of Botany, Univ. of Pennsylvania,
Philadelphia 4, Penna. 20 July, 1954.

Dear Dr. Fogg:

Recently I have determined more than 1300 specimens of *Salix* for the Academy of Natural Sciences of Philadelphia. Professor Smith mentioned that you and Dr. Wahl of Penn. State University were sponsoring a Flora of Pennsylvania. I remember that I have determined many specimens for ~~you~~ both of you in recent years.

I am writing now because I determined two juvenile specimens from the Juniata River area as *S. caroliniana* Michx. (the former *S. longipes* Shuttleworth and var. *Wardii* Bebb). It occurs up the Potomac Valley to its headwaters, and also up the Ohio Valley to the Pittsburgh area. So far as I know, it never had been reported before in Pennsylvania away from those two valleys.

It is very desirable to have mature foliage specimens of it from the Juniata area. Perhaps you, or some of your colleagues or students, may be able to search for it there during this summer and autumn. You also may wish to write to Dr. Wahl about a similar effort.

You probably have some specimens with mature foliage. As you know, it resembles *Salix nigra*, but has much larger leaves, more veiny, and glaucous beneath. While it is found in river valleys, and in alluvium, it occurs much more commonly in rocky ground than does *S. nigra*.

Wishing you all success in the task of compiling a Flora, I am,

cordially yours,

Carleton R. Ball

Carleton R. Ball.

P.S. I suppose that you can consult the two specimens in the herbarium of the Academy without too much trouble.

RECEIVED JULY 21 1954
ACADEMY OF NATURAL SCIENCES
PHILADELPHIA

July 30, 1954

Dr. Carleton R. Ball
3814 Jocelyn Street, N.W.
Washington 15, D. C.

Dear Dr. Ball:

Upon my recent return from India I find here your kind letter of July 20th concerning the Philadelphia Academy's collection of *Salix*.

I am, of course, keenly interested in your report that *S. caroliniana* occurs in Pennsylvania and the next time I get to the Academy, which will probably be next week, I shall take occasion to examine these specimens.

Also, I shall suggest to my collaborator, Dr. Wahl, that he follow up this matter in the Juniata area, which is more accessible to him from Penn State than it is to me. In fact, he frequently stops to collect in that region on his way to and from Philadelphia.

You are, as usual, most helpful in making suggestions and I deeply appreciate the fact that you have written to me concerning this material.

Sincerely yours,

John M. Fogg, Jr.
Director

from Fogg

February 18, 1957

Dr. C. R. Ball
3814 Jocelyn Street N. W.
Washington 15, D. C.

Dear Dr. Ball:

I am sending you separately a specimen of a willow - at least, I think it is a willow - which is growing on the grounds of the Northeastern Regional Laboratory about two miles from the Arboretum.

To my knowledge I have never seen anything quite like it and wonder if you would be good enough to name it for me. The specimen need not be returned.

We have a small accumulation of Pennsylvania Salix which I would like to send you soon so that we may continue to have the benefit of your identifications in connection with our State Flora.

Sincerely yours,

BALL, CARLETON R

Dr. John M. Fogg, Jr.,
The Arnold Arboretum,
9414 Meadowbrook Ave.,
Philadelphia 18, Penna.

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

February 21, 1957.

Dear Dr. Fogg:

Your letter of Feby. 18, and the willow, are safely received. The specimen certainly is a willow, equally certainly an introduced species and probably from Asia. I feel sure that I have had it once or twice before but cannot now remember its name. I have looked through my own small collection of Asiatic species but do not find it.

The leaves suggest close relationship with *Salix viminalis* L. but are much narrower, and the margins, while involute, have sparse denticulation.

It seems to meet the description of *S. angustifolia* Willd., as given by Andersson in DeCandolle, Prodr. 16, pt. 2, p. 315, under Section Purpureae, instead of Section Viminalis. I have no specimens of *S. angustifolia* in my herbarium, but will look it up at the U.S. Natl. Herb. when I next go down. I worked there yesterday but will go again next week. I assume that you are not in a hurry about it. Andersson's failure to put it in Sect. Viminalis means nothing, because he was trying to do the willows of the world before finishing European species. He put our Cordatae in 3 different Sections, with unrelated species.

The Siberian ~~var.~~ variety, *S. mongolica* Suiz., var. *gracilior* Suizev has leaves of same width as your plant, but longer and with closer denticulation, and leaves and twigs are completely glabrous.

It will be helpful to know the name of the collector, and the height and habit of the plant, as well as local habitat. The card attached to the specimen bore the initials, EURB, and date. Are those the initials of the collector?

It will be very helpful if the plant can be relocated and collection of young leaves and flowers and/or fruit be made. That will help in final proof of identity.

Send along your other Penna. willows whenever ready, and I will give them prompt attention. Have just finished up the winter's bundles and cartons and now am clearing up odds and ends.

Thanks for the privilege of keeping the specimen.

Cordially yours,

Carleton R. Ball
Carleton R. Ball

P.S. Some of the notes made above were for my own information as I begin the search for the name of that species.

10 yrs old - 10-12
15 feet - bushy - rounded
lightly glabrous
brown brown

from Fogg

February 25, 1957

Dr. Carleton R. Ball
3814 Jocelyn Street, N. W.
Washington 15, D. C.

Dear Dr. Ball:

Many thanks for your wonderful letter of February 21st. I am, of course, vastly intrigued by our strange willow and selfishly a little pleased that you did not readily recognize it.

This plant grows on the grounds of the Eastern Regional Laboratory of the U. S. D. A. at 600 E. Mermaid Lane in Wyndmoor, Montgomery County, Pa., about a mile from the Morris Arboretum. It is ten or twelve years old and approximately 15 feet tall, with a rounded, bushy habit. I fear we can tell you nothing as to its origin since the man who planted these grounds is no longer available, due to ill health, for consultation.

The specimen which I sent you was collected by Dr. J. J. Willaman, Head of the Bio-Chemical Division of the Laboratory. He tells me that the initials EWRB are meaningless and that he certainly would not have left the tag on the specimen if he had realized that I was going to forward it to you. For my part, I would assuredly have provided a properly documented label had I known that the plant would be of such interest and that you would do other than discard it after naming.

We shall keep careful watch on the plant this spring and shall provide you with better material including flowers and, if possible, fruit.

Some day I should very much like to have your advice concerning the establishment of a Salicetum here at the Arboretum. Few groups are as poorly represented on our 170 acres as are the willows and I definitely mean to do something to remedy this situation.

Thanks again for all the trouble you have taken.

Sincerely yours,

April 11, 1957

Dr. Carleton R. Ball
3814 Jocelyn Street, N. W.
Washington 15, D. C.

Dear Dr. Ball:

I am writing to inform you that in accordance with your expressed willingness to continue looking at our willows we are forwarding a carton containing 117 specimens of Salix for your examination.

A little later I shall have a few others to send you and I am also keeping my eye on the strange one that I sent you some weeks ago which is growing on the grounds of the Eastern Regional Laboratories not far from here. As soon as it flowers I shall collect material for you.

Thanking you for your continued cooperation,
I am

Sincerely yours,

UNITED STATES DEPARTMENT OF AGRICULTURE
FEDERAL EXTENSION SERVICE
WASHINGTON 25, D. C.

Dr. John M Foog, Jr., Director,
The Morris Arboretum, Univ. of Pennsylvania,
9414 Meadowbrook Ave.;
Philadelphia 18, Pa.

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

12 June, 1957.

Dear Dr. Foog:

I am ashamed to discover that I did not acknowledge receipt of the carton of willows sent with your letter of April 11. I have been swamped with willow shipments this spring and summer and overlook some duties.

I have finished the determinations of the material and am repacking the carton for shipment to the above address, by franked mail. I will have to take it to the Dept. for mailing and may not get down there until Friday, the 14th, as tomorrow is my 84th birthday anniversary, and Thursday we have some guests coming.

I have been able to make certain determinations of most of the specimens but a few were too juvenile for certainty. The several collections by Helen I. Kennedy are a good example of this. They are not only very juvenile, but consist of only one or two small twigs each. If she lives in Adams Co., she could easily have collected later and more.

I wonder also how she (or some one else) was able to determine and name all these juvenile collections. Nos. 64 and 112, with densely hairy organs and ~~hairy~~ precocious flowers, are assigned to *S. serissima*, which has glabrous organs and aments appearing long after the leaves, as the name indicates.

No. 64 probably is *S. sericea* Marshall. No. No. 46 probably is *S. Babylonica* L. No. 67 (labelled *S. nigra*) looks identical with No. 46. Nos. 39 and 56 are labelled *S. discolor* but both have hairy twigs and, if they really belong in Section *Discolores*, they would represent *S. humilis* instead of *S. discolor*.

There is a game which all botanists who collect juvenile material of *Salix* should try to play. Photos of several babies, and of the same persons after they became adults, are given you, and you are supposed to put the two pictures of the same individual together. More failures than successes result, and sometimes even the sexes get mixed.

Now I tackle 4 large cartons from the Univ. of Michigan (ann Arbor) and Michigan State University (East Lansing).

Trusting that your carton reaches you safely, I am

Cordially yours,

Carleton R. Ball
Carleton R. Ball
Collaborator.

from Fogg

June 20, 1957

Dr. Carlton R. Ball
3814 Jocelyn St. N.W.
Washington 15, D.C.

Dear Dr. Ball:

The box of willow has arrived safely and once more I desire to express my very real appreciation of your kindness in going over them for us. If every group of plant had such a friend as Salix has in your floristic work would be a real pleasure.

You will recall, perhaps, that last February I sent you a very narrow-leaved willow which had been submitted to me by Dr. Willaman of the Eastern

Regional Laboratory. You wrote to me about it on February 21, expressing some doubts concerning its identity. Last month I visited the Estate of Mrs. A. C. Barnes near Chester Springs in Chester Co; Pa. and saw growing there what I take to be the same species. Mrs. Barnes had acquired it from a nursery under the name of S. Friesiana Anders. It is listed by Rehder on page 108 of the second edition of his Manuel. I collected a specimen for you which is going forward to you under separate cover and shall be keen to learn whether you agree with this determination.

The juvenile collections made by Mrs. Kennedy should never have been sent to you but ought rather to have been consigned to the waste basket. My colleague Edgar Wherry helped her name them and I suppose he put them in the shipment in an effort to see how nearly correct his identifications has been.

Thanks again for all you have done for us and many congratulations on your 84th Birthday.

Sincerely yours,

UNITED STATES DEPARTMENT OF AGRICULTURE
FEDERAL EXTENSION SERVICE
WASHINGTON 25, D. C.

Dr. John M. Fogg, Jr., Director,
Morris Arboretum, Univ. of Pennsylvania,
9414 Meadowbrook Ave., Philadelphia 18, PA.

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

2 July, 1957.

Dear Dr. Fogg:

Your letter of June 20 was promptly received and I thank you for the kind words about my work. I always am glad to help to the fullest extent possible and my only worry is that I may be accurate, when dealing with fragmentary or juvenile material.

I also have received the specimen of your 21966, supposedly S. Friesiana Andersson, collected May 20, 1957, in Chester Co., Penna. I am very glad to ~~xx~~ have this specimen, which agrees in leaf characters with the specimen from the Northeast Regional Lab. The Penn. specimen has exceedingly juvenile flowers and I trust that you can get mature fruit from the N.R. L^o plant, which you are watching.

I am now checking hundreds of *Salix* specimens from all the college and univ. herbariums in Michigan. In those received from the Cranbrook Institute was one bearing two different collections. One was labelled "*S. rosmarinifolia* L^o" and was too juvenile for determination, but was not a juvenile stage of the second.

The second had leaves exactly like ~~xxx~~ your two Penna. collections discussed above, but no aments. It was labelled merely "*Salix rosmarinifolia*" without the name of any author. Yesterday, I checked it with several specimens of "*Salix rosmarinifolia* Koch" at the U.S. National Herb. and it matched them in foliage characters. I will look up Koch's publication presently.

In leaf characters, it and your two Pa. specimens, are obviously near to *Salix viminalis* L., but the leaves are much narrower. *S. viminalis* has broad black flower scales, while the very juvenile aments on your specimen apparently have pale and narrow scales. We desperately need mature fruiting aments.

Andersson (Monog. Salicum, p. 121) indicates that *S. Friesiana* is a hybrid of *S. repens* and *S. viminalis*. As synonyms, he cites the "*S. rosmarinifolia*" of several authors, including a variety of it by Koch. He also has a subsp. "*rosmarinifolia*" (p. 115) under *S. repens*, which he says is the *S. rosmarinifolia* of Linne, and of Koch. The leaf description is much like one of your ~~7~~ specimens. In his figure (66) of *S. Friesiana* the leaves are much broader.

It appears that some study will be required in order to determine just what species your Penn. specimens represent. When mature fruit is received, I will make a try at it. You may wish to compare your collections with the material of *S. rosmarinifolia* in the herbarium there.

Cordially yours,

Carleton R. Ball
Carleton R. Ball,
Collaborator.