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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.

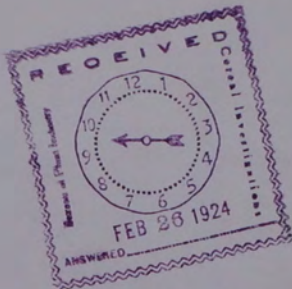


THE UNIVERSITY OF WYOMING
DEPARTMENT OF BOTANY
LARAMIE, WYOMING

Feb. 22, 1924.

Dr. C. R. Ball,
Bureau of Plant-Industry,
Washington, D.C.

My dear Dr. Ball,



Mrs. Armstrong wrote me about your inquiry
in regard to the willows that we got in western

Wyoming last summer.

Unfortunately we didn't collect many willows
and so our collection is not such as would interest
you much. I am sending you duplicates of the few
we did get, however, and would be very glad to have
your determinations on these. You may keep the
specimens and report the determinations by number.

yours truly

Edwin B. Payson



THE UNIVERSITY OF WYOMING
DEPARTMENT OF BOTANY
LARAMIE, WYOMING

Nov. 18, 1925

Dr. C. R. Ball
Bureau of Plant Industry,
Washington, D.C.



Dear Dr. Ball,

Accept my best thanks for the *Salix deter-*
mination and for the duplicates for our
herbarium. I also have put the label you sent
for no. 2379 with the specimen. Thank you
for correcting that error.

The collection that was mixed evidently
had only the one piece of *S. petrophila* and that
one was sent to you. I will mount it separately
and so have a record of that species for that
locality.

Sincerely yours,

Edwin B. Paton

WILLAMETTE UNIVERSITY
DEPARTMENT OF BIOLOGY
SALEM, OREGON

PROFESSOR MORTON E. PECK

ASS'T PROFESSOR CECIL R. MONK

Nov. 23, 1896.

Dr. Carleton R. Ball,
Washington, D.C.

Dear Doctor Ball,

I have several
tussling specimens of Salix that I
should like to have you pass upon.
I do not wish to trouble you with them unless
you are so situated that you can go over
them without inconvenience. I shall
therefore not send them unless I hear from
you.

Sincerely,

Morton E. Peck.

(over)

Program Planning Division

Washington, D.C.

November 30, 1936

Professor Morton E. Peck,
Department of Biology,
Willamette University,
Salem, Oregon.

Dear Professor Peck:

On retruning to my office today I found your inquiry of November 23.

I hasten to reply that I will be glad to identify willows for you at any time and in any quantity. I seldom am gone for more than 2 or three weeks at any one trip.

When sending, please let me know if any of the specimens are to be kept by me for my own large Salix herbarium. I am just as glad to determine specimens, whether I keep them or not, so dont worry on that score. I get good distribution records out of them, and occasionally something new pops up. Also I like to be useful to field workers where I can. I still identify some 2000 per year so keep fairly well in practice and greatly enjoy it.

Cordially Yours,

Carleton R. Ball
Exec. Secy., Coordinating Committee,
U.S.D.A., T.V.A., and Land-Grant Colleges.

AMERICAN MUSEUM OF NATURAL HISTORY

U.S. DEPARTMENT OF AGRICULTURE

DEPARTMENT OF BIOLOGY
WILLAMETTE UNIVERSITY

Extension Service

Washington, D.C.

December 22, 1936

Professor Morton E. Peck,
Dept. of Biology,
Willamette University, Salem, Oregon.

Dear Professor Peck:

Your letter of December 14 and the packet of willows were safely received and I have been greatly delighted at the records of distribution obtained from these interesting specimens.

I do not wonder that you were somewhat puzzled by some of them, as they represent species and varieties several of which had not been reported from Oregon before. I have made some notes on them on the attached sheet with the determinations.

The complex of *S. anglorum* and varieties and *S. petrophila* and varieties needs study but I am using the names under which these are going at this time.

I will return the specimens just as soon as the Christmas rush is over, as I hate to burden the mails with them just now. I am putting a few of my recent papers in with the specimens.

Many thanks for the privilege of keeping part of the material where there were two labels inclosed. I greatly appreciate these specimens as they are critical.

With best wishes for the holidays season and coming years, I am

Cordially Yours,

Carleton R. Ball
Chief Agriculturist

WILLAMETTE UNIVERSITY
DEPARTMENT OF BIOLOGY
SALEM, OREGON

PROFESSOR MORTON E. PECK

ASS'T PROFESSOR CECIL R. MONK

Dec. 14, 1936.

Dear Dr. Ball,

I am mailing you today several specimens of Salix. Of those that have my personal label with them I am sending enough for you to take out a specimen if you care for it. With your treatment of the genus in Albion's Flora I have not had much trouble placing my material, but two of these particularly puzzle me.

Sincerely,

Morton E. Peck.

(over)

April 17, 1940

Dr. Francis W. Pennell,
Department of Botany,
Philadelphia Academy of Science,
Philadelphia, Pennsylvania.

Dear Dr. Pennell:

In about three years I expect to begin preparation of a monograph of American willows. For Mexico, Central America, and South America, material is relatively scanty and our knowledge of distribution is very incomplete.

For Mexico, several mountain species are incompletely known because of scanty and imperfect material. Several lowland species are more completely known, but knowledge of distribution is not sufficient.

In Central and South America only one species, *Salix Humboldtiana*, occurs but in two or more varieties. It has been widely planted in and about towns and ranches and the chief problem is to determine its distribution as a wild plant.

Practically all willows can be determined from foliage specimens. Collections may be made, therefore, at practically any season of the year. Flowers and/or fruit are very desirable, of course, but foliage collections will show distribution.

If the Academy is sending any expeditions to Mexico and/or southward, I will be glad if you will bring this matter to the attention of the botanists. If you know of institutions or private collectors who are going to that area but not as parts of expeditions, I will be glad if they may be informed and requested to help out. You can send me names and addresses and I will take the matter up with them direct.

I am sending this letter to several institutions in the hope that much can be accomplished within the next three years or thereabouts.

Appreciating your cooperation and with personal regards, I am

Cordially yours,

Carleton R. Ball,
Executive Secretary



THIS SIDE OF CARD IS FOR ADDRESS

Mr Carlton R Ball
Dept of Agric
Wash. D.C.

Dear Mr. Ball;

Richmond Va
10/8/56

I always remember you as an
agrostologist with a flair for willows -
so when I saw in the Sunday N.Y. Times
see 2. p 4 - Oct 4, 56 - that "A feature
of the proposed botanical display
will be the largest collection of native
willows in the world" in the new Arboretum
of the Flushing Meadows Park in Queens
N.Y. I thought of you

Sincerely
Ray G. Pierce

Program Planning Division

October 12, 1936

Dr. Roy G. Pierce,
Richmond, Va.

My dear Pierce:

Your interesting post card of October 5 was gladly received. I am looking up fuller information on the proposed Arboretum of the Flushing Meadows Park in Queens Co., N.Y. If they are going to specialize in willows I will be much interested, and may be able to send them cuttings from time to time.

Actually, I have not been an agréetologist for more than 30 years and not an agronomist for at least half a dozen. I don't know what I am any more.

The willows have been more than a side line through the years. I determine thousands from the Forest Service where they are exceedingly important as browse plants in the Nat. Forests and as soil-holding plants on the western mountains. The Biological Survey also sends many specimens for similar reasons, and the Nat. Park Service and other tag along. It helps to keep me young.

Why not stop in and see me when you are in Washington? I am here part of the time. Also why not drive down thro the Tennessee Valley and see what is being done to the water, soil, and people. Its worth while.

Cordially Yours,

Carleton R. Bell
Exec. Secy., Coordinating Committee,
U.S.D.A., T.V.A., and Land-Grant Colleges

IOWA STATE COLLEGE
OF AGRICULTURE AND MECHANIC ARTS
AMES, IOWA

DEPARTMENT OF
BOTANY AND PLANT PATHOLOGY

July 29, 1957

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

Dear Dr. Ball:

Dr. Bragonier has forwarded your letter of July 23 to me for an answer. We are still working on the Alaskan Flora project but are not making too much progress at the present time. We have not been able to get financial aid from various organizations in Washington. We hope within another year to secure a man whose primary research responsibilities will be to work upon the Alaskan Flora. Once having such a person on the campus, we think that it will be much easier to secure financial assistance from governmental agencies. It would be an enormous help to us if you could have the chapter on *Salix* completed since none of us feel in any way competent to handle such a job, particularly when you are the specialist on that material. We are looking forward eagerly to receiving your treatment of *Salix* for Alaska. If there is anything we can do to facilitate your work, please write us at any time.

Sincerely yours,

Richard W. Pohl
Richard W. Pohl
Curator of the Herbarium

RWP:eb

THE UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA, U. S. A.

DEPARTMENT OF BOTANY

January 8, 1925.

Dr. Carleton R. Ball,
Bureau of Plant Industry,
Washington, D. C.

Dear Dr. Ball:

I am delighted to receive, in today's mail, a number of reprints of your recent publications. I am pleased to have these for my personal files, because I am very enthusiastic about your aggressive opinions concerning many botanical and agronomic questions.

Very sincerely yours,

Raymond J. Poel
Professor of Botany,
Chairman.

RJP:EH



July 11, 1941

Professor Raymond J. Pool
Department of Botany
University of Nebraska
Lincoln, Nebraska

Dear Professor Pool:

I have finished the determination of the willows sent me with your letter of May 22. These have been repacked with an abundance of crushed paper, securely tied, labelled, and are being returned by express collect today. I trust that they reach you promptly and in good condition.

As Nebraska lies in that part of the country where the limits of distribution of many eastern species are imperfectly known, I have made a record of localities, or at least counties, for this material and later will plot it on maps. I am enclosing copy of this record for any use which it may have for you and your associates.

Conclusions regarding the different species based on this material are as follows:

S. lucida is excluded from the State flora unless the missing Weeping Water specimens prove otherwise.

S. amygdaloides occurs quite widely across the State, as had been expected.

S. nigra is confined to the extreme southeastern corner which matches its known distribution in adjacent Kansas, Missouri, and Iowa.

S. interior and its variety *pedicellata* are sparingly but widely distributed in the Great Plains area. The variety *wheeleri* is most common in the Ohio Valley and Great Lakes areas. The specimen from Nebraska approximates this variety.

S. missouriensis (*S. cordata vestita* (And.) -----), I am becoming increasingly doubtful if this plant is specifically distinct from *S. cordata* and probably it must be restored. However, this question must not be decided without further study. I have made a record of twig color and pubescence for all of your material because these characters vary in

S. cordata and *S. lutea*. All of your specimens show pubescence or remnants of it. In general the pubescence appears on the new growth in summer and autumn, remains on the twigs during winter, and is dehiscent in spring, at least on all exposed portions.

S. petiolaris occurs in Cherry and Sheridan Counties in northwestern Nebraska. This is not surprising because this supposedly northeastern species had been found at a few points in South Dakota, including the eastern face of the Black Hills and Bennett County which lies just north of Cherry and Sheridan Counties in Nebraska, and also along the eastern face of the front range in Colorado from Estes Park in Larimer County southward to El Paso and Teller Counties. The Nebraska localities are in the same general area of distribution.

S. humilis Marshall is represented in Nebraska mostly by the variety *rigidiuscula* which has narrowly elliptical leaves usually becoming thickened and glabrate with age. Two specimens from the eastern part of the State I have determined as the species but more complete collections might prove them to be the variety.

S. tristis Aiton is very similar to *S. humilis* but smaller in every way. Under dry-land conditions the summer shoots of *S. humilis* will have small leaves and deceptively resemble *S. tristis*. Where enough material is collected the large leaves of the more favorable growth will prove the identity. In general the leaves of *S. tristis* are more crowded at the ends of the twigs and the stems are smaller. I have left one specimen under this name as it seems to possess those characteristics.

You will note on page 4b that I do not know the county in which Oasis is located and I am not able to find it on any map of Nebraska at my disposal. It probably is around Cherry or Sheridan Counties where the rest of *S. petiolaris* was collected but I will be glad to know.

Perhaps you will pardon the suggestion about the mounting of these herbarium specimens. In general they are mounted as near the center of the sheet as possible and with the thickened butts of the twigs toward the bottom of the sheet. When many sheets are placed in one cover this mounting causes the pile to hump in the middle and is likely to result in the breaking off of leaves and aments, besides taking more room in the herbarium. In my own collection I mount specimens with the thickened butts of the twigs alternately in each of the four corners of successive sheets, thereby keeping the pile completely level and saving space and breakage. I also have developed a series of packets of different sizes but of a type which is much more easily opened and with less danger of breaking or spilling contents than in the case of the packet you use. I enclose a sample which is made of much thinner paper than I use for my regular packets. The next size larger is 1 inch wider and I also have one several inches longer for enormous leaves of such species as occur on the water sprouts of our

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tree willows. I cut a pattern for each of these packets on heavy cardboard, clip several sheets of paper to the cardboard and cut with shears. From 8 to 20 sheets can be cut at one time depending on the thickness of the paper.

I was much interested in the large number of duplicates of some of these collections which have been mounted for inclusion in this herbarium. In several cases there were 4 or 5 sheets of identical material and in a few cases from 8 to 10 sheets. I had not noticed this in any other herbarium material with which I have worked. So far as I observe most of the Bates material is not found in other large herbariums and it may be that most of the duplicates were mounted for the Nebraska Herbarium.

I appreciate your courtesy in making this material available to me.

Cordially yours,

Carleton R. Ball
Executive Secretary

Enclosure

CRB/lc



THE UNIVERSITY OF WYOMING

ENGINEERING BUILDING

LARAMIE, WYOMING

October 17, 1956.

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

Dear Dr. Ball:

One of my graduate students, Mr. George Argus who hails from Alaska, has been working over our Wyoming willows for a couple of years now and has them practically in hand. He has gradually worked out the extensive synonymy of the species and prepared a key, with good descriptions of the sections.

We have come across one collection, however, which I secured last summer which has proved to be beyond us, and I am sending you a sample to get your opinion. It lacks flowers or fruit, but has mature leaves which are so distinctive that they should give you some ideas. It came from the Medicine Bow Range west of Laramie which has been extensively collected in the past, but this thing seems to be different and we are very curious about it. Could you please help us out?

You will be interested to learn that Dr. Reed, formerly of our staff, has just taken a position as Dean of the Graduate School at the University of New Hampshire. We were sorry to see him go.

With best wishes,

Sincerely,

Ted

C. L. Porter

(See over)

Dr. C. L. Porter, Dept. of Botany,
Univ. of Wyoming, Laramie, Wyo.
Dr.
Dear/Porter:

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

27 October, 1956

I have received your letter of 17 October and the packet of willow No. 7172, from Albany Co. I think, without doubt, that it is *Saxix pseudomonticola* Ball, but I do not wonder that you and Mr. Argus were confused.

It is an excessively dwarfed plant. Your label shows 1-2 ft. tall, for a plant normally 5 or 10 to 15 ft. high. The dwarfing effect is shown by the very short, stout twigs and the crowded leaves, very small and unusually thick. This dwarfing was caused by elevation, and probably also by habitat, especially if it was growing beneath spruce-fir trees.

I have compared it with some 50 sheets of the species. Some others with a height of only 2.5-5 feet show the same short stoutish twigs. Three were collected by the Reeds in the same general area but so early in the season that they bear no leaves. Your No. 6419 was collected in Albany Co. in 1953 and has long twigs and larger leaves but one or two of the lower, smaller leaves, retarded in developing, are similar to those on 7172.

I am very glad to have seen this specimen. As you do not say whether it is to kept or returned, I am holding it until I hear from you. If you wishit, I'll be glad to send it back.

I am indeed interested to know that Dr. Reed has become Dean of the Graduate School at the Univ. of New Hampshire. If he was raised out West, that will be new and interesting experience for him. N.H. was my mother's State, and Vermont my father's, and I am very fond of both.

With all good wishes, I am Cordially Yours,

Carleton R. Ball

June 22, 1939.

Dr. David Potter,
Biological Laboratories,
Clark University,
Worcester, Massachusetts.

Dear Dr. Potter:

In further reference to my letter of June 17 replying to your letter of June 13, I take pleasure in enclosing a list of the willows of Labrador and Baffin Land which you sent me for determination. I have arranged the material collected on the two expeditions in geographical order which also is numerical order for the collections with the exception of those which already had been named and were numbered in a separate series.

It is interesting to note that the collections contained the following thirteen species and seven additional varieties under two of them:

- S. balsamifera* (Hook.) Barr.
- S. calcicola* Fern. & Wieg.
- S. reticulata* L.
- S. vestita* Pursh.
- S. herbacea* L.
- S. uva-ursi* Pursh.
- S. anglorum* Cham.
- S. anglorum antiplasta* Schn.
- S. anglorum arioclada* Schn.
- S. anglorum kophophylla* Schn.
- S. arctophila* Ckdl.
- S. cordifolia typica* Fern.
- S. cordifolia callicarpaea* (Trautv.) Fern.
- S. cordifolia eucycla* Fern.
- S. cordifolia intensa* Fern.
- S. cordifolia Macounii* (Rydg.) Schn.
- S. desertorum* Rich.
- S. argyrocarpa* And.
- S. planifolia* Pursh.
- S. near pedunculata* Fern.

Very probably this list includes all the species and most of the varieties which are to be found in the area over which you collected. *S. cordifolia* variety *tonsa*, with leaves practically as glabrous as those of *S. arctophila*, occurs in the southern part of Labrador but is not represented in your collection. It is possible also that some of Fernald's new species from the lower St. Lawrence basin may be found in the part of south Labrador in which you collected.

I wish to congratulate you most highly on this extremely complete and representative collection from an area not any too well known. It is collections like yours which eventually will make possible the monographing of the Arctic willows with a complete knowledge of their variability under different conditions and a fairly accurate idea of their distribution. I am looking forward to such monographic efforts when I retire from the government service a few years hence.

Some of the determinations are not absolutely certain as indicated in the list. In some cases this was caused by immaturity of the collected material. In other cases, as with the plants which I have listed as "near *pedunculata* Fern.", the material is sufficiently complete but there is doubt as to the species it represents. Dr. Fernald has described three species related to *S. planifolia*, basing each one of the three on a single specimen. Only one of the three species is represented even in my herbarium or in the National Herbarium, and I am in doubt, therefore, as to just what your material represents because we know that not all the range of variation of a species is shown by any one collection. I doubt if all three of his species are valid and this frequently happens when new species are based on only one plant.

I have not been able to find all of your localities on any map accessible to me. I am wondering if you have a map of Labrador of the eastern Arctic which you could spare me. I am able to get the general placement because of the sequence of dates, but I may have made some errors in arrangement nevertheless. For instance, I have not been able to locate Bowdoin Harbor, Grenfell Pickle, and Eclipse Harbor either with relation to each other or to the Button Islands to the north or Cape Mugford to the south.

In two cases the material received under one number proved to be mixed. In these cases I have designated one part by the letter "a" and the other by the letter "b". In No. 8616, two different varieties of *S. cordifolia* were present. In No. 8659, the plant with sessile aments is *S. planifolia* and the plant with pedunculate aments is a species near *S. pedunculata* Fern. No. 8601 was omitted from the list which you sent me. Extreme care in collecting and sorting is shown by the fact that so few mistakes occurred

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in an area where there is much superficial resemblance between species and varieties. Again I congratulate you.

The material placed under *S. desertorum* is the most uncertain of all. In the first place two of the numbers are very immature and the third one is rather aberrant in character. It certainly does not belong to any of the other species named, even though it is not wholly typical of *S. desertorum*.

Greatly appreciating the opportunity of studying this material, I am

Cordially yours,

Carleton R. Ball,
Executive Secretary,
Coordinating Committee



Chatting informally at a garden party given for members of the Botanical Society of America yesterday by McGill University are three of America's leading botanists. They are, from left to right, **DR. W. H. CAMP**, of the New York Botanical Garden, **DR. J. W. MARVIN**, of the University of Vermont, and **DR. J. E. POTZGER**, of Butler University, Indianapolis, Ind. At far right is **MRS. POTZGER**, a zoologist, who accompanied her husband to Montreal. Dr. F. Cyril James, principal of the university, acted as host at the garden party which was held on the campus.

Bogs Reveal Story of Ages

Dr. J. E. Potzger Finds Strange Botanical Facts

Those dank, spongy areas of ground known as bogs are usually regarded as a nuisance and a hindrance.

But not by Dr. J. E. Potzger, associate professor of botany at Butler University, Indianapolis, Indiana.

To Dr. Potzger and his microscope a bog can tell the fascinating story of the changes in vegetation over a period dating back to the glacial age, 25,000 or 30,000 years ago.

One of his most recent discoveries, and one that has created a sensation in the botanical world, is that Canadian spruce and other Canadian fir trees once grew as far south as Texas—thousands of years ago, of course.

Dr. Potzger, who described his findings to yesterday's meeting of the Botanical Society of America here, made his discovery from

samples sent to him from a bog near Austin, Texas. Those taken from the lowest levels of the bog, he reported, showed up to four per cent Canadian spruce and fir pollen, he said.

"It seems hard to believe, but the proof is there," he said.

Elk Lived in Texas

In support of his find, Dr. C. C. Clark, of New York, recently wrote to tell Dr. Potzger that he himself had found elk and musk-ox fossils in Texas.

Another interesting fact learned from Dr. Potzger was that Montreal at one time enjoyed a much warmer climate than did the middle areas of the United States, many hundred miles further south.

How does he know?

Because the bogs in this area do not show as much spruce as do those in Michigan and Wisconsin. Up here, he said, there was evidence of hemlock, birch and pine freely mixed in with the spruce remains, clearly indicating that a considerably milder climate followed fast after the glacial age.

In other words, it was evident, he said, that the glacial period retreated from this region of the continent much sooner than it did from Indiana and the central part of America.

Stating that it was not particularly surprising, he pointed out that even now the shore areas of Greenland are very much milder than the interior.

Eyes Lake St. John Bog

Dr. Potzger has already studied bogs north of Montreal, at Bellevue, near Nominique, and at Lac des Loups, in the Mont Laurier-Seneterre Park. After a tour of Gaspé, together with three botanists from the University of Montreal, he will visit a bog he has heard of at Metabetchouan in the Lake St. John region.

With him he will have his special rods by which he can bring up samples from every six-inch or one-foot level right down to the bottom of the bog. These he will place in bottles to be taken back to Indiana and studied at leisure.

Then the microscopic pollen grains, and minute bits of grasses and mosses and woody peat will tell him the story of vegetation in this province from the glacial period down to the present.

Dr. Potzger, who is brimful of enthusiasm for his work, said that he preferred small round bogs where he could bore through to the centre rather than the large ones and those of the long "valley" type. It was too easy with the latter, he had found, to miss the centre and so miss the full story.

With Dr. Potzger is his wife, a charming woman who takes a keen interest in her husband's work although she is a specialist in another field, being a zoologist. Mrs. Potzger is also an artist, and does black and white drawings of

animal life for a large American publishing company.

Asked if she would accompany her husband on his Gaspé and Lake St. John trips, she declared she "wouldn't miss them for anything."

It is their first visit to Montreal, and both expressed their delight in the place, and "especially the courtesy and fine behavior of the children here."

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

July 7, 1949

Dear Dr. Ball:

I received your very nice letter and determinations and want to thank you sincerely. These determinations & species to look for in the area are of much help to me. Thank you also for the reprints you sent. They will be very useful in our work here.

Digitized by Hunt Institute for Botanical Documentation

I wish to congratulate you on your 76th birthday anniversary. With your very wonderful outlook on life, I'm sure you will be well and happy for many years to come.

It is certainly refreshing to a student of botany to correspond with a man of your reputation who is so pleasant and has such a wonderful outlook on life.

I am spending a very enjoyable

(See over)

Summer at the Montana State University
Biological Station
at Bigfork, Montana, and expect to get back
at my work at the U. of Utah in September.
Thank you again for everything.

Sincerely,
S. J. Preece Jr.

Prof. S.J. Preece, Jr.,
Mont. State Biological Station,
Bigfork, Montana.

3814 Jocelyn St., N.W.,
Washington 15, D.C.
1 August, 1949.

Dear Professor Preece:

Your friendly letter of July 7 came promptly and was appreciated. I was raised on a cattle ranch, where cooperation was the word. I spent much of my official life of 50 years in developing Federal-State cooperation in agriculture and natural resources. I ought to be somewhat cooperative in outlook.

When your letter came I was driving hard on the manuscript of *Salix* for the new Britton and Brown Illustrated Flora. It was finished and mailed on July 30. That covers about one-third of a monograph of *Salix*. For it, I recognized 40 species of *Salix* (35 native and 5 introduced, and rejected some 20 assigned to the area covered. Getting rid of them took as much work as redescribing and keying the 40 I retained. Of the 20, about 10 were hybrids, described as species, and the rest mostly errors in determination or redescribing old species.

Now I take up Alaska willows for Dr. Anderson. The work is about half finished, and will cover about another one-third of American willows, including some Utah species. The Illus. Flora will have *S. amygdaloides*, *S. anglorum* var., and *S. Bebbiana* of the Utah flora, besides some introduced species. The final third comprises the western-southwestern species which do not reach Alaska and a few from N.E. Canada.

Separately, I send you my latest reprint, which may have general interest.

Glad you are getting in a cool summer in N.W. Montana. In that area you will find *S. subcoerulea* Piper and *S. bella* Piper, which I have reduced to varieties of the *S. Drummondiana* Barrett from adjacent Canada and rarely in N.W. Mont. This paper is in press and cites numerous specimens, so that all herbariums may check if they wish.

Cordially yours,

Carleton R. Ball