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

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

4-12-99

Ames Iowa. April 9-1899.

Dear Mr. Ball:

I have your recent favor and am
glad you are to try the pan examination.
I sincerely hope you will succeed.
I should like your very next work
some willows from de Cotte and
elsewhere which I hope you
can name. If there are any
duplicates among the No. specimens
pass them over to Prof. Trelease.
You can have the duplicate
specimens from Wisconsin. I
think there is a duplicate *Salix*
canadensis yes you have
seen it. Your collectors I
have not sent out material

for the name of the

This Spring. I have had so much to do.

I am sorry about your not having waited a while longer on the ^{new} Salix paper. Beyer tells me that there would have been room for it.

I shall send my green paper to Davenport, also the ^{new} Haines paper.

I suppose I shall soon see proof of my paper on leguminous seeds.

Miss Paddocks may go to Charleston for three months at \$50. Dante looks for

Prof. Senter. James W. Wilson wrote, asking me to recommend some one. He said he knew of you but you were too high a price a man. He evidently thinks you ought to receive more pay.

Spring is very late here. The nuptials are not out yet. I saw a fine robin about two weeks ago.

Monday. Miss Ellis one of the younger sisters of the Miss Ellis now in college will marry for me. She has never been in college.

I have not sent in your pay roll. I spoke to Prof. Curtis and told him you would get up the end of March so send me your bill. Yours truly
Wm. Brewster & children and others. L.H. Brewster

DEPARTMENT OF BOTANY,
IOWA STATE COLLEGE OF AGRICULTURE
AND MECHANIC ARTS,
AMES, IOWA.

12-13-99

LHP-ML

Ames, Iowa, Dec. 9, 1899.

Mr. C. R. Ball,

Washington, D. C.

Dear Mr. Ball:-

Your favor of Dec. 5th at hand. I wrote Miss Paddock the other day stating what I thought we had better do, but since writing her I have made up my mind that possibly it would be well to include the species of *Salix* which I collected last summer, and to accomplish this I will have them laid out immediately. In the mean time, however, I think you had better send your paper on to Dr. Bain and let me insert the additional species in your list.

I should be glad to bear a portion of the expense with you and I think arrangements can be made to pay for the separates for the library without any difficulty. *You will not have to bear any of this expense*

The work on grasses is at present not going along very fast. The printer has my manuscript but has not sent up any proof, but I hope e'er long to receive some. The second part of it I hope to work up this winter will and you will probably be able to see quite a number of the grasses which I send to Scribner. I shall at all times feel at liberty to call upon you for assistance.

I trust that your work is satisfactory and that you are enjoying it. I know of course that you will do a great deal of good work and that you will naturally advance from time to time. The privilege of being in Washington with a large number of scientific workers is a great stimulus and help to you.

Yours truly,

L. H. Pammel

DEPARTMENT OF BOTANY

IOWA STATE COLLEGE OF
AGRICULTURE AND MECHANIC ARTS

AMES, IOWA

L. H. PAMMEL, PROFESSOR
A. ESTELLA PADDOCK, ASSISTANT
CHARLOTTE M. KING, ARTIST
IRA J. WELCH, CLERK

Ames, Iowa, Oct. 25, 1901.

Mr. C. R. Ball,

Washington, D. C.

My Dear Mr. Ball,- Your favor of Oct. 18 at hand. I am glad to note your suggestion on the subject of numbering and the reason I started over was this that I practically don't know what the last number was last year but I think your suggestion was a good one and I shall take the liberty of renumbering these specimens. I have been so busy of late that I have not been able to give much attention to our western collection. I am just now getting ready the report for the Bureau of Plant Industry for Dr. Woods. Consequently I have not been able to work at these but I shall take the work up shortly. And I shall begin with a sufficiently high number to make sure that the plants will not be duplicated.

Yours truly,

L. H. Pammel

I. J. W.

DEPARTMENT OF BOTANY.

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L. H. PAMMEL, PROFESSOR.
A. ESTELLA PADDOCK, ASSISTANT.
CHARLOTTE M. KING, ARTIST.
IRA J. WELCH, CLERK.

Ames, Iowa, Dec. 18, 1901.

C. R. Ball,

Washington, D. C.

Dear Mr. Ball,- I have your favor of Dec. 16 and as soon as all the willows are returned to me I shall number them and let you have the numbers, and any use that you may make of my material for a paper I shall be glad to let you use. I shall not publish for some time, but I have in mind something on the flora of the Uintah mountains, and Miss Paddock is getting ready something up on the flora of the Big Horn range. I will give you full data as to altitude and so on.

Yours truly,

L. H. Pammel

I. J. W.

March 15, 1907.

Dr. L. E. Pammel,
Iowa State College,
Ames, Iowa.

My dear Dr. Pammel:

Your favor of the 4th instant, together with a copy of the College Compendium, was duly received. Accept my hearty thanks for this. I am very much pleased with it, especially with the large number of new cuts which appear in it.

I am just completing a revision of the willows belonging to the section cordatae and before putting the finishing touches to it, I am desirous of seeing more material than is contained in the National Herbarium and my own private collection. To this end I am asking for the loan for study of certain species from Dr. Trelase, Dr. Robinson and Prof. Macoun. I shall be glad also if you can send me as soon as may be entirely convenient the material you have of the species named on the enclosed list. You will recognize that a number of these names are only synonyms but I have

15-11-07
Dr. L. H. Pammel #2.

tried to give all those under which specimens of
our western species are likely to be found. You
will note that in the case of cordata, largely an
eastern species, and lasiolepis, a Pacific coast
species, I am desiring only material from the
general Rocky Mountain region. *or preferably cordata from all
points west of
the Plains* I was able to
take a hasty glance through most of these while
at the College last July but of course was not
able to give them a creditable study or to make
many annotations in so short a time.

I shall be glad if in sending these, you
can tell me just how you desire to have annotations
or corrections in determination indicated on the
sheets, whether in pencil or ink, on the sheet it-
self, on the original label, or the State College
label, etc.

With kindest regards to all and thanks
in advance for this courtesy, I am

Very sincerely yours,

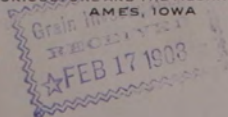
Agronomist in Sorghum
Investigations.

RMK.

Enc.

Barclayi And.
Barrattiano Tweedyi Bebb.
commutata Bebb.
conjuncta Bebb.
cordata (West of the Plains)
" Watsoni Bebb.
Curtiflora And.
flava Rydb.
irrorata And.
lasiolopsis (if any from Rocky Mtns.)
lutea Nutt.
Mackenziana Hook
Missouriensis Bebb
monticola Bebb
myrtillifolia And.
Novae-angliae And.
padifolia Rydb.
padophylloides "
pseudocordata And.
pseudomyrsinites "
Tweedy (Bebb.) Ball
Watsoni (Bebb) Rydb.
Wolfii Bebb
Undetermined Cordatae.

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L. H. PAMMEL, PH. D., PROFESSOR, MORPHOLOGY, PHYSIOLOGY, SYSTEMATIC BOTANY
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HARRIETTE S. KELLOGG, A. B., A. M., CURATOR
ADA HAYDEN,
R. E. JEFFS, } ASSISTANTS IN GENERAL BOTANY
WINFIELD DUDGEON }
R. E. BUCHANAN, M. S., ASSISTANT PROFESSOR, GENERAL BACTERIOLOGY, CYTOLOGY
H. F. WATT, ASSISTANT BACTERIOLOGY
BERTHA HERR, CLERK

Feb. 13, 1908.

Mr. C. R. Ball,

Washington, D. C.

My dear Mr. Ball:-

Your letter and the willows came a few days ago. I wish to thank you most sincerely for looking these over and naming them for us. I judge from looking them over that you have made a very critical study of the species. I am especially pleased to think that I suggested, a few years ago, that you take up the subject of willows for your post graduate work here at Ames, and that you have developed into a first class salicologist.

We received a few days ago the announcement of the arrival of a daughter in your home, Mrs. Pammel and I extend to you and Mrs. Ball our hearty congratulations. May the young lady grow to womanhood and be a joy and comfort to you in your old age.

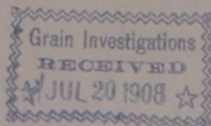
Yours truly,

L. H. Pammel

(Dictated but not read.)

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R. E. BUCHANAN, M. S., ASSISTANT PROFESSOR, GENERAL BACTERIOLOGY, CYTOLOGY
H. F. WATT, ASSISTANT BACTERIOLOGIST
BERTHA HERR, CLERK



July 18, 1908.

Mr. C. R. Ball,

Washington, D. C.

My dear Mr. Ball:-

I just returned from a trip in the west and spent a few days with your brother where I was delightfully entertained.

I got quite a number of willows which I will send you shortly.

I also stopped in Laramie, Wyoming. Dr. Nelson mentioned the fact that he was fast approaching the completion of the work. He said that he understood that you were to work up the willows but said that he had not heard from you recently. I hope that you can do the work for him.

yours truly,

L. H. Pammel

Please stop with me when you go west
Notify me and I will be here.

L.H.P.

April 3, 1915.

Dr. L. H. Pammel,
Dept. of Botany,
Iowa State College,
Ames, Iowa.

Dear Dr. Pammel:-

I am enclosing herewith the bibliography which I promised you. It is arranged in chronological order, as you will note, and I trust will be acceptable for the purpose desired.

The last four titles are of papers in press. The first one has been with the Botanical Gazette some weeks. The second is now at the Government Printing Office. The third is just ready to go to our Bureau editor. The fourth is not yet fully completed. I have had correspondence with the editors of the American Journal of Botany, however, and have submitted sample pages of manuscript to them. It will be completed by the end of this month. You can use your own judgment about entering all or any of these four titles. As a matter of fact, I expect to have three more completed before I leave the City the first of May.

In accordance with our conversation while you were here, I shall be glad if you can send me your material

(Dr. L. H. Pammel -- 4/3/15 -- #2.)

of S. missouriensis. You can send it either direct to me at the Department or to the U.S. National Herbarium for me, as you prefer.

With kindest regards, I am

Very sincerely yours,

Wrote 4/7/15 asking re bibliog. + giving ad-
dress, Expt. Farm to June 30, & Logan,
Care E.D.B. in July, + will forward if I not
there.

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L.H. Pammel

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January 18, 1919.

Dr. L. H. Pammel,
Iowa State College of Agriculture,
Ames, Iowa.

Dear Dr. Pammel:

I have had for several weeks your letter of December 19 asking for a key to Iowa species of willows, but have been unable to give it earlier attention because of the pressure of conferences in connection with the visits of scientific men to Washington during Convocation Week and the agricultural meetings last week.

There are several species of native willows not contained in the list ~~last~~ which you suggested in your letter. I have prepared keys to cover all the species native to Iowa and to include also the most common introduced species. I think that it will be very desirable to present the key in three parts, as follows: (1) Based on complete specimens; (2) based on ament characters, and (3) based on foliage characters. I will enclose a copy of a provisional key based on foliage characters in order that you will see just what I have in mind. I will hope to complete the other two keys within a few days and send them to you.

I note your statement of Mr. Cratty's opinion that S. sericea occurs in the northwest corner of the State. If Mr. Cratty has any material from Emmet County I will be exceedingly glad to see it. I have never seen any material from the western part of Iowa nor found the distribution of the species in Minnesota indicating that it is likely to be found in northwest Iowa. The willows peculiar to Emmet County are those occurring in rather cold situations, whereas sericea is a plant of fairly warm situations and, therefore, not theoretically to be found in Emmet County because of the presence of cold bogs.

I am in receipt of your paper on the birches and maples and thank you heartily for the same which I have not yet had time to read.

I am in receipt of the package of willows which you mentioned were to be sent and thank you for remembering me with this material. I have identified them and am enclosing the list of identifications herewith. As you will note from the list, the specimens which were sent under the name sericea proved to be amygdaloides and cordata respectively, while the one sent as "rostrata" proves to be discolor.

Very sincerely yours,

GRB:JLN

Received in Chicago

1. *S. lucida* Muhl.
S. pentandra L.
S. alba L.
S. fragilis L.
S. babylonica L.
2. *S. amygdaloides* Anderss.
3. *S. nigra* Marsh.
4. *S. interior* Rowlee
a. interior linearifolia Rydb.
5. *S. cordata* Muhl
6. *S. missouriensis*
7. *S. pedicellaris hypoglaucia* Fern.
8. *S. candida* Fluegge
9. *S. petiolaris* J. E. Smith
10. *S. sericea* Marsh.
11. *S. discolor* Muhl.
12. *S. eriocephala* Michx.
13. *S. humilis* Marsh.
14. *S. tristis* Aiton
15. *S. bebbiana* Sarg.

dupl
KEY BASED ON FOLIAGE CHARACTERS.

L.H. Pammel
18-1-19 30
(Iowa)

Leaves green on both sides

Margins remotely spinulose-denticulate (Longifoliae)

Blades broadly linear; acute at both ends 4. interior

Blades linear, acuminate both ends 4a. interior linearifolia

Margins closely serrate

Blades linear-lanceolate, mostly curved 3. nigra

Blades lanceolate or oblong-ob lanceolate, straight (usually pale to subglaucous beneath) 5. cordata

Blades broadly lanceolate to ovate, lustrous above

Broadly lanceolate, long-acuminate 1. lucida

Ovate, short-acuminate pentandra

Leaves glaucous beneath

Margins finely and distinctly serrate

Petioles glandular; (introduced trees)

Blades linear-lanceolate; branchlets slender, pendulous, tough babingtonia

Blades lanceolate; branchlets stouter, spreading, ~~fragile~~

Blades somewhat sericeous, 7-9 serrations per cm. alba

Blades glabrous, 4-6 serrations per cm. fragilis

Petioles not glandular (native shrubs or trees)

Blades ovate-lanceolate, long-acuminate; petioles slender twisted 2. amygdaloides

Blades lanceolate, or oblong-lanceolate, acute; petioles stoutish, not twisted

Blades glabrous or glabrate (except No. 9) when mature

Pale green or subglaucous beneath, coarsely reticulate above, glabrous 5. cordata

Densely glaucous and somewhat pubescent beneath 6. missouriensis

Glaucous and finely reticulate beneath (sometimes thinly silky both sides) 9. petiolaris

- Blades silvery pubescent beneath 10. sericea
- Margins entire or remotely ^{repand} dentate or denticulate, mostly revolute
- Blades glabrous or glabrate
- Blades oblong, 1-2 inches long, strongly reticulate both ^{on} surfaces 7. pedicellaris hypoglauca
- Blades obovate or oval, 2-4 inches long, coarsely subreticulate beneath
- Blades ^{elliptic} obovate, thin, entire 11. discolor
- Blades elliptic-oval, thick, coarsely repand-dentate. . 12. ericcephala
- Blades tomentose and more or less rugose, at least beneath
- Blades linear-oblanccolate, white-woolly on both sides . . . 8. gandida
- Blades oblanceolate, gray-tomentose beneath
- Blades 2-4 inches long 13. humilis
- Blades 1-2 $\frac{1}{2}$ onches long 14. tristis
- Blades elliptic-oval or rhomboidal 15. bebbiana

ECONOMIC AND SYSTEMATIC BOTANY

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IOWA STATE COLLEGE OF

AGRICULTURE AND MECHANIC ARTS

DEPARTMENT OF BOTANY

AMES, IOWA

April second,
 1920.

Mr. C. R. Ball,
 Office of Cereal Investigations,
 Washington, D. C.

Dear Mr. Ball:-

In arranging the Semi-Centennial Celebration the biological sciences are arranging a program. I am, therefore, asking you to talk on Botany of Cereal Crops, the discussion to be by Drs. A. S. Hitchcock and J. C. Arthur.

The Department of Entomology will ask W. Newell to discuss the subject Insect Control by Quarantine Eradication to be discussed by Gossard and Osborn.

Dr. Buchanan of the Department of Bacteriology will ask E. O. Jordan of the University of Chicago to talk on Some Phases of Non-medical Bacteriology. I do not know who will discuss this subject.

Please notify me at an early date as to whether you will consent to appear on this program. I hope also you will not refuse my request of you.

Yours truly,

L. H. Pammel.

LHP/T.

April 6, 1920.

Mr. L. H. Pammel,
Iowa State College,
Department of Botany,
Ames, Iowa.

Dear Mr. Pammel:

division Your interesting letter of April 2, inviting me to present the subject of botany of cereal crops before the ~~botanical~~ *Biological* ~~doctors~~ of the Semi-Centennial Celebration, is received and I certainly appreciate the honor of this opportunity. So far as I can see now, I will be able to accept and will endeavor to prepare an adequate discussion. I would like to know, however, more definitely concerning the program and the time allotted to each speaker. I would like to know, also, if these addresses are supposed to be of such a nature as to be available for publication in a commemorative volume, and, also, as to whether lantern slide illustrations could be used if desired.

With kindest regards and best wishes, I am,

Very truly yours,

Cerealist in Charge.

CRB:RL

Oct. 6, 1924.

Dr. L. H. Pammel,
Dept. of Botany,
Iowa State College,
Ames, Iowa.

Dear Doctor Pammel:

I am sending you separately a reprint of my recent paper, entitled "Extensions of Range and New Variety in *Salix*", which discusses several species of the north-central States.

I hope it may have some interest for you. If you know of amateur or professional botanists in your State who would like to make use of a copy, I will be glad to send them as long as the supply lasts.

Appreciating your cooperation, I am

Very sincerely yours,

C. R. Ball,
Senior Agronomist in Charge.

CRB/ecs

Print

L. H. PAMMEL, PH. D., PROFESSOR
J. N. MARTIN, PH. D., PROFESSOR
I. E. MELHUS, PH. D., PROFESSOR
A. L. BAKKE, PH. D., ASSOC. PROF.
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CHAS. ROGERS, A. B., INST.
R. I. CRATTY, CURATOR
ELIZABETH TIERNAN, OFFICE ASST.

IOWA STATE COLLEGE OF
AGRICULTURE AND MECHANIC ARTS
DEPARTMENT OF BOTANY

AMES, IOWA Feb. 2, 1925

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

Dear Dr. Ball:

Thank you for the very fine paper
on Shrubby Willows of Indiana
which came a few days ago. The
figures are exceptionally good.

Yours truly,

L. H. Pammel



Belle Glade Florida
2-12-28

Dear Dr. Ball:

Will you be kind enough to give me your opinion
on the enclosed paper which is not uncommon
in the everglades. It has been in bloom now
for a month and will continue to bloom for some
time longer. It is the source of a great deal
of honey in this time of the year.

With very kindest personal regards to you and
family.

Yours truly
L. H. P.

Pamunty

Digitized by Hunt Institute for Botanical Documentation

These plants are growing together.
The species also occurs in upland
cypress feet.

LHP