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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 TENNESSEE
KNOXVILLE
DEPARTMENT OF BOTANY

May 29, 1957

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

Dear Dr. Ball:

I was wondering if you would be willing to review
our willows of Tennessee and prepare a key for our species.
If so, I will be glad to send you the material which you have
not seen, and if you wish, records of those that you have
already annotated. I enclose a card for your reply.

Sincerely,

Aaron J. Sharp

Aaron J. Sharp
Professor and Head

AJS:sb

Enclosure

Dr. Aaron J. Sharp,
Dept. of Botany,
The University of Tennessee,
Knoxville, Tennessee.

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

24 June, 1957.

Dear Dr. Sharp:

Your letter of May 29 was promptly received. At that time I was finishing up a revision of the willows sent me by the University of Pennsylvania. That job now is completed and the willows returned.

But I already had agreed to do a much more extensive review of the willows of Michigan for the University of Michigan at Ann Arbor. They were willing to obtain the Salix material from every herbarium in Michigan, and send it to me, if I would agree to revise the material. I agreed to do so, and the cartons have been coming ever since.

Four of them (3 very large) came from the Michigan State University (former State College of Agric. and Mechanic Arts). The three received from the University of Michigan, so far, have contained the collections from the many smaller colleges in the State. I am not quite half way through these shipments yet, and the U. of M. will send its own large collections later.

As far as I can see now, I am likely to be busy on these collection for nearly two months, especially if we have as much cloudy weather as we have had so far.

As soon as Michigan is done, I will be glad to have you send all Tennessee willows you wish to have studied. I will write you when it appears that I can give time to them.

In the meantime, you can be considering whether you wish to obtain and ship to me the willow specimens from the herbariums of the other colleges and universities in Tennessee.

It probably will be best to send me, also, the specimens I already have determined. There have been so many changes in the valid names in recent years, and differences in interpretations of variations, that any new work on the flora of Tennessee would be strengthened if all were studied again.

Cordially yours,

Carleton R. Ball

Dr. Aaron J. Sharp, Dept. of Botany,
University of Tennessee,
Knoxville 16, Tenn.

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

24 September, 1957.

Dear Dr. Sharp:

In continuation of my letter of August 6, I am glad to say that at last I have cleared up the accumulated willow commitments, and will be glad to receive your Tennessee willows whenever you may send them. I will try to give them immediate attention on arrival and return them promptly.

Yes I think that you also asked for keys to the species, and these also I will try to prepare.

Are you including the common introduced and cultivate species, such as *Salix alba*, *S. babylonica*, *S. fragilis*, and others, or only native species?

Cordially yours,

Carlsten R. Ball

3814 Jocelyn Street,

Prof. Aaron J. Sharp,

Dept. Botany, University of Tennessee, Washington 15, D.C.,
Knoxville 16, Tennessee.

August 8, 1957,

Dear Prof. Sharp:-

I am sorry to have mislaid the copy of my letter to you written sometime in July. In this letter I estimated progress on Michigan willows, and told you that you might send me Tennessee willows about September first.

Since then I have had a vicious attack of virus flu, and all work on willows stopped.

Please do not send me any Tennessee willows on September first, or later until I write you that I am ready.

Regretting the delay, I am
Most Cordially Yours,

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Carleton R. Hall

Dr. A. J. Sharp, Dept. of Botany,
University of Tennessee,
Knoxville 16, Tenn.

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

8 November, 1957.

Dear Dr. Sharp:

Your carton of Tennessee willows, with invoice of October 7, was safely received. All of the specimens, excepting one too juvenile, have been determined. The carton has been repacked and addressed and will go forward to you by express, collect, today or tomorrow. Original invoice is inclosed.

The specimens are in 4 packets, with names of species on outside of each. The specimens of each species and variety are in alphabetical order of counties, as I listed the counties, because Tennessee is border-line for a few of them, and I wish to have records of extension of range. For some, I could not locate the county. If I have any of these may be range extensions, I will write you about them.

Two specimens of *S. humilis* var. *rigidiuscula* are labelled as from Swain co., North Carolina, rather than from Tennessee.

I will prepare the desired keys promptly and forward them. All of your species and varieties are included in my *Salix* chapter in Gleason's recent edition of The B. & B. Illustrated Flora. If you wish to use the descriptions as given there, it will be agreeable to me.

OK I believe that *S. rigida* was not listed as occurring in Tennessee in that work, but sporadic occurrences in Ala. and Ga. we noted. *Salix discolor* and varieties also were not recorded as occurring south of Kentucky. There may have been ~~other~~ others in this class but I have not checked before writing this letter. It will be valuable to continue searching for those not previously recorded from Tennessee.

Yours being a local flora, it will be helpful to give the range in elevation for those occurring in the mountains.

Trusting that the carton arrives safely, I am, Most Cordially Yours,

Carleton R. Ball.

P.S. I am inclosing an self-addressed postal card you sent me some time ago.

Professor Aaron J. Sharp, Dept. Botany,
University of Tennessee,
Knoxville 16, Tennessee.

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

12 November, 1957.

Dear Professor Sharp:

In continuation of my letter of Nov. 8, returning the carton of willows, I now have prepared a key to the Tennessee willows as represented in your collection.

The key was made by extracting the needed portion from my key in Gleason's Illustrated Flora. Because that work contained so many more species, it was necessary to change the text in several of the paragraphs of key text.

This has resulted in a rough-draft job. It doubtless will need some revision. I will give it a thorough study after I return, on Nov. 22 from my attendance at the Agronomy Golden Jubilee meetings in Atlanta, where I will be honored as one of the founders.

In the meantime, you will have opportunity to look it over and make any suggestions that may occur to you.

Let me emphasize now that you are perfect liberty to change it in any way that appeals to you. I have been making rather long and full keys in recent years because I felt that it would help students to better understand the difficult genus *Salix*.

You may wish to shorten the keys considerably. I am including the names of the *Salix* Sections represented (Fragiles to Discolores) by the included species. This, also, I believe is helpful to students.

In the keys, the 3 introduced species of Section *Fragiles* (*S. fragilis*, *S. alba*, and *S. babylonica*) precede any native species. That is because the two native species (*S. lucida* and *S. serissima*) and one introduced species (*S. pentandra*) of Section *Pentandrae*, which have really glandular petioles, do not seem to be found in Tennessee.

If you feel that native species should come first in the publication, the keys can start with *S. caroliniana* and *S. nigra*, and then insert the *Fragiles* before continuing with *S. interior*, et al.

Regretting the delays which have occurred, I am Most Sincerely Yours,

Carlton R. Ball

E-1. Shrub or small tree, 2-5 or rarely 7.5 m. high; leaves plane, glabrous (hairy in var. latifolia), elliptical or elliptical-oblongate, rarely obovate, 4-10 cm. long; aments to 10 cm. long; capsules to 10 or 12 mm.; styles and stigmas 0.5-0.7 mm. 9. *S. discolor*

E-2. Low, erect, upland shrubs, 0.5-3 m. high; leaves pubescent-tomentose, sometimes becoming glabrate, aments 1-3 cm. long; capsules 6-9 mm. long; styles and stigmas 0.2-0.4 mm. long. somewhat rugose beneath;

F-1. Shrub 1-3 m. high; leaves oblanceolate to narrowly ovate, 3-10 or 15 cm. long, pubescent (or var. rigidiuscula glabrate-glabrous beneath) 10. *S. humilis*

F-2. Shrub 0.5-1 m. high; leaves narrowly oblanceolate, mostly entire, crowded, 2-5 cm. long, pubescent on both sides 11. *S. tristis*

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over for better

KEYS TO TENNESSEE WILLOWS

12-81-59
A.J. Sharp

A-1. Leaves closely glandular-serrate, serrulate, or crenulate; serrulate (sparsely serrate in *S. interior*), linear to lanceolate, broadly lanceolate, or or somewhat oblanceolate; aments coetaneous (except in *S. interior*), bracted- or leafy-pedunculate

B-1. Petioles somewhat glandular above at leaf-base; introduced trees; capsules glabrous; scales yellowish, hairy, deciduous

C-2. Leaves lanceolate or linear-lanceolate, glaucous beneath; primary veins slender, , closely spaced, parallel; aments slender; stamens 2 (or rarely 3-5 in *S. fragilis* & *S. alba*), (*Fragiles*). Twigs spread

D-1. ~~Exserted~~ ^{long}, fragile; leaves lanceolate; capsules 3.5-5 mm. long

E-1. Leaves glabrous, 4-6 serrations per cm.; capsules short-pedicelled

1. *S. fragilis*

E-2. Leaves sericeous, 7-9 serrations per cm.; capsules sessile

2. *S. alba*.

D-2. Twigs elongated, pendulous; leaves linear-lanceolate or broader; petioles less frequently glandular; capsules 1.5-2.5 mm. long, sessile

3. *S. babylonica*

B-2. Native trees and shrubs; Petioles not glandular; Botanical Documentation

C-1. Native trees; leaves linear-lanceolate to lanceolate, with tiny vein islets beneath; aments lax; scales pale yellow; stamens 3-5 or 7; capsules glabrous, 3-5 mm. long; styles 0.1-0.5 mm. long

D-1. Leaves glaucous beneath, long-acuminate, somewhat pubescent. 4. *S. caroliniana* (*Bonplandiana*)

D-2. Leaves green beneath, acuminate (*Nigrae*)

5. *S. nigra*

C-2. Native shrubs, tall and erect; stamens only 2

D-1. Capsules glabrous (ovaries sometimes pubescent in *S. interior*) (green on both sides but paler beneath,

E-1. Leaves linear, irregularly and remotely spinulose-denticulate; aments serotinous, 1-3 together terminating leafy seasonal twigs 3-10 cm. long; scales yellow, deciduous

6. *S. interior*

E-2. Leaves lanceolate to broadly so, glaucous beneath, serrate; aments coetaneous, solitary; scales dark brown, crinkly pilose

(*Cordatae*)

D-2. Capsules sericeous; leaves lanceolate, sericeous beneath; aments precocious, subsessile; scales blackish

7. *S. rigida*

D-3. Capsules densely gray-pubescent, 6-12 mm. long; leaves elliptic to oblanceolate or narrowly obovate, plane to subrugose beneath, entire, subentire, or more or less undulate-crenate; aments precocious, sessile to subsessile, without basal bracts; scales black. (*Discolores*)

8. *S. sericea*

THE UNIVERSITY OF TENNESSEE
KNOXVILLE
DEPARTMENT OF BOTANY

December 14, 1957

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

Dear Dr. Ball:

We received, quite some time ago, the University of Tennessee specimens of Salix. We were very pleased to have your identification on these species and also the key. They will be quite useful to us when we come to complete the manuscript on the Tennessee Flora.

Again many thanks for your help.

Sincerely,

A. J. Sharp
A. J. Sharp
Professor and Head

AJS:aw

Merry Xmas!