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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.

DEPARTMENT OF BOTANY



Toronto, Ont.
EDMONTON, ALBERTA
CANADA

Aug. 28, 1924.

Dr. C. R. Bell,
Washington, D.C.

Dear sir:

I wish to thank you for your letter in
regard to literature about adventitious roots of *Salix*,
and for the reference to Hallett's paper.

When I return to Alberta - one year hence -
I shall be glad to communicate with you about
winter-killed sprouts of *Salix* and to send you material
of any that you may wish to examine.

Yours respectfully,
E. H. S. S. S.

Dept. of Botany,
University of Toronto,
Toronto, Ont.





Nov. 24, 1926.

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

Dear Sir:

I wish to thank you very much for your letter of Oct. 29, containing a number of references to papers on the roots of the Salicaceae. Perhaps you may discontinue sending citations on this subject, however, because I have turned my attention to problems very different in nature.

I am interested in the Willows of Alberta particularly so because of ecological studies commenced last summer (my first summer, in the district). Most of our collections of *Salix* were sent this autumn (along with grasses and Carexes) to Dr. Mittle of Ottawa, for determination. However, I find that I can spare specimens of most of the species that I collected last summer. All of them (about 10 species, I judge) were obtained in the "portland" area, - and in the Edmonton district. I regret that some of the specimens are poor, meagre, incomplete - and perhaps not determinable. Since I am keeping duplicates of these collections, you need not return the specimens sent. I shall be glad to send additional species as I collect them. Next summer, I expect to study areas more distant from Edmonton. Respectfully yours.
E. H. Moss.

December 1, 1926

Prof. E. H. Moss,
Department of Botany,
University of Alberta,
Edmonton, Alberta, Canada.

Dear Prof. Moss:

Your letter of November 24 and the accompanying package of Salix specimens duly received. I have examined these with much interest, and enclose herewith a list of the determinations. I am sending a copy of it to Dr. Walte, as otherwise he may send to me the material which you have sent him. I am determining most of his material for him from time to time. If he has received other species than those you sent me, he probably will forward them with the next shipment of his own material.

You speak of the material as all having been collected in the Edmonton district. I would be glad to know if the word "district" here means the political unit, the Edmonton provincial electoral district, or whether you are using the word in the general sense of vicinity. If my Rand-McNally map of Alberta of 1923 is correct, the Edmonton electoral district is a very small unit, the South Edmonton district being somewhat larger but considerably smaller than the average electoral district. By "parkland" I take it that you mean fairly level land, originally in grass, with scattered clumps of willows, aspens and other arborescent plants, these clumps occupying low spots which carry water in the rainy season, but an abundant growth of grasses and sedges during the summer. I take it, also, that your term "low moor" refers to these low spots which I have just described.

I am asking these questions because I, too, am greatly interested in the ecology of the willows. In 1925 I was a member of a survey party which covered 3000 miles in Manitoba, Saskatchewan and Alberta. We entered Edmonton from the south-east through the Forest Reserve, went north to the Athabasca River and returned to Edmonton and proceeded south from there. I did not collect near Edmonton, but did collect about 35 miles north near Legal and at Athabasca Landing, and also at a few points south of Edmonton, as well as several points in

Saskatchewan. The ten species which you have sent me include practically all of those which might be expected, except discolor, which is common to that section, and of which there is a variety or form with narrower, thicker and more sinuate-crenate leaves; and lutea, which may be expected in the same situations as mackenziana. I did not find planifolia on this trip, although A. H. Brinkman writes that it is fairly common in the vicinity of Red Deer. Probably the most surprising thing in your collection is arbusculoides. Several collections of this species were made in Jasper Park by Prof. J. N. Macoun in 1917 and 1918 and by J. G. Jack in 1922. It was collected at Nordegg at an elevation of 4500 feet by Dr. Malte in 1925, but has not been found by Mr. N. B. Sanson in Rocky Mountains Park. It was collected by Laing at Lake Athabasca in 1920, and by me at Athabasca Landing in 1925. Apparently your collection extends its range 100 miles further south, away from the mountains. There may be other records of its occurrence to the southeastward, which I do not have before me at this moment. I will not have time to look this up until I work up that section in my treatment of the Canadian species. I was interested to note, during my trip in 1925, that in southeastern Saskatchewan S. petiolaris was a dwarf and exceedingly caespitose or clumpy plant only three or four feet high, and forming a rounded clump like a haystack. As we went northward in Saskatchewan and Alberta, it increased in stature until in the latitude of Edmonton and Prince Albert it became a small tree, with a trunk from two to four or more inches in diameter. A very similar variation was found in other species, as discolor.

I am afraid that you have robbed yourself in sending me this set of specimens, and I shall be perfectly willing to return any or all of them to you if you have need of them. I am always glad to examine and determine the material, whether or not I retain the specimens.

Very sincerely yours,

C. R. Ball

Senior Agronomist in Charge

CRB:MRJ

DEPARTMENT OF BOTANY



EDMONTON, ALBERTA
CANADA

Jan. 5, 1927.

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

Dear sir:



Many thanks for the information concerning the willows that we sent. I now hasten to fill in the gaps in data pertaining to the various collectors. In passing, perhaps I should explain that Professor Lewis is head of our Dept., I being his ^(Asst.-Prof.) First Lieutenant; and, between us we made somewhat of a "fitch" of sending away the willow for determination. All of the collections (and numbers) are mine, however, with the exception of four (noted below), which are Miss Dowding's. No's 1 to 4 may stand, - as my numbers; these were collected in 1923, my first season in Alberta. By the way, since that time I have spent little time (except winters) in Alberta; - that is, until last summer. I am sorry to say that we have in the herbarium no ^{further} specimens of Willows that are worth while sending to you. Next summer, however, we shall almost certainly make a number of collections, and, I shall try to obtain those which you have mentioned as being of particular interest.

My notes on *S. arbusculoides* are meagre, but, if I remember correctly both collections (No's 3 and 516) were made in the bottom of the Saskatchewan valley and close to the bank of the river, - suggesting that possibly this species has been brought down by the river from regions of higher altitude farther west.

Respectfully yours
C. A. Moss.

Alberta Canada

Professor E. H. Moss,
Dept. of Botany, Univ. of Alberta,
Edmonton, Alta., Can.

November 15, 1931

Dear Professor Moss:

Your letter of Nov. 4, and accompanying packet of willows duly received and I report on same below.

- U.C. {
- 2131 *S. arbusculoides* Anderss. May 21
2132 *S.* " " "
2133 *S.* " " "
2134 *S. pseudo-monticola* Ball "
2135 *S. mackenziana* (Hook.) Barr. "
(differs from *lutea* by dark-colored twigs, and long pedicels)
2136 *S. pseudomonticola* Ball
(difficult to determine with out leaves; differs from *mackenziana* when without leaves by shorter pedicels and longer styles.)
2137 *S. arbusculoides* Anderss. Form with longer aments. Such forms more often seen in Alaska, and in other species along the Pacific
U.C. { 2138. *S. lasiandra* Benth.
Distinguished by the serrate leaves with conspicuous glands on the petioles.
2139 *S. arbusculoides* Anders.
2140 *S. discolor* Muhl.
Possibly the so-called variety *princeoides*, by the more acute and crenate-serrate leaves, but too young for certainty
2140a *S. discolor* Muhl.
not the var 2140b *S. planifolia* Pursh
2186 *S. interior pedicellata* (Andersson) Ball
13 The narrow-leaved var. of the sandbar willow. The pedicels, in spite of Andersson's name, are no longer than in *S. interior* itself. The sandbar willows often are affected by elongated reddish stem galls. *S. melanopsis* here produces some beautiful ones. Other sections of the genus show cherry galls, rosette galls, cone galls, etc.

I take it that these all came from the bank of the Saskatchewan River. I would be glad to get some fruit and leaves from the same plant of *mackenziana*, which is still in need of better knowledge. This year I have collected an abundance of the form of it occurring in this State and hope to unravel the tangle presently.

It seems to me that you are getting a very good working knowledge of the species in Alberta. They are not so bad once you get to know them-

Should you have opportunity later I will appreciate a series of the *myrtillofolia-monochroma* complex from Peace River. I am getting some of the northwestern forms worked out.

Cordially yours,

Carleton R. Ball,
Research Associate

all herb COR 2.
4 herb U.C.

Prof. E. H. Moss,
Dept. of Botany, Univ. of Alberta,
Edmonton, Alta.

Oct 17, 1931.

Dear Professor Moss:

Your letter of October 7 came promptly and the packet of willows came yesterday in good condition. I have been glad to give them immediate attention and am inclosing the list of determinations, with notes. Relatively little is known of the willow flora in that region intermediate between the central parts of the provinces and the Yukon Valley and every contribution is important.

Salix seculeriana we expect to be abundant in the area. Your specimens are very interesting in showing the variation in pubescence of stem and leaf, and the range of leaf size on the same plant, as well as the uniformity of leaf shape.

Your specimen of *S. mackenziana* is typical of the plant as it occurs in the southern part of Alberta and in Washn. and Oregon and northern Calif. Whether or not it is the true *mackenziana* I am trying to find out. There is another with yellow twigs and thick leaves, whitened below, that matches *lutea* Nuttall except for ~~the~~ having long pedicels. It occurs farther east in the Canadian prairies. Am trying to straighten out the mixup.

Your *subcerulea* is typical of our Rocky Mountain plant, at least in twig and leaf characters. In Abrams' *Illus. Flora of the Pacific States* (1922) I gave it no Canadian distribution. In the Albertan Rockies it is replaced by *S. drummondiana* and what is probably a new variety of that species. I think I have one or two recent records of its occurrence in southern Alta. or B.C. but they are not available to me at this time. I am sure that your collection greatly extends its known range northward.

^h
S. monochroma (?) puzzles me. Did all the material come from one plant? There is a great range in leaf shape and size, especially as none is a real sprout, on which aberrant leaves may be expected. The fruiting specimen looks like *S. myrtillofolia* var. *pseudo-myrsinites* (And.) Ball, with its oblanceolate leaves and thinly pubescent twigs. The pieces with the broadly elliptical to oval-obovate, short acute leaves look like *S. monochroma* and I have so named it. The leaves on fruiting twigs always are reduced in size and often altered in shape and the two species are close relatives. I have no material here to compare it with and will have none until I return to Washington, D.C. *Salix monochroma* has not previously been found north of Rocky Mountains Park, I think.

From all this you will see that you have made a real contribution to our knowledge of distribution of these species. Is there anyone living in the Peace River District who could make a more or less extensive collection next spring or summer? It would be very valuable if it could be done. When I have finished the Alaska revision I want to monograph the genus for North America.

I am returning the specimen of *monochroma* (?) by mail today and hope it comes safely. Many thanks for your courtesies.

Most cordially yours,

Carleton R. Ball
Research Associate.

May 9, 1941

Dr. E. H. Moss,
Department of Botany,
University of Alberta,
Edmonton, Alberta, Canada.

Dear Dr. Moss:

On my return to Washington recently I found your letter of April 14 and the accompanying package of willows from the Jasper Park and Waterton Lake areas, together with official labels for the latter.

I have completed the determination of the Jasper Park specimens and enclose copy of the list of determinations. Comments on a few of the collections are given below.

One of the most important of the specimens is No. 4851, *S. alaxensis*. So far as known, this species reaches the southern limits of the Rocky Mountain distribution in Jasper Park. The only previous collection from there was made by Spreadborough on a bare slope above the railroad station at Brule on June 24, 1918 and distributed by the National Herbarium of Canada as No. 95,809A. I have not yet checked the map of Jasper Park to determine how far apart these two locations may be.

As I probably have written you previously, there must be a monographic study of the material which I have determined here as *S. "glaucoops"* Andersson. This comprises material which has been named *S. pseudolapponeum* and *S. Wyomingensis* in our Rocky Mountains, *S. glaucoops* and *S. Seemannii* in the Canadian and Alaskan Mountains, *S. desertorum* Richardson from the Mackenzie Basin, and *S. glauca* and its varieties from the Alaska-Yukon area. *S. desertorum* is the oldest name and when its identity is clearly established we can then determine what varieties must be recognised. There probably are only two species involved, namely *S. desertorum* and *S. glauca*.

No. 4850, *S. brachycarpa* var. *glabellcarpa* also is interesting. If I remember correctly, Jasper Park was the type locality for this variety. It is possible, of course, that it represents a hybrid but I have not yet had time to make a study of the different collections.

Carleton R. Ball,
Executive Secretary

June 27, 1941

Dr. E. H. Moss,
Department of Botany,
Edmonton, Alberta, Canada.

Dear Dr. Moss:

Your letter of June 5, acknowledged by my secretary on June 13, is now before me. I am delighted to have this additional collection of willows from southwestern Alberta and enclose a list of the determinations. I am a little puzzled by some of them deemed in part by their juvenile condition.

You had indicated that you thought some of them represented *S. lutea platyphylla* Ball. The capsules on some of these specimens had rather long pedicels but the young leaves appeared to be only the normal narrow type rather than the ovate leaves of this variety.

I am somewhat surprised that you found *S. planifolia* in a prairie area that far south but probably we do not know all about its distribution yet.

I collected *S. amygdaloides* at Lethbridge some years ago and that probably is about the western limit of its distribution in Canada.

The labels for Nos. 1079 to 1084 carry the date August 15, 1941. This obviously was an error and I have substituted the date May 15, 1941 which was the date of collection for the earlier and some later specimens.

Many thanks for your courtesy in giving me these specimens for my collection.

Cordially yours,

Carleton E. Ball,
Executive Secretary