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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.

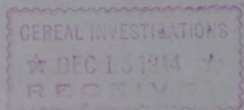
Mr. Ball,
Mr. Hitchcock has
delivered the Key to Populus. If you
can give me the Key to Salix at an
early date I can fix this family
for manifesting. It is an
early group & I should like to put
it out soon.
A. S. H.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY.

ECONOMIC AND SYSTEMATIC BOTANY.

Washington, D. C., December 14, 1914.

Mr. C. R. Ball, Agronomist,
Bureau of Plant Industry.



Dear Mr. Ball:

I have the specimen of Agropyron enclosed in your letter of December 10. The species turns out to be Agropyron subvillosum which is probably only a form of Agropyron dasystachyum. The abnormal growth is due I think to some kind of gall, possibly nematodes.

Very truly yours,

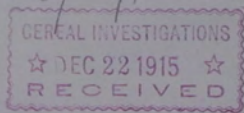
A. S. Hitchcock

Systematic Agrostologist.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY.

ECONOMIC AND SYSTEMATIC BOTANY.

Washington, D. C., December 20, 1915.



Mr. C. R. Ball,
Bureau of Plant Industry.

Dear Mr. Ball:

We have looked over the specimens of grasses that
you left here a few days ago. I am enclosing a list of these.
A few we discarded. The labels of these are enclosed.

Very truly yours,

Digitized by Hunt Institute for Botanical Documentation

A. S. Hitchcock
Systematic Agrostologist.

Dec. 18, 1915.

1951. *Agrostis microphylla* Steud. 1934. *Gastridium lendigerum* (L.) Gaud.
1908. " " 1953. *Notholcus lanatus* (L.) Hitchc.
1928. " *retrofracta* Willd.
1911. " *exarata* Trin. ²⁰²⁷
1950. " " ~~July 1915.~~ *Agropyron lanceolatus* Scribn.
1907. *Festuca octoflora* Walt ²⁰²⁸
1910. *Deschampsia holciformis* Presl " *Sitanion hystrix* (Nutt.) Sm.
1949. " *elongata* (Hook.) Munro
1914. *Briza minor* L.
1920. *Polygonum ~~littoralis~~ Smith* ^{ok}
1912. " *monspeliensis* (L.) Desf.
1922. *Elymus condensatus* Presl
1909. " *glaucus* Buckl.
1932. *Phalaris minor* Retz.
1933. " *paradoxa* L.
1921. " *californica* ^{H. & A.}
~~*angusta* Nees~~
1952. *Koeleria phleoides* (Vill.) Pers
1948. *Chaetochloa geniculata* (Lam.) M. & C.
1905. *Hordeum murinum* L.
1913. *Lolium perenne* L.
1924. " *temulentum* L.
1937. " " "
1936. " *multiflorum* Lam.
1915. *Aira caryophyllea* L.
1919. *Poa annua* L. 1904 *Bromus carinatus* H. & A.
1902 " *villosus* Forsk
1906 *Hordeum ~~modicum~~* L.
1925 { *Bromus ~~lanceolatus~~* L.
Danthonia americana ^{Walt.}

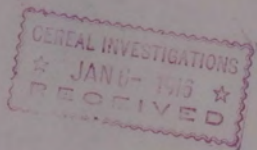
Mr Ball

To the botanists who are to furnish the manuscript for the Flora of the Vicinity of Washington.

It is suggested that you prepare keys to the species and to the genera of the families assigned to you. After these are submitted to Mr. Hitchcock, copies will be prepared for the use of each contributor, who will be asked to test them during the coming season.

It is further suggested that each contributor sort the specimens of his groups in the District Herbarium, placing the several species in species covers.

If any contributor can furnish completed manuscript of all or a portion of his assignment this will be placed on file in Mr. Hitchcock's office for consultation by all interested.



February 10, 1916.

Prof. A. S. Hitchcock,

Economic and Systematic Botany.

Dear Prof. Hitchcock:-

Your letter of December 20, transmitting identification of grasses collected by me in California and Oregon last season, was duly received and I thank you for your assistance in this matter. I note that I omitted the number from two specimens collected at Bend, Oregon, on July 27. They are as follows:

2027. *Agropyron lanceolatus* Scribn.

2028. *Sitanion hystrix* (Nutt.) Sm.

Very sincerely yours,

Agronomist in Charge of
Western Wheat Investigations.

CRB-f

February 11, 1916.

Prof. A. S. Hitchcock,
Economic and Systematic Botany.

Dear Prof. Hitchcock:-

I am transmitting herewith a small package of unidentified grasses and will be under obligation if you can name them for me. They represent some remaining unnamed material from various collections.

Very sincerely yours,

Agronomist in Charge of
Western Wheat Investigations.

CRB-f

May 14, 1916.

dear Prof. Hitchcock:-

I am transmitting herewith the copy covering the genus *Salix* for the District flora. Two keys are given. One is based principally on floral characters; the other is based wholly on vegetative characters.

I much regret the delay in preparing this manuscript, due in part to illness and in part to having too many manuscripts in preparation most of the time. I have submitted four as a result of the winter's work and have two other nearly done.

I ^{have} completed my fiftieth scientific paper since graduation twenty years ago.

Very sincerely yours,

Prof. A.S. Hitchcock,

U.S. National Herbarium.

What is the number of the family Rubiaceae?
It was dist without number.

September 12, 1918.

Prof. A. S. Hitchcock,
U. S. National Herbarium,
Smithsonian Institution,
Washington, D. C.

Dear Prof. Hitchcock:

The little willow which you sent me yesterday
proves to be S. brachycarpa Nutt. This has been known in
recent literature also as S. stricta (Anders) Rydb. It
is also the S. desertorum of various authors, but not of
Richardson.

If you intended me to keep the specimen I thank
you, and if you wish it returned will be glad to do so.

Very sincerely yours,

CRB/EGW

Cerealist in Charge.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON

DIVISION OF BOTANY

June 1, 1933.

Dr. C. R. Ball,
Bureau of Public Administration,
University of California,
Berkeley, California

Dear Doctor Ball:

I am collecting data on the location of type specimens. You have described a good many willows. Are the types of these in your own herbarium, and where can I say they are located?

Sincerely yours,

A. S. Hitchcock

A. S. Hitchcock, Principal Botanist
in Charge of Systematic Agrostology.

Office address: Smithsonian Institution.

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(See over)

September 8, 1933.

Professor A.S. Hitchcock,
Smithsonian Institution,
Washington, D. C.

Dear Professor Hitchcock:

I find that I have completely neglected your letter of June 1 with reference to location of type specimens of such willows as I have described. I enclose a list which gives this information.

As to the location of my own herbarium I can say only that it is here now and will return with me to Washington within the next few months.

I have collected a few grasses at different points in California but have been allowing them to accumulate. Under separate cover I am now sending a bundle for the National Herbarium. I will be very glad if you will have them identified and send me the list of determinations by numbers.

I hear very little news about what is going on in Washington but those I have seen are under the impression that you are still in the service.

With personal regards to yourself, to Mrs. Hitchcock and to Mrs. Chase, I am

Very sincerely yours,

Carleton R. Ball

Research Associate

July 21, 1934

CRB:CSB

P.S. This letter is a tragedy. After writing it I was unable to find the package of grasses, which had been moved when I was not around. I laid the letter aside, hoping the grasses would be found, and finally the letter was forgotten. It won't do you much good now, except for the records.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON

DIVISION OF BOTANY

October 14, 1933.

Dr. C. R. Ball,
Bureau of Public Administration,
University of California,
Berkeley, California

Dear Doctor Ball:

The Committee on Nomenclature of the Botanical Society of America is preparing an index to the location of type specimens. Our record shows that your types of grasses are in the U. S. National Herbarium. I understand that your types of willows are in your private herbarium. Please let me know if you have types elsewhere.

Sincerely yours,

A. S. Hitchcock

A. S. Hitchcock, Chairman, Committee
on Nomenclature, Botanical Society
of America.

Office address: Smithsonian Institution

TYPES OF NEW SALIX SPECIES AND VARIETIES BY CARLETON R. BALL

- S. caudata parvifolia Ball, n. var. Bot. Gaz. 72:225. 1921. fig. 1.
Type specimen, ~~XXXXXX~~XXXXXX (pistillate), P. C. Standley 16865, along Swift-
current Creek, below Lake McDermott, alt. about 1350 n., August 1, 1919.
In U.S. National Herbarium. (Glacier National Park, Montana,
- S. discolor Overi Ball, n. var. Rhodora 26:137-138. 1924.
Type specimen: W.H. Over 14483, and Ball and Over 2238 Aug. 12, 1922 & May 21, 1923
August 9, 1923 (all from the same plant), Hiawatha Beach, west shore of Big
Stone Lake, Roberts Co., So. Dak. Types in Herbarium C.R. Ball.
- S. Farrae Ball n. sp. Contrib. U.S. Natl. Herb. 22:321. 1921.
Type specimen: Edith M. Farr 558 (pistillate), overflowed flats along the Kicking
Horse River, Field, B. C., Can., June 7 and July 15, 1905. In Herbarium
C.R. Ball.
- S. Ferre Walpolei Ball and Coville, n. var. Bot. Gaz. 71:435-436. 1921.
Type specimens: F. A. Walpole 1624 (pistillate), July 30, 1901, and Walpole
1742 (staminate), August 5, 1901, rocky banks, northwest shore of Imunik
Basin, and banks of Fuksuk Channel, respectively, in vicinity of Port Clar-
ence, Seward Peninsula, Alaska. Types in U.S. National Herbarium.
- S. Gooddingii Ball, n. sp. Bot. Gaz. 40:376, pl. 12, figs. 1-2. 1905.
Type specimen: L. M. Goodding 669 (pistillate), ditch banks, Muddy Creek,
Nevada, May 2, 1902. Type in Herbarium C. R. Ball.
- S. lasiandra Abramsi Ball, n. var. Bot. Gaz. 72:224. 1921.
Type specimen: L. R. Abrams 4493 (pistillate), near Sentinel Hotel, Yosemite
Valley, Yosemite National Park, California, alt. 4000-4500 feet, June 23,
1911. Type in Stanford University Herbarium.
- S. lutea famelica Ball, n. var. Bot. Gaz. 71:426-427. 1921.
Type specimen: C.R. Ball 1304, north edge of town, Forsyth, Montana, Septem-
ber 1, 1908. Type in Herbarium C.R. Ball.
- S. lutea ligulifolia Ball, n. var. Bot. Gaz. 71:428-430. 1921.
Type specimen: F.V. Coville 1977, White Mountain Indian Reservation, watershed
of White River above Fort Apache, June 30, 1904. Type in U.S. National Her-
barium, sheet 500639. (Arizona
- S. lutea platyphylla Ball, n. var. Bot. Gaz. 71:430-431. 1921.
Type specimen: C.R. Ball 1336, Salt Lake City, City Creek Canyon, September
11, 1908. Type in Herbarium C.R. Ball. (Utah,
- S. monochroma Ball, n. sp. Bot. Gaz. 71: 431-435, fig. 1. 1921.
Type specimens: Sandberg, MacDougal, and Heller 39, Valley of Hatwai Creek,
 Nez Perce Co., Idaho, April 24, 1892. Types in U.S. National Herbarium,
sheet 935072 (pistillate), and 242995 (staminate).

Salix Nelsoni Ball, n. sp. Bot. Gaz. 40:379-380, pl. 13, 1905.

Type, pistillate: Aven Nelson 7580, along the creek, Laramie Peak, Albany Co., Wyo., July 13, 1900. In Herbarium C.R. Ball

Salix pennata Ball, n. sp. Bot. Gaz. 60:45-48, fig. 1. 1915.

Type, Pistillate: W. N. Saksdorf 15, Mt. Paddo (Adams), Washn., July 13,

August 12, 1886. Staminate type: Saksdorf 16, same data.

Both types in Bebb Herbarium of the Field Museum, Chicago.

Salix pseudo-monticola Ball, n. sp. in Standley, Flora of Glacier National Park,

Contrib. U. S. Natl. Herb. 22:321. 1921.

Type: Pistillate, M.B. Sanson 233, Rocky Mountains Park, Banff, Alta., Can., June 30, 1911. In herbarium C.R. Ball (2 sheets). Mature foliage: In willow thicket, swampy ground, southeast of Fair Grounds, Bozeman, Montana, C.R. Ball 1510, Sept. 3, 1908. In herbarium C.R. Ball (2 sheets).

Salix Seculeriana var. coetanea Ball, n. var. Jour. Washn. Acad. Sci. 24: 73-75. 1934.

Type, pistillate: J. Wm. Thompson 9297, Upper alpine slopes of Redtop Mtn., Kittitas County, Washn., July 4, 1933. In. Herb. C.R. Ball (2 sheets).

Salix Seculeriana var. Thompsonii Ball, n. var. Jour. Washn. Acad. Sci. 24:75-76, fig. 1. 1934.

Types: J. Wm. Thompson 5696 (pistillate) and 5900 (staminate), Moist slopes along Cheasty Boulevard, Seattle, Washn., March 1, 1933. Both in Herbarium C.R. Ball.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON

DIVISION OF
FOREIGN PLANTS AND ANIMALS
PLANT EXPLORATION AND INTRODUCTION

July 30, 1934.

Mr. C. R. Ball,
Bureau of Public Administration,
University of California,
Berkeley, California

Dear Mr. Ball:

I have your letter of September 8, 1933, as amended by your postscript of July 1, 1934. I am very glad to have the information concerning the types of the willows. The information came too late to put on the last list that I am issuing, but it will go on to our permanent record cards.

Sincerely yours,

A. S. Hitchcock
A. S. Hitchcock, Principal Botanist in
Charge of Systematic Agrostology.

Office address: Smithsonian Institution.

August 4 1934.

Prof. A. S. Hitchcock,
U. S. Natl. Herbarium
Smithsonian Institution,
Washington D.C.

My dear Dr. Hitchcock:

Through the courtesy of Dr. Maxon I am handing you some 25 California grasses for the National Herbarium. If you will be kind enough to determine them and report the determinations by number to me I will greatly appreciate the courtesy.

I had hoped to have time to look them up myself but that seems impossible with present pressures. Sorry the Salix data were so delayed.

With personal regards to you and yours,

Most cordially

Carleton R. Ball

P. S. I think that when I was coming out here you told me of a rather rare grass from the coast of NW California, probably from Humboldt or Del Norte Counties. When I was up there in 1932 it was too early for grasses along the coast, though I got a few from the sandy floodplain of the Trinity River, away from the ocean.

Now I have lost the record of what species was wanted. Harold E. Parks is now living near the coast near Trinidad, Humboldt co., and can collect whatever is finable. He knows many of the grasses, and Joseph P. Tracy at Eureka know more of them. They often hunt in couples so probably can get what you want if you will let me know what it was.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON

DIVISION OF
~~FOREIGN AGRICULTURAL ECONOMICS~~
PLANT EXPLORATION AND INTRODUCTION

August 13, 1934.

Dr. Carleton R. Ball,
University of California,
Bureau of Public Administration,
Berkeley, California

Dear Doctor Ball:

Dr Maxon has given me your letter of August 4 and also the package of grasses. I will look these over as soon as I can get the time. Just now we are very much crowded with proof reading. The Manual of Grasses is going through the press.

In regard to grasses from the northwest coast of California I will say that I am in correspondence with Mr. Tracy who has sent us many good things from that region. He will probably send me anything of interest that he finds.

Sincerely yours,

A. S. Hitchcock

A. S. Hitchcock, Principal Botanist in
Charge of Systematic Agrostology.

~~Bureau of Public Administration~~
Office address: Smithsonian Institution.

Univ. Calif., Berkeley, Calif.

September 17, 1934.

Dear Dr. Hitchcock:

Many thanks for your letter and the identifications of the grasses sent you. The duplicates have been distributed and the coast is clear again.

Tracy is a fine man and a good collector and he knows where things grow in the northwest corner of this State.

Shall hope to be seeing you in the early winter.

With personal regards, I am

Most cordally Yours,

Carleton R. Ball

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON

DIVISION OF
PLANT EXPLORATION AND INTRODUCTION

August 30, 1934.

Dr. C. R. Ball,
University of California,
Bureau of Public Administration,
Berkeley, California

Dear Doctor Ball:

After much delay I have been able to go over your grasses
received through Dr. Maxon in accord with your letter of August 4.
I am enclosing a list of identifications.

Sincerely yours,

A. S. Hitchcock
A. S. Hitchcock, Principal Botanist
in Charge of Systematic Agrostology.

Office address: Smithsonian Institution.

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(See over)

Sept. 8, 1934.

Dr. A. S. Hitchcock,
Smithsonian Institution,
Washington, D. C.

My dear Dr. Hitchcock:

Your letter of August 30, with list of identifications of my
grasses, is here and I am greatly obliged to you for the labor.

I did not collect many of each number but will leave a set here
and give smaller number to Stanford.

With best wishes, Most Cordially

Carleton R. Ball
Research Associate

Digitized by Hunt Institute for Botanical Documentation

Ball- September 4, 1934.

352. *Briza minor* L.
360A. *Bromus rigidus* Roth
530. *Trisetum spicatum* (L.) Richt.
531. *Poa epilys* Scribn.
532. *Deschampsia caespitosa* (L.) Beauv.
533. *Stipa columbiana* Macoun (*S. minor*)
534. *Sitanion hystrix* (Nutt.) J. G. Smith
535. *Trisetum spicatum* (L.) Richt.
655. *Bromus orcuttianus* Vasey
656. *Elymus glaucus* Buckl.
657A. *Bromus tectorum* L.
657B. *Elymus glaucus* Buckl.
658. *Poa bolanderi* Vasey
659. " *pratensis* L.
660. *Sitanion hystrix* (Nutt.) J. G. Smith
661. *Deschampsia elongata* (Hook.) Munro
662A. *Agrostis exarata* Trin.
662B. *Glyceria pauciflora* Presl
670. *Stipa columbiana* Macoun
699. *Elymus condensatus* Presl
Ball, Parks, & Tracy, Coll.
01341. *Aira caryophyllea* L.
01342. *Stipa columbiana* Macoun
01343. *Bromus rubens* L.
01344. *Festuca megalura* Nutt.
01345. *Bromus tectorum* L.
01346. *Sitanion jubatum* J. G. Smith

Leths file

February 28, 1935

Dr. Albert S. Hitchcock
U. S. National Herbarium
Smithsonian Building
Washington, D. C.

My dear Dr. Hitchcock:

When I sent you the list of type specimens of the various new species and varieties of willows which I have published, I accidentally omitted three. Since then I have published several others to bring the list up to date. I enclose lists containing the desired data on both these lots. Hoping to see you in person before many weeks, I am

Cordially yours,

CRB:MK
Enclosures

Carleton R. Ball

Types of SALIX, NEW SPECIES AND VARIETIES. (List 2)

of Carleton R. Ball

- S. brachycarpa Mexiae Ball, n. var. Univ. Cal. Pubs. Bot. 17:412-414, pl. 73. 1934.

Staminate type, Ynez Mexia 2132, in Univ. Calif. Herb. (Sheet 384376); pistillate type Mexia 2131 in same Herbarium (Sheets 384376, 441340, and 441341) distributed as S. nipholada Rydb. Both from rock-covered snout of Muldrow Glacier, McK. Natl. Park, Alaska, alt. 1000 m., July 28, 1929.

- S. brachycarpa Sansoni Ball, n. var. Univ. Cal. Pubs. Bot. 17:414-416. 1934.

Type specimen H. B. Sanson 119, Starbird Glacier Valley, Lake of the Hanging Glacier, Windermere District, July, 1928, in Herbarium C. R. Ball. This collection number contains both staminate and pistillate plants, the latter being the specific type. *Brit. Col.*

- S. Farrae Ball (Amplified description) Univ. Cal. Pubs. Bot. 17:406-409, pl. 71. 1934.

- S. Farrae microserrulata Ball, n. var. Univ. Cal. Pubs. Bot. 17:410. 1934.

Pistillate type. Malte and Watson 898 (National Museum of Canada 116806) Suidance Canyon, near Banff, Alberta, Canada, alt. 4500 ft., July 4, 1925, in Herbarium C. R. Ball.

- S. glauca Alicae Ball, n. var. Univ. Cal. Pubs. Bot. 17:416-417, pl. 74. 1934.

Pistillate type, Alice Eastwood 614, Whitehorse, Yukon River, Yukon Territory, Canada, July 12, 1914, in Herbarium Calif. Academy of Sciences. Staminate type, August Kutsche, same locality, May, 1916, 2 sheets in Herbarium Cal. Academy of Sciences.

- S. interior pedicellata (Andersson) Ball, n. comb. Canadian Field-Naturalist 40:175. 1926.

- S. laevigata araquipa (Jepson) Ball, n. comb. Bot. Gaz. 72:234-235, 1921.
S. laevigata forma araquipa Jepson.

Type specimen, W. L. Jepson, dry gulches, Araquipa Hills, Solano County, May 2-6, 1891, in Herbarium W. L. Jepson.

- S. Parksiana Ball, n. sp. Univ. Cal. Pubs. Bot. 17:400-402, pls. 67-68, 1934.

Staminate type, Harold E. Parks 0983, gravel bars of Smith River near Roosevelt Highway Bridge, Del Norte County, May 30, 1931, (sheets 481366-481367) in Herbarium Univ. of Cal. Pistillate type, Harold E. Parks 0982, river gravels, Van Duzen River between Alton and Carlotta, Humboldt County, May 14, 1931, (sheets 481288-481289) in Herbarium Univ. of Cal.

S. Setchelliana Ball, n. sp. Univ. Cal. Pubs. Bot. 17:410-412, pl. 72. 1934

Staminate type, William A. and Clara E. Setchell 587, in gravel at snout of Muldrow Glacier, base of Mt. Nielsen, elev. about 3,000 ft., Mt. McKinley Natl. Park, Alaska, July 12, 1932. In Herbarium Univ. of Calif. (sheets 486279 and 504076). Pistillate type, David Kaye 1, same locality, about August 31, 1932. In Herbarium Univ. of Cal. (sheets 504077-504078).

S. Tracyi Ball, n. sp. Univ. Cal. Pubs. Bot. 17:403-406, pls. 69-70. 1934.

Staminate type, Ball, Parks, and Tracy 01288, Madrona Park, above Gasquet, Smith River, Del Norte County, elev. about 500 ft., May 15, 1932. In Herbarium of Univ. of Cal. (sheets 504032 to 504035). Pistillate type, Parks and Tracy 0934, "French Flat," just below Gasquet, same locality, May 10, 1931. In Herbarium Univ. of Cal. (sheets 481400 and 481401).

S. Tweedyi (Bebb) Ball, n. comb. Bot. Gaz. 40:377-378, pl. 12, f. 3-5, 1906.

S. Barrattiana Tweedyi Bebb.

(Type: Frank Tweedy 11, Head of Big Goose Creek, Big Horn Mts., Wyo. July 15-24, 1893. In U.S. Natl. Herbarium)