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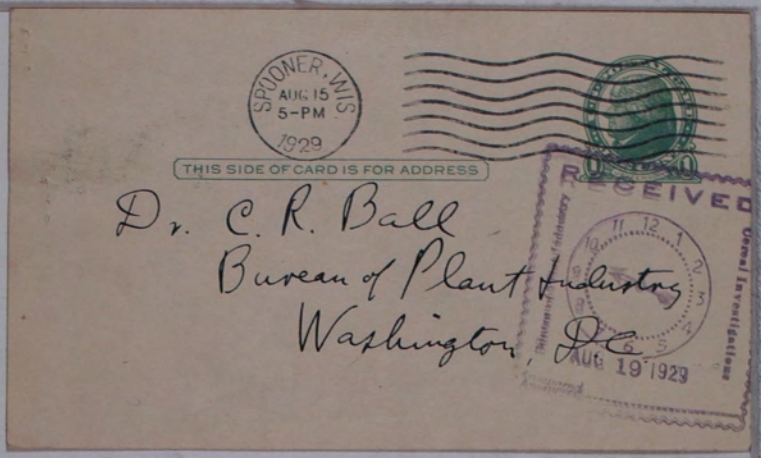

Spooner, Wis.
Aug 15, 1929

Thank you for your willow identifications. Keep the material. The willows of Pepoons Flora of the Chicago area are based to a large extent upon those specimens. Am at present in the field in northern Wisconsin. Have some specimens of Salix collected this spring which I shall send you if I may.

N. C. Fassett
Biology Building
Madison, Wis

THE UNIVERSITY OF WISCONSIN
MADISON, WISCONSIN, U. S. A.

DEPARTMENT OF BOTANY
BIOLOGY BUILDING

March 18, 1932.

Professor Carleton R. Ball,
University of California,
Berkeley, California.

Dear Professor Ball:

I have taken the liberty of sending you for identification some willows collected by a student in southeastern Wisconsin. There will doubtless be a great deal of duplication among them, since they are all from one tamarack bog.

Please keep this material.

Sincerely yours,

N. C. Fassett

N. C. Fassett.

(See over)

Prof. N. C. Fassett,
Dept. Botany, Univ. Wisc.
Madison, Wisc.

March 26, 1932

Dear Professor Fassett:

Yours of March 18 and the package of willows received. I inclose alist of the determinations.

I would very much like to know if the successive stages taken through the season represent specimens from the smae plant, in some cases, and if so, which numbers represent specimens from the same plant.

Such collections (from the saem plant) are very helpful in determining what variations in leaf characters are associated with what variations in flower and fruit characters. Mr Rhodes certainly had an opportunity to do that if he worked in the same swamp all season.

The material is very interesting to me and I thank you for permission to keep. it. If you wish all or part of it returned, however, please f eelquite free to say so and I will return it gladly.

Most cordially yours,

Carleton R. Ball
Research Associate

Program Planning Division
May 29, 1936

Professor M. C. Fassett,
Secy., Am. Soc, Pl. Taxonomists,
Dept. Botany, Univ. of Wisc.,
Madison, Wisconsin,

My dear Professor Fassett:

I have noted with much interest the item in Science for May 15, regarding the formation of the American Society of Plant Taxonomists. I am wholly in favor of such a movement and hasten to inclose my dues of one dollar (cash) for two-year dues. I hope that they will need to be increased before the two years are gone.



Have had little time for real work on the willows since taking up my duties here. Have gotten my entire collection (over 11,000 sheets) into new steel cases, however, and have managed to keep up on determinations, which run to about 1,000 sheets per year, for Forest Service and botanists in general.

Cordially Yours,

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

December 15, 1942

Dr. Norman C. Fassett,
Dept. Botany, Univ. Wisc.,
Madison, Wisconsin.

Dear Dr. Fassett:

I have just read with much interest the portion on poplars and willows in "Hayfever plants of the Middle West", by yourself and others. This is a real contribution to medical botany and I congratulate you on its completion.

I hope that you will bear with me, as one long and deeply interested in the accuracy of scientific writing, if I point out some errors in this brief portion of the publication. We mus maintain high and exacting stanfards of accuracy if science is to make its full possible contribution and if scientists are to achieve needed leadership.



The drawing of S. cordata, said to be original, would never be recognived for that species. In the drawing, the leafy peduncles and the aments are of wqual length (about 2 cm. in your reduced scale). This would mean peduncles 3 to 5 or 6 cm. long in nature. Actually, the pedundcles of S. cordata seldom exceed 1 cm. in length. The aments actually are subs essile and would appear almost sessile at your reduction. The drawing looks much more like S. fragilis than like S. cordata.

In two places you refer to the flower scales of willows as "fringed". This seems to be inaccurate on two counts. First, the flower scales of most willows are clothed on one or both surfaces with hairs, and not ciliate on the margins. Even if it were proper to call marginal ciliation a "fringe", the flower scales in willows would not be fringed. Second, the proper application of the word "fringed" would seem to be as a popular term for the technical "finbriate", which is quite different from marginal hairs. The finbriate fringe refers to a lacerated condition of the body material at its edge, as in the fringed gentian, certain mosses, and some composites. It is significant that in the Bebb illustration to which you refer, the scales have the long hairs distributed over the surface.

I am much happier in pointing these things out in a personal letter than I could be in calling public attention to them, although thelatter is necessary when practices persist.

With best holiday wishes, I am

Cordially yours

Carleton R. Ball
Executive Secretary

THE UNIVERSITY OF WISCONSIN
MADISON, WISCONSIN, U. S. A.

DEPARTMENT OF BOTANY
BIOLOGY BUILDING

December 21, 1942

Dr. Carleton R. Ball
Extension Service
U. S. Department of Agriculture
Washington, D. C.

My dear Dr. Ball:

I appreciate your comments on the brief notes on the willow in my hay fever pamphlet. I must plead guilty on practically all accounts. Certainly the drawing looks much more like S. fragilis than it does like S. cordata. I also agree that it is unfortunate to refer to flower scales of willows as fringed. If they were actually ciliate, I would not object to the term fringed as a popular one, since Webster's dictionary defines cilia as "any minute marginal hairs or hair-like processes forming a fringe like an eyelash", but since these scales are not ciliate that question is purely academic in this case.



I also quite agree with your inference that this is a contribution to medical botany rather than to taxonomy. Somewhere in the book I have made the statement that the different species are shown, not for purposes of identification, but to give some idea of range of variation within the genus. This does not excuse the presenting of pictures incorrectly identified. If my Manual of Aquatic Plants should at any time come to your hand I would be very glad to have your comments on the treatment of Salix. Since that book is intended for identification of species an error would really be more serious. I make no pretense of understanding the willows and worked up that treatment largely through the literature and study of the specimens. It was not thrown together hurriedly as was the hay fever book. But I realize that there may be many imperfections. If you find time to make criticisms of that work I assure you I shall be very glad to have them.

Sincerely yours,

N. C. Fassett

(over)

January 5, 1943

Dr. Norman C. Fassett,
Dept. Botany, Biology Bldg.,
University of Wisconsin,
Madison, Wisconsin.

Dear Dr. Fassett:

Your letter of December 21 was promptly received and read with much interest. As you are relatively young and apparently wishing to learn how to improve your work, I am glad to try to meet your request.

I obtained a copy of your "Manual of Aquatic Plants and looked through the illustrations of willows. Some rather serious errors appear. THat set me to thinking about our standards for selecting material for illustration and what we need to know and guard against in such selection.

As a result, I tried to set down what I was thinking. I could do this only with reference to the genus Salix, of course. Before I got through I had a small paper which seemed worth publishing. Accordingly, I let it get cold, revised it twice, and have sent it forward for publication.



With my ideas clarified, I will go through the willow portion of your Manual, as time permits, and make notes on the treatment of each species. Threafter, I will writeb you again.

I am inclosing a carbon copy of my paper in order to save much repetition in making my comments later. I will be glad to have your comments on the manuscript after I have sent mine on yourvManual.

Cordially Yours,

Carleton R. Ball
Executive Secretary

Writing

July 23, 1943

Dr. N. C. Fassett,
Dept. of Boatany, Univ. Wisc.,
Madison, Wisconsin

Dear Dr. Fassett:

In reference to previous correspondence, I finally have taken time to study the Salix illustrations in the Manual of Aquatic Plants. Here are my conclusions. The language may not be orthodox but the facts are as stated.

Fig. 1. S. longipes. Fair. The blades usually taper much more slowly, making the margins appear parallel.

2, 5. S. longifolia. Good, altho 5 is exaggerated in size.

3. S. longifolia Wheeleri. Not good. The leaves should be shorter and proportionately than those of the species and hairy on both sides.

4. S. serissima. Bad. Looks exactly S. lucida(seasonal shoot). Should be smaller and not long-acuminate.

6. S. lucida. Good, except is larger than average and should have glands.

7. S. nigra. Good, altho not all leaves are falcate.

8. S. amygdaloides. Fair. The blades are narrower than average and the petioles are too short and too stout.

9. S. sericea. Good, except that points are too much curved. See also 18.

10. S. discolor. Good.

11. S. glaucophylla. Good.

12, 13, 14. S. cordata. Awful. Very misleading in comparison with others, and 12 misleading in itself.

15. S. missouriensis. Very bad. Looks like S. Bebbiana. Should be like 16 with broad base and serrations.

16. S. petiolaris. Impossible. If 14 were lengthened by ½ it would look much like petiolaris.

17. S. pedicellaris. Bad. Much too large. Looks more like S. planifolia.

18. S. sericea. Only fair. Tapers too much and no serrations. 9 is better.

19. S. Bebbiana. Good for shape and size but should be hairy on both sides.

20. S. candida. Only fair. Too long and narrow, resembling S. pe;;ita.

21, 23. S. serissima and S. lucida. Peduncles and aments should be almost exactly alike at same age, but you have one long-peduncled and short capsule and other without peduncle and long capsule.

22. S. glaucophylla. Fair. At x 4 the style should be 4 mm. long.

25. S. candida. Good.

25. S. pedicellaris. Poor. Pedicel should equal ½ the capsule length.

26. S. cordata. Good, except style should be 2 mm. long at x 4.

27. S. sericea. Poor. Pedicel is twice as long as should be.

28. S. pellita. Good, except style is too short.

29. S. amygdaloides. Awful. Ament should be long-leafy-pedunculate, 6-8 times as long as wide, capsule 2½ times as long as pedicel, and glabrous.

30. S. petiolaris. Fair. At 4 x, capsule is correct but pedicel is only half as long as should be and style should be evident

dupl to Lake

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31. S. Bebbiana. Poor. On x 4, the capsules should be 35 mm. and the ped pedicel about ½ that length.
32. S. discolor. Poor. On x 4, the capsules should be about 35 mm. long but the pedicels only about ¼ as long.
30, 31, 32, when compared, give very wrong impressions to th student.
33. S. longifolia. Fair. The ament is long pedunculate, the mature capsules 7-9 mm. long (1.6 cm. at x 2) and the pedicels 2 mm. at x 2. The capsules are glabrous at maturity.
35. S. serissima. Good.
37. S. sericea. Impossible. It looks like S. humilis. S. sericea has linear aments.
38. S. nigra. Good, but should have peduncle or basa l bracts.
45. S. discolor. Good.
48. S. cordata. Good.
34-47 (excluding those discussed). These drawings, showing scales and stamens, are not all accurate as to stamen length, scale length and hairines, etc., and therefore not comparable. For example, the stamens of S. discolor should be longer than those of S. cordata or S. pedicellaris. The scales of S. longifolia are hairy. The scale hairs of S. cordata are not as long as the stamens, etc., etc.

The drawings of leaves in F. Schuyler Mathews: Field book of American trees and shrubs, are fairly accurate, for the most part. His drawing of S. Bebbe iana is very poor, however, the leaves being too long and narrow. Yours is much better.



I was sorry to see the type of key you employ. My chief objection to it is that the user never learns the characters of the plants as a unit and always has to use a key to find one. In the natural form of dichotomous key he goes straight down to plant, character by character, and gradually learns them so that he no longer has to go to the key.

Life is so short, and the student has so much to learn, I believe that we ought to make things as simple as possible. It makes more work for us, the authors, and saves much time and work for tens of thousands of students, the users. "All writing is for the reader".

By the way, how about that word "aquatic"? Are these willows really aquatics, in the dictionary sense of the word?

Having said all the mean things on hand, I hope you recover and go on with your good work.

Cordially yours,

Carleton R. Ball
Collaborator.

July 24, 1943

Dr. Norman C. Fassett,
Dept. of Botany, Univ. Wisconsin,
Madison, Wisconsin

Dear Dr. Fassett:

When writing you yesterday, I was under the impression that your letter of April 7, regarding the troubles of an author dealing with difficult groups, had been answered. Apparently, however, it has not.

I am wholly sympathetic to your statement of that particular difficulty. But I would come back to my sentence of yesterday, taken from my volume on the writing of technical manuscripts: "All writing is for the reader". If it cannot be made safe and profitable for the reader, it should not be written or at least not offered for sale. You and I know that many books in botany have been written to "sell" and not primarily to inform readers. Some authors have done this deliberately, like forgers and commercial fakers. Some have done it unintentionally thro not being willing to discipline themselves enough to insure accuracy or completeness. In either case, science suffers, and it is no accident that botany has a low esteem among the sciences.



I once heard a man lecture on the handling of clay soils. He said: "Kepp off clay soils when they are wet", and then added: "And that don't cost you anything". Your figures of amygdaloides and serice aments certainly never could have been found on those species. The leaves said to represent S. serissima and S. petiolaris probably did not come from those species and, if they did, were so atypical that they should have been rejected. To have omitted unsatisfactory material would have cost you nothing and would have helped the reader greatly. The same comment holds for the leaves of S. cordata from flowering shoots. If mature leaves were not available (which seems hardly probable), leave them out.

I am sending separately a copy of my printed paper on variation in foliage on willows. If you will scan the photographic illustrations in my write-up of willows for Deam: Shrubs of Indiana, you will get my idea of what helps the reader, altho Deam and not I chose the specimens. It will show what your leaves of S. pedicellaris should have looked like.

I retired on June 30, being past 70, but still have my desk at the Dept. and will be glad to determine material at any time. Am starting work on my monograph of Salix and a volume on natural resources.

Cordially yours,

Carleton R. Ball
Collaborator

26-VII-43

THE UNIVERSITY OF WISCONSIN
MADISON, WISCONSIN, U. S. A.

DEPARTMENT OF BOTANY
BIOLOGY BUILDING



be useful to various workers, many of them not botanists, is more important than the academic question of what is an aquatic, and from all reports the book has been useful. I am afraid it is misleading as to the willows, but then I am afraid most people not specialists in the group have very little hope when they tackle that group anyway. Possibly if there is ever another edition I can, with your help, remedy that situation.

What about some criticisms of those keys?

Sincerely yours,

N C Fassett

N. C. Fassett

from N.C. Fassett

THE UNIVERSITY OF WISCONSIN
MADISON, WISCONSIN, U. S. A. 6

DEPARTMENT OF BOTANY
BIOLOGY BUILDING

July 26, 1943



Dr. Carleton R. Ball
Extension Service
U. S. Department of Agriculture
Washington, D. C.

My dear Dr. Ball:

Your letter containing "all the mean things on hand" is very much appreciated. I can see nothing mean in it but perfectly straightforward, constructive, helpful criticism. I do not know if or when there will ever be a revision of the aquatic manual, but in such event I shall certainly try to improve the drawings in line with your detailed suggestions.

You do not mention the keys. I am not at all confident of them, having had some trouble sometimes with an occasional individual. I quite agree with your paragraph concerning the type of key. I very much prefer what you call the natural form of dichotomous key, and never expected to use the other type, which I detest. Its use in this book was largely due to necessity for saving space, particularly with so much discussion occasionally interpolated. Also I have found that the inexperienced user sometimes has trouble with the natural key in which the two choices may be separated by considerable distance. The tyro shows more inclination to read both choices carefully if they are placed in juxtaposition, but with this type of key I always feel that I am going absolutely blind, not knowing where I am going to turn out.



You also question the word "aquatic" and wonder if the willows are really aquatic. Just you try to make a list of aquatic plants. I know one place where there is a red oak, probably forty years old, standing in several feet of water. I have included many things which perhaps do not normally grow in the water, and I am afraid have left out a few which do. There is no line between aquatic and terrestrial plants. I tried to include what I thought the person working in wet habitats would be apt to find. I am sure I would not make just the same list of aquatics again. I knew before I had been working a day on this problem that the criticism of "is this an aquatic?" would come up again and again, and I have not been disappointed. Fernald wrote a ten-page review proving that I had left out most of what should go in and included most of what should have been left out, but was prevailed upon not to publish it. After all, the question of what will

July 28, 1943

Dr. Norman C. Fassett,
Dept. Botany, Univ. Wisconsin,
Madison, Wisconsin.

Dear Dr. Fassett:

Since writing you regarding illustrations of plant organs, I remembered a publication of the Forest Service which employed line drawings in a processed publication. They are very small and I have not studied them for accuracy but, if accurate, they should be helpful to the user. As between genuses, at least, they are not comparable as to size. I send the paper separately.

Please return the publication when you are entirely finished with it.

Cordgially yours,

Carleton R. Ball
Collaborator

August 6, 1943

Dr. Norman C. Fassett,
Dept. Botany, U^niv. Wisc.,
Madison, Wisconsin
Dear Dr. Fassett:

Your letter of July 26 was promptly received and I appreciate you attitude toward my critical suggestions. Now I have tried to study your keys in Man. Aquat. Pl. and will comment on them. Let me say also that I appreciate the difficulty of limiting the word "aquatic" but I still believe that science would have been served by qualification in title, -- as "aquat. and subaquat."

Likewise, I note your statement that willows "are difficult to determine, showing much variation". What plants do not? Does Salix show any variations equivalent to those in the leaves of Morus, Acer, Sassafras, or some species of Rhus?, just to mention a few, and not omitting Quercus. If the willows still are difficult, it comes in large part from the botanists who study earlier descriptions instead of actual plants. See later comment.

My first impression of the keys based on vegetative characters is that you have carefully avoided the precise and helpful (educating) terms describing leaf-margins, and leaf color and shape. Yet you employ such terms as petiole, stipule, gland, centimeter, without batting an eye. Why not the terms serrate, denticulate, crenulate, repand, linear, oblong, lanceolate, ovate, elliptical, acuminate, acute, cordate, etc., etc., suitably modified? Wood and Gray did that and trained a generation of amateurs to know plants accurately. In our day, why be afraid to do it when every 8-year-old boy uses the complicated terms dealwith the parts of radio and automobile. It seems childish to describe things in phrases when a single precise word is shorter and teaches something.



Let me congratulate you on "Shining Willow". Shining applies to animate objects, shiny to inanimate objects. Most botanists say "Shiny Willow".

In your keys of vegatative characters, the first fundamental error is in S. 3 (a) reads: Leaves strongly whitened beneath, and includes serissima, longipes, amygdaloides, sericea, missouriensis. 3 (b) reads; Leaves green beneath, and includes longifolia, lucida, nigra, cordata. Actually, S. longipes is the only one strongly whitened (dealbata) beneath. The others are glaucescent (subglaucous) to glaucous and cordata belongs exactly with this group and not with those green beneath. The glaucous character develops slowly in all of these, except perhaps S. amygdaloides. Young leaves often do not show it, but your key is said to be based on mature leaves.

This fundamental error leads to several less important ones. You state that the leaves of S. nigra are "as dark green beneath as above", which decidely is not true. They are evidently lighter beneath. You state that the leaves of S. cordata are "green but paler beneath", which is untrue at full development. And you do not bring out the real difference in S. longipes, which causes even very young leaves to show glaucescence or glaucousness.

11. Leaves tapered to a long whip-like tip. S. amygdaloides. Many mature leaves of amygdaloides are merely acute to acuminate. That tip is more true of S. lucida.

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N.C. Fassett

12. S. sericea. Often the same plant may have "both finely toothed leaves and leaves without teeth". I have never seen specimens with distal and median lvs. entire, altho the basal leaves on shoots may be subentire. But this is just as true of the other species with lanceolate, serrulate leaves, and in no way serves to distinguish S. serica from them.

14. S. sericea f. glabra and S. petiolaris are said to be "strongly whitened beneath and strongly veiny on both sides". Neither is strongly whitened, as noted above. S. cordata often is just as strongly veiny on both sides as these others. S. sericea and petiolaris can be separated from the others by blackish twigs, the others being yellow to brown.

Key 2 (b) reads: "Leaf margins without teeth or with indentations". In the first place, serrate leaves have "indentations" between the teeth. In the second place, one is sent from here to Key 21. Yet you did not wait for Key 21 but in Key 15-18 began keying the very species for which one was sent to Key 21. That is confusing and also wasteful of spece. Not only that, but you inserted these before you finished with those having serrate margins (See 17 (b) to 20). That is even more confusing and certainly is not the way to make willows less "difficult to determine".

Key 19-20. All forms of S. cordata have hairy twigs, at least at some season of the year, and so cannot be separated from each other or from S. missouriensis (probably a var. of cordata) by that character.

Key 21, and earlier and later. First some general statements on plant hairs on the cuticle. The expression is extremely variable. In the first place, most willows lose the cuticle by peeling in the spring. The newly exposed new cuticle is glabrous, even in hairy species. The cuticular hair cells develop after the new cuticle "matures". The cuticle often does not peel off from the area behind budscales and branchlets and remnants of the hairy covering may be detected there, after peeling has left glabrous branchlets.

In the second place, the hairs from branchlets, budscales, and leaves gradually drop off during the summer and fall, just as most aging men become thinner of hair. Sometimes they become glabrate to glabrous with age (seasonal), just as some men become bald, at least on top. If Palmer and Steyermark had studied many plants at different stages of development there never should have been any "S. sericea f. glabra" All young specimens are "sericea" and all mature specimens are "forma glabra". Great is taxonomic botany!

Keys 21 and 24. I must take vigorous exception to your misleading use of the term "wool". It is just as bad to use popular terms incorrectly as to use technical terms incorrectly. You elected to use popular term in your keys and then used them in ways which popular usage never countenances. "Wool" refers to naturally crinkly hairs. Just one willow, S. candida, has such wool. No one would call the pelts of beaver, mink, and seal "woolly" just because the hairs are exceedingly close together and the fur heavy thereby. Yet that is just what you did in the case of Bebbiana and pellita, and even dragged sericea in (Key 25 a). Any country boy knows better than that.

Furthermore, whether hairs are flattened on the surface, or straight but spreading, or more or less twisted in different directions (but not truly crinkly), depends first on the density of the hairy covering and secondly on artificial factors, such as brushing together in the wind, pressure in pressing, etc., etc. The hairy covering of S. pellita and S. argyrocarpa is very dense and pressing produces peculiar effects. Leaves of both species often become glabrate in age.

In the case of S. lucida intonsa (Key 7) and S. discolor latifolia (Key 23b). you refer to the hairs as reddish. Sometimes they are, but not nearly always and the cause probably is physoilogical. Can it be that the botanists saw these hairs only when they were reddish and failed to detect them when gray or silvery?

6-VIII-43
N.C. Fassett

Would it not have been better to have started the keying at 21 somewhat as follows:

21 Twigs and mature leaves without hairs
  22 Leaves small, entire, smooth on both sides. S. pedicellaris
  22 Leaves midsized to large, coarsely crenate. S. discolor
21 Twigs and mature leaves more or less hairy

In your 22 you use the word "smooth" correctly, as the opposite of rough. This is common popular usage. In 47 you use it incorrectly as the opposite of hairy. The popular term, "smooth-shaven" is used not because the face otherwise is hairy but because it would be rough. We speak of a smooth girlish skin, altho that skin is downy. We say, "smooth as silk", altho silk is as hair.

23. The leaves of S. bebbiana are puberulent to pubescent above also.

24. See my previous discussion of wool. Here you have silky wool and dull cottony wool. How are learners to learn precision when so lead (or misled)?

In your keys based on floral characters, you use such technical terms as pistil, stamen, staminate, scales, stipe, and rachis, but refuse to use peduncle, and do not mention style or stigma.

Key 26-27. "Pistils or capsules". Why both? If synonymous (both including stipe (pedicel), capsule, style, and stigma) the word capsules should have been in parenthesis. If capsule" means only the seed pod it should not have appeared in key 26.

Key 28. Better "Scale pale yellow, ditto 40.

In your keying of floral specimans, many of your key pair are based on vegetative rather than floral characters. This may be desirable but in 30 you have date of flowering. Suppose the specimen was undated? Also S. serissima may flower in June but matures more slowly than lucida and is persistent. In 31, large trees vs. shrubs. No herbarium specimen shows that, so how use the key.



Key 35. Catkins "forming". Better "appearing". They formed in the bud.

Keys 37-38. Another loose collection of terms: fuzzy, velvety, densely woolly with tangled hairs (how woolly if hairs are not tangled?), dull, etc. Also "smooth" used incorrectly. Also in 47 and 49, cottony and cobwebby. Cobwebs are blackish, and when made, reticulate. What has that to do with our S. candia? It is just too bad to use terms loosely. In fact, it seems "fuzzy".

53. Some young leaves of S. petiolaris are glabrous and many young leaves of S. cordata are pubescent.

Descriptions of aments as slender and stout or , better still, as linear, oblong, elliptical, and combinations of these, with actual measurements, would have taught the user something which the present keys do not.

There is a lot of good in your book, even in the treatment of Salix, and probably more in less "difficult" groups. Unfortunately, there is no standard of quality in books and many of them, like much other merchandise, are made to sell rather than to be of the greatest possible value to the buyer or user. If scientists do not have high standards, of whom shall we expect them?

This letter, and the hours of study on which it is based, has not been written wholly for you. It is written also to set stakes for my own performance in my monograph and other willow papers, yet to be.

Cordially yours,

Carleton R. Ball
Collaborator

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

March 1, 1944.

Dear Dr. Fassett:

Curtis & Bausor, new ed. Complete Guide to N.A. Trees, is a good example of useles and misleading text figures illustrat sting leaves of willows. Some are positively misleading, others not helpful, a few good. Venations nd margins all bad.

Th waste of paper and space is teriffic ina case like that. I have sent him an analysis of each species and a copy of my paper. ( I seem to recall that he is dead, but some one will get it).

Cordially yours,

Carleton R. Ball

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

Dr. Norman C. Fassett,
Dept. Botany, Univ. Misc.,
Madison, Wisconsin.

October 23, 1947

Dear Dr. Fassett:

I have just read with much interest you notes on Veronica connata Rafinnsque, in Journ. Wash. Adad. Sci. My interest is not in Veronica, as you know, but in the recognition of the normal variations in the organs of a species and of an individual plant. Taxonomy can mean little until thhse facts are recognized.

When I went to my card fine to see what I had sent you recently, I could find no card at all. I felt sure that you had been on my mailing list in years past. In any case, I have just sent you four reprints, of a general nature. In the one entitled: More plant study: Fewer plant names, you will find a discussion of variation as it normally occurs in Salix. Most variable of all is hairiness, Leaf shape and size vary quite uniformly ~~in~~ the four different types of twigs ~~xxx~~ and each twig.
between

It seems to me that our plant descriptions have got to recognize the variation on a single plant, as you have done in the paper ~~xxxxx~~ mentioned.

Cordially yours

P. S. I send the Va. Willows because, at the request of Prof. Massey, I included a brief summary of the many uses of willoes.

Carleton R. Ball

THE UNIVERSITY OF WISCONSIN
MADISON 6, WISCONSIN, U. S. A.

DEPARTMENT OF BOTANY
BIOLOGY BUILDING

January 28, 1948

Dr. Carleton R. Ball
Extension Service
U. S. Department of Agriculture
Washington, D. C.

Dear Dr. Ball:

The Manual of Aquatic Plants is going into a fourth printing and I am about to make a few corrections but not revisions. In checking over your suggestions concerning treatment of the willows, I find that an entire revision would be in order but it couldn't be done at the present time.

I am therefore confining changes to replacement of the worst drawing in the lot, that of S. amygdaloides, which is certainly not that species. I found several sheets in the herbarium identified by you as that species and have had a new drawing made up from them. Some time I hope I can revise the whole book, but I am still at a loss to know just what to do with Salix. It is a very difficult group for anyone not a specialist to do in the manner it should be done. Perhaps we can take up that question later.



Sincerely yours,

N. C. Fassett

N. C. Fassett

(over)

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

Dr. Norman C. Fassett,
Dept. of Botany,
University of Wisconsin,
Madison 6, Wisconsin.

February 4, 1948

Dear Dr. Fassett:

I have your letter of ~~Jany.~~ 28 about revision of the Salix in your 4th printing of the Manual of Aquatic Plants. I have not looked up what I said previously. My main contention peobably was that the illustrations did not fit the description.

For example, if a capsule is 6-8 mm. long, on a pedicel 1.5-2 mm., and with a style 0.5-1 mm. long, then these organs in the drawing should have those relative proportions. Frequently they do not, and in the above case the pedicel and style will be of the same length, etc.

As I have pointed out, willow shoots tend to have three shapes and sizes of leaves. The lower are smaller and broader and blunter than those farther up on the same shoot. This is because the lower never fully develop because of too much competition for food by the later ones. The apex of a leaf always develops before the basal portion and that is left narrower than normal if complete development never occurs. All leaves on a fruiting ywigs will be smaller than those on later sterile twigs. Where a single leaf is to be pictured, the main thing is to choose one that shows the general impression an observer gets when he looks at the whole plant in nature.

If at any time, soon or late, I can help you in selecting or approving material for a revision, I will be glad to serve.

Cordially yours,



Carleton T. Hall

P.S. Separately I send Willows of West. Va., the latest out.

THE UNIVERSITY OF WISCONSIN
MADISON 6, WISCONSIN, U. S. A.

DEPARTMENT OF BOTANY
BIOLOGY BUILDING

April 2, 1948

Dr. Carleton R. Ball
Extension Service
U. S. Department of Agriculture
Washington, D. C.

Dear Dr. Ball:

We have somewhere around 500 and 600 sheets of Salix from Wisconsin. While a number of them were identified by you, the whole collection has never really been gone over critically. Would you be interested in checking over this material?



Sincerely yours,

N. C. Fassett,
Professor of Botany

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

Dr. N. C. Fassett,
Dept. Botany, Biology Bldg.,
Univ. of Wisconsin, Madison 6.

April 13, 1948

Dear Dr. Fassett:

Your letter of April 2 promptly received. I will delighted to review all the available Salix specimens from Wisconsin.

If it is needed soon in connection with something you are completeing, I will make special effort and do them in early summer.

If they will wait untill late fall or winter, it will suit me better because I am writing furiously now on some previous commitments in Salix.

I have just recorded some interesting uses of willows by Wisconsin Indian tribes.

Cordially yours,

Carleton R. Ball

THE UNIVERSITY OF WISCONSIN
MADISON 6, WISCONSIN, U. S. A.

DEPARTMENT OF BOTANY
BIOLOGY BUILDING

June 23, 1949

Dr. Carleton R. Ball
Extension Service
U. S. Department of Agriculture
Washington, D. C.

Dear Dr. Ball:

Some time ago you wrote me that you could, in the future, go over the willows in the herbarium here. Has the time come when you will be able to do it?

We are planning a book on Wisconsin Trees and Shrubs and your identification on our material would be naturally of tremendous value.

Sincerely yours,

N. C. Fassett

(over)

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

29 March, 1953.

Dr. Norman C. Fassett,
Dept. of Botany,
University of Wisconsin,
Madison 6, Wisconsin.

Dear Dr. Fassett:

I was astounded today, while running through some apers, to find a bunch of letters of 1949, which apparently had been mislaid and never answered. One was your letter of June 23, 1949, asking me if the time had come when I could go over the Wisconsin willows.

Going to my letter file, I found your earlier letter of April 2, 1948, asking me if I would identify the willows in the University herbarium. To that letter I had replied, on April 13, that I would be delighted to do that. I suggested that if there was pressing need I would do them right away, but added that if they could wait until fall or or winter, it would suit me better.

Evidently they were not sent either then or during the next fall or winter, and your letter of June , 1948, apparently was the first follow-up.

I am very, very sorry that your second letter was thus mislaid. If you still wish them reveiwed, send them right along and I will give them immediate attention.

Cordially yours,

Carleton R. Ball

THE UNIVERSITY OF WISCONSIN
MADISON 6, WISCONSIN, U. S. A.

DEPARTMENT OF BOTANY
BIRGE HALL

December 21, 1954

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

Dear Mr. Ball:

As you may already have heard, Dr. Norman Fassett died on September 14 after a prolonged illness. His vital and stimulating personality is already much missed by those of us who knew him.

A memorial committee, appointed by the Department of Botany, has discussed means of perpetuating not just the name of Norman Fassett, but also the kind of thing that he tried to do during his professional life. As we all know, he was an authority on the flora of the Midwest and especially interested in Wisconsin and in field botany. One of the strong supporters of the Wisconsin Academy of Sciences, Arts and Letters, he and his students had many papers appear in its publication, most notable, being the long series of preliminary reports on the flora of Wisconsin and his paper on the Brule River. The committee, therefore, visualizes as a possible memorial, a fund which would be used to aid the publication of papers on field or herbarium botany in the Transactions of the Wisconsin Academy of Sciences, Arts and Letters. Since the Academy has very limited funds for publication, such a fund should permit the improved publication of meritorious work. The Academy states that it would be happy to grant a credit line "Publication assisted by the Norman C. Fassett Memorial Fund" when this fund is used for publication of a paper or for illustrations in a paper. If sufficient donations are received, the memorial fund will be set up in such a way that the income from investment of the fund will be used each year. If the funds received are insufficient for this purpose, the committee proposes that they be used by the editorial committee of the Wisconsin Academy to publish illustrations in field or herbarium botany papers each year until the principal is exhausted. Of course, the former alternative is preferable and $1,000 is being set as the minimum goal for a permanent memorial fund.

Norman Fassett's former students and colleagues are being approached to raise this memorial fund. Donations should be made payable to the "Norman C. Fassett Memorial Fund" and sent to any member of the committee.

Sincerely yours,

Norman C. Fassett Memorial Committee
John T. Curtis
Richard I. Evans
Jonathan D. Sauer
John W. Thomson, Chairman.

(over)

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

12 February, 1955.

The Norman C. Fassett Memorial Committee,
Dept. of Botany, Birge Hall,
University of Wisconsin,
Madison 6, Wisc.

Gentlemen:

Your letter of December 21, last, was received just at the time of our Christmas family reunion and got misplaced. It has just come to light.

I greatly appteciate the service Dr. Fassett rendered, in many ways, in the field of biological science and am very glad that you are planning to give him lasting recognition by establishing the proposed memorial fund. As is well recognized, scientists receive relatively little public acclaim for t\ their contributions to human advancement, as compared with entertainers, or eveb business men.

I am inclosing my check for $5.00 to be added to the Fund. I greatly wish that it might be more but, because I have given my efforts to science and public administration, and not to accumulating money, we now are living on my retirement annuity. It is quite sufficient for our needs but does not leave much of a balance for contributions to the many worth causes.

Wishing you al success, I am

Cordially yours,

Carleton R. Ball