



Hunt Institute for Botanical Documentation
5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: www.huntbotanical.org

The Hunt Institute is committed to making its collections accessible for research. We are pleased to offer this digitized item.

Usage guidelines

We have provided this low-resolution, digitized version for research purposes. To inquire about publishing any images from this item, please contact the Institute.

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.

Journ. Ann Arb
24:103-106 1912
1943

SALIX FLORIDANA CHAPMAN A VALID SPECIES

Carleton R. Ball

This paper is designed to show that synonymy, like a snowball, grows by continued accretion and is not a product of taxonomic botany.

In 1860, Dr. A. W. Chapman of Alabama described "Salix Floridana n. sp." in his Flora of the Southern United States, page 430. The description was repeated without change on page 430 of Edition 2 (1883, 1887, 1889), and on page 453 of Edition 3 in 1897. The original description, based on the type collection, is as follows:

"S. Floridana n. sp. Leaves ovate-lanceolate, acute, smooth above, glaucous beneath, finely serrate, rounded at the base, the petioles pubescent; stipules small, caducous; fruiting ament oblong, dense; capsule ovate-lanceolate, smooth. — Rocky banks, West Florida, fruiting in April. — Shrub 8'-12' high. Leaves thin, 2'-3' long. Fruiting aments 2'-3' long, 1' in diameter, enveloped in the copious wool of the seeds. Flowers not seen."

The leaf description: "ovate-lanceolate, acute,rounded at the base," taken with the glabrous capsules, indicates at once a willow unlike any other species known in the Southern States. Apparently no other collections were made by Dr. Chapman or any one else in the 41 years from 1860 to 1900, inclusive.

As Dr. Chapman had not collected staminate specimens, he made no attempt to indicate the relationship of his species to others. He merely arranged it next to S. nigra because of the leafy-pedunculate coetaneous aments and pedicelled glabrous capsules.

2

With the opening of the 20th century, there began a second and more confused 41-year period for *S. floridana* Chapman. In 1903, Small described it on page 342 of his Flora of the Southeastern United States. The description, given below, was repeated on the same page of Edition 2, in 1913.

"*S. floridana* Chapm. A branching shrub 2-4 m. tall, with sparingly pubescent twigs. Leaf-blades oblong or oblong-lanceolate, 5-8 cm. long, acute, serrulate, glabrous, dark-green above, glaucous beneath, rounded or truncate at the base; petioles 4-10 mm. long, pubescent; mature pistillate aments oblong-cylindric, 4-7 cm. long, fully 2 cm. thick, dense; capsules ovoid-conic, 6-8 mm. high (sic), glabrous. On rocky banks, middle and western Florida."

Why Small credits the species to "middle" as well as "western Florida" is not known, as no collections other than Chapman's type had been made in Florida. He may have collected immature *S. longipes* which to for a time he believed/represent *S. floridana*.

Although staminate aments still were unknown, Small keys the species as follows:

"Capsules glabrous

Stamens 2

Filaments glabrous, bracts persistent

Leaf-blades less than 3 times as long as broad."

He evidently assumed that this species belonged with those having 2 stamens because of its superficial resemblance to *S. cordata* and *S. missouriensis*, from which he separates it by the last item (leaf-blades) quoted from the key.

Collections by Dr. R. M. Harper

Early in 1904, Dr. Roland M. Harper published notes (Bull. Torr. Bot. Club 31:21-22. 1904) on his No. 1381, *S. floridana*, collected in Pulaski Co., Ga., on June 27, 1902. The writer has seen two sheets of this number in each of four herbariums (Field Museum, Mo. Bot. Garden, N. Y. Bot. Garden, and U. S. Natl. Herb.). One sheet in each herbarium carries vigorous shoots with enormous leaves, reaching a maximum size of 6 x 18 cm. Harper's comments, quoted below, are much to the point, although he does not mention the larger leaves, lacking on Chapman's fruiting specimen.

"*Salix floridana* Chapm. I refer tentatively to this almost unknown species, specimens collected in wet woods at the outer (eastern) base of the sand-hills of the Ocmulgee in Pulaski County below Hawkinsville, June 27 (no. 1381). My specimens were slender erect trees about ten feet tall and two inches in diameter, with tasteless bark roughish below and smooth above. The twigs were very brittle, not only at the base but throughout. No trace of fruit was found, but my material, as far as it goes, seems to be a perfect match for the type specimen in the Torrey Herbarium, collected by Dr. Chapman in West Florida."

In 1913, Small published two more small volumes, "Shrubs of Florida" and "Florida Trees." *S. floridana* Chapman was described briefly in both (pages 9 and 13, respectively) and in the second Small adds: "..... found in southern Georgia." He probably refers to Harper's collection in Pulaski County, which is just south of the center of the State.

Harper collected his No. 3634, a second specimen with mature foliage, in a "Semi-calcareous swamp of small creek about 1/2 mile east of Cedar Springs, Early Co., Ga., April 11, 1938." The writer has seen the very uniform specimens of it from the herbariums named and from Gray Herbarium, where someone has annotated it as "*S. longipes* Shuttleworth." It is typical *S. floridana*, as recognized by Harper.

Salix Floridana Chapman Reduced to Synonymy

In 1917, Dr. Camillo Schneider, a German dendrologist on a botanical visit to the United States, was caught by the outbreak of World War No. 1. He was allowed to continue work at the Arnold Arboretum, where Dr. Sargent suggested that he prepare a revision of American species of the genus *Salix*.

His first paper (Bot. Gaz. 65:1-41. Jany., 1918) covered the species of Mexico, West Indies, and Central and South American, including *S. longipes* Shuttleworth of the West Indies and southeastern United States. Under this species, he lists *S. Floridana* Chapman as a synonym (p. 21).

In 1919, he published his treatment of "The Species of the *Pteleandrea* Group" (Journ. Arnold Arb. 1:1-32). In discussing *S. longipes* again, he states (p. 25):

"There is hardly any doubt that *S. occidentalis* from Cuba and *S. longipes* (sensu str.) from Florida cannot be separated even as varieties. The last one has been again described by Chapman (1860) as *S. floridana* and by Small (1913) as *S. amphibia*."

In neither publication does Schneider give any reason for regarding *S. floridana* as conspecific with *S. longipes*. His annotation label attached to the sheet bearing the isotype of *S. Floridana* Chapman, in the Torrey Herbarium of Columbia University (received through the New York Botanical Garden), bears the following comment, in Schneider's hand: "prob(ably) *S. longipes* Shuttlew. (cotype of *S. floridana* Chap.)". It is dated "1919" and therefore was written after the preparation of the two papers discussed above. It expresses uncertainty and makes his earlier action still less understandable. The isotype in the Gray Herbarium of Harvard University is not annotated by Schneider, nor is the sheet bearing Harper's 1381.

Salix Chapmanii Small Replaces S. floridana Chapman

In 1933, Small published his Manual of the Southeastern Flora.

On page 414 appears the following description:

"S. Chapmanii Small. Shrub or small tree, the twigs purple, sometimes sparingly pubescent; leaf-blades elliptic or elliptic-lanceolate, or ovate-lanceolate, 5-8 cm. long or larger, on twigs (sic), acute, serrate, very glaucous beneath; capsule conic, 7-9 mm. long, stout-beaked, truncate at the turgid base. River banks and wet woods, Coastal Plain, N. Fla. and S. Ga."

In his keys to *Salix* species, on page 413, he enters this species under Section *Cordatae* (with 2 stamens) and separates *S. cordata* and *S. Chapmanii* as follows:

"Capsules usually less than 7 mm. long; twigs greenish,
more or less grayish-pubescent *S. cordata*
"Capsules mostly over 7 mm. long; twigs purple *S. Chapmanii*"

In the list of new species contained in the volume, there appears on page 1504 the following entry: "*S. Chapmanii* Small, Type, Middle Florida, Chapman, in herb. C(olumbia) U(niversity)." Chapman based his *S. floridana* on a single collection, the type, from "Rocky banks, West Florida." On page 413 of this 1933 Manual, Small follows Schneider and cites *S. floridana* Chapman as a synonym under *S. longipes* "Anders." *S. Chapmanii* was based on the type of *S. floridana*. If *S. floridana* is a synonym of *S. longipes*, how then can its single-collection type become the type of *S. Chapmanii*? Small characteristically gives no reason for his action, so completely illegal taxonomically.

Salix astatulana Enters the Picture

Recently, Murrill and Palmer have described and figured Salix astatulana sp. nov.^{a/}, discovered by Dr. Murrill in Lake and Levy Counties of Central Florida.

a/ Murrill, William A., and Ernest J. Palmer. A New Willow from Florida. Journ. Arnold Arb. 22:580-581, 1 text fig. Oct., 1941.

The authors state that their species "appears to be most nearly related to *S. longipes*" but is "a very different plant in its foliage," which is true also of *S. floridana* Chapman.

The description of leaves, aments, and fruits (in Latin only), so closely duplicated the description of *S. floridana* Chapman that the writer wrote to Dr. Murrill in an endeavor to purchase duplicate specimens or, failing that, to obtain the isotypes for study. Dr. Murrill courteously sent fragments from each of the three collections. These also indicated that the specimens represented the juvenile stages of *S. floridana* Chapman, of which the type and the Harper collections represent maturity. Thereupon, the Arnold Arboretum of Harvard University was asked to loan the types and all three collections were received through the courtesy of Drs. Merrill and Raup. Unquestionably they represent *S. floridana* Chapman.

The type specimens consist of rather small fragments. The pistillate type is from a "Small tree in clump, wet soil of hammock, north of Astatula, Lake Co., Murrill and Watson, Feby. 4, March 7, 1941." it consists of 7 twig fragments from 5 to 22 cm. long, together with 2 detached mature leaves and one detached fairly mature ament. One of the twigs is staminate. The staminate type is from a group of only staminate trees in a "low hammock at Lake Harris, near Tavares, Lake Co., Murrill, Dec. 15, 1940 (not Dec. 5 as printed), and Feb. 5, 1941. It consists of 6 fragments, including 4 twigs 7 to 21 cm. long and 2 detached full-grown leaves, obviously from still other twigs.

Redescription of *S. floridana* Chapman

The following amplified description is drawn from all authentic material. The specimens, previously mentioned, included two isotypes of *S. floridana* (and therefore of *S. Chapmanii*), one from the N. Y. Botanical Garden and one from the Gray Herbarium. There also were specimens of Harper's 1381 and 3634 from five herbariums. Finally, there were the pistillate and staminate types of *S. astatulana* from the Arnold Arboretum of Harvard University and fragments of their isotypes from the collector, Dr. Merrill, of the University of Florida. The type specimen cannot be located at the Missouri Botanical Garden.

Shrub or small tree, 2-4 m. tall; branchlets brittle (Harper), the older yellowish-brown or grayish-brown and sparsely pubescent or glabrous, the younger dark brown to blackish (as dried) and more or less pubescent; bud scales 2-5 mm. long, colored and clothed as the branchlets; stipules, on vigorous shoots, 5-10 mm. long, semi-lunate, glandular-serrulate. Leaves lanceolate, broadly lanceolate, or ovate-lanceolate, mostly 5-12 cm. long and 2-4 cm. wide, on puberulent or pubescent petioles 0.7-1.5 cm. long (not 4 cm. as indicated in text-figure of *S. astatulana*); the lowest leaves on a given branchlet ovate, obtuse, 1.5-3 cm. long; the next higher or median leaves oval or elliptic-oval or somewhat obovate, obtuse to acute, 5-7 cm. long by 2.5-3 cm. wide; the remainder or normal leaves lanceolate to broadly lanceolate, acuminate, and 5-12 cm. long by 2.5-4 cm. wide or, on vigorous shoots (Harper 1381), broadly lanceolate and acuminate, 12-16 cm. long and 4-5 cm. wide, or the largest broadly elliptical and acute, 17-18 cm. long and 6 cm. wide, on puberulent petioles up to 2.5 or 3 cm. long; all leaves rounded to truncate to somewhat cordate at base, glandular-crenate-serrulate on the margins (the

serrulations averaging 3.5 to 7 per cm. on smaller and 2.5-4 per cm. on larger leaves), sometimes with small lobes near the base of the blade (as in *S. pseudomonticola* Ball) or with solitary glands or isolated pieces of glandular foliaceous tissue (remnants of once basal lobes) 0.5-1.5 mm. long, on the sides of the petiole 3-7 mm. below the blade and in its plane; usually densely pubescent while unfolding, becoming progressively glabrescent to glabrate with age; the yellowish midribs prominent beneath and usually remaining finely pubescent above, especially toward the base; glaucous beneath, becoming dark green above in age, the greenish-yellow secondaries and tertiaries forming a coarse raised network on both surfaces as in *S. discolor* but never forming the fine flat mosaic of vein islets so characteristic of *S. longipes*, *S. amygdaloides*, *S. nigra*, and related species.

Aments coetaneous, leafy-pedunculate, 3.5-6 cm. long, 1.5 cm. wide in flower, the pistillate 2-2.5 cm. wide in fruit; peduncles 0.5-1 cm. long, pubescent, bearing 1-3 small leaves 1-3 cm. long; flower scales oblong-obovate, about 2 mm. long, yellowish to yellowish-brown, rounded or sometimes truncate at apex, glabrate outside except on margin and base, densely villous inside; stamens 3-4 or 6 (sometimes only 2), filaments 5-7 mm. long, sparsely pilose at base; capsules ovate-lanceolate, 5-8 mm. long, glabrous, brown at maturity, style 0.1-0.2 mm. long, bifid, stigmas very short, pedicel 2-4 mm. long, sparsely pilose, becoming glabrate; gland 1, ventral, 0.6-1 mm. long, stout, cylindrical.

To Summarize

Salix floridana Chapman, Fl. So.U.S. 430. 1860.

S. Chapmanii Small, Man. SE. Fl. 414. 1933.

S. astatulana Murrill & Palmer, in Jour. Arnold Arb. 22:580. 1941.

From *S. longipes*, its nearest southeastern relative, *S. floridana* differs chiefly in its lanceolate to ovate-lanceolate or broadly elliptical leaves with coarse venation, the leaves of *S. longipes* being linear-lanceolate to narrowly lanceolate and with a very fine mosaic of vein islets. The capsules of *S. floridana* also are larger, the stamens fewer, and the flower scales more glabrate.

It is not certain that *S. floridana* is most nearly akin to *S. longipes* and other members of the Section Bonplandianae. It probably belongs to the Section Triandrae, represented by *S. triandra* L. of Eurasia and by other species. Schneider assigned our *S. amygdaloides* Andersson, of the northern United States and southern Canada, to the Triandrae but it has the same venation (mosaic of small vein islets) as *S. longipes* and *S. nigra*.

In any case, *Salix floridana* is a species apparently on the verge of extinction. In 80 years, it has become known from only 5 points in Florida and Georgia. Let a line drawn from Jackson Co., the type locality in north-western Florida, to Pulaski Co., some 160 miles to the northeast, just south of the center of Georgia and where Harper collected his No. 1381, be taken as the base of an approximately isosceles triangle. Det Lake Co. in central Florida, some 260 miles to the southeast and the type locality for *S. astatulana*, be taken as the apex. The base line will pass through Early Co., Georgia, the second Harper locality and close to Jackson Co., Florida. The right leg will pass through Levy Co., Florida, the second Murrill locality. Within this relatively small area, *Salix floridana* seems to be waging its grim fight for life, with man's encroachments probably spelling defeat.

February 6, 1942

Dr. Hugh N. Raup,
Arnold Arboretum,
Jamaica Plain, Mass.

Dear Dr. Raup:

I now have completed my study of the material on which *S. floridana* Chapman, *S. Chapmanii* Small, and *S. astatulana* Murrill and Palmer were based. The inescapable conclusion is that all three are one and the same species with *S. floridana* antedating the other names by 73 and 81 years respectively.

What induced Schneider to consider *S. floridana* synonymous with *S. longipes* I cannot understand. He did it at the very beginning of his study before he had acquired any real knowledge of American willows. What caused Small to erect his *S. Chapmanii* on the type of *S. floridana* is a still greater mystery because if *S. floridana* was the same as *S. longipes*, the type of *S. floridana* certainly could not become the type of his new species. Why Murrill and Palmer completely ignored both *S. floridana* and *S. Chapmanii*, the descriptions of which exactly match their nature material, is a still further mystery, especially as an excellent isotype of *S. floridana*, an excellent photograph of another isotype, and the two Georgia collections of Harper, were all available in the Harvard Botanical collections. At any rate, it is a pleasure to restore Chapman's name and again to honor the State from which the type collection and the later collections have come.

I have discussed the historical aspects of this problem and completely redescribed *S. floridana* from the isotypes, the two Harper collections, and the pistillate and staminate types of *S. astatulana*. The resulting manuscript I would like very much to have published in the *Journal of the Arnold Arboretum* if this can be arranged. For this purpose I am enclosing the ribbon copy and will be glad if you can transmit it for publication. If I need to write to anyone else, please let me know.

Greatly appreciating your help in this and other matters, I am

Cordially yours,

Lawson R. Ball,
Executive Secretary

February 7, 1942

Dr. Hugh W. Raup,
Arnold Arboretum,
Jamaica Plain, Mass.

Dear Dr. Raup:

Since writing you yesterday, I have been thinking more about the excellent isotype of *S. floridana* Chapman which the Gray Herbarium of Harvard University possesses. The Missouri Botanical Garden is unable to locate the type specimen and it may be permanently lost. I do not know how many isotypes exist, but the only ones I have seen are those in the Gray Herbarium and the Torrey Herbarium of Columbia University. The Gray Herbarium has a photograph of this last. I have two suggestions.

I think it would be an excellent thing if the Gray Herbarium would have this isotype photographed natural size and prints distributed to some of the leading herbariums. The original label on this specimen is the only indication I ever have seen of the type locality, namely, Marianna, Jackson County, Florida. Chapman merely said west Florida and the isotype in New York has no locality on its label.

Secondly, I think it would be very helpful to science if a photograph of the Gray Herbarium isotype could be printed with this paper. There hardly can be a photograph of the types of *S. astatulana* because they are so extremely fragmentary in character that they give no idea of the appearance of the plant in nature. If a photographic illustration can be included with my paper, I will be glad of course to bear my fair share of the expense.

Cordially yours,

Carleton R. Ball,
Executive Secretary

THE ARNOLD ARBORETUM
HARVARD UNIVERSITY
JAMAICA PLAIN, MASS., U.S.A.

February 12, 1942

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

Dear Dr. Ball:

I think your treatment of Salix floridana and all its vicissitudes is excellent. I do not know how S. astatulana got as far as it did, as I knew nothing of it until I saw it in the Journal.

I have discussed the matter of publication with Dr. Merrill, and with Dr. Smith, who edits the Journal. They agree that we should take the paper, but the question of space is a rather serious one. Our immediate staff actually overfills the Journal most of the time, and everything has to be reduced as much as possible in order to get it in. We are wondering, therefore, if you would be willing to reduce the size of the paper rather drastically, say to approximately half its present size. In going over it, it seems to me that this could be done without losing any essentials, but you will, of course, have to be the judge. Another problem is the time element. Our next issue is filled to overflowing, and the July number seems to be likewise full or nearly so. Consequently, it would be some time before we could get your paper in. We will be glad to have the plate made of the isotype of S. floridana from the Gray Herbarium, with no expense to you.

Please let me know how you feel about this proposition. If you wish, I can send the manuscript back, but presumably you have a carbon that you can use in case you want to revise it.

I have not had time, since I got your comments about it, to re-examine my proposed new Mexican species. We do not have good material here of S. jaliscana, but judging by the descriptions, the plant seems to be rather distinct from it. However, I shall spend some more time on the question before doing anything further toward publication. Best regards.

Sincerely yours,

Hugh M. Raup

Hugh M. Raup

HMR:T

P.S. I should have noted that the Journal supplies
50 reprints free -
H.M.R.

February 17, 1942

Dr. Hugh M. Raup,
The Arnold Arboretum,
Harvard University,
Jamaica Plain, Mass.

Dear Dr. Raup:

In further direct reference to my revised paper, I am enclosing the ribbon copy of pages 1 to 4 and 7.

From the copy you have, please take pages 7 and 8, renumber them as 5 and 6, and insert them in the pages I send herewith.

From old page 7 (new page 5) please strike out the first paragraph entirely as it occurs on new page 4.

While there are 7 pages in this new draft, 3 of them are not full pages and the total is about 5½ pages. I trust that this is satisfactory, but if not please let me know.

Cordially yours,

Carleton R. Ball,
Executive Secretary

Please return the other pages of old mss

February 17, 1942.

Dr. Hugh M. Raup,
The Arnold Arboretum,
Harvard University,
Jamaica Plain, Mass.

Dear Dr. Raup:

Your letter of February 12 is received and I thank you and Dr. Merrill for your consideration of the proposed paper on "*Salix floridana* Chapman: A Valid Species." I agree with you that it can be shortened without particular loss. The present length was caused partly by each of the four sections having been written independently as the material permitted conclusions, and partly by the fact that I was a little bit peeved by what the various authors had done apparently without any reference to Chapman's description and isotypes or Harper's excellent foliage specimens correctly labeled and widely distributed. I myself had overlooked the publication of *Salix Chapmanii* Small largely because I was in California then and was working actively to get as complete a knowledge as possible of western species and varieties, including those of Alaska.

I have reduced the manuscript to a point where, I trust that it will prove acceptable. As to possible date of publication, all journals are crowded and we have to take our turn.

I greatly appreciate the willingness of the Journal to make a plate of the isotype of *S. floridana* from the Gray Herbarium without expense to me. This is very fine.

I note that 50 reprints will be supplied without charge. I shall wish to purchase an additional quantity and assume that opportunity will be given when galley proof is submitted.

With reference to your proposed Mexican species, I have some specimens of *S. jaliscana* Jones, including those of Mrs. Mexia from Guerrero. There are some also in the National Herbarium, including two of the collections by Arsenes. I will be very glad to send my material if you wish it, as will the National Herbarium. Neither of us has an isotype of *S. jaliscana* but the type specimen I suppose is with the Jones herbarium at Pomona College, Pomona, California.

Sincerely yours,

Corliss M. Ball,
Executive Secretary