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5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
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Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
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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.

This is a revision, with change of title, of manuscript - no. 206.
Salix petiolaris, as of Fernald: a tragedy of errors, which
was refused by the Jour. Arn. Arb.

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SALIX PETIOLARIS J. E. SMITH: AMERICAN, NOT BRITISH.

Carleton R. Ball

At the very end of his review of "Difficulties in North American Salix", Dr. M. L. Fernald (8:46-48) ^{P.} discusses Salix petiolaris and makes some amazing statements.

* Numbers in parenthesis refer to "Literature Cited", at end of paper.

On page 47, he says : "It seems extraordinary that the identity of our low shrub, Salix gracilis, should, for more than a century and a quarter, have been confused by all students of Salix with the British tree, S. petiolaris J.E. Smith, Trans. Linn. Soc. vi. 122 (1802), Engl. Bot. xvi. t. 1147 (1803), and Fl. Britt. iii. 1048 (1804), etc." On page 48, he concludes: "The latter name [S. petiolaris] seems to have been wholly misapplied to our material".

It would have been extraordinary if it had been true. In these statements, however, Fernald offers no definite evidence, but merely a dogmatic conclusion. Therein he tells all American botanists ~~beginning~~ beginning with Pursh (17) in 1814, and all British botanists later than Hooker (12) in 1820, Forbes (10) in 1829, and Loudon (15) in 1838, that they did not know what they were talking about when they denied that Salix petiolaris ever was a native British willow. At the outset of this discussion, let it be stated emphatically that S. petiolaris J.E. Smith was wholly an American plant when published in England in 1802, and still is after 145 years. Now for the evidence, point by point.

Point 1. The Assertion that S. petiolaris is "British".

Salix petiolaris was described by Sir James Edward Smith (20:122-123) in 1802.

His description and notes follow:

"Salix petiolaris. Dark long-leaved willow.

"S. foliis lanceolatis serratis glabris subtus glaucis, germinibus pedicellatis ovatis sericeis, stigmatibus sessilibus bilobis.

"In salicetis et palustribus. D. Dickson. Fl. April.

"This species has not been found wild in Norfolk, but was sent to Mr. Crowe by Mr. Dickson, along with the last [S. laurina], as of British growth. It has most affinity with the two preceding species [S. laurina and S. nigricans] but has longer

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and more slender twigs. The leaves are 4 or 5 inches long, about an inch broad, lanceolate, pointed, serrated, somewhat revolute, generally a little unequal at the base; bright green, smooth and shining above; glaucous beneath, and sometimes a little hairy. In drying they turn of a purplish black. The footstalks are peculiarly long, linear, and slender, silky on the upper side. Stipules small, crescent-shaped, toothed, smooth. The female catkins, the only sex I have seen, are scarcely an inch long, with black, hairy, often obovate, often notched, scales. Germens on long footstalks, small, ovate, silky. Stigmas perfectly sessile, ovate, obtuse, divided into two lobes."

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Smith described it again, ~~with~~ with a colored plate, in 1803. The branches now are included, as "slender, flexible, round, smooth, more or less purplish or brown" (21, species & plate 1147). As to source, Smith says: "For this new species of Salix we are obliged to Mr. Dickson, who found it in some part of Great Britain, the exact place is not remembered, and sent it in a growing state to Mr. Crowe. We know only the female, which is a small spreading tree." It was described again, in Latin (82, 1048-49) in 1804.

In his final publication (23, 181-182), in 1828, Smith says: "In osier grounds and swamps. Sent from Scotland by the late Mr. Dickson. In Fossil marsh, on the north side of the canal, Mr. David Don. Marshes in Angushire, Mr. George Don. Hooker." He then refers to Pursh's doubt of British origin but does not see why it should not be wild in Europe as well as in North America.

Hooker (12, 419), in 1820, refers to the Scottish localities and states: "I have never seen ~~native specimens~~," which he repeats essentially in later editions. In Ed. 6 (p. 386. 1850) he says: "Not uncommon in North America and certainly not a European species, although perhaps as wild in this country as most of our other tree willows." Forbes (10, 45) discusses it in 1829. Loudon (15, 1533-34), in 1838, reviews previous literature and quotes extensively, but finds no further evidence of British origin.

S. petiolaris has never been included in British floras since these early authors. When revising and monographing the British willows, White (25) in 1890 and Linton (14) in 1913 did not think it necessary to mention it even as an excluded species.

In America, Pursh (17:616), in 1814, follows Smith's description but says: "It has been by mistake adopted as a native of Great Britain." He described also S. fuscata Ph. (p. 612) from New York and Pennsylvania, which generally has been considered synonymous with S. petiolaris but which, by its obovate-lanceolate leaves, obtuse scales, short-pedicelled capsules, and black-tomentose 1-year twigs, probably is S. humilis Marsh., or possibly S. discolor var. latifolia Andersson.

Hooker (13:148), in 1839, includes S. petiolaris, with leaves serrate, from "Lake Winnipeg. Dr. Richardson." Also "S. rosmarinifolia L.", with leaves narrow and mostly entire, from "Saskatchewan. Dr. Richardson." This latter is not Lime's species but the later-described S. gracilis Andersson. Barratt (7:4), in 1840, says: "This is undoubtedly a native Willow, since both sexes are found here plentifully. The staminate plant was unknown in Great Britain till transmitted by me, in the living state."

Torrey (24:207), in 1843, says: "This species was many years ago adopted by mistake as a native of Scotland, and has ever since obtained a place in British floras, but there can be little doubt that the plant described by Sir J.E. Smith was of North American origin, as Pursh and Lindl^y have both asserted." All later publications, from Gray's Manual (11:426) in 1848 onward, have recognized S. petiolaris as American species, until Fernald's statement in 1946.

Fernald (8:48) says: "Although Schneider talked all around the subject, . . . , in his discussion there is no indication that he actually compared our species with true S. petiolaris." As "our species" is the true S. petiolaris, this criticism falls. But Schneider (19:16-19, not '16-24' as Fernald says) reviews more literature than is discussed herein and quotes the opinions of numerous British and American botanists. He then observes: "How this plant came to England has never been exactly explained."

That S. petiolaris, and many other American plants, did reach Great Britain in early days is not surprising. Their tradesmen were on the lookout for material to use in their hand industries, of which basketry was an important member. Their private botanic gardens were constantly obtaining foreign material. Smith himself says (20:) that "Mr. Crowe . . . for many years . . . has . . . collected willows, both indigenous and exotic, from all quarters . . ." The occurrence of this American willow as an escape in waste places in Scotland undoubtedly resulted from throwing the twig clippings from basket making into such spots, as happened in America.

Point 2. Assertion that *S. petiolaris* is a "tree"; *S. gracilis* a "low shrub".

Fernald says (8:47) "the British tree, *S. petiolaris* J.E. Smith", as contrasted with "our low shrub, *S. gracilis*." Smith originally did not give the height but in 1803 (21) he says: "We only know the female, which is a small, spreading tree." Forbes (10:45), in 1829, called it a bushy tree, with slender, spreading . . . branches".

All of the British descriptions were drawn from cultivated plants in private botanic gardens. In such gardens, in Britain, the soil was enriched and the plants usually well spaced, with little competition. These conditions stimulate growth to unusually large size. Further, all of the British plants were from cuttings, which insures a single stem and therefore a tree-like habit of growth. As all of the nutrients go to develop a single stem, rather than a clump of stems, this insures increased height. Finally, all of the British plants were female and, being unfertilized, used no nutrient energy in ripening an annual seed crop. No actual heights are given by British authors.

American descriptions, on the other hand, were based on wild plants growing in natural conditions of soil, exposure, and competition. Most of the earlier observations also were made in the extreme southern portion of the range of *S. petiolaris*, where climatic conditions are least favorable to its development. In 1814, Pursh (17:616) follows Smith's description. In 1840, Barratt (7:4) does not record the height. In 1843, Torrey (24:207) says: "stems 4-10 ft. high". In 1865, Wood (26:653) says: "Shrub or small tree 4-15 f. high", but does not give the source of his information.

Salix petiolaris shows its lowest average height in the southern portion of its range, from New England to Nebraska. Northward, its height steadily increases. In central Saskatchewan and central Alberta, heights of 8, 10, and 12 feet are recorded commonly. The writer found plants 10-12 feet high (No. 2358) at Clyde, north of Edmonton. Even in extreme northern Alberta (lat. 59° 30'), Raup 2125 was from a "Shrub about 10 ft. high." On request, Dr. George H. Turner is measuring heights and studying habit in the Edmonton area. Already, he has found many plants 12-14 feet high, some 15 feet, and one each 17.5, 19.5, and 22 feet in height. His full paper will appear in a Canadian journal.

Several of the writer's plants in the Clyde area were few-stemmed and tree-like in habit, with more or less spreading branches. Dr. Turner already has found several single-stemmed plants in open aspen woods. Some are young and only 4-8 feet high. Others are 11 feet high. All are tree-like in habit, with somewhat spreading branches. He also finds few-stemmed plants 12-14 feet high and tree-like in habit. These taller plants are not "low shrubs", and where they have but one or few stems they are "small trees." Fernald himself says (8:46) that "S. gracilis is a slender shrub . . . 1-3 m. high." Now, 3 m. is 10 feet, which is not exactly low for a shrub. The contention for a specific difference in height and habit appears to be unproved.

Fernald further says (8:46): "Typical Salix gracilis is smaller and generally more northern" [than his var. textoris, which is true S. petiolaris]. The 12-22-foot northern plants therefore should be smaller than those farther south. Exactly the reverse is shown to be true.

Point 3. Assertion of Spreading Branches on "British", Erect on American Plant. □

Fernald states (8:47) that S. gracilis of America "is a slender shrub with erect, green to olive-brown tomentous and flexible branches". He further states, quoting Forbes (10:45) with bracketed comments of his own, that the alleged "British" S. petiolaris is "A bushy tree, with slender, spreading [not strongly ascending] purplish or dark-brown [not green or olivaceous] branches." The tree-like habit of British-grown plants has been explained above, under Point 2. They were single-stemmed because grown from cuttings, and they were "bushy" because grown widely-spaced in botanic gardens.

With little competition from neighboring plants, or among the few stems of one plant, the branches tend to grow outward. With severe competition from adjacent plants, or among crowded stems of one plant, they necessarily must grow upward. The low, clumpy, many-stemmed plants in northern United States and northward have erect or ascending stems and branches. The fairly common taller plants of more northern Canada, when they have few stems, have more or less spreading branches. Both types of branching, and all ~~the~~ degrees of intermediacy, may be seen in some Canadian localities. These differences are environmental and not genetic effects.

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12 4 Point 4. Statement that S. petiolaris has Purplish; S. gracilis Greenish Twigs. ☒

← This statement is quoted in Point 3, above. The only answer is that both so-called species have twigs with both ranges of color. Some 275 sheets of S. petiolaris in the writer's herbarium, collected from New England westward to Nebraska and Colorado and northward far into Canada, have been examined. Practically all of them show something of the two color ranges but the dominant effect is brown to dark brown rather than green to light brown.

In general, the 3- and 2-year twigs are brown to blackish, especially in summer and autumn. ^{One} 1-year and seasonal twigs ~~are~~ often are green to olive-green to yellow, especially early in the season. These differences are noted on the same plant. In general, there is a progressive deepening of the color on all twigs as the season ^{advances} ~~progresses~~. All ~~of~~ these facts were especially evident where collections had been made from the same plant at intervals during the season. This has been done by A.J. Breitung, the late A.H. Brinkman, W.C. ~~Mc~~ McCalla, and G.H. Turner in Canada, and F.W. Rapp in Michigan. The average twig color tends to be lighter in the drier Great Plains area than in the more humid eastern areas. Specimens from Nebraska and Colorado, and many from Alberta, show distinctly reddish twigs, which McCalla says are beautifully crimson in spring.

Bebb No. 24, grown by him from cuttings received from Kew Gardens, England, also shows twigs ranging from greenish to dark brown. Evidently there is no specific difference in twig color between S. petiolaris and S. gracilis, whatever their relationship.

Point 5. Claim that Only the "British" Plant has Leaves 4-5 Inches Long. ☒

(20, 22)
The original description of S. petiolaris says: "The leaves are 4 or 5 inches long and about an inch broad." In 1803, Smith said (21, No. 1147): "Leaves 4 or 5 inches long and almost an inch broad, when full grown." With this second description is plate 1147. It contains, first, a twig with two pistillate aments and leaves 4-6 cm. long and $\frac{1}{2}$ to 1 cm. wide. It also carries what obviously is a short section of a vigorous autumnal shoot or root sprout, bearing two leaves 4-4.5 inches long and 0.8 inch wide, with long petioles.

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Here, then, we have the origin of "leaves 4 or 5 inches long and almost an inch ~~broad~~ broad." As pointed out by the writer (4, 5), such shoots normally have leaves 1.5 to 2 or even 3 times as large as those on twigs which have borne fruits. Because taxonomic descriptions seldom cover such vigorous shoots, and because their deviation from the taxonomic norm has not been generally known, the meaning of this portion of Smith's description and plate has not been generally recognized.

American plants produce the same large leaves. In the writer's herbarium, a specimen from Quebec has leaves up to 4.8 by 0.6 ~~in~~ inches; a New York specimen up to 4.5-5 by 0.75 inches; two Michigan specimens have leaves up to 4 by 0.75 and 3.5 by 0.85 inches, respectively; and two Iowa specimens bear leaves to 3.5 by 1 and 4 by 1.1 inches, respectively. In late August, 1947, Dr. Turner collected sprouts from plants near Fort Saskatchewan, Alta. Five had blades to 5 inches long, one to 5.5 inches, and one (3 sprouts) had blades to 6 inches in length. Later collections might show longer blades.

But Smith, in 1803, threw further light on his description and plate. He writes (21:No. 1147): "The very young leaves are tinged with an elegant ferrugineous hue, especially in the radical shoots which spring up when a tree is cut down. Such shoots in some species differ greatly from the general appearance of the plant, and require in this genus to be particularly attended to." Here is an early recognition of the plant variation which the writer (4, 5) has been emphasizing. But, more important still, Smith could not have known about leaf hue on "radical shoots" of his S. petiolaris unless he actually had seen the growth from a cut tree. The only plants then known to him were those in the Crowe Garden, on which his description was based. This tells us almost certainly that the vigorous shoot in plate 1147, with leaves 4 or 5 inches long, was a root sprout, from which such leaf development would be normal.

4 Point 6. Claim of Different Scale Color in "British" and American Plants. □

Smith's original description (20:123) says: "black, hairy, often obovate, often notched, scales." A year later, he wrote (21:No. 1147): "Scales small, obtuse, often notched, black and hairy." Forbes, who also described only the plants growing in a botanic garden, wrote (10:45): "Scales rounded, notched." Fernald (8:47) says that the scales in American S. gracilis are "elongate, entire, and yellowish." What are the facts?

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Flower scales, in any willow, are nearly as varying as the leaves, already discussed^d by the writer (4, 5, 6). As the ament emerges from the bud, the scales in all species are comparatively short and broad, and usually obtuse, no matter what their normal fine^d shape. As the ament develops, the scales change in size, shape, and color. Linton (14:1-2) ^{sp.} made observations on such changes. These changes progress faster and farther in the basal portion of the ament than in the apical, in lax aments than in dense ones, and in fertilized^z aments than in unfertilized. Infertile pistillate aments usually do not become as long or as lax as normal, and their various floral organs do not develop ^{so} as far. The scales, and the capsules with their pedicels, styles, and stigmas, usually remain shorter and therefore relatively broader than normal.

Male S. petiolaris was not known in Great Britain until sent by Barratt ^{sp.} (74) and perhaps others some 25 years after the species was described in 1802. The original and later descriptions, therefore, were based on infertile pistillate aments, with consequent error in the knowledge of the actual and relative ~~size~~ size and shape of floral organs. This accounts for some of the differences recorded. In Bebb ~~1824~~ 24, grown in Illinois from English cuttings, the not fully developed scales are broad, and blackish at tip.

A study of numerous American specimens of S. petiolaris (and S. gracilis) shows that the scales vary from obovate, as the aments open, to oblanceolate at maturity. The apex varies from truncate to slightly erose, or rarely roundish. The color varies from light brown to brown or dark brown, as the scale ages, and is darkest at the tip. If quickly or poorly dried, they are blackish. They blacken more readily when dried while very young and in the "obovate" stage. Specimens were noted in which the young scales, poorly dried, were "obovate and blackish". They never are "yellowish", as described by Fernald, in the sense that those of S. lucida, S. nigra, S. interior, and their relatives are yellow or yellowish.

Point 7. Listing of Varieties of S. petiolaris Synonymous with S. gracilis. ☒

More problems arise when we consider the relationship of S. gracilis Andersson to the American S. petiolaris Smith. Fernald, refusing to recognize the latter, described ^{sp.} (8:46) his S. gracilis var. textoris var. nov. as having ~~capsulis~~ ^{em.} "capsulis ad 2 mm. longis; foliis maturis glabris 4-10 cm. longis ad 2 cm. latis evidenter serrato-dentatis." It represents the larger plant here discussed as the tree S. petiolaris.

He then states (8:47) that S. gracilis Andersson is "characterized by capsules only 5-7 mm. long and leaves entire or only obscurely denticulate, the mature ones only 2.5-7 cm. long and 3-11 mm. ~~wide~~ broad." It is not the purpose here to decide whether a variety of S. petiolaris with allegedly lower stature, smaller ^{ru}subentire leaves, and smaller capsules shall be recognized. The present object is to point out the errors ^{made}by Andersson, Schneider, and Fernald in discussing and creating certain names and combinations.

Andersson, in his compilation of the willows of North America (1), described S. petiolaris Smith on page 126 and compared it only with S. sericea Marsh., which he erroneously called "S. grisea Marsh." On page 127, five species later, he described his new species, S. gracilis, citing the "S. rosmarinifolia L." of Hooker (13:148) as a synonym. He expresses much doubt as to the actual relationships of his S. gracilis but did not compare it with S. petiolaris, in spite of calling Hooker's plant a synonym. S. gracilis has been regarded by most later authors either as a synonym of S. petiolaris or as a variety of it, with smaller, narrower, mostly entire leaves.

To his new species, S. gracilis, Andersson attached ^{dx}a new variety, rosmarinoides Andersson. The only significant character assigned to it, in the very brief and jumbled Latin description, is "foliis apicem versus serrulatis", whereas of his S. gracilis he says "foliis . . . integerrimis." In other words, his var. rosmarinoides was the true S. petiolaris, which he does not ^{even} mention in discussing the relationships of his S. gracilis. Andersson seems to have realized his error presently, for var. rosmarinoides is never mentioned again, in his two monographs (2, 3) of 1867 and 1868. In 1867, ^{more-}over, he reduced his S. gracilis to a subspecies of S. petiolaris. In 1868, he reduced it (3:235) to a variety of S. petiolaris, thus ending his doubts as to their relationships. All of this would be unimportant but for the later erroneous actions of both Schneider and Fernald.

Schneider, in 1920, published (19:19) his "S. petiolaris var. rosmarinoides comb. nov.", which he said was based on "S. petiolaris * rosmarinoides Andersson", of 1858. Here Schneider makes a first error. Andersson made no such combination in 1858, nor in any other year. As noted above, his combination in 1858 was "S. gracilis * rosmarinoides," a variety which he immediately abandoned and never mentioned again. Schneider's second error was in assuming that the asterisk in Andersson's combination denoted a subspecies

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instead of a variety. It did not, as placed in that publication, and Gray correctly called it "var. rosmarinoides" in the simultaneous American edition (1, Am. ed. p. 67). Andersson's publications are full of the inconsistent use of ^{minerals, Greek letters,} ~~asterisks, etc.~~ and asterisks to denote varieties. If Andersson's variety really had been one of S. petiolaris, therefore, Schneider's combination would not have been ^{new} "new", but a repetition. As Andersson made no such combination, Schneider's combination has no base.

Schneider cites S. gracilis Anders. of 1858, S. petiolaris subsp. gracilis Andersson of 1867, and S. petiolaris var. gracilis Anders. of 1868 as synonyms of his (Schneider's) "var. rosmarinoides." Obviously they are not, because they represent the gracilis concept, whereas his "var. rosmarinoides" represents the petiolaris concept, as Andersson himself had recognized after 1858. In other words, Schneider was making S. petiolaris (S. gracilis var. rosmarinoides Anders.) a variety of itself.

Fernald (8:46-47), in 1946, says of S. gracilis: "It is S. petiolaris vars. rosmarinoides (Anders.) Schneider and ~~and~~ angustifolia Anders. . . ." Here he follows Schneider in the errors just discussed. But Fernald, refusing to recognize S. petiolaris as an American plant, had just described (8:46) his "S. gracilis Anders. var. textoris var. nov." Actually, his variety textoris represents the American form with larger serrate leaves, which is the true S. petiolaris Smith. But because Andersson (1:126-127), after describing S. petiolaris, redescribed the same form as S. gracilis var. rosmarinoides Andersson [var. nov.], Fernald's S. gracilis Anders. var. textoris var. nov. also is a synonym of Andersson's S. gracilis var. rosmarinoides.

Fernald was in error also in omitting S. petiolaris var. gracilis Andersson of 1868 from his above-named list of varieties of S. petiolaris which are synonyms of S. gracilis. Here he probably was misled by Schneider's erroneous reference.

Cfsc 11/2 Washington, D.C.

Flush (allow for 2 fig)
and 4 cm hanging indentation

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SALIX PETIOLARIS J. E. SMITH: AMERICAN, NOT BRITISH

CARLETON R. BALL

At the very end of his review of "Difficulties in North American *Salix*," Dr. M. L. Fernald (8, p. 46-48) discusses *Salix petiolaris* and makes some amazing statements. On page 47, he says: "It seems extraordinary that the identity of our low shrub, *Salix gracilis*, should, for more than a century and a quarter, have been confused by all students of *Salix* with the British tree, *S. petiolaris* J. E. Smith, Trans. Linn. Soc. vi. 122 (1802), Engl. Bot. xvi. t. 1147 (1803), and Fl. Britt. iii. 1048 (1804), etc." On page 48, he concludes: "The latter name [*S. petiolaris*] seems to have been wholly misapplied to our material."

It would have been extraordinary if it had been true. In these statements, however, Fernald offers no definite evidence, but merely a dogmatic conclusion. Therein he tells all American botanists beginning with Pursh (17) in 1814, and all British botanists later than Hooker (12) in 1820, Forbes (10) in 1829, and London (15) in 1838, that they did not know what they were talking about when they denied that *Salix petiolaris* ever was a native British willow. At the outset of this discussion let it be stated emphatically that *S. petiolaris* J. E. Smith was wholly an American plant when published in England in 1802 and still is after 145 years. Now for the evidence, point by point.

Point 1. The Assertion that *S. petiolaris* is "British." *Salix petiolaris* was described by Sir James Edward Smith (20, p. 122-123) in 1802. His description and notes follow:

"*Salix petiolaris*. Dark long-leaved willow.
"S. foliis lanceolatis serratis glabris subtus glaucis, germinibus pedicellatis ovatis sericeis, stigmatibus sessilibus bilobis.

"In salicetis et palustribus. D. Dickson. Fl. April.
"This species has not been found wild in Norfolk, but was sent to Mr. Crowe by Mr. Dickson, along with the last [*S. laurina*], as of British growth. It has most affinity with the two preceding species [*S. laurina* and *S. nigricans*] but has longer and more slender twigs. The leaves are 4 or 5 inches long, about an inch broad, lanceolate, pointed, serrated, somewhat revolute, generally a little unequal at the base; bright green, smooth and shining above; glaucous beneath, and sometimes a little hairy. In drying they turn of a purplish black. The footstalks are peculiarly long, linear, and slender, silky on the upper side. Stipules small, crescent-shaped, toothed, smooth. The female catkins, the only sex I have seen, are scarcely an inch long, with black, hairy, often obovate, often notched, scales. Germens on long footstalks, small, ovate, silky. Stigmas perfectly sessile, ovate, obtuse, divided into two lobes."

Smith described it again, with a colored plate, in 1803. The branches now are included, as "slender, flexible, round, smooth, more or less purplish or brown" (21, species & plate 1147). As to source, Smith says: "For this new species of *Salix* we are obliged to Mr. Dickson, who found it in some part of Great Britain, the exact place is not remembered, and sent it in a growing state to Mr. Crowe. We know only the female, which is a small spreading tree." It was described again, in Latin (22, p. 1048-49) in 1804.

In his final publication (23, p. 181-182), in 1828, Smith says: "In osier grounds and swamps. Sent from Scotland by the late Mr. Dickson. In Possil marsh, on the north side of the canal, Mr. David Don. Marshes in Angus-shire, Mr. George Don. Hooker." He then refers to Pursh's doubt of British origin but does not see why it should not be wild in Europe as well as in North America.

Hooker (12, p. 419), in 1820, refers to the Scottish localities and states: "I have never seen native specimens," which he repeats essentially in later

THE NEW YORK BOTANICAL GARDEN

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July 15, 1948

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

Dear Dr. Ball:

Your package of reprints arrived in due time and has been distributed in accordance with your directions. We are greatly interested in the cool, calm, and decisive way in which you dismembered one of our botanical colleagues.

I am glad to know that you will expect to finish your manuscript for the Illustrated Flora in a short time. The whole work is now 98 per cent complete and we are anxious to proceed with the necessary illustrations as soon as we can.

Very truly yours,

H. A. Gleason

HAG:MJA

H. A. Gleason

The Torrey Botanical Club

OFFICE OF THE EDITOR INCORPORATED

December 2, 1947

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

Dear Doctor Ball:

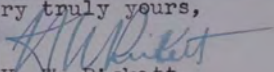
Some time ago Dr. Gleason turned over to me your paper entitled "Salix petiolaris, as of Fernald: A Tragedy of Errors," with the request that I consider it for the Bulletin. I hope you will forgive my delay in taking this up. I have been unusually busy with some things that had to be finished.

I have read the paper with interest and should be glad to have it in the Bulletin. However, before I can definitely accept it, I should like to point out to you that the phrasing of the title and of certain remarks in the text savor a little more of personalities than is fitting in a strictly scientific publication. I know, of course, that what you say is perfectly warranted by the facts; nevertheless in a journal of the standing of the Bulletin we feel it advisable to avoid anything that might be construed as a personal attack. After all, the facts speak for themselves. I should like you to consider, therefore, modifying the title so as to read, for instance, "Salix petiolaris; Origin and Status" or whatever suggests itself in that particular style; further to omit the term "error" as part of the subdivisions.

I think also that you could with advantage shorten the paper somewhat, as you ~~have~~ suggested you might in your letter to Dr. Gleason. Some of the opinions of the earlier authors, it seems to me, need not be quoted in full if the reference is given to their writings. It will be easier for your readers to get your point if you abstract what authors have said rather than quoting them in full. Finally, in listing literature cited, we do not include digests or abstracts of the contents of papers.

I enclose your paper that you may make such modifications as you care to. If you will return it to me after having done so, I should be glad to further its publication. I think we might get it into the March issue of the Bulletin, or the May issue at the latest.

Very truly yours,


H. W. Rickett
Editor

Enc
HWR:s

Dr. H. W. Rickett:

Editor: Torrey Bulletin

New York Botanical Garden,

Bronx Park (Fordham Br. P.O.)

New York N.Y.

3614 Jocelyn St., N.W.,

Washington 15, D.C.

December 12, 1947

Dear Dr. Rickett: Many thanks for your full letter of December 2, acknowledged by card on Dec. 5. I appreciate the interest and frank expression (having been an editor most of my life), and am glad to cooperate.

I return the rewritten manuscript herein. It has been reduced from 15 to 12 pages but I believe that the percentage shortening is not that great.

The title now reads: *Salix Petiolaris* J.E. Smith: American, not "British". This seems factual, enlightening, and not personal.

The subtitles, which began: "Error 1", "Error 2", etc., now begin: Point 1, Point 2, etc. That removes any personal aspersion.

In Point 7, I still refer to errors made by Andersson, Schneider, and Fernald in making combinations and in recording those made by the other. This is common practice in taxonomy, I believe,

I trust that all is satisfactory but if not please let me hear from you.

Cordially yours,

Carleton R. Ball

P.S. I note that the Torrey Bulletin letter-head you use carries no address.

3614 Jocelyn St. N.W., Washington 15, D.C.

Dear Dr. Rickett:

December 5, 1947

Your letter of Dec. 2 and manuscript just received.

In general, I agree that your conclusions are sound.

Will proceed with revision promptly.

Cordially yours,

Carleton R. Ball

The Torrey Botanical Club

OFFICE OF THE EDITOR ~~ROCKEF~~

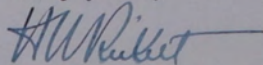
December 15, 1947

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

Dear Doctor Ball:

Your manuscript has just come in. I have not had time yet to look it over carefully, but do not doubt that it is now acceptable for the Bulletin. I appreciate very greatly your readiness to cooperate in revising it. I will do my best to get it out in the March issue.

Very truly yours,



H. W. Rickett
Editor

HWR:s

Dr. H. W. Rickett,
New York Botanical Garden,
Bronx Park (Fordham Br. P.O.),
New York, N. Y.

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

December 29, 1947

Dear Dr. Rickett:

I have received your letter of Dec. 15, acknowledging receipt of manuscript, and that of Dec. 21, noting omission of references to Mos. 9, 16, and 18 in the list of Literature Cited.

I am scandalized by my carelessness in those three omissions. Part of them resulted from the "shortening" process. It will be much safer now to insert references to them, at pertinent points, than to change the numbers of the citation by omitting those three. Two numerical entries and one short sentence will be required. I record the necessary procedures here so that if the ms. came back to you for any reason, the additions could be inserted there. Also, that you could make the corrections in the proof if I should not be here when it appears.

On page 4, in first line of last paragraph, insert "(19)" after the word "portion". This takes care of Rosenzehl & Bitters.

On page 4, last paragraph, after the word "Edmonton" at end of line 5, insert "(16. 1 (3):453)". That takes care of Macdon, who discussed its occurrence in that area.

On page 7, at the end of paragraph 2, add: "Fernald himself once admitted (6,p.137) that the typical American plant has leaves to "12 cm." (5 inches) long." This takes care of Fernald & Wiegand.

If these do not get inserted in the manuscript, I will make those additions when galley proof is read.

Greatly appreciating your courtesies, and with best New Year wishes, I am

Cordially yours,

Carlton R. Ball

THE TORREY BOTANICAL CLUB
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NEW YORK 58, N. Y.

HAROLD W. RICKETT
EDITOR

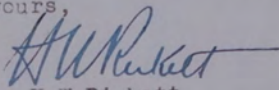
29 January 1948

Dear Doctor Ball:

It just occurred to me, in thinking of your paper on Salix, that it might be courteous to send Dr. Fernald a copy of the proof and invite him to submit a rejoinder, if he cared to. This is commonly done, and we have done it in the Bulletin. It tends to dispel any idea that scientific wranglings involve personal attacks.

Would you have any objection to such a procedure ?

Very truly yours,


H.W. Rickett

r/

Digitized by Hunt Institute for Botanical Documentation

Dear Dr. Rickett:
I have just returned from the mailbox, wherein I placed my card to you concerning the proof I returned yesterday, and your letter of yesterday here at the house.
I will be delighted to have you send proof to Dr. Fernald and invite him to comment. He has the original manuscript, and while it was with the Towns, Arnold Arb. but made no comment to me at that time.
When he accepted for Rhodora my paper on studying willows or making new sections in Salix, he printed it without comment. Although it took him two or three days to read it, he printed it. I am sorry to hear that he is not well. I hope he will be able to read it soon.
Sincerely,
Carlton H. Ball

Dr. H. W. Rickett,
N.Y. Botanical Garden,
Bronx Park, Fordham Br. P.O.,
New York 58, N.Y.

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

April 13, 1948

Dear Dr. Rickett:

Some time ago I noted my paper on *Salix petiolaris* in the March-April issue of the Torrey Bulletin and wish to thank and congratulate you on the exceptionally prompt publication you have achieved.

In my letter of Jan. 30, returning the proofs, I ordered 150 reprints of this paper and trust that they were not overlooked. I know that nowadays they do not come out as promptly as they once did, so send this merely as a precaution.

With appreciation of your good work, I am

Cordially yours,

Carleton R. Ball

Reprints came on Apr. 14
I wrote Rickett a card on Apr. 15

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

Dear Dr. Rickett:

January 30, 1948

Yesterday I returned corrected galley proof, abstract, and order for 150 reprints of my *Salix petiolaris* paper.

Was rushing to a meeting so did not inclose letter but I want you to know that I heartily appreciate the speed and courtesy with which this has been handled.

Printers errors were corrected in ink and my errors (2) in pencil. I'll pay for those.

Cordially yours

Carleton R. Ball

(abstract)

Ball, Carleton R. (Washington, D.C.). / *Salix petiolaris* J.E.Smith, American, not British. Bull. Torrey Bot. Club.

Fernald claims that *S. petiolaris* is a British plant and renames the American plant, thereby opposing the 100-130-year conclusions of British and American botanists. Described in 1802 from an English botanic garden plant, ~~Salix petiolaris~~ and later found as a rare escape in Scotland, it represented a foreign introduction for basketry. He claims also that the "British" plant is a tree with spreading branches, purplish twigs, ~~and~~ 4-5-inch leaves, and obovate notched black scales, while the American plant is a "low shrub" with ascending or erect branches, greenish or yellow twigs, much smaller leaves, and "elongate entire, and yellowish" scales. These differences prove not to hold.

The British plant, height not given, was tree-like because from a one-stem cutting, and spreading because without competition. In Canada, the American plant commonly is 10-15 feet high, and sometimes 19-22.5 feet. Single-stemmed and few-stemmed tree-like plants with spreading branches are numerous. Twig color is governed by age and exposure. Seasonal and 1-year twigs (American) normally are green to yellowish, darkening as the season advances. Older twigs are brown, dark brown, or blackish.

The 4-5-inch British leaves were from a root sprout, usually 2-3 times as large as on normal shoots. Many American specimens have 4-5-inch leaves and numerous sprouts have 5-6-inch leaves. In America, the scales are ~~rounded~~ obovate, rounded, truncate, or notched, and brown to dark brown or black. Nomenclatorial errors regarding *S. petiolaris* and varieties, made by Andersson, Schneider, and Fernald, are pointed out.