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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

(Copied by W. A. Archer)

NEW VARIETIES OF WESTERN WILLOWS

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Increasing collections of West American Salices make possible better interpretations of the variations of expression noted in different species. The present paper adds two varieties to Salix melanopsis Nuttall, that one of the western long-leaf or sandbar willows most closely related to the eastern S. interior Rowlee (S. longifolia Muhl.). Continuing study of the abundant Alaskan collections made by Dr. and Mrs. Setchell and others have revealed significant variations in S. fuscescens And., S. reticulata L. and S. ovalifolia Trautvetter. Descriptions of these as new varieties should make these species more readily comprehended.

Type specimens are indicated and available herbarium specimens are cited. The following initials are used to designate the herbariums in which the collections examined are housed: CAS, California Academy of Sciences; CRB, Carleton R. Ball; PANS, Philadelphia Academy of Natural Sciences; SU, Standord University; UC, University of California; and USN, U. S. National Herbarium. The courtesies shown by the institutions named ~~are~~ appreciated, as is also the assistance received from Dr. Setchell and others.

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Text lacking for:

Salix fuscescens var. *reducta* n. var.

" *ovalifolia* var. *cyclophylla* (Rydberg) n. comb.

SALIX MELANOPSIS variety GRACILIPES Ball, n. var.

This variety is distinguished by the distinctly pedicelled capsules. In the species the capsules are sessile in the upper part of the ament and borne on very short pedicels, usually about 0.3-0.5 mm. long, in the basal portion. The aments of the variety tend also to be laxer and in some cases longer also.

Pistillate aments 2-6 cm. long in flower and 3-9 cm. long in fruit, more or less lax, the longer remotely flowered at the base, solitary or in pairs on leafy peduncles 2-5 cm. long in flowering and 4-8 cm. long when fruiting, and bearing 4-7 foliage leaves. Capsules 4-5 mm. long; ~~maxima~~ pedicels 1-1.5 mm. long in the lower portion of the ament and 0.5-1 mm. long in the upper portion; stigma short, sessile, divided. Staminate aments lax at base, 3-6 or up to 9 cm. long, the longer rather slender.

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Like most varieties, this one sometimes grades more or less insensibly into the species. The means, and especially the extremes, however, are so striking that it seems desirable to designate them as representing a measurable and observable and measurable variation. ^{With} such action, students and collectors are less likely to be puzzled by inconsistencies in specific descriptions and also are led to expect, and therefore to note, other similar variations in the plants they collect. The varietal name, gracilipes, refers to the slender and elongated pedicels of the capsules.

S. melanopsis var. *granulipes*Distribution

This newly recognized variety is known only from Humboldt and Del Norte Counties, California, in the extreme northwestern part of the State. In these counties chiefly it has been found ~~only~~ near the coast, in locations approximately at sea level, composed of where it occupies river bars and banks ~~saturated with~~ sand, gravel, and boulders. It is associated with S. melanopsis and S. parksiana.

Humboldt Co. Along Willow Creek, near its mouth at Trinity River, alt. 600 feet, Joseph P. Tracy 3295 (♂ and ♀), July 4, 1911 (UC); ~~Tracy 10824, 10825, and 10826, May 17, 1932 (GAS, UC); (Tracy 10095), (UC).~~

Del Norte Co. Common low shrub, 1-1.5 m. high, on gravel bars at margin of Smith River, at Roosevelt Highway Bridge, alt. about sea level, Harold E. Parks 0981 ~~ERREXKERE~~ (CAS; CRE, 2 sheets; St; UC, 2 sheets, and many other herbariums; aments long, lax); 0988 (CAS; CRE 3 sheets, St, UC 4 sheets, and many other herbariums; ~~aments~~ aments short, lax), both May 21, 1931. Low shrubs, abundant in gravelly margin of Smith River at Roosevelt Highway Bridge, elev. 15 m., 01008 (♀), 01012 (♀), 01021 (♂ type collection, aments midlength, lax), 01022 (♂, aments long, lax), all May 30, 1931 (CAS, CRE, St, UC, and many other herbariums); ~~Tracy 10824, Sept. 24, 1932, probably from same plant as 01021 (CRE, UC).~~ Abundant low shrub, 2-3 m. high, on creek bank near Smith River, below Gasquets, elev. 90-120 m., Harold E. Parks and Joseph P. Tracy 0935 (staminate type collection), May 10, 1931 (CAS; CRE, 2 sheets; St; UC, type, 2 sheets); Joseph P. Tracy 9357 from same plant (CRE, UC).

86. S. melanopsis tenerrima (Henderson) Ball, n. comb.

S. longifolia tenerrima Henderson in Bull. Torr. Bot. Club 27:354, 1900.

S. tenerrima (Henderson) Heller, Cat. No. Am. Plants, ed. 2, 4, 1900.

S. fluviatilis tenerrima (Henderson) Howell, Fl. NW. Am. 618, 1902.

S. linearifolia Rydberg, Fl. Colo. 94, 1906 (in part); Fl. Rocky Mts. 192, 1917 (in part).

S. exigua tenerrima (Henderson) Schneider, in Bot. Gaz. 67:335, 1919.

From the synonymy given above it will be noted that this little willow has enjoyed specific rank under two different names, and varietal rank as an appendage of three different species of the sandbar or longleaf willows, previous to its present assignment as a variety of S. melanopsis. Muttall. The reasons for the present arrangement are twofold. In the first place, the characters of its branchlets, leaves, and capsules are those of melanopsis, with two exceptions, and not those of the other three species. Those two exceptions are narrow ^{er} blades and longer ^{capsule} pedicels, which constitute its claim to varietal rank. In the second place, its geographic distribution is almost exactly that of S. melanopsis, but is wholly outside the ^{ranges} of S. longifolia (interior) and S. fluviatilis, and coincident with that of S. exigua in only a small part of the range of that widely-distributed species. The equivalent form of S. exigua is variety stenophylla (Rydberg) Schneider and the corresponding narrow-leaved presentation of S. interior Rowlee is the variety pedicellata (Andersson) Ball. From the other distinctly pedicelled variety, S. melanopsis ^{gracilipes} ~~longipes~~ Ball, ^{its} variety tenerrima differs in the very narrow blades.

Differs from the species in linear leaves 4-7 or 8 cm. by 2-4 or 5 mm. on fruiting branchlets; 8-9 cm. by 5-7 mm. ~~xxxxxx~~ up to 11 cm. by 7 mm. on seasonal shoots, and 12-14 cm. by 10-15 mm. on sprouts, stipules obsolete or 1-4 mm. long on seasonal shoots, and up to 5-8 mm. long on sprouts, lanceolate, usually denticulate; pedicels of the capsules somewhat longer than in the species, 0.5-1 mm. long. all more or less denticulate or spinulose-denticulate

Distributed sparingly with the species from southern British Columbia and Alberta, south to western Montana and western Wyoming, northern Utah, eastern portions of Washington and Oregon, northern California, and the Sierra Nevada throughout, with a southern outpost in the ~~San Bernardino Mts.~~ ^{Colorado Desert} of southern California.

Humboldt Co. Shrub 8-10 feet high, on bank of Willow Creek at Trinity River, elev. 500 feet, Harold E. Parks and Joseph E. Tracy 0972 [UC, B]
May 17, 1931;-- In sand dunes at Little River Lagoon, Harold E. Parks 01019
May 28, 1931 [UC, B]

Butte Co.: On banks of Butte Creek, Chico, E.E. Copeland, May 28, 1903; determined by v. Seemen as "*S. longifolia* Muhl., form" and distributed by C.E. Baker as No. 3278 of Plants of the Pacific Coast [UC,]

7
CO.: Abundant along entire length of surface water, 1000-
Palm Cañon, Mts., Colorado Desert, elev. 400 ft., Frank

SALIX RETICULATA var. *gigantea* 1, 11, n. var

Section *Reticulatae*.

Similar to *S. reticulata* but larger in every way; branches
cm. long; leaves large, long-petioled petioles mostly 2-4 or 4.5 cm. long;
blades obovate-oval to suborbicular or oblate-orbicular, mostly 4-6 cm. long,
3.5-5 or 5.5 cm. wide, common sizes being 4 by 3.5, 4.5 by 4.5, 5 by
5.5-5.5, and 6 by 4.5 rarely wider than long, as 4.8 by 5 and 5.2 by 5.3 cm,
respectively, obtuse to retuse at apex, rounded to retuse or cordate at base,
with margins
the larger/glandular-crenate throughout. Aments leafy-pedunculate, 2.5-4
or 5 cm. long; 1 cm. wide, lax in the basal portion; broadly oblanceolate or
or almost triangular,
truncate or broadly rounded at apex, 1.5-2 or 2.5 mm. long thinly pilose to
glaucous outside; capsules 4-5 mm. long 6 mm. long; broadly ovate, bluntly
subsessile or pedicel up to 0.4 mm. long; styles and stigmas 0.2-0.4 mm. long.

This variety differs chiefly from the species in the larger leaf-blades,
mostly 4-6 cm. long, and the larger aments and capsules. The pistillate type

Variety is distributed in in southern and south-central Alaska from Unalaska to Mt. McKinley National Park. It seems to be most abundant in the central portion of this range, in the area covered by Kadiak Island and upper Alaska Peninsula. The following specimens have been examined. The containing herbariums and the initials used to designate them are: CAS, Californai Academy of Sciences; CRB, Carleton R. Ball, SU, Stanford University; PANS, Philadelphia Acady of Natural Sciences; UC, University of California; and USN, U.S. National Herbarium.

Amakaak Id., atvU^{alaska}, B.W. Evermann 156, Aug. 2, 1892 (USN).

Shumagin Ids., Unga, F. A. Golder 40, Sept. 20, 1899 (USN).

Alaska Peninsula. Kukak Bay, Coville and Kearney 1537, July 1-5, 1899 (USN);

Katmai Region, A.E. Miller, July 21, 1919 (UN).

Kadiak Id. Kadiak, L. J. Cole, July 1, 1899 (USN); Coville and Kearney 2312, July 20, 1899 (USN); C.V. Piper 4592, July 28 1904 (CRB, USN). Kadiak Mountain, W. C. Gallop 1141, July 19, 1900 (CRB, USN).

Alaska Range, Isabella Pass, elev. 3310 ft. W.A. and C.E. Satchell 107a, June 27, 1931 (UC, stam type).

Mt. McKinley National Park, east end not far from Superintendent's headquarters, elev. 3000 to 3300 ft., David Kaye 3, in 1832 (CRB, UC).

Copper River Region, trailing, 2.5 inches high, common in high tundra, West Fork of Eagle Creek, alt. 4500 ft. Wm. L. Pope 160, Aug. 22 1902 (USN).