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JUNCUS CONFUSUS, A NEW RUSH FROM THE ROCKY MOUNTAIN REGION.

BY FREDERICK V. COVILLE.

In a collection of Juncaceae from Idaho, recently received for identification from Mr. A. A. Heller, were two specimens of an undescribed Juncus, which had long been confounded, even by Engelmann himself, with *Juncus tenuis congestus* Engelm. A description of the species, which was already well represented in the National Herbarium by specimens from other collectors, is given herewith.

Juncus confusus Coville, sp. nov.

Plant perennial, densely tufted, 15 to 60 cm. high, erect; stem 0.5 to 1.5 mm. thick at base, narrower above, striate, nearly terete; leaves all basal, the sheaths with well developed auricles, the blades erect, one-third to one-half or more the height of the stem, flat, usually involute in drying, narrow, 0.5 to 1 mm. in breadth; inflorescence congested into a turbinate cluster 2 cm. or less in height, much exceeded by its lowest bract; perianth 3 to 4 mm. long, its parts equal, ovate-lanceolate, acute, with green or at maturity stramineous midrib and a brown stripe on either side; stamens 6, about one-half as long as the perianth, the anthers shorter than their filaments; capsule oblong, equaling the perianth, retuse, completely 3-celled; seed light brown, obovoid or oblong, .45 to .6 mm. in length, with oblique white apiculations connected by a usually evident white raphe, finely reticulated in about 16 longitudinal rows, the areolæ smooth and 2 to 4 times broader than long.

Type specimen in the U. S. National Herbarium, collected September 6, 1890, in an irrigated meadow, North Park, Colorado, by C. S. Crandall.

Other specimens beside the type have been examined as follows:

Colorado: Grand Lake, George Vasey, 1868, No. 576.

Wyoming: Sherman, altitude 8,000 feet, G. W. Letterman, July 28, 1884.

Big Horn Mountains, B. C. Buffum, August 6, 1892.

Clarks Fork Valley, J. N. Rose, September 3, 1893, No. 530.

Steamboat Point, Yellowstone Lake, Robert Adams, August 19, 1871.

Montana: Spanish Creek, P. A. Rydberg, July 11, 1896, No. 3058.

In a meadow, Spanish Basin, altitude 1,800 meters, P. A. Rydberg, July 17, 1896, No. 3116.

In a wet meadow, Blackhawk, P. A. Rydberg, August 5, 1896, No. 3282.

Idaho: In the vicinity of Forest and about Lake Waha, Nez Perces County, Mr. and Mrs. A. A. Heller, June 25, 1896, No. 3319, and July 16, 1896, No. 3446.

Washington: Near Spangle, Spokane County, W. N. Suksdorf, June 30, 1884, No. 1042.

Juncus confusus is one of seven closely related species, all of which with the exception of *J. tenuis* occur only in America and with the additional exception of *J. dichotomus* only in North America. *Juncus tenuis* was formerly a very rare plant in Europe, but is now becoming widely disseminated there and in nearly all parts of the world, apparently by introduction from America. The following synopsis will be useful in distinguishing the species of the group:

Synopsis of *Juncus tenuis* and its Allies.

Leaf blade flat, but sometimes involute in drying.

Anthers much longer than their filaments.....*J. georgianus* Coville.

A densely tufted plant, with long leaves, reaching the unusually large inflorescence; brown-striped perianth 4 to 6 mm. long; and narrowly oblong-lanceolate completely 3-celled capsule. This species is known only from Georgia, where it occurs on Stone Mountain and adjacent knobs of similar geological structure. For full description see Bull. Torr. Club, **22**: 44. 1895.

Anthers not exceeding their filaments.

Perianth 2.5 to 4 mm. long, usually with some reddish or brownish coloration, equaling the completely 3-celled capsule; apex of the capsule distinctly triquetrous, truncate or retuse.

Inflorescence somewhat congested, much exceeded by its lowest involucral bract.....*J. confusus* Coville.

A plant of the Rocky Mountain region from Colorado northward to Montana, Idaho, and Washington.

Inflorescence not congested, the flowers secund on the somewhat incurved branches, seldom exceeded by the lowest involucral bract.....*J. secundus* Beauv.

A species of common occurrence in the coastal plain from New Jersey to North Carolina and occasional in Illinois and Missouri.

Perianth 3.5 to 5.5 mm. long, green or stramineous, without brown stripes along either side of the midrib (except in the variety); capsule obovate, broadly rounded, though sometimes retuse, incompletely 3-celled.....*J. tenuis* Willd.

Occurring almost throughout North America, especially as a weed along roadsides and paths, and now migrating to all parts of the world. Along the Pacific coast from middle California to Vancouver Island occurs a robust variety with congested inflorescence much exceeded, as is usually the case also in the type form of the species, by the lowest involucral bract; the perianth 4 to 5.5 mm. in length, about one-half longer than the capsule; its parts with a reddish brown stripe along either side of the midrib. This plant is here named **Junctus tenuis occidentalis** (*J. tenuis congestus* Engelm. Trans. St. Louis Acad. **2**: 450. 1866. Not *J. congestus* Thuill. 1799).

Leaf blade terete, channeled along the upper side.

Seed not caudate.

Perianth 3.5 to 5 mm. long, not exceeded by the capsule.

J. dichotomus Ell.

A species common to North and South America, occurring abundantly in the United States along the coast from Texas to New Jersey, and more rarely as far northward as Maine. The plant is often confounded with *J. tenuis* when not critically examined, but in addition to its leaf character it may be distinguished also by its darker green color and its fewer-ribbed (about 14 instead of 20 to 24) seeds.

Perianth 2.5 to 3 mm. long, conspicuously exceeded by the capsule.....*J. greenei* Oakes & Tuckerm.

Occurring near the coast from New Jersey northward to New Brunswick; in Michigan, Wisconsin, and Minnesota; and in the Canadian province of Ontario. The inflorescence is usually short, much exceeded by the lowest involucral bract, and the exposed portions of the completely 3-celled ovoid-lanceolate capsule are commonly brownish. The seeds are commonly but erroneously described as caudate.

Seed distinctly caudate.....*J. vaseyi* Engelm.

Occurring from Michigan, Illinois, and Iowa northward to the plains of middle Canada; at Orono, Maine; in the Black Hills of South Dakota; and, on the authority of a label in the Canby Herbarium, in Middle Park, Colorado. *J. vaseyi* differs from the last, in addition to its important seed and perianth characters, in its inflorescence usually exceeding the lowest involucral bract, and the green, or, at maturity, stramineous capsule being little or not at all contracted toward the apex.



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