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# *Juncus tweedyi* (Juncaceae sect. *Ozophyllum*), the correct name for *Juncus brevicaudatus*

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The taxonomic and nomenclatural aspects of *Juncus tweedyi* and *J. brevicaudatus* are discussed. *Juncus tweedyi*, often hitherto placed in synonymy under *J. brevicaudatus*, has been found to have nomenclatural priority when both are treated as conspecific. The typification of the names *J. tweedyi* and *J. brevicaudatus* are addressed. Lectotypes are designated for the names *J. tweedyi, J. brevicaudatus,* and *J. canadensis* var. *kuntzei*.

## Introduction

*Juncus* Linnaeus (1753: 325, Juncaceae) is a cosmopolitan genus of approximately 315 species (Kirschner 2002). *Juncus* sect. *Ozophyllum* (Dumortier 1827: 142) is the most diverse in the genus containing ca. 85 species worldwide (Kirschner 2002, Knapp 2016). *Juncus tweedyi* Rydberg (1900: 90) was described from thermal springs of the western United States. Later, Fernald (1904) made the new combination *J. brevicaudatus* (Engelmann1866: 436) Fernald (1904: 35) and based it on *J. canadensis* J. Gray *ex* Laharpe (1825: 46) var. *brevicaudatus* Engelmann (1866: 436) for plants occupying wetlands of the northeastern United States. Initially, these two species names were believed to refer to two distinct species, but recent works consider them conspecific as elaborated below.

Most regional or State level floristic treatments in the United States recognize either *J. brevicaudtus* (Englemann) Fernald (1904: 35) or *J. tweedyi* with no mention of the other name as a synonym (Lakela 1965, Hitchcock & Cronquist 1973, Cronquist *et. al.* 1977, Voss & Reznicek 2012, Knapp 2016, Sorrie & Knapp 2020). In contrast, the most recent continental and global treatments of the genus recognize a single species (Brooks & Clemants 2000; Kirschner 2002; Welsh *et al.* 2003, 2008, 2015). However, Brooks and Clemants (2000), as well as Kirschner (2002) treated *Juncus tweedyi* as a synonym of *J. brevicaudatus*, whereas Welsh *et al.* (2003, 2008, 2015) recognized *J. tweedyi* as the correct name with *J. brevicaudatus* as a synonym.

As per the Shenzhen Code Art. 11.2, "A name has no priority outside the rank at which it is published …" (Turland *et al.*, 2018). Although the priority of the name *Juncus canadensis* var. *brevicaudatus* Englemann (1866: 436) starts from 1866, its rank is varietal, and it cannot compete with the names at other ranks. At the rank of species, the name *J. tweedyi*, published in 1900 has priority over the name *J. brevicaudatus*, published in 1904. Thus, Welsh *et al.*(2003, 2008, 2015) were correct in treating *J. tweedyi* as the correct name. It is speculated here that those who used *J. brevicaudatus* might have treated it as having priority from 1866 and ignored the varietal rank. The preceding concept of the publication priority regardless of the rank of a name alludes to a convention practiced in the then used American Codes, e.g., Rochester Code (1892) mandating "The Law of Priority.—Priority of publication is to be regarded as the fundamental principle of botanical nomenclature"

It is noted here that Brooks and Clemants (2000) found no distinguishing morphology to separate *Juncus tweedyi* from *J. brevicaudatus*. Upon examination of numerous specimens by the first author, their findings are corroborated, and no morphologic characters are known to separate the two. There is a weak trend for plants of the western portion of the geographic range to have slightly larger capsules.

Given the fact that the name *J. tweedyi* has at least one current usage, we believe the best path forward is not to conserve

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the name *J. brevicaudatus,* but rather recognize *J. tweedyi* as the correct name. Furthermore, the possibility exists that future work could show a distinction, e.g., on a molecular basis, between *J. brevicaudatus* and *J. tweedyi*, and recognizing such a distinction might be facilitated by the availability of both names. For the preceding two reasons, we opt not to propose the conservation of the name *J. brevicaudatus* over *J. tweedyi*.

## Typification

***Juncus tweedyi*** Rydberg (1900: 90).

**Lectotype (designated here):**—U.S.A. Yellowstone Nat. Park, 1884, *F. Tweedy 223* (US!01014093 (specimen on left side of sheet), image available at http://n2t.net/ark:/65665/m36ba492d8-ad74-40fb-a425-87f165d9c396)

= *Juncus canadensis* var. *brevicaudatus* Engelmann (1866: 436)

= *Juncus brevicaudatus* (Engelmann) Fernald (1904: 35)

**Lectotype (here designated):**—U.S.A., Massachusetts, Houghtons Pond, Milton, 8 September 1853, *W. Boot* GH [00339972].

= *Juncus canadensis* var. *coarctatus* Engelmann (1867: 544);

= *Juncus coarctatus* (Engelmann) Buchenau (1906: 160).

= *Juncus canadensis* var. *kuntzei* Buchenau (1890: 272).

**Lectotype (here designated):**—U.S.A., Utah, "Die var. Kuntzeiwurde von Dr. O. Kuntze an der Pacificbahnbei Corinne in einer Hoehe Type von ca. 7000 FuBgefunden": NY! [NY247586].

**Notes**:—The holotype of *Juncus tweedyi* was cited as being at NY by Kirschner (2002) but searches for this specimen have not been successful. The general collections of *Juncus* at NY contain a folder for *J. tweedyi* that states "see type collection", however only an empty folder in the type collections of NY in the correct alphabetic range was found. No digital record or image exists for this type. It is possible that the specimen has been misfiled or lost.

A specimen annotated by Tiehm in 1984 as the holotype of *Juncus tweedyi* at YU is not correct. This specimen, *Tweedy 225,* is cited by Rydberg (1900) as *J. nevadensis* and the type of *J. tweedyi* is *Tweedy 223.* The only specimen we have found that matches Rydberg's cited collection number is at US. This specimen cannot be the holotype as its label lacks the original annotation by Rydberg. Given that no other specimen of *Tweedy 223* has been found, we here lectotypify the name *J. tweedyi* with the US specimen.

The typification of *J. brevicaudatus* is complex. Kirschner (2002) cited the following:

*Juncus canadensis* var. *brevicaudatus* Engelmann, Trans. Acad. Sci. St. Louis 2: 436 (1866); *J.canadensis* var. *coarctatus* Engelmann, in A.Gray, Manual, ed. 5, 544 (1867) and Engelmann, Trans. Acad. Sci. St. Louis 2: 474 (1868); *J. coarctatus* (Engelmann) Buchenau, in H.G.A. Engler, Pflanzenr. (iv.) 36: 160 (1906). T: Ontario: Isle of St. Ignace, Lake Superior, 9 Aug 1866, O.B. Wheeler [G. Engelmann, Herb. Junc. Bor.- Amer. Norm.] 76; lecto, MO; designated here by S.E. Clemants; isolecto: NY, PR.

This above typification is incorrect. Although Engelmann (1866) did not provide a description or diagnosis for his varietal name *Juncus canadensis* var. *brevicaudatus*, he did refer to a description. Engelmann's treatment shows "[var.] a. *brevicaudatus* (*J. acuminatus*, Gray)". In other words, it is evident that Engelmann (1866) considered Gray's (1859) treatment of "*J. acuminatus* Michx." as a misapplication and cited "*J. acuminatus* sensu A. Gray (1859, non Michx., 1803)" as a synonym; he thus referred to Gray's description. It is emphasized here that the basis for the validity of the varietal name *J. canadensis* var. *brevicaudatus* is Engelmann's reference to Gray's description of *"J. acuminatus*". As per the Shenzhen Code Art.7.8., "A name of a new taxon validly published solely by reference to a previously and effectively published description or diagnosis (Art. 38.1(a)) … is to be typified by an element selected from the entire context of the validating description or diagnosis …". Therefore, the varietal name *J. canadensis* var. *brevicaudatus* must be typified by an element selected from Gray's (1859: 480) treatment of "*J. acuminatus*". Gray, however, merely provided distributional range as "Mountains, Maine, W. Massachusetts, N. New York and northward"; he did not cite any collection. Nevertheless, pre-1859 collection(s) from any of the preceding areas, housed at GH and identifiable as *J. canadensis* var. *brevicaudatus*, is eligible for the typification of this varietal name.

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