

THREE NEW COMBINATIONS IN *ANEMONE* (RANUNCULACEAE) FROM NORTH AMERICA

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ABSTRACT

Three new combinations, *Anemone multifida* var. *stylosa*, based on *A. stylosa* A. Nelson, *A. narcissiflora* var. *zephyra*, based on *A. zephyra* A. Nelson, and *A. quinquefolia* var. *minima*, based on *A. minima* DC., are made. In addition, a lectotype is proposed for *A. zephyra* and the previous selection of the lectotype for *A. stylosa* by Boraiah & Heimbürger is discussed.

KEY WORDS: Ranunculaceae, taxonomy, *Anemone*, North America

INTRODUCTION

In an examination of the North American representatives of *Anemone* (Ranunculaceae), the authors have concluded that the following combinations are necessary.

TAXONOMY

Anemone multifida Poir. var. **stylosa** (A. Nelson) Dutton & Keener, *comb. & stat. nov.* BASIONYM: *Anemone stylosa* A. Nelson, Bot. Gaz. 42:52. 1906. SYNTYPES: UNITED STATES. Utah: Fish Lake, M.E. Jones 5763 & 5764. (LECTOTYPE [chosen here]: M.E. Jones 5763 [RM 14559!]; Isolectotypes: RM!, US!).

Rydberg (1917) treated *Anemone stylosa* as a synonym of *A. tetonensis* Porter ex Britton as did Welsh *et al.* [1987; *A. tetonensis* as *A. multifida* Poir. var. *tetonensis* (Porter ex Britton) C.L. Hitchc.]. However, Boraiah & Heimbürger (1964) concluded that *A. stylosa* is a distinct species based on cytotaxonomic evidence. In light of both morphological and cytological data, we have concluded that *A. stylosa* is most appropriately treated as a variety of *A. multifida*.

In the protologue of *Anemone stylosa*, Nelson (1906) cited two M.E. Jones collections (5763 & 5764) as syntypes. In their selection of the lectotype of *A. stylosa*, Boraiah & Heimbürger (1964) cited M.E. Jones 5763 which they claimed was deposited in ARIZ. Furthermore, they concluded that Nelson's other syntype (M.E. Jones 5764) is actually *A. multifida*. We agree with Boraiah & Heimbürger's taxonomic conclusions regarding the two Jones collections, but attempts to locate the sheet they selected as the lectotype at ARIZ have failed. As Nelson was stationed at RM (Williams 1984), we interpret Boraiah & Heimbürger's citation of ARIZ as an "error" and are "correcting" their citation of the herbarium of deposition to RM. Furthermore, there are two sheets of M.E. Jones 5763 at RM, one of which is indicated as "type" by Nelson. It is this sheet, M.E. Jones 5763 (RM - 14559), which we designate as the lectotype.

Anemone multifida var. *stylosa* is distributed in Arizona and Utah at elevations from 2700 to 3700 m. It is distinguished from the three other varieties of *A. multifida* by its solitary flower, single tier of involucre leaves, purple to red or green to red sepals which are uniform in color on both surfaces, and strongly hooked achene beaks. *Anemone multifida* var. *tetonensis* has 1 or 2 flowers, 1 or 2 tiers of involucre leaves, blue, purple, or occasionally white sepals which are uniform in color on both surfaces, and recurved achene beaks. *Anemone multifida* var. *saxicola* has 1 to 3 flowers, 1 or 2 tiers of involucre leaves, sepals which are white or yellow on the upper surface and red, purple, or blue on the lower surface, and more or less straight achene beaks. *Anemone multifida* var. *multifida* has 2 to 7 flowers, 1 or 2 tiers of involucre leaves, sepals which are green to yellow, blue, purple, or red on both surfaces or are rarely white or yellow on the upper surface and blue or red on the lower surface, and more or less straight achene beaks.

Additional Specimens Examined: UNITED STATES. Arizona: Coconino Co.: on Humphrey's Peak of San Francisco Mountain, 7-10 Aug 1898, Mac-

Dougal 399 (GH). Utah: Cache Co.: talus slopes following snow above White Pine Lake, 17 Jul 1936, *Maguire 14095* (US); Garfield Co.: Bryce Canyon, 10 Jul 1932, *Weight B-32/307* (US).

***Anemone narcissiflora* L. var. *zephyra* (A. Nelson) Dutton & Keener, comb. & stat. nov.** BASIONYM: *Anemone zephyra* A. Nelson, Bot. Gaz. 42:51. 1906. - (LECTOTYPE (chosen here): UNITED STATES. Colorado: along streams, summit of North Park Range, Larimer Co., 10 Aug 1903, *L.N. Goodding 1834* [RM 51668!]; Isolectotypes: GH!, RM!, US!) - *Anemonastrum narcissiflorum* (L.) Holub subsp. *zephyrum* (A. Nelson) W.A. Weber, Phytologia 41:486. 1979.; *Anemonastrum zephyrum* (A. Nelson) Holub, Folia Geobot. Phytotax. 8:165. 1973.; *Anemone narcissiflora* L. subsp. *zephyra* (A. Nelson) A. Löve, D. Löve, & B.M. Kapoor, Arctic Alpine Res. 3:149. 1971.

Anemone narcissiflora L. and its close relatives are a highly variable group of plants. This variability has led systematists to several different conclusions regarding the placement and rank of *Anemone zephyra* A. Nelson, one such closely related plant. Rydberg (1917) accepted *Anemone zephyra*, while Dorn (1977) treated it as a synonym of *Anemone narcissiflora*. More recently, Weber *et al.* (1979) placed the plant in the segregate genus *Anemonastrum* as a subspecies of *narcissiflorum*. We do not accept this segregate genus, as Hoot *et al.* (1994) have clearly established its placement within *Anemone sensu lato*. We conclude that *Anemone zephyra* is most appropriately treated as a variety of *Anemone narcissiflora*.

Nelson (1906) did not cite any specimens in the protologue of *Anemone zephyra*. He did, however, state that "the proposed species probably includes all the specimens from the Rocky Mountains of the United States distributed as *A. narcissiflora* or *A. albomerus* (ined.)." There is a specimen at RM identified as *A. albomerus* A. Nels. sp. nov., which Nelson indicated as "type". It is this sheet, *L.N. Goodding 1834* (RM - 51668), which we designate as the lectotype for *A. zephyra*.

Anemone narcissiflora var. *zephyra* occurs in Colorado and Wyoming at elevations from 2700 to 3900 m. It can be differentiated from the other two North American varieties by the unlobed lateral segments of the involucre leaves, 40-60 stamens, yellow sepals, and 5 mm long achene bodies. *Anemone narcissiflora* var. *monantha* has unlobed lateral segments of the involucre leaves, 40-60 stamens, white or white and blue sepals, and 6-9 mm long achene bodies, while *A. narcissiflora* var. *villosissima* has lobed lateral segments of the involucre leaves, 60-80 stamens, white or white and blue tinged sepals, and 6-9 mm long achene bodies.

Additional Specimens Examined: UNITED STATES. Colorado: Chaffee Co.: South Cottonwood Gulch, in rich pine woods, 9 Jul 1892, *Sheldon 328*

(US); Grand Co.: moist soil, Milner Pass, 11 Aug 1921, *Clokey et al.* 4105 (US); Gunnison Co.: on the high ridge N of Cottonwood Pass on the Continental Divide, 20 miles W of Buena Vista and 13.5 mi E of Taylor River Road at Taylor Park Reservoir, 5 Aug 1986, *Reveal & Broome* 6344 (MARY); Jackson Co.: rich soil - banks of Michigan River, North Park, 28 Jul 1884, *Sheldon* 121 (US); Pitkin Co.: along Colorado Hwy 82 in a subalpine graminoid meadow along Roaring Fork Creek, about 0.8 mi NE of Independence (site) and 3.2 mi below Independence Pass, 3 Aug 1986, *Reveal & Broome* 6246 (MARY). Wyoming: Johnson/Sheridan cos.: head of Big Goose Creek, Big Horn Mountains, 15-24 Jul 1893, *Tweedy* 51 (US).

Greuter & Raus (1989) recently concluded that the name *Anemone narcissiflora* of Linnaeus (1759) is illegitimate being superfluous for the earlier *A. narcissifolia* ("uarcissifolia") L. (1753). The present authors have opted to use the orthography *A. narcissiflora* over the "nonsensical" *A. uarcissifolia* and are coauthoring a proposal to conserve its current and widespread usage with the full support of Greuter (pers. comm.).

***Anemone quinquefolia* L. var. *minima* (DC.) Frodin, comb. & stat. nov.**

BASIONYM: *Anemone minima* DC., *Syst. Nat.* 1:206. 1817. - HOLO-

TYPE: UNITED STATES. Sur les Allegani en Virginie, *Palisot de Beauvois s.n.* (G!) - *Anemonoides minima* (DC.) Holub, *Folia Geobot. Phytotax.* 12:428. 1977.

In a comprehensive study of the eastern North American *Anemone quinquefolia* complex, Frodin (1964) concluded that *A. minima* is a variety of *A. quinquefolia*. He proposed, but did not publish, the new combination. We have reached the same conclusion regarding the taxonomic status of this plant and with his permission and guidance, are publishing this name for him here. Frodin is to be attributed sole authorship of this combination [Article 46.4, Greuter *et al.* (1994)].

Anemone quinquefolia var. *minima* is distributed in North Carolina, Tennessee, Virginia, and West Virginia at elevations from 600 to 1000 m. The variety has relatively short achene bodies (2.5-3.0 mm long) and lateral leaflets of the radical leaves which are not lobed or are sometimes lobed only once while *A. quinquefolia* var. *quinquefolia*, the only other variety, has longer achene bodies (3.0-4.5 mm long) and lateral leaflets of the radical leaves which are frequently once lobed.

Additional Specimens Examined: UNITED STATES. Tennessee: Washington Co.: Johnson City, 7 Apr 1897, *Ashe* 3017 (NCU). Virginia: Carroll Co.: beside a creek adjacent to Rt. 764 3.0 mi S of the Pulaski Co./Carroll Co. line and 5.2 mi S of Rt. 693, NE of Sylvatus, 18 Mar 1990, *Dutton & Ward* 4618 (MARY); Craig Co.: base of wooded slope along tributary to Craig Creek, W

of Craigs Creek, 6 mi NE of Newcastle, 14 Apr 1936, *Wherry & Adams 2684* (BH,CM,CU,GH,MO,PH); Montgomery Co.: S of Dry Run Road 10 mi NE of its junction with Virginia Hwy 8, 2 mi N of Blacksburg, 14 Apr 1936, *Wherry s.n.* (GH); Pittsylvania Co.: E bank of Pigg River, S of Virginia Hwy 40, SW of Toshes P.O., 15 Apr 1936, *Wherry s.n.* (GH); Smyth Co.: on the Iron Mountains, 27 May 1892, *Britton et al. s.n.* (NY).

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