

# SIX NEW COMBINATIONS IN *DODECATHEON* (PRIMULACEAE)

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## ABSTRACT

Six new combinations are required in *Dodecatheon* L. for a forthcoming treatment of the genus in *Flora of North America north of Mexico*: **D. clevelandii** Greene var. **gracile** (Greene) Reveal, **D. clevelandii** var. **insulare** (H.J. Thoms.) Reveal, **D. clevelandii** var. **patulum** (Kuntze) Reveal, **D. pulchellum** var. **macrocarpum** (A. Gray) Reveal, **D. pulchellum** var. **shoshonense** (A. Nelson) Reveal, and **D. utahense** (N.H. Holmgren) Reveal.

## RESUMEN

Se necesitan seis combinaciones nuevas en *Dodecatheon* L. en el tratamiento del género en la *Flora of North America north of Mexico*: **D. clevelandii** Greene var. **gracile** (Greene) Reveal, **D. clevelandii** var. **insulare** (H.J. Thoms.) Reveal, **D. clevelandii** var. **patulum** (Kuntze) Reveal, **D. pulchellum** var. **macrocarpum** (A. Gray) Reveal, **D. pulchellum** var. **shoshonense** (A. Nelson) Reveal, y **D. utahense** (N.H. Holmgren) Reveal.

The following new combinations are required for a forthcoming treatment of *Dodecatheon* L. (Primulaceae) in volume 8 of *Flora of North America north of Mexico*. The rank of variety is used throughout following Holmgren (1994).

**Dodecatheon clevelandii** Greene var. **gracile** (Greene) Reveal, comb. nov. *Dodecatheon patulum* (Kuntze) Greene var. *gracile* Greene, *Erythea* 3:72. 1895. TYPE: U.S.A. CALIFORNIA. Santa Clara Co.: garden specimen obtained from root collected at Loma Prieta by J.B. Davy (Not found).

**Dodecatheon clevelandii** Greene var. **insulare** (H.J. Thoms.) Reveal, comb. nov. *Dodecatheon clevelandii* subsp. *insulare* H.J. Thoms., *Contr. Dudley Herb.* 4:134. 1953 (as "insularis"). TYPE: U.S.A. CALIFORNIA. Santa Barbara Co.: in chaparral along road to La Cumbre Lookout, 2.3 mi E of San Marcos Pass, Santa Inez Mts., 3000 ft., 25 Mar 1950, H.J. Thompson 1079 (HOLOTYPE: DS; ISOTYPE: OSC).

**Dodecatheon clevelandii** Greene var. **patulum** (Kuntze) Reveal, comb. nov. *Meadia patula* Kuntze, *Revis. Gen. Pl.* 2:398. 1894. *Dodecatheon patulum* (Kuntze) Greene, *Erythea* 3:72. 1895. The earlier Greene name (*Pittonia* 1:211. 1888) is not valid as it was provisional when published. TYPE: U.S.A. CALIFORNIA. Alameda Co.: Livermore Valley, 23 Mar 1888, E.L. Greene s.n. (LECTOTYPE: NDG; ISOLECTOTYPE: DS), designated by H.J. Thompson, *Contr. Dudley Herb.* 4:135. 1953.

The variation within *Dodecatheon clevelandii*, as defined by Thompson (1953), is maintained with only the rank altered. The epithet var. *gracile* is equivalent to subsp. *sanctarum* (Greene) Abrams.

**Dodecatheon pulchellum** (Raf.) Merr. var. **macrocarpum** (A. Gray) Reveal, comb. nov. *Dodecatheon meadia* L. var. *macrocarpum* A. Gray, *Bot. Calif.* 1:467. 1876. TYPE: U.S.A. ALASKA. Valdez-Cordova Co.: Middleton Island, 2 Jun 1874, W.H. Dall s.n. (LECTOTYPE: GH). NOTE: The lectotype was incorrectly termed a "neotype" by Beamish, *Bull. Torrey Bot. Club* 82:364. 1955. Previously, H.J. Thompson (1953) had considered a W.H. Brewer specimen (217, GH) from the Santa Susana Mts., Ventura Co., California, to be the type even though Gray considered this specimen to be a "form" of his var. *macrocarpum*, and annotated the Brewer specimen "macrocarpum, laciniatum."

This phase of *Dodecatheon pulchellum* has long been known as subsp. *alaskanum* (Hultén)

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Hultén or subsp. *superbum* (Pennell & Stair) Hultén. As treated by Thompson (1953) and by Taylor and MacBryde (1978), it is the tetraploid, coastal expression that occurs from southern Alaska to Oregon.

**Dodecatheon pulchellum** (Raf.) Merr. var. **shoshonense** (A. Nelson) Reveal, comb. nov.  
*Dodecatheon pauciflorum* (Durand) Greene var. *shoshonense* A. Nelson, Bot. Gaz. 54:143. 1912 (as *shoshonensis*). TYPE: U.S.A. IDAHO. Twin Falls Co.: Shoshone Falls, 26 Jul 1911, A. Nelson & J. F. Macbride 1362 (HOLOTYPE: RM).

This variety of *Dodecatheon pulchellum* is found mainly in alkaline meadows on the foothills and valley bottoms of the northern Mojave Desert and Intermountain Region. In the latter area, var. *pulchellum* is a plant of the mountains. Only in the Pacific Northwest will one find var. *pulchellum* at lower elevations. The distinctive yellow pollen sacs of var. *shoshonense* are seen in populations of var. *pulchellum* in the Black Hills area of north-eastern Wyoming and adjacent South Dakota. Welsh (2003) proposed two entities which are synonyms of var. *shoshonense*: subvar. *atwoodii* and subvar. *coriaceum*.

**Dodecatheon utahense** (N.H. Holmgren) Reveal, stat. nov. *Dodecatheon dentatum* Hook. var. *utahense* N.H. Holmgren, Brittonia 46:91. 1994. TYPE: U.S.A. UTAH. Salt Lake Co.: Moss Falls, Big Cottonwood Canyon, Wasatch Range, 13 Jun 1977, N.H. Holmgren & P.K. Holmgren 8412 (HOLOTYPE: NY; ISOTYPES: BRY, UTC).

The work by Mast et al. (2001, 2004) demonstrated that varieties of *Dodecatheon dentatum* Hook., recognized by Holmgren (1994), should be regarded as distinct species. Accordingly three widely disjunct entities are now accepted: *D. dentatum* mainly on the eastern slope of the Cascade Range from south-central British Columbia to central Washington, with disjunct populations along the western portion of the Columbia River, the Columbia River Gorge of both Oregon and Washington, northeastern Oregon (Wallowa Co.), and in northern Idaho; *D. ellisiae* Standley of north central New Mexico in the mountains of Bernalillo, Sandoval and Torrance cos., and in southeastern Arizona in southern Apache, Greenlee, southern Graham, and northeastern Santa Rita cos.; and *D. utahense*, a narrow endemic confined to Big Cottonwood Canyon, Salt Lake Co., Utah.

The recent molecular work on *Primulaceae* by Mast et al. (2001, 2004) and others (Källersjö et al. 2000; Martins et al. 2003; Trift et al. 2002) has shown that recognition of *Dodecatheon* creates a paraphyletic *Primula*. Accordingly, Mast and Reveal (2006) transferred all of the entities assigned to *Dodecatheon* to *Primula*.

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