

***PHYSARIA PINETORUM* SUBSP. *IVEYANA*, COMB. ET STAT. NOV.
(BRASSICACEAE)**

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ABSTRACT

The combination *Physaria pinetorum* subsp. *iveyana* (O'Kane, Smith, & Arp) O'Kane, **comb. et stat. nov.** is made to acknowledge some morphological intergradation between *Physaria pinetorum* and *P. iveyana* at high elevations on Sandia Peak. A key separating the two subspecies is provided.

When describing *Physaria iveyana*, the authors (O'Kane et al. 2012) noted that “*Physaria iveyana* is clearly related to *P. pinetorum*, both morphologically and based on preliminary molecular analyses (O'Kane unpublished)” — but that *P. iveyana* exhibited a condensed growth form typical of many high elevation species in exposed locations and that only on the Sandia Crest, New Mexico, was this growth form found. Individuals of *P. pinetorum* with more or less typical, if somewhat smaller, habit occur in similar high elevation areas, such as the Manzano Mountains. It is hypothesized here that matted or nearly matted forms with short infructescences on the Sandia Crest exhibit genetic, rather than purely plastic, adaptations to their local conditions.

Field work on the Sandia Crest by Roth (2014), however, concluded that “the majority of plants observed, including those at the type locality had short, subumbellate infructescences *and elongated infructescences, on the same plant* Length of infructescence appeared more of a function to environmental factors, such as wind and sun exposures. Plants grown in protected sites away from the rims *tended* to have longer infructescences than those grown in open, exposed areas along the rim” [emphases added]. Photographs provided by Roth (2014) support these observations. Nevertheless, it appears that even when longer infructescences are present, they are shorter and more prostrate and the plants are more compact than those seen in plants locally at lower elevations and at higher elevations elsewhere, such as in the Manzano Mountains.

It is to be expected that biologists will sometimes encounter populations in the midst of speciation. This appears to be such a case, thus *P. iveyana*, a phenotypically distinctive entity, is justifiably recognized at subspecific rather than specific rank.

PHYSARIA PINETORUM subsp. **IVEYANA** (O'Kane, Smith, & Arp) O'Kane, **comb. et stat. nov.**
Physaria iveyana O'Kane, Smith, & Arp, Phytoneuron 2012-53: 1–3. 2012. **TYPE: USA. New Mexico.** Bernalillo Co.: Sandia Mountains, The Sandia Crest. 35° 12.609' N, 106° 26.981' W, 10,700 ft (3723 m) elev, 9 Jul 2009, *S.L. O'Kane, Jr. 9197 with K.D. Heil* (holotype: MO; isotypes: ARIZ, BRY, COLO, GH, ISTC, K, NMC, NY, UNM).

The following key distinguishes the two subspecies of *Physaria pinetorum* in nearly all instances, even at high elevations.

1. Infructescences subumbellate, barely or not at all exceeding the basal leaves or if exceeding them and somewhat elongated, the stems short, prostrate or nearly so, and the fruits mainly subumbellate at the ends of the stems; plants mat-like, typically dense but looser where protected; around 10700 ft. elevation, limestone-derived soils and rock crevices, Sandia Crest, Bernalillo Co., New Mexico **subsp. *iveyana***

- 1'. Infructescences racemose throughout, elongate and evidently much exceeding the basal leaves; plants caespitose, but not mat-forming, never forming hard, dense mats; more widely distributed, from 4750–10650 ft. elevation, coarse, mainly granitic, but some limey, soils.... **subsp. pinetorum**

LITERATURE CITED

- O'Kane, S.L., Jr., K.N. Smith, and K.A. Arp. 2012. *Physaria iveyana* (Brassicaceae), a new species from the Sandia Mountains, New Mexico. *Phytoneuron* 2012-53: 1–6.
- Roth, D. 2014. Ivey's Bladderpod (*Physaria iveyana*), Status Survey and Report. Unpublished report by NM Energy, Minerals, & Natural Resources Department, Forestry Division, for the U.S. Fish & Wildlife Service, Region 2, Albuquerque, New Mexico.