

Deleted from CRPR 2B.3 in the CNPS Inventory on August 13, 2015

Rare Plant Status Review: *Androsace occidentalis*
Proposed Deletion from California Rare Plant Rank 2B.3, G5 / SX
 Danny Slakey (CNPS), Aaron E. Sims (CNPS) and Roxanne Bittman (CNDDDB)
 July 8, 2015

Background

Androsace occidentalis is an annual herb in the Primulaceae that is distributed across North America in much of the United States and Canada. It has been included on California Rare Plant Rank (CRPR) 2B since it was added to the 6th Edition of the CNPS Inventory (RPSAC and Tibor 2001). It was noted to occur in California in *The Jepson Manual* (Cholewa and Henderson 1993), *The Jepson Manual, Second Edition (TJM 2)*, Cholewa 2012), and the *Flora of North America* (Kelso 2009). *Androsace occidentalis* had been known in California from only a single location, Emigrant Gap, but the best available evidence suggests that the record was likely in error, and that the plant never occurred in California.

The addition of *A. occidentalis* to the CNPS Inventory in 2001 was based on two collections of the plant made by M.E. Jones on April 29, 1882, and September 29th, 1884, with duplicate specimens at the CAS, DS, JEPS, POM, RSA, UC, and UTC Herbaria (both collections s.n.) (Consortium of California Herbaria, CCH 2015; Consortium of Intermountain Herbaria, CIH 2015). Jones' field notes, as well as other specimen records clearly show he was not at Emigrant Gap on the dates he purportedly collected *A. occidentalis* there. From April 27th to 29th, 1882, Jones made his collection numbers 3176 to 3202 at Colton in Southern California (Jones Year Unknown; CCH 2015). Jones, however, did collect at Emigrant Gap on May 27th, 28th, and 30th (but not May 29th), 1882 (Jones Year Unknown; CCH 2015). The second collection of *A. occidentalis* from Emigrant Gap was dated for a time that he was in El Paso, Texas. In Texas he collected numbers 5238 to 5247 on September 29th, 1884. Jones clearly did not collect *A. occidentalis* on the dates found on the specimen labels. If in fact he did collect *A. occidentalis* at Emigrant Gap, it only seems plausible that the collections were made in late May 1882, as opposed to April of that year.

In addition to the unusual records of *A. occidentalis* at Emigrant Gap, several other out-of-place plants were purportedly collected around the same time at Emigrant Gap. *Draba reptans*, known from only a few locations in California, is treated as a waif in *The Jepson Manual, Second Edition* (Al-Shehbaz 2012) and Jones has a collection of it from Emigrant Gap on April 29, 1882. *Draba nemorosa*, also known from just a few locations in California and treated as a waif in California by Al-Shehbaz (2012), was purportedly collected on April 19th, 1882, when Jones was actually collecting in San Diego (Jones Year Unknown). These records with conflicting dates and unusual locations are another likely example of Jones' mislabeling around this time period.

Androsace expert G.T. Robbins also felt that Jones' collections of *A. occidentalis* were likely in error. Robbins' 1958 annotation on a duplicate of the 1882 Emigrant Gap

specimen at the Jepson Herbarium reads “On the basis of this collection I allowed for California within the range of *A. occidentalis*. The printed label in the Pomona Herb. reads ‘Flora of California’ but now I think that this may be one of the numerous instances of mixed labels in Jones’ collections and was probably not collected in California”. Robbins was referring to his monograph of North American *Androsace* (Robbins 1944). *TJM 2 Androsace* author A. Cholewa (pers. comm. 2015) agreed that she would be inclined to follow the dates in Jones’ field notes, but further noted that the situation is “all too confusing”.

Definitively determining the actual location where the California *Androsace* specimens originated is likely an impossible feat. According to Jones’ (Year Unknown) field notes, he collected over 50,000 specimens in the 1882 field season; some errors are to be expected with such prolific collecting. Jones has several additional collections of *A. occidentalis* from Utah and Colorado between the 1880s and 1890s (CIH 2015; Southwest Ecological Information Network, SEINET 2015). Perhaps the most probable origin of the 1882 Emigrant Gap collection is the vicinity of Salt Lake City, where he purportedly collected the plant in May 1882 (CIH 2015), and where his field notes claim he spent time in early June 1882 (Jones Year Unknown). The plant has been confirmed in relatively close proximity to Salt Lake City as recently as 1974 (see *Arnou 4002* in CIH 2015). Incidentally, both *Draba nemorosa* and *D. reptans* have been collected in close proximity to Salt Lake City as well (see, for example, *M.E. Jones 1357* and *S. Watson 93* in CIH 2015).

Several other specimen records labeled as *A. occidentalis* have surfaced in California. Specimens from other localities in the Sierra Nevada were housed at the UCD herbarium. Cholewa (pers. comm. 2014) examined high-resolution images of these specimens and determined them to be *A. elongata* subsp. *acuta*; they are currently treated as such. Another specimen from the Gray Herbarium, *Wiggins 9492*, is a duplicate of a known record of *Androsace septentrionalis* (CCH 2015). There is one additional record of the plant in CalFlora (2015), but it is from Arizona. The nearest confirmed record of *A. occidentalis* is apparently *Tiehm 9391*, collected roughly 500 km to the east of Emigrant Gap in White Pine County, Nevada (SEINET 2015).

To check for the presence of *A. occidentalis* at Emigrant Gap, a group of CNPS Rare Plant Treasure Hunt volunteers searched the area over the course of several days in May 2015. Although their search was not exhaustive, they did search many of the roadsides and meadows with potential habitat in the Emigrant Gap area without success (N. Blackburn, J. Buck, and L. Couper pers. comm. 2015).

Although we cannot confirm with absolute certainty that *A. occidentalis* was never collected at Emigrant Gap in California, the best available evidence suggests that the collections were made in error and are actually attributable to another locality, possibly in the vicinity of Salt Lake City, Utah. Based on the available information, CNPS and CNDDDB recommend deleting *Androsace occidentalis* from the CNPS Inventory. If more information becomes available in the future, we will re-evaluate its status at that time.

Recommended Actions

CNPS: Delete *Androsace occidentalis* from CRPR 2B.3

CNDDDB: Delete *Androsace occidentalis* from G5 / SX

Current CNPS Inventory Record

Androsace occidentalis Pursh.

western androsace

Primulaceae

CRPR 2B.3

Placer

Arkansas, Arizona, Colorado, Iowa, Idaho, Illinois, Indiana, Kansas, Massachusetts, Michigan, Minnesota, Missouri, Montana, North Dakota, Nebraska, New Mexico, Nevada, Ohio, Oklahoma, South Dakota, Texas, Utah, Wisconsin, Wyoming
Blue Canyon (556C) 39120C6

Upper montane coniferous forest (usually mesic). Elevation 1675-1700 meters.

Annual herb. Blooms August to September.

Known in CA only from Emigrant Gap. See *Bulletin of the Torrey Botanical Club* 40(9):462 (1913) for original description.

Available online at <http://www.rareplants.cnps.org/detail/1813.html>

Revised CNPS Inventory Record

Androsace occidentalis Pursh.

Considered But Rejected: Previously CRPR 2B.3; does not occur in California.

Literature Cited

Al-Shehbaz, I. 2012. *Draba*. Pp. 543-546 in Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.), *The Jepson Manual: Vascular Plants of California* (2nd ed.). University of California Press, Berkeley and Los Angeles.

Calflora. 2015. Information on wild California plants for conservation, education, and appreciation. Website <http://www.calflora.org/> [Accessed 19 June 2015].

Cholewa, A. 2012. *Androsace*. P. 1128 in Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.), *The Jepson Manual: Vascular Plants of California* (2nd ed.). University of California Press, Berkeley and Los Angeles.

___ and D.M. Henderson. 1993. *Androsace*. Pp. 905-906 in Hickman, J.C. (ed.), *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley.

Consortium of California Herbaria (CCH). 2015. Data provided by the participants of the Consortium of California Herbaria. Regents of the University of California, Berkeley. Website <http://ucjeps.berkeley.edu/consortium/> [Accessed 18 June 2015].

Consortium of Intermountain Herbaria (CIH) 2015. Intermountain Region Herbarium Network. Website <http://intermountainbiota.org/portal/index.php> [accessed 18 June 2015].

Jones, M.E. Year Unknown. Botanical Exploration of Marcus E. Jones. Website http://www.rsabg.org/documents/research/marcus_jones_1875_1919.pdf [Accessed 18 June 2015].

Kelso, S. 2009. *Androsace*. Pp. 259-263 in Flora of North America Editorial Committee (eds.), Flora of North America North of Mexico, Vol. 8. New York and Oxford.

Rare Plant Scientific Advisory Committee (RPSAC) and D.P. Tibor (ed.). 2001. California Native Plant Society's Inventory of Rare and Endangered Plants of California. Special Publication No. 1 (Sixth Edition). California Native Plant Society, Sacramento. 387 pp.

Robbins, G.T. 1944. North American species of *Androsace*. American Midland Naturalist 32(1): 137-163.

Southwest Ecological Information Network (SEINET) 2015. Website <http://swbiodiversity.org/portal/index.php> [Accessed 19 June 2015].