

Rare plant Status Review: new addition *Astragalus pulsiferae* var. *coronensis* and update of vars. *suksdorfii* and *pulsiferae*

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August 30, 2005

Background

Astragalus pulsiferae is distributed in Shasta, Lassen, Modoc, Plumas and Sierra Counties in California, and in Nevada (Washoe County) and Washington (Klickitat County). The studies of Ondricek (now Fallscheer), Clifton and Welsh led them to conclude that there are at least three subspecific taxa in the *Astragalus pulsiferae* complex. Two of the rare varieties, *pulsiferae* and *suksdorfii*, are current List 1B taxa. The third variety *coronensis* was newly described in *Rhodora* 104(919): 271-279 (2002) and consists of plants that were formerly considered to be var. *suksdorfii*. We have received an evaluation of the current CNDDDB *suksdorfii* occurrences that should be transferred to the new variety *coronensis* as well as additional location data for *coronensis* from Robin Fallscheer. This new variety appears to be rare, though less so than the other varieties. Relevant excerpts from the *Rhodora* article and summaries of each variety are provided below. We have also updated our data on the existing rare varieties according to the discussion provided in the article.

var. *coronensis*

The following excerpt consists of the article abstract: "Described as new is *Astragalus pulsiferae* var. *coronensis*. This new variety is distinguished by its superficial root crown and longer pod trichomes, as well as by more subtle differences in the type of internode pubescence. In addition, the stipules in the new variety are all distinct, correlating with the above-ground stem." Later, the authors provide the following additional description: "Plants with root crown superficial. Stems branching at soil level, foliose to the base, the internodes villosulous. Calyx teeth 1.5-2.5 mm long. Pod pubescence 1-1.7 mm long."

The habitat of this variety is described as "sandy silt, friable at the surface, hard-packed beneath, among basalt cobble and gravel with juniper, sagebrush, bitterbrush, and Jeffrey pine at 1345-1890 m." In California, it occurs on the Modoc Plateau in Modoc and Lassen Counties and in the Plumas County portion of the Sierra Nevada Range, on volcanic inclusions. It is considered rare in Nevada. Based on estimated mapping of available data, there appear to be about 48 known occurrences in California. Fallscheer's summary of known occurrences in 2002 estimated that there are approximately 15,000 to over 16,500 plants. Numbers of plants at occurrences varies from a single plant to over 3,000. Additional occurrences have been reported since this time, comprising at least 640 plants, slightly increasing the general range of total plant numbers known at this time. Based on the relatively high number of known occurrences and number of plants, List 4 appears to be appropriate for this new taxon.

var. *suksdorfii*

With the new description of var. *coronensis*, var. *suksdorfii* is rarer than the current number of CNDDDB occurrences indicates at this time. Several of the current occurrences are actually var. *coronensis*. Based on the determinations by Fallscheer, there are approximately 24 occurrences of var. *suksdorfii*. Var. *suksdorfii* is described as occurring in "open pine forest in loose volcanic substrates at 1380-2005 m" in California. Its known distribution is Plumas, Lassen, and Shasta

Counties in California, and Klickitat County in Washington. The following description is given for this variety: "Plants with caudex commonly subterranean for (0.5) 1.5-2.5 cm, or the caudex rarely exactly superficial. Stems mostly simple, sometimes branched or spurred at 1 or 2 nodes preceding the first peduncle, the foliose internodes strigose-strigulose. Calyx teeth 1.4-2.5 mm long, subequal to the tube. Pod pubescence 0.4-0.7 mm long." Based on the information in this article, we have updated the information we have for this List 1B taxon.

var. *pulsiferae*

This taxon is described as occurring on "loose sandy sites and interdune valleys, often with sagebrush, on the east side of the northern Sierra Nevada." It usually occurs on "sand derived from weathered granitic rocks at 1310-1798 m." Its known distribution is Lassen, Plumas, and Sierra Counties in California and Washoe County in Nevada. The plant description from the article is as follows. "Plants with root crown commonly subterranean. Stems mostly buried for a space of (0) 2-9 cm, commonly branched at emergence from the soil, the foliose internodes villous-hirsute. Calyx teeth (1) 1.4-3.6 mm long. Pod pubescence 0.6-0.9 mm long." There are 15 known occurrences at this time. Based on the information in this article, we have updated the information we have for this List 1B taxon.

Recommended Actions:

CNPS: Add *Astragalus pulsiferae* var. *coronensis* to CNPS List 4

CNDDDB: Add to CNDDDB as G4T3 / S3.2

General: Review updated Inventory records for all varieties below.

Please review the draft new and revised CNPS Inventory records below, respond Yes or No on the proposal to add the new taxon to the Inventory and CNDDDB, and provide any edits/comments. If responding No, please provide supporting information.

Draft CNPS Inventory Records

Astragalus pulsiferae Gray var. *coronensis* Welsh, Ondricek & Clifton Fabaceae
"Modoc Plateau milk-vetch"
List 4 / RED 1-2-2
[change to G4T3, change to S3.2]
Lassen, Modoc, Plumas, Nevada
586B, 587B, 602D, 603B, 603C, 620A, 621A, 638B, 638C, 638D, 639A, 639B, 639C, 640B, 656C, 657C, 674A, 675A, 676B, 676D, 692A, 692C, 692D, 693C [Quads are not included for List 4's in the Inventory but shown here for review purposes].
Great Basin scrub, Lower montane coniferous forest, Pinyon and juniper woodland / sandy, gravelly, volcanic; elevation 1345-1890 meters.
Perennial herb, blooms May-July.
Threatened by grazing; potentially threatened by proposed pipeline development. Considered critically imperiled in NV. Not in *The Jepson Manual*. See *Rhodora* 104(919):276 (2002) for original description.

Astragalus pulsiferae Gray var. *suksdorfii* (Howell) Barneby

Fabaceae

"Suksdorf's milk-vetch"

List 1B / RED 2-2-2

[change to G4T2 / S2.2]

Lassen, Plumas, Shasta, Washington

586C, 587B, 603C, 606B, 624C, 625D, 638B, 639C, 640B, 640D, 642B, 642C, 642D, 643A, 644A, 644D, 656B

Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland / volcanic, gravelly, rocky; elevation 1300-2000 meters.

Perennial herb, blooms May- July.

Threatened by grazing and timber harvest activities; potentially threatened by vehicles and development. State-listed as Endangered in WA. See *Erythea* 1:111 (1893) for original description, and *Memoirs of the New York Botanical Garden* 13:968-971 (1964) and *Rhodora* 4(919):271-279 (2002) for taxonomic treatment.

Astragalus pulsiferae Gray var. *pulsiferae*

Fabaceae

"Pulsifer's milk-vetch"

List 1B / RED 2-2-2

[G4T2 / change to S2.2]

Lassen, Plumas, Sierra, Nevada

586A, 586C, 586D, 587D, 604C

Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland / usually granitic, sandy or rocky; elevation 1300-1800 meters.

Perennial herb, blooms May-August.

Need quads for Sierra Co. Threatened by grazing and development. Considered critically imperiled in NV. See *Proceedings of the American Academy of Arts and Sciences* 10:69 (1874) for original description, and *Memoirs of the New York Botanical Garden* 13:968-971 (1964) and *Rhodora* 4(919):271-279 (2002) for taxonomic treatment.