New, Rare, and Geographically Interesting Plants along the Crest of the Southern Sierra Nevada, California

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Abstract

The arid and rugged eastern slope of the southern Sierra Nevada between Olancha Peak and Walker Pass has received only cursory botanical explorations to date. Limited access, steep terrain, lack of potable water, and high summer temperatures are all factors attributing to this poorly known flora. Since 1984, four new taxa have been discovered along the eastern slope. Several new range extensions for rare and endemic species have also been documented, *e.g., Trifolium dedeckerae*. The flora of the eastern slope of the southern Sierra Nevada has strong affinities to the White Mountains, the mountain ranges within the Mojave Desert, and the San Gabriel-San Bernardino Mountains of southern California.

Introduction

Sporadic plant collecting has occurred on Olancha Peak and Walker Pass in the southern Sierra Nevada for about 100 years, yet the majority of this 40 mi (60 km) section of the southern Sierran crest has remained basically unexplored. Doubtless, nearly every major botanist in California has made at least one collection from the Walker Pass area since the 1880's, and yet a new species of *Astragalus* was discovered in 1986, less than 1-1/2 mi (3 km) from the highway! A new species of *Monardella* was recognized from Olancha Peak in 1986, and a complete flora is currently available for this area [Tatum, 1979].

The crest of the southern Sierra Nevada south of Olancha Peak is a very dry, rocky area with no available potable water during the summer months. Access to most of this area is limited to only a few trails and bissected by the Kennedy Meadows Road. The eastern slope is extremely rugged, with steep terrain rising from the desert floor (Figs. 1, 2). These cumulative factors make plant collection and/or botanical explorations of this region relatively difficult. The southern Sierran crest between Olancha Peak and Walker Pass is public land administered by the USDA-Forest Service, Inyo National Forest, and USDI-Bureau of Land Management.

This author became intrigued with the rugged and arid crest as part of a long-range floristic project for the southern Sierra Nevada after working two field seasons in the Dome Land

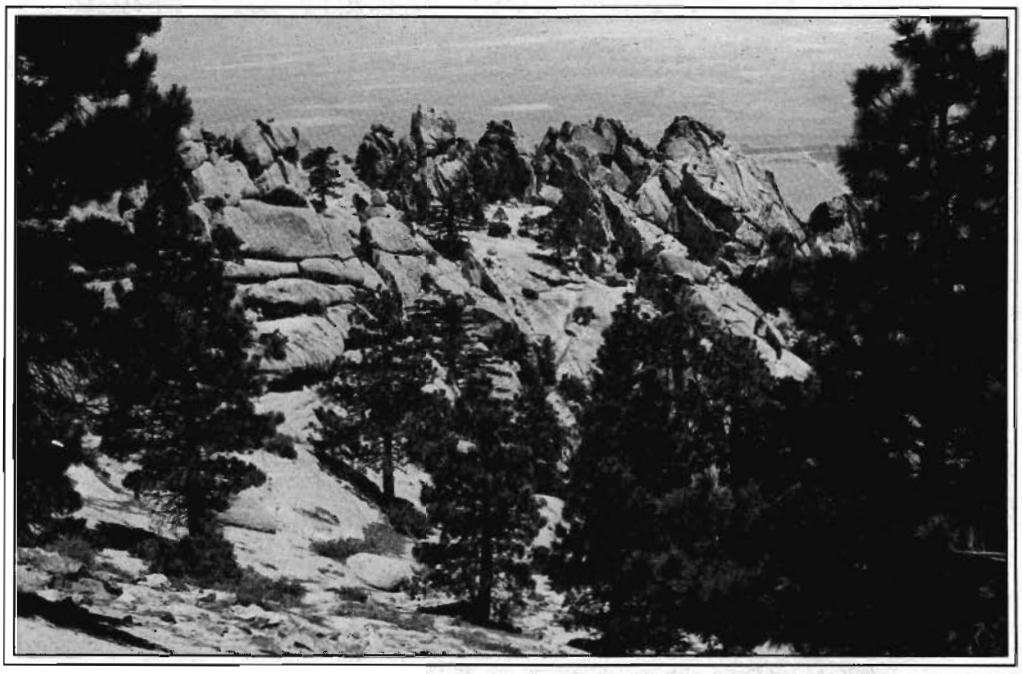

Figure 1. View from the summit of Owens Peak overlooking Indian Wells Valley. Rocky and rugged granitic outcrops with an open mixed conifer stand dominated by Jeffrey Pine with scattered Sugar Pine, Limber Pine, and Western Juniper. Looking east-northeast.

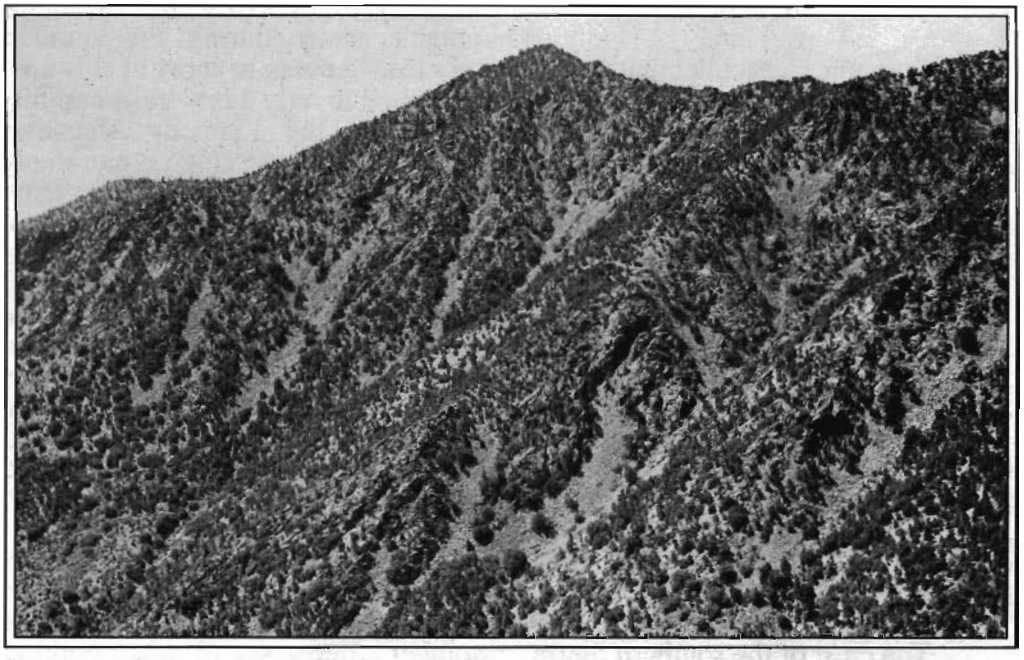

Figure 2. The rocky and steep east slope of Mt. Jenkins made up of metamorphic rocks. The Pacific Crest Trail (upper third ridge) crosses this area of the Sierran Crest just south of Owens Peak. Slope is dominated by a Pinyon Pine Woodland.

Wilderness (Sequoia National Forest) and adjacent Kern Plateau. Collecting along the crest began in 1982, and collecting activity increased during the following four field seasons (Fig. 3). The section of the Pacific Crest Trail under construction between Lamont Meadows and Walker Pass has greatly facilitated access to this remote area. Plant specimens necessary to document this flora are still needed, since much of the crest remains botanically unsurveyed. This paper provides an overview of those rare and geographically interesting taxa documented to date, particularly in the Owens Peak - Spanish Needle area.

Preliminary Results

Although the crest of the southern Sierra in the vicinity of the Inyo-Kern-Tulare county line probably receives less than 10 in (25 cm) of precipitation per year, one can find in rugged canyons, mixed stands of Sugar Pine, Limber Pine, Jeffrey Pine, Pinyon Pine, White Fir, and Western Juniper. Understory taxa comprise Great Basin, Mojavean, and Sierran species. Common shrubs and subshrubs for the southern Sierran crest include: *Arctostaphylos patula, Artemisia tridentata, Ceanothus cuneatus, Cercocarpus intricatus, Cercocarpus ledifolius, Chrysothamnus* spp. *Ephedra viridis, Eriogonum umbellatum* (senso lato), *Eriophyllum confertiflorum, Fremontodendron californicum, Garrya flavescens* var. *pallida, Haplopappus cuneatus, Holodiscus dumosus, Keckiella breviflora, Leptodactylon pungens* subsp. *pulchriflorum, Penstemon newberryi, Quercus chrysolepis* var. *nana, Rhamnus californica* subsp. *cuspidata, Ribes cereum, Salvia pachyphylla, and Symphoricarpos parishii.*

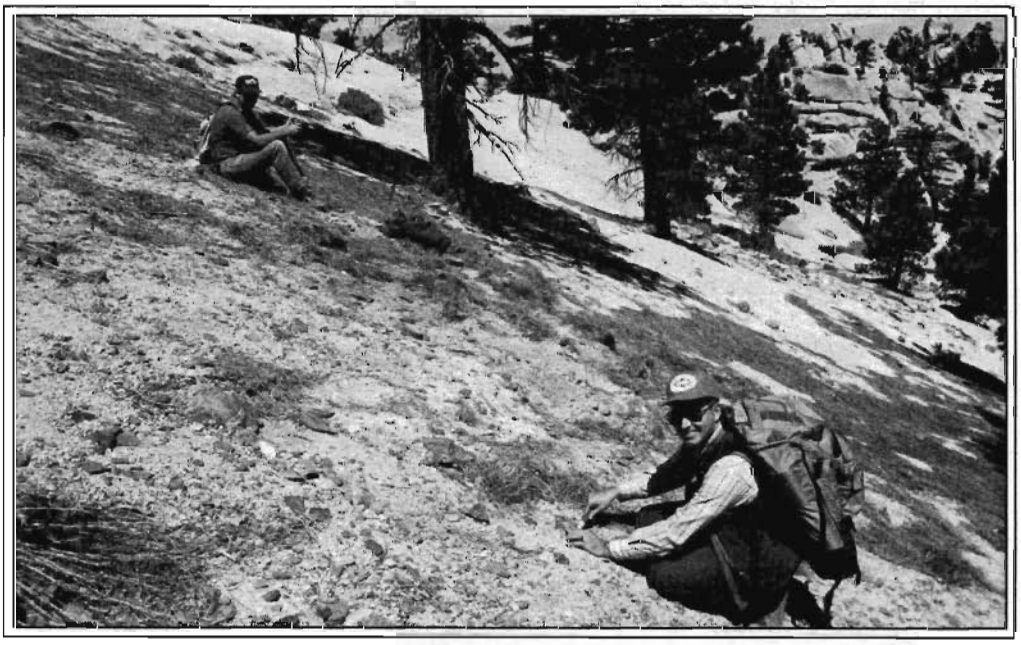

Figure 3. Author and Loren Ross collecting the type material for *Lomatium shevockii* near the summit of Owens Peak. The rare *Erigeron aequifolius* Hall, *Eriogonum breedlovei* (J. T. Howell) Reveal var. *shevockii* J. T. Howell, *Haplopappus gilmanii* Blake, *Monardella* sp. nov., and *Raillardella muirii* Gray are located at the base of the granitic boulders in the background. Looking northeast.

New Species to Science from the Crest of the Southern Sierra Nevada

Allium shevockii [McNeal, 1987]
Astragalus ertterae [Barneby and Shevock, 1987]
Lomatium shevockii [Hartman & Constance, 1988]
Monardella sp. nov. (to be published by Shevock, Ertter, & Jokerst in *Madroño*)

Geographically Interesting Taxa along the Crest of the Southern Sierra Nevada

Acer glabrum var. *diffusum*
Arabis davidsonii
Dudleya calcicola
Frasera tubulosa
Muilla coronata
Nolina parryi subsp. *wolfii*
Potentilla saxosa var. *sierrae*
Salvia pachyphylla

Rare Taxa along the Crest of the Southern Sierra Nevada Between Olancha Peak and Walker Pass

(Plants inventoried by the California Natural Diversity Data Base)

Allium shevockii
Astragalus ertterae (Fig. 4)
Erigeron aequifolius
Eriogonum breedlovei var. *shevockii*
Eriogonum wrightii var. *olanchense*
Hackelia sharsmithii
Haplopappus gilmanii
Lewisia disepala (Fig. 5)
Lomatium shevockii (Fig. 6)
Lupinus padre-crowleyi
Monardella sp. nov.
Phacelia nashiana
Phacelia novenmillensis (Fig. 7)
Raillardella muirii
Trifolium dedeckerae

New Records for a Flora of Kern County from the Sierran Crest

[Twisselmann, 1967]

Acer glabrum var. *diffusum*
Allium shevockii
Arabis davidsonii
Astragalus ertterae
Boschniakia strobilacea (just south of Walker Pass)
Calochortus nuttallii var. *panamintensis*
Cordylanthus eremicus subsp. *kernensis*
Delphinium pratense
Dudleya calcicola
Erigeron aequifolius
Eriogonum breedlovei var. *shevockii*
Haplopappus gilmanii
Hulsea heterochroma
Lewisia disepala
Lomatium shevockii
Mimulus nanus (complex)
Monardella sp. nov.
Phacelia novenmillensis
Raillardella muirii
Salvia pachyphylla
Selaginella watsonii
Streptanthus pilosus
Trifolium dedeckerae

Conclusion

Numerous plant collections obtained by this author from the crest of the southern Sierra Nevada remain to be determined. Collections in large and/or complex genera such as *Arabis, Galium, Lupinus,* and *Phacelia* will be sent to specialists for determination. It is anticipated that the lists for new, rare, and geographically interesting taxa from the southern Sierran crest will double again in the next couple of years as the field work progresses into areas that have not been surveyed at this time.

Figure 4. *Astragalus ertterae* in fruit. Currently known from only three populations along the Pacific Crest Trail in an open Pinyon Pine Woodland on granitic soils in the vicinity of Walker Pass. Fruits are relatively large (16-22 mm) in comparison to the size of the plant (height 3.5-9 cm).

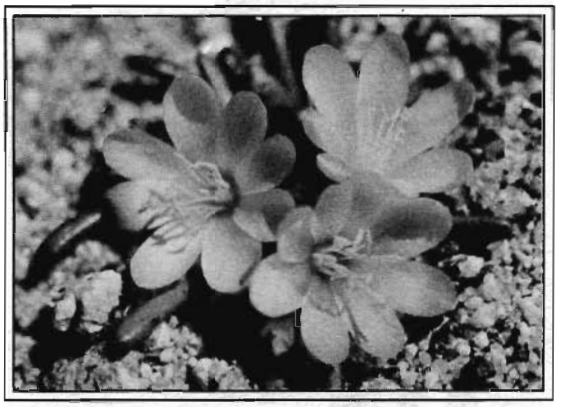

Figure 5. The Yosemite Bitterroot, *Lewisia disepala* Rydb. is very rare on sandy to gravelly, granitic ridgetops in the southern Sierra. Appears to flower only in wet years (in this portion of its range) and flowers shortly after snowmelt. Diameter of a single flower is 13-18 mm.

Figure 6. *Lomatium shevockii*, first discovered by the author in 1984 on Owens Peak. Plants are acaulescent, with ternately compound blue-green leaves with white spinose tips. Exceedingly rare. Flowering heads are 25-30 mm in diameter.

Figure 7. Nine Mile Canyon Phacelia (*Phacelia novenmillensis* Munz). Very small pale-blue flowers. Sepals (9-10 mm) considerably longer than the petals (3-4 mm). Plants rarely over 13 cm tall.

These new discoveries are yet another example of the amount of floristic work still needed in California [Shevock and Taylor, 1987]. These findings are provided at this time with the hope that they will stimulate other detailed studies in botanically unexplored and remote areas.

Acknowledgements

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