

these species tend to be heavier than those of dry-fruited species (mean weight of 23.49mg compared to 6.45mg, $p < .01$, excluding three species of each fruit type with seeds > 100 mg), making these seeds more favorable targets for seed predators. — STEPHEN H. BULLOCK, Biology Department, University of California, Los Angeles 90024.

GREAT BASIN VEGETATION IN CARBON COUNTY, MONTANA. — Great Basin vegetation is well represented in only two counties in Montana, Beaverhead and Carbon. Both counties are along the southern edge of Montana, the former bordering Idaho and the latter bordering Wyoming. This vegetation is best represented in Carbon County where it covers about 1800 sq. km. The greatest diversity of species occurs in an area of less than 260 sq. km. in the south foothills of the Pryor Mountains and along the Big Horn Canyon.

The Pryor Mountains and Big Horn Canyon have a predominant substrate of limestone, sandstone, shale, and some gypsum. Several formations with red soils are also well represented. These form extensive areas of nearly barren hills. The conspicuous vegetation of the area contains extensive stands of Utah juniper, *Juniperus osteosperma* (Torrey) Little, and black sagebrush, *Artemisia nova* A. Nels. Several species of *Atriplex* are also common.

Field work by the author in 1976 turned up several interesting plants from this area including some first records for the state. The most interesting collections are listed below. A few are not strictly Great Basin plants but are significant for other reasons. Apparent first state records are indicated by an asterisk (*). Specimens are deposited in MONT with some duplicates in RM and my personal herbarium.

BORAGINACEAE — *Cryptantha ambigua* (Gray) Greene, Dorn 2633; *C. cana* (A. Nels.) Payson, Dorn 2546*, 2627; *C. flavoculata* (A. Nels.) Payson, Dorn 2543*, 2626.

CAPPARACEAE — *Cleome lutea* Hook., Dorn 2630.

COMPOSITAE — *Artemisia pedatifida* Nutt., Dorn 2534; *A. spinescens* Eaton, Dorn 2552; *Erigeron allocotus* Blake, Dorn 2625* (This species is endemic to the area and was known previously from only Big Horn Co., Wyoming.); *Hymenopappus filifolius* Hook. var. *luteus* (Nutt.) B. L. Turner, Dorn 2660* (These plants were growing with *Hymenopappus polycephalus* Osterh. with no evidence of intergrading.); *Hymenoxys torreyana* (Nutt.) Parker, Dorn 2549*; *Malacothrix torreyi* Gray, Dorn 2677; *Platyschkuhria integrifolia* (Gray) Rydb., Dorn 2638, 2670; *Sphaeromeria capitata* Nutt., Dorn 2564; *Tetradymia spinosa* Hook. & Arn., Dorn 2684; *Townsendia incana* Nutt., Dorn 2628*, 2658; *Wyethia scabra* Hook., Dorn 2629; *Xylorhiza glabriuscula* Nutt., Dorn 2535, 2686.

CRUCIFERAE — *Malcolmia africana* (L.) R. Br., Dorn 2540*; *Physaria australis* (Payson) Rollins, Dorn 2547, 2559; *Stanleya tomentosa* Parry, Dorn 2652; *Streptanthella longirostris* (Wats.) Rydb., Dorn 2570*, 2653.

HYDROPHYLLACEAE — *Phacelia ivesiana* Torrey, Dorn 2567*, 2632.

LEGUMINOSAE — *Astragalus grayi* Parry ex Wats., Dorn 2642; *A. hyalinus* Jones, Dorn 2774.

LOASACEAE — *Mentzelia pumila* Nutt. ex T. & G., Dorn 2775*.

ONAGRACEAE — *Cammissonia andina* (Nutt.) Raven, Dorn 2568; *C. minor* (A. Nels.) Raven, Dorn 2654*; *C. scapoidea* (T. & G.) Raven, Dorn 2662.

POLEMONIACEAE — *Gilia leptomeria* Gray, Dorn 2631*; *Gilia tweedyi* Rydb., Dorn 2566*; *Ipomopsis pumila* (Nutt.) Grant, Dorn 2639.

POLYGONACEAE — *Erigonum brevicaule* Nutt. [*E. pauciflorum* Pursh var. *canum* (Stokes) Reveal], Dorn 2690, 2773.

ROSACEAE — *Physocarpus monogynus* (Torrey) Coult., Dorn 2778.

SAXIFRAGACEAE — *Sullivantia hapemanii* (Coult. & Fish.) Coult., Dorn 2674* (This species is otherwise known from only a few localities in Wyoming. It was found on dripping limestone.).

SCROPHULARIACEAE — *Penstemon caryi* Pennell, *Dorn* 2669*, 2777 (This species is endemic to the area and was known previously only from Big Horn Co., Wyoming.) ; *P. laricifolius* Hook. & Arn., *Dorn* 2651.

TAMARICACEAE — *Tamarix chinensis* Loureiro, *Dorn* 2673.

UMBELLIFERAE — *Musineon vaginatum* Rydb., *Dorn* 2683 (This record from the Pryor Mountains adds to the previous known range of the Big Horn and Bridger mountains.). — ROBERT D. DORN, Box 1471, Cheyenne, Wyoming 82001.

KNOBCONE PINE SOUTHWARD RANGE EXTENSION IN THE SIERRA NEVADA. — *Pinus attenuata* Lemm. has previously been reported as reaching its southern Sierra Nevada limit in Yosemite National Park (Griffin, J. R., and W. B. Critchfield, The distribution of forest trees in California, 1972; specifically, along the fire road to Deer Camp, Arnó, S. F., Discovering Sierra trees, 1973). We report here the existence of a population near Bass Lake, for a range extension of ca. 35km south, out of Yosemite Park and into Madera County. The population is distributed west of the Beasore Rd. 2.0–2.5 km north of Malum Ridge Rd. T7S, R22E, 10 (J. Keeley 7014, Occidental College, Los Angeles). At this site it occurs in close association with *Arctostaphylos viscida* and, on the periphery, mixes with *Pinus ponderosa*, *Pinus lambertiana*, *Libocedrus decurrens* and *Quercus chrysolepis*. The population is an uneven-aged stand of several hundred trees centered on a knoll at ca. 1200 m elevation. Several smaller populations occur 1.5–2.5 km further north on the Beasore Rd.

Pinus attenuata has previously been reported south of Yosemite Park (Munz, P. A., Supplement to a California flora, 1968), but Munz's report was apparently based on knobcone pine planted along the Mineral King Rd. (Griffin and Critchfield, op. cit.). The Beasore Rd. population is apparently indigenous. This is suggested by the large size of the population and confirmation by a Sierra Nevada Forest spokesperson (J. F. Underwood, Timber Management Officer, pers. comm. 14 Sept. 77) that knobcone pine has *not* been planted in this area. — JON E. KEELEY, Department of Biology, Occidental College, Los Angeles, Ca. 90041, STERLING C. KEELEY, Department of Biology, California State University, Northridge, Ca. 91330, and JANET LEE, Department of Botany, University of Kansas, Lawrence 66044.

SCROPHULARIA LAEVIS (SCROPHULARIACEAE), A LEGITIMATE SPECIES — Wootton and Standley (Contr. U. S. Nat Herb. 16: 173. 1913) described *S. laevis* based on collections from the Organ Mountains without flowers. The key in their "Flora of New Mexico" (Contr. U. S. Nat Herb. 19, 578. 1915) states the flowers to be dull-greenish, apparently without basis.

Shaw, having seen only the type specimen in the National Herbarium, indicated in his monograph (Aliso 5(2): 172. 1962) that *S. laevis* was synonymous with *S. montana*. In the same monograph, (Ibid., 173) he listed the type specimen under *S. parviflora*. His distribution map (Ibid., 173) showing both *S. montana* and *S. parviflora* locations does not show the Organ Mountain location at all. That it was probably omitted unintentionally is indicated since there are more New Mexico voucher specimens cited than there are locations plotted. Later, based on his observation of plants grown from Organ Mountain seed, Shaw (private communication with R. Roy Johnson) stated the plants resembled his hybrid, *S. macrantha* x *S. parviflora*.

All confirmed locations of *S. parviflora* are west of the Continental Divide, while all those of *S. montana* are east of the Divide. The location of *S. laevis* in the Organ Mountains is about 80 km from the nearest station of *S. montana* and over 200 km from the nearest station of *S. parviflora*.

Plants of *S. laevis* collected at several sites in the Organ Mountains over the past 15 years show little variation, indicating the stability and homogeneity of the population. They differ from both *S. montana* and *S. parviflora* in their smaller stature,



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