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ADDITIONS TO THE VASCULAR FLORA OF THE SANTA ANA MOUNTAINS, CALIFORNIA

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ABSTRACT

The Santa Ana Mountains, part of the Peninsular Ranges of southern California, have been well-documented floristically. Nevertheless, since publication of a preliminary vascular flora for the range in 1978, a significant number of additions have been reported. These are principally from studies of two subregions in the southern portion of the range and include 42 taxa from the Santa Rosa Plateau and 88 taxa from the San Mateo Canyon Wilderness Area. Documentation is provided here for an additional 66 taxa not included in other published floristic accounts of the Santa Ana Mountains. A voucher specimen and generalized distribution information are cited for each taxon.

Key words: California; flora; Peninsular Ranges; Santa Ana Mountains.

INTRODUCTION

The Santa Ana Mountains are situated at the northwestern extremity of the Peninsular Ranges in southern California, and straddle the borders of Orange, Riverside, and San Diego counties. The range is considered to have one of the best documented floras of any region in southern California. Lathrop and Thorne (1978) reported 848 vascular taxa in their preliminary inventory of the range. In the 17 years since that treatment, a significant number of additions to the flora have been reported. These have primarily been from two subregions of the Santa Ana Mountains. A revision of the flora for the Santa Rosa Plateau region (Lathrop and Thorne 1985) added 42 taxa. A floristic inventory of the San Mateo Canyon Wilderness Area of the Cleveland National Forest, located in the southwestern end of the range, has documented the presence of another 88 taxa (Boyd, et al. 1995).

Herein we cite an additional 66 taxa not reported in other published accounts of the range. Each of the following taxonomic entries is based on at least one herbarium specimen. Additional reports, not substantiated by a documenting herbarium specimen, are necessarily excluded. Herbarium acronyms are cited and follow *Index Herbariorum*, 8th ed. (Holmgren, et al. 1990). An alphabetical arrangement is followed for families

within subdivisions, classes, or subclasses, as well as genera within families and species within genera. Nomenclature follows, for the most part, Hickman (1993). In some instances, we have elected to follow alternate treatments and have thus indicated the Hickman equivalent in brackets. Family nomenclature is that of Thorne (1992) for the flowering plants and Crabbe et al. (1975) for ferns. Nonnative taxa are indicated by an asterisk (*) preceding the taxon name.

LYCOPODIAE

SELAGINELLACEAE

SELAGINELLA ASPRELLA Maxon Perennial herb. Locally common on rocky slopes, upper reaches of Santiago Peak. *P. Munz 7744*, 7 Sep 1923 (POM).

FILICAE

ADIANTACEAE

NOTHOLAENA CALIFORNICA D. Eaton Perennial herb. Rocky slopes and cliff-faces with xeric exposures at scattered sites on the lower western slopes of the range, as in Trabuco and Silverado canyons. *G. Marsh & K. Marsh s.n.*, 27 Jan 1978 (IRVC).

PELLAEA MUCRONATA (D. Eaton) D. Eaton var. CALIFORNICA (Lemon) Munz & I. M. Johnston Perennial herb. Plants approaching this taxon have been collected in the saddle between Modjeska and Santiago peaks. *A. Boughey & P. Pembroke 1046*, 15 June 1965 (IRVC).

ASPLENIACEAE

CYSTOPTERIS FRAGILIS (L.) Bernh. Perennial herb. Apparently uncommon in mesic situations in Silverado and Lost Woman canyons. *K. Marvosh s.n.*, 6 Apr 1966 (IRVC).

CONIFERAE

CUPRESSACEAE

*CALOEDRUS DECURRENS (Torrey) Florin Tree. Locally common at Los Pinos Saddle in area of introduced conifers in ravine northeast of Los Pinos Peak. It is not clear whether this species is reproducing locally, or just persisting from past plantings. *Roberts & R. Fisher 3164*, 28 Oct 1986 (IRVC).

PINACEAE

*PINUS RADIATA D. Don Tree. Locally common in area of introduced conifers, upper Trabuco Canyon, northeast of Los Pinos Peak. *Roberts & C. Roberts 4163*, 3 Nov 1988 (RSA).

ANGIOSPERMAE—DICOTYLEDONES

ANACARDIACEAE

RHUS TRILOBATA Nutt. ex Torrey & A. Gray var. QUINATA (E. Greene) Jepson [*R. t. s.l.*] Small shrub. Plants approaching this variety have been collected at scattered stations in the central part of the range, including Hot Springs and San Juan canyons. *Roberts & R. Allen 1002*, 10 Apr 1983 (IRVC).

APIACEAE

SANICULA BIPINNATA Hook. & Arn. Geophyte. Apparently scarce, known only from oak woodland understory of lower Verdugo Canyon. *Roberts 3853*, 15 Mar 1988 (RSA).

ASTERACEAE

ANCISTROCARPHUS FILAGINEUS A. Gray Annual. Locally common on open, vernal moist clay soil in native grasslands at Elsinore Peak and vicinity. *Boyd, L. Arnseth, & O. Mistretta 6135*, 6 May 1991 (RSA).

ASTER BERNARDINUS H. M. Hall Perennial herb. Local in moist situations along crest of range from Los Pinos Peak to Cariso Summit. *A. Sanders & J. West 3270*, 6 Nov 1982 (UCR).

ASTER RADULINUS A. Gray Perennial herb. Highly localized in the understory of *Quercus berberidifolia* chaparral in vicinity of Oak Flats (a.k.a. Oat Flats) northeast of the junction of the Main Divide and Skyline roads, just west of Riverside County line. *Boyd & Roberts 7715*, 14 Oct 1992 (RSA).

BACCHARIS DOUGLASII DC. Perennial herb. Apparently scarce and local along stream in Holy Jim Canyon. *P. Munz 7733*, 6 Sep 1923 (POM).

BACCHARIS SAROTHOIDES A. Gray Small shrub. Apparently scarce and local near river bank, south side of the Santa Ana River near Horseshoe Bend, Santa Ana Canyon. *K. Marsh s.n.*, 15 Dec 1986 (IRVC).

BRICKELLIA NEVINII A. Gray Low shrub. Locally common, openings in chaparral of steep, xeric slopes in upper Tin Mine Canyon. *Boyd & K. Boyd 7656*, 9 July 1992 (RSA).

*DIMORPHOTHECA SINUATA DC. Annual. Encountered as a waif along Volcano Road, west of the Santa Rosa Plateau Ecological Reserve on Mesa de Colorado. *Boyd 3517*, 30 Apr 1989 (RSA).

ERICAMERIA CUNEATA (A. Gray) McClatchie var. CUNEATA Small shrub. Scarce on granitic outcrops, west slope of Modjeska Peak in oak woodland. *G. Marsh & K. Marsh s.n.*, 14 Oct 1988 (IRVC).

HULSEA HETEROCHROMA A. Gray Biennial or short-lived perennial

herb. Apparently scarce at upper elevations, as near the western summit of Modjeska Peak. *G. Reynolds s.n.*, 3 July 1980 (IRVC).

MICROSERIS DOUGLASII (DC.) Schultz-Bip. ssp. TENELLA (A. Gray) Chambers Annual. Apparently uncommon; collected once along the Main Divide Truck Trail between El Carriso and Santiago Peak in an area of oak woodland with scattered *Pinus coulteri* and *Pseudotsuga macrocarpa*. *E. Lathrop 7050*, 9 May 1969 (RSA).

*SENECIO MIKANIODES Walp. Liana. Locally established along the stream in lower Ladd Canyon. *G. Marsh & K. Marsh s.n.*, 29 Jan 1978 (RSA).

*TRAGOPOGON DUBIUS Scop. Annual. Locally common in disturbed grasslands surrounded by *Quercus agrifolia* woodland in the Morrell Potrero area along the Main Divide Road, northwest of Elsinore Peak. *Boyd & Ross 7077*, 28 Apr 1992 (RSA).

BORAGINACEAE

PECTOCARYA SETOSA A. Gray Annual. Scarce and local on open, vernal moist clay soil at the border between scrub and grassland vegetation, southern base of Elsinore Peak and on the grassy knoll to the east. These are noteworthy cismontane populations for this typically transmontane species. *Boyd 6169*, 7 May 1991 (RSA).

BRASSICACEAE

*LOBULARIA MARITIMA (L.) Desv. Suffrutescent perennial. Locally established in disturbed situations, usually near habitations, as in Trabuco, Rice, and McVicker canyons. *Boyd 6280*, 20 May 1991 (RSA).

*RAPHANUS RAPHANISTRUM L. × R. SATIVUS L. Annual. Putative hybrids of these common weeds have been collected in a disturbed area between Silverado and Modjeska canyons along Santiago Canyon Road. *J. Johnson s.n.*, 17 Feb 1975 (IRVC).

CAPPARACEAE

ISOMERIS ARBOREA Nutt. Small shrub. This taxon has been collected at lower elevations of Silverado and Modjeska canyons and is presumed native to the area. *D. Frees s.n.*, 13 Mar 1965 (IRVC). It is also occasional along the Main Divide Road between El Carriso and Morrell Potrero, and on the Santa Rosa Plateau along Tenaja Road, southeast of Tenaja Guard Station. These latter populations are considered to be introduced, apparently seeded onto road cuts, but are now reproducing and spreading into adjacent scrub and grassland vegetation. *Boyd & K. Boyd 7719*, 21 Feb 1993 (RSA).

CARYOPHYLLACEAE

*SPERGULA ARVENSIS L. ssp. ARVENSIS Annual. Apparently scarce in Trabuco Canyon. *M. Savage s.n.*, 20 Apr 1965 (IRVC).

CONVOLVULACEAE

CALYSTEGIA MACROSTEGIA (E. Greene) Brummitt ssp. TENUIFOLIA (Abrams) Brummitt Perennial herb. Apparently scarce, as in Silverado and Los Alamos canyons. *F. Fosberg S5142*, 21 June 1931 (RSA).

CRASSULACEAE

DUDLEYA CYMOSA (Lem.) Britton ssp. OVATIFOLIA (Britton) Moran Succulent perennial herb. Locally common on north-facing cliffs in chaparral, central Santiago Canyon near Fleming Park to near the summit of the west slope of Modjeska Peak. *Roberts & C. Roberts 4074*, 9 June 1988 (IRVC).

EUPHORBIACEAE

ACALYPHA CALIFORNICA Benth. Small shrub. Locally common in chaparral along powerline road on ridges east of Weir Canyon, at

the head of Gypsum Canyon. This population apparently represents the northernmost station for the species. *Boyd & L. LaPré s.n.*, 27 May 1981 (RSA).

FABACEAE

**LATHYRUS TINGITANUS* L. Annual. Known from scattered stations in San Juan Canyon along the Ortega Highway. *Roberts 1770*, 9 May 1985 (IRVC).

LOTUS ARGOPHYLLUS (A. Gray) E. Greene ssp. *ARGOPHYLLUS* Perennial herb. Collected along Highway 74 in lower San Juan Canyon. *G. Marsh & K. Marsh s.n.*, 21 Nov 1977 (RSA).

LUPINUS EXCUBITUS M. E. Jones var. *AUSTROMONTANUS* (Heller) C. P. Smith Suffrutescent perennial. Locally common on the southern and eastern flanks of Elsinore peak and adjacent hills to the south and east, in native grasslands associated with cobbly clay soil deposits. *Boyd 6159*, 7 May 1991 (RSA).

**SENNA ARTEMISIOIDES* (Gaudichaud ex DC.) Randell Small shrub. Locally established in alluvial scrub of lower Silverado Canyon wash. *G. Marsh & K. Marsh s.n.*, 5 Aug 1988 (IRVC).

VICIA HASSEI S. Watson Annual. Apparently uncommon; collected once from a shaded slope at 1,200 ft in Sierra Canyon. *P. Munz & R. Harwood 3748*, 24 Apr 1920 (POM).

FRANKENIACEAE

FRANKENIA SALINA (Molina) I. M. Johnston Suffrutescent perennial. Apparently scarce; collected once in an unspecified location in Silverado Canyon. *D. Van Gorden s.n.*, 9 May 1965 (IRVC).

GERANIACEAE

**ERODIUM BOTRYS* (Cav.) Bertol. Annual. Documented from near the summit of Black Star Canyon, observed in abundance on the Santa Rosa Plateau (Ross, pers. obs.), and to be expected in annual grasslands and other disturbed situations throughout the range. *D. Ibbetson s.n.*, 3 Apr 1965 (IRVC).

LAMIACEAE

**MELISSA OFFICINALIS* L. ssp. *OFFICINALIS* Perennial herb. Apparently scarce; shaded margin of stream near Shrewsbury Spring in Silverado Canyon. *Roberts & G. Marsh 3121*, 27 Aug 1986 (IRVC).

LENNOACEAE

PHOLISMA ARENARIUM Nutt. ex Hook. Parasitic perennial herb. Locally scarce on decomposing granite slope in chaparral, north side of lower Rice Cyn, just inside the Cleveland National Forest boundary. Apparently parasitic on roots of *Eriodictyon crassifolium*. *Boyd 6277*, 20 May 1991 (RSA).

LOASACEAE

MENTZELIA DISPERSA S. Watson Annual. Locally common in loose, rocky soil in chaparral, upper western slope of Modjeska Peak and on the summit of Santiago Peak. *Roberts & C. Roberts 4071*, 9 June 1988 (RSA).

MYRTACEAE

**EUCALYPTUS TORQUATA* Luehm. Tree. Adventive in lower Santiago Canyon adjacent to planted trees. *Roberts 2835*, 14 May 1986 (IRVC).

ONAGRACEAE

**OENOTHERA SPECIOSA* Nutt. Perennial herb. Collected in Silverado Canyon, presumably as an escape from cultivation. *B. Simpson s.n.*, 2 Apr 1965 (IRVC).

PAPAVERACEAE

ESCHSCHOLZIA CAESPITOSA Benth. Annual. Local in fairly xeric openings in chaparral at the base of the range, just north of the mouth of Hagador Canyon at the lower end of Skyline Drive. *Boyd 6210*, 10 May 1991 (RSA).

POLEMONIACEAE

GILIA OCHROLEUCA M. E. Jones ssp. *EXILIS* (A. Gray) A. D. Grant & V. Grant Annual. Locally common on open, gravelly alluvial benches of canyons draining the northeastern flank of the range, such as Rice and Indian Canyons. *Boyd 6278*, 20 May 1991 (RSA).

LINANTHUS CILIATUS (Benth.) E. Greene Annual. Local in chaparral openings near Maple Springs, below Modjeska Peak. *A. Boughey & P. Pembroke 1048*, 15 June 1965 (IRVC).

POLYGONACEAE

ERIOGONUM WRIGHTII Torrey ex Benth. var. *SUBSCAPOSUM* S. Watson Small shrub. Local in rocky soil at the summit of Santiago Peak. *C. Wolf 5404*, 24 Aug 1933 (RSA).

SAPINDACEAE

**DODONEA VISCOSA* (L.) Jacq. s.l. Shrub. Reportedly adventive in riparian vegetation of Silverado Canyon at its confluence with Shusbury Canyon. *K. Marsh s.n.*, 9 July 1987 (IRVC).

SCROPHULARIACEAE

KECKIELLA ANTIRRHINOIDES (Benth.) Straw × *K. CORDIFOLIA* (Benth.) Straw Small shrub. Scarce natural hybrid at the north base of the range just north of the mouth of Hagador Canyon at the lower end of Skyline Drive. Both parental species were present and common in the surrounding dense chaparral vegetation. *Boyd 6217*, 10 May 1991 (RSA).

VALERIANACEAE

**CENTRANTHUS RUBER* (L.) DC. Perennial herb. Adventive plants documented in Silverado Canyon and in lower Hot Springs Canyon where locally common in disturbed riparian woodland. *A. Boughey 415*, 9 July 1968 (IRVC).

VERBENACEAE

VERBENA LASIOSTACHYS Link var. *SCABRIDA* Moldenke Suffrutescent perennial. Known from a single collection in Santiago Canyon. *Roberts 2785*, 11 Apr 1986 (IRVC).

VERBENA MENTHIFOLIA Benth. Suffrutescent perennial. Documented in Dove Canyon Creek, southeast of Trabuco Oaks. *K. Marsh s.n.*, 25 Mar 1980 (IRVC).

ANGIOSPERMAE—MONOCOTYLEDONES

ALLIACEAE

ALLIUM MUNZII (Ownbey ex Traub) McNeal Geophyte. Occasional to locally common on open, vernal moist cobbly clay soil deposits on the south and east sides of Elsinore Peak and on adjacent hills to the south and east. The Elsinore Peak populations occur at the highest known elevation for the species (± 1070 m). *Boyd 6164*, 7 May 1991 (RSA).

CYPERACEAE

CAREX GLOBOSA Boott Perennial herb. Local in seepage above Blue Light Mine, Pine Canyon. *G. Marsh & K. Marsh s.n.*, 2 May 1977 (IRVC).

*CYPERUS DIFFORMIS L. Annual. Documented along Via Yerba Road on the Santa Rosa Plateau. *S. White s.n.*, 25 Sep 1990 (UCR).

CYPERUS ODORATUS L. Annual. Local in moist areas at scattered stations including San Juan Hot Springs, Arroyo Trabuco, and near Potrero de los Pinos. *G. Marsh & K. Marsh s.n.*, 12 Oct 1978 (IRVC).

LILIACEAE

CALOCHORTUS PLUMMERAE E. Greene Geophyte. Infrequent in chaparral openings along the main crest of the range, north of Pleasants Peak and south of Oak Flat (a.k.a. Oat Flat), 1.5 miles south of the junction of Main Divide and Skyline roads. *Boyd & K. Boyd 7655*, 9 July 1992 (RSA).

CALOCHORTUS WEEDII Alph. Wood var. INTERMEDIUS Ownbey Bulbiferous perennial. Documented from such scattered stations as Gypsum and Silverado canyons, Sierra Peak, and Starr Ranch. *E. Balls 23278*, 27 June 1958 (RSA).

MELANTHIACEAE

ZIGADENUS FREMONTII (Torrey) S. Watson var. MINOR (Hook. & Arn.) Jepson [*Z. f. s.l.*] Geophyte. Gracile, small-flowered plants corresponding to this variety are locally common on clay soil on Elsinore Peak, and have also been collected along Skyline Drive, and in Trabuco Canyon. *Boyd & Ross 6777*, 1 Apr 1992 (RSA).

POACEAE

ARISTIDA PURPUREA Nutt. var. PARISHII (A. Hitchc.) K. W. Allred Perennial herb. Local in xeric sedimentary substrates at lower elevations on the western side of the range, as in Lucas, Blind, and Santiago canyons. *Roberts 4314*, 26 Apr 1989 (RSA).

ARISTIDA TERNIPES Cav. var. HAMULOSA (Henrard) J. S. Trent Perennial herb. Documented from rocky outcrops in the lower elevations of the central western portions of the range including Cañada Chiquita, Dove, and San Juan canyons. *Roberts & H. Camp 3219*, 10 Mar 1987 (IRVC).

*ARRHENATHERUM ELATIUS (L.) Beauv. ex J. & C. Presl Perennial herb. Locally common in chaparral near the summit of Modjeska Peak. This coarse adventive perennial may have been seeded after a fire in 1982. *Roberts 4098*, 10 June 1988 (RSA).

CALAMAGROSTIS Densa Vasey [sub *C. koelerioides* Vasey] Perennial herb. Local at the northern end of the range in Coal Canyon in woodland of *Cupressus forbesii*. *K. Marsh s.n.*, 30 July 1982 (IRVC).

*CRYPISIS VAGINIFLORA (Forsskal) Opiz Annual. Known only from a

vernal pool at the western base of the range, south of Trabuco Canyon. *K. Marsh s.n.*, 13 Aug 1980 (IRVC).

ELYMUS GLAUCUS Buckl. ssp. JEPSONII (Burt Davy) Gould Perennial herb. Documented from clay soil in yellow pine forest between Santiago Peak and Indian Truck Trail along the Main Divide Road. *E. Balls 23293*, 27 June 1958 (RSA).

*ELYMUS HISPIDUS (Opiz) Meld. [*Elytrigia intermedia* (Host) Nevski ssp. *i.*] Perennial herb. Locally common in disturbed areas within chaparral and coastal sage scrub vegetation along Main Divide Road near Falcon Group Camp. Probably introduced to the site as a soil stabilizer. *Roberts 758*, 20 July 1982 (UCSB).

*LOLIUM PERENNE L. ssp. PERENNE Perennial herb. Collected once in Blackstar Canyon, 0.5 mile below "Hidden Ranch" in recently burned area. Possibly seeded as post-fire erosion control. *A. Boughey 216*, 23 Apr 1968 (IRVC).

*POLYPOGON INTERRUPTUS Kunth Perennial herb. Documented along streams in Silverado and San Juan canyons. *R. Meinzer 111*, 24 May 1971 (IRVC).

SCRIBNERIA BOLANDERI (Thurber) Hackel Annual. Local on open clay soil, vernal moist areas in native grasslands east of Elsinore Peak. *Boyd 8510*, 13 May 1995 (RSA).

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