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VASCULAR PLANTS OF THE HIGH SIERRA SAN PEDRO MÁRTIR, BAJA CALIFORNIA, MEXICO: AN ANNOTATED CHECKLIST

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ABSTRACT

The Sierra San Pedro Mártir (SSPM) is the highest mountain range in Baja California, Mexico, the summit of Picacho del Diablo peak attaining 3095 meters. An annotated checklist describes the vascular flora of the SSPM high country, defined here as above 1800 m. It comprises almost 500 species in 251 genera and 78 families. The high country is dominated by coniferous forest species known from montane California and Arizona whose southern ranges terminate in the SSPM. The annotated checklist identifies 453 species in 236 genera as indigenous, of which 23 species and one variety are endemic to the SSPM. Over 30 species are unreported from Alta California but occur in regions northeast of Baja California. The climate, vegetation and biogeography of the range are described. Botanical explorations to the area since 1893 are outlined with reference to collectors, their collections, and herbaria where specimens are housed. For each species, the checklist cites one to several collections, months in flower, and known distribution ranges. Asteraceae is the most speciose of the twelve largest families, and *Juncus* contributes the most indigenous species, followed by *Carex* and *Muhlenbergia*. Listed separately are species from chaparral or desert scrub just below the 1800 m limit that are thought to extend into the high country but for which no records exist at this time.

RESUMEN

La Sierra San Pedro Mártir (SSPM), es el rango montañoso más alto en Baja California, México, siendo el Picacho del Diablo su punto máximo con 3095 metros de altura. Se presenta aquí el listado anotado de la flora vascular de las tierras altas de la SSPM, definida por encima de 1800 m. Esta zona posee casi 500 especies que representan 251 géneros y 78 familias. Las tierras altas se encuentran dominadas por bosques de coníferas conocidas en las montañas de California y Arizona, cuyo rango al sur termina en la SSPM. El listado anotado identifica 453 especies en 236 géneros indígenas, de los cuales 23 especies y una variedad son endémicas de la SSPM. Más de 30 especies no han sido reportadas en Alta California pero ocurren en regiones del noreste de Baja California. Se describen el clima, la vegetación y la biogeografía de dicho rango. Las expediciones botánicas realizadas en el área desde 1893 son presentadas aquí, con especial referencia a sus colectores, colecciones y herbarios donde se encuentran depositadas. Este listado cita para cada una de las especies, de una a varias colecciones, meses de floración y los rangos de distribución conocidos. La familia con el mayor número de especies es Asteraceae, mientras que *Juncus* contribuye con el mayor número de especies indígenas, seguido por *Carex* y *Muhlenbergia*. Se presentan aparte las especies del chaparral o del matorral desértico, justo por debajo de los 1800 m, las cuales se cree que se pueden extender en las tierras altas pero para las cuales no existen reportes en este momento.

Key words: Baja California, biogeography, climate, collectors, collections, endemics, floristics, Sierra San Pedro Mártir, SSPM, vascular flora, vegetation.

INTRODUCTION

Range

The Sierra San Pedro Mártir (SSPM) of the Peninsular Range Batholithic Province (Gastil et al. 1975) is the highest mountain range in Baja California, Mexico. The summit of the highest peak, the Picacho del Diablo (Fig. 1; Map 1), reaches an elevation of 3095 m. The SSPM is a northwest–southeast trending fault-bound range (lat. 31°N), 150 km southeast of the United States–Mexico border, and forms the peninsular range divide for a distance of ca. 100 km. The crest consists of a broad plateau of gentle hills and shallow alluvial basins with elevations of 2500 m in the north and 1800 m in the south. The

eastern escarpment is highly dissected with vertical relief of 1000–2500 m above the Sonoran Desert (Fig. 2). A ridgeline of 2700–2950 m separates the plateau from the eastern escarpment. The western flank is a steep, largely undissected escarpment of 500–1000 m. Granitic rocks are exposed extensively through the range, with local exposures of metamorphic rock (see Delgadillo 2004 for additional detail).

Many plants of the mountains of California and Arizona reach their southern limits in the SSPM, and many plants of the SSPM are found nowhere else in Baja California peninsula. The flora of higher parts of the range is thus of particular interest to both Mexican botanists and to botanists farther north. The intent of this survey is to list the plants of the high peaks and of the coniferous forest on the plateau of the SSPM, but it is hard to draw a boundary. Fringing riparian woodland of *Pinus jeffreyi* (Jeffrey pine; Fig. 3) is found down to 1300 m

⁴Deceased 21 Jan 2010.

Fig. 1–4. Sierra San Pedro Mártir. —1. Picacho del Diablo, the highest point in the Baja California peninsula (3095 m). —2. Cañada del Diablo from Observatory (ca. 2840 m). —3. Chaparral-clad W slopes and gallery forest of Jeffrey pine along stream on trail to Oak Pasture, Reid Moran in foreground, 22 Aug 1967. —4. Montane chaparral and Jeffrey pine forest on ridge at upper (N) end of La Encantada Meadow (ca. 2285 m).

and locally as low as 650 m; conversely, many plants of associations more common at lower elevations, for example chaparral, do extend to the plateau (Fig. 4). To include information for most conifers of the plateau (Map 2), we arbitrarily set our lower limit at 1800 m. The main checklist contains taxa known by us to occur above 1800 m based on herbarium vouchers and/or field collection notes. In Table 1 we list additional taxa that may possibly extend this high but for which we have found no supporting documentation.

Climate

The climate of the SSPM is Mediterranean with relatively mild temperatures, winter precipitation from cyclones from the northern Pacific Ocean (Nov–Apr) and summer drought. Westerly airflow during winter cyclones results in strong orographic precipitation gradients. Mean annual precipitation in the SSPM increases from 270 mm at Rancho Santa Cruz at the base of the western escarpment to 700 mm on the western plateau, 500 mm on the north and east sides of the plateau, and 200 mm at the base of the eastern escarpment (Minnich et al. 2000a,b). The annual warm season precipitation, which comes mostly in the form of afternoon thunder showers in July and August, is 50–200 mm. Mean January temperatures range from 10°C in the coastal valleys and deserts to 0°C at 2500 m. July temperatures average 25°C in the coastal valleys, 16°C at 2500 m, and 30°C in the deserts (Minnich et al. 2000b; Delgadillo 2004).

Vegetation

The SSPM exhibits a distribution of conifers familiar from the mountain ranges of California (Minnich and Franco-Vizcaino 1998; Minnich 2001). Combined into Map 2 are the ranges of the nine main conifers and their assemblages. Maps 3–22 depict distribution ranges individually for various dominant tree and shrub species, including Great Basin sage scrub (Map 3), wet meadows (Map 4), mountain-mahogany chaparral (Map 5), timberland chaparral (Map 6), chamise chaparral (Map 7), manzanita chaparral (Map 8), peninsula manzanita (Map 9), red-shank chaparral (Map 10), coulter pine (Map 11), mixed lodgepole pine (Map 12), four-needle pinyon (Map 13), single-leaf pinyon (Map 14), Jeffrey pine (Map 15), mixed incense cedar (Map 16), mixed mountain cypress (Map 17), mixed white fir and sugar pine (Map 18), quaking aspen (Map 19), coast live oak (Map 20), golden-cup oak (Map 21), and peninsular oak (Map 22). The mixed conifer assemblages are defined as follows: mixed lodgepole pine (*Pinus contorta* subsp. *murrayana* with *P. jeffreyi*), mixed incense cedar (*Calocedrus decurrens* with white fir [*Abies concolor*] and *Pinus jeffreyi*), and mixed mountain cypress (*Hesperocyparis montana* with *A. concolor* and sugar pine [*Pinus lambertiana*]) (Minnich et al. 2000a; additional associates are indicated in the checklist).

The western escarpment below 1900 m is dominated by chaparral, which consists of dense contiguous carpets of evergreen sclerophyllous shrubs. With increasing elevation, chamise chaparral (dominated by *Adenostoma fasciculatum*; Map 7) and red-shank chaparral (dominated by *Adenostoma sparsifolium*; Map 10) are replaced by peninsula manzanita (*Arctostaphylos peninsularis*) chaparral (Map 9), which occurs as high as 2200–2400 m on steep southern exposures (Fig. 5).

Peninsula manzanita chaparral also extends onto the upper catchments of the eastern escarpment (Map 9). Coast live oak (*Quercus agrifolia*) woodlands (Map 20) occur in small groves along canyons, basins, and fault seeps. Other hardwood forests consist of riparian galleries of mostly *Populus fremontii* and *Salix* spp. along the primary trunk streams descending from the plateau. *Platanus racemosa* occurs locally in the southwestern corner of the SSPM. The most widespread conifer in the chaparral zone, four-needle pinyon (*Pinus quadrifolia*), has lent its name to the corresponding woodlands (Map 13). This tree occurs in a fragmented patchwork of thousands of small stands growing in mostly chamise and red-shank chaparral. Two small colonies of Coulter pine, *Pinus coulteri* (Map 11), grow in dense *Arctostaphylos peninsularis* chaparral (Map 9) in the far north and at “Cerro 2040” in the south.

The eastern escarpment above 1800 m is covered by extensive woodlands of *Pinus quadrifolia* (Map 13), mostly in association with peninsula manzanita chaparral. Below 1500 m, *P. quadrifolia* is replaced by *P. monophylla*, one-needle pinyon (Map 14), with understory of desert chaparral dominated by *Arctostaphylos peninsularis*, *Cercocarpus betuloides*, *Fremontodendron californicum*, *Garrya grisea*, *Quercus cornelius-mulleri*, *Rhus ovata*, *R. trilobata*, and succulents such as *Agave deserti*, *Nolina parryi*, and *Yucca schidigera* (Wiggins 1944; Chambers 1955).

The SSPM plateau is covered by 40,000 hectares of Californian mixed conifer forests. The lower margins are dominated by monotypic stands of *Pinus jeffreyi* forest (Map 15; Fig. 3–7), especially on floors and arroyos of the central and southern plateau (2100 m). To the north, *P. jeffreyi* forest gives way to continuous, floristically richer forests that cover hillslope terrains as well as basin floors. South-facing slopes are dominated by *P. jeffreyi* with scattered cover of *Abies concolor* and *Pinus lambertiana* (Map 18; Fig. 6), accompanied by the endemic *Hesperocyparis montana* (Map 17; Fig. 10) on the eastern escarpment from “Cerro Venado Blanco” to east of La Encantada. North-facing slope forests are dominated by *Abies concolor* and *Pinus lambertiana*. *Hesperocyparis montana* also extends downslope into the upper reaches of *Pinus quadrifolia* forest. *Calocedrus decurrens* (Map 16), occurs locally along watercourses, mostly on the western slope of the range, and in the deep canyons of the eastern escarpment north of Picacho del Diablo. *Pinus contorta* subsp. *murrayana* forest (Map 12; Fig. 7) is common near meadows at Vallecitos and La Tasajera. A few stands grow on the highest summits of the eastern divide.

Mixed conifer forest grows above the chaparral belt or in basins at lower elevations lacking dense shrub understory. Open stands of prostrate montane chaparral dominated by manzanita chaparral (*Arctostaphylos patula*) (Map 8) and *Ceanothus cordulatus* are important understory, especially above 2200 m north of La Grulla and La Encantada. Other important shrubs include *Arctostaphylos pringlei* and *Frangula californica* subsp. *tomentella*. Shrubby *Quercus chrysolepis* (Map 21) is common in forests covering hilly areas of the plateau. *Quercus chrysolepis* also descends into the chaparral to 1900 m along steep canyons and across north-facing slopes. *Quercus peninsularis* (Map 22) grows extensively in Jeffrey pine forest on metamorphic rock exposures south of La Grulla and La Encantada and locally near the Observatory. Quaking aspen, *Populus tremuloides* (Map 19; Fig. 8), is common in the

Table 1. Supplementary list of species found in chaparral or desert scrub just below conifer forests of the Sierra San Pedro Mártir. The list includes species that have been recorded from ca. 1300–1750 m and will likely be found at elevations above 1800 m with further collecting. For each species, the elevation cited represents the highest known elevation of occurrence to date. Most are species of the chaparral on the western slopes; some are desert species of the canyons on the steep eastern slope of the range. A few have been collected on “Cerro Chato”, “Cerro Matomi”, or other peaks of the range separated from the main mountain mass. (Asterisks denote naturalized taxa).

<i>Apium graveolens</i> L.	1675 m
<i>Calochortus splendens</i> Dougl.,	1750 m
<i>Ceanothus palmeri</i> Trelease,	1500 m
<i>Cheilanthes covillei</i> Maxon,	1700 m
<i>Cheilanthes lindheimeri</i> (J.Smith) Hook.,	1550 m
<i>Chorizanthe fimbriata</i> Nutt. subsp. <i>fimbriata</i> ,	1600 m
<i>Cuscuta subinclusa</i> Durand & Hilg. (<i>C. ceanothi</i> Behr),	1600 m
<i>Cyperus niger</i> R. & P. var. <i>capitatus</i> (Britt.) O'Neill,	1700 m
<i>Dendromecon rigida</i> Benth.,	1700 m
<i>Echinocereus engelmannii</i> (Parry) Ruml. subsp. <i>engelmannii</i> ,	1600 m
<i>Eriastrum sapphirinum</i> (Eastw.) Mason,	1675 m
<i>Ericameria linearifolia</i> ,	1600 m
<i>Eriogonum foliosum</i> S.Watson,	1700 m
<i>Euphorbia micromeria</i> Boiss. ex Engelm. (<i>Chamaesyce micromeria</i> (Boiss.) Woot. & Standl.),	1700 m
<i>Ferocactus cylindraceus</i> (Engelm.) Orcutt (<i>C. acanthodes</i> (Lem.) Britt. & Rose),	1750 m
<i>Galium diabolense</i> Dempst.,	1700 m
<i>Geraea viscida</i> (A.Gray) Blake,	1700 m
<i>Hazardia stenolepis</i> (H.M.Hall) Hoover,	1700 m
<i>Linanthus bellus</i> (A.Gray) Greene,	1725 m
<i>Mimulus fremontii</i> A.Gray,	1600 m
<i>Nemacladus longiflorus</i> A.Gray,	1725 m
<i>Phacelia imbricata</i> Greene subsp. <i>bernardina</i> (Greene) Heckard,	1750 m
* <i>Plantago lanceolata</i> L.,	1675 m
<i>Poa secunda</i> J.Presl subsp. <i>secunda</i> ,	<1500 m
<i>Populus fremontii</i> S.Watson,	1700 m
<i>Prunus ilicifolia</i> (Nutt.) Walp. subsp. <i>ilicifolia</i> ,	1675 m
<i>Quercus dunnii</i> Kell.,	1675 m
<i>Rhus kearneyi</i> F.A.Barkley subsp. <i>kearneyi</i> ,	1350 m
<i>Ribes quercetorum</i> Greene,	1750 m
<i>Schismus barbatus</i> (L.) Thell.,	1725 m
<i>Scirpus microcarpus</i> Presl,	1675 m
<i>Selaginella bigelovii</i> Underw.,	1700 m
<i>Spergularia marina</i> (L.) Griseb.,	1700 m
<i>Sphenopholis obtusata</i> (Michx.) Scribn.,	1675 m
* <i>Stellaria media</i> (L.) Vill.,	1675 m
<i>Stephanomeria pauciflora</i> (Torr.) A.Nelson,	1625 m
<i>Toxicodendron radicans</i> L. subsp. <i>diversilobum</i> (Torr. & A.Gray) Thorne,	1700 m
<i>Uropappus lindleyi</i> (DC.) Nutt.,	1550 m
<i>Verbena neomexicana</i> (A.Gray) Small,	1750 m

high plateaus from “Cerro Venado Blanco” to the southern edge of Vallecitos and east of La Encantada. Except for quaking aspen, there is little or no shrub or hardwood tree cover on the floor of Vallecitos and north-facing slopes of the nearby western and eastern divides.

The forest belt has numerous wet meadows (Map 4; Fig. 9) that are subject to summer cattle grazing. Most are small, but those at La Grulla, La Encantada, and Santa Rosa in central SSPM are more than 500 hectares. Dominant species are *Juncus* spp. and *Carex* spp., similar to meadows in the mountains of California. Other common herbs include

Astragalus gruinus, *Berula erecta*, *Cirsium tioganum*, *Epilobium ciliatum*, *Oenothera californica*, *Poa annua*, and *Ranunculus cymbalaria* subsp. *saximontanus*. Herbaceous perennials of such genera as *Achillea*, *Dieteria*, *Muhlenbergia*, and *Potentilla* cover drier or overgrazed meadows.

Plant Collections

We have collected, photographed, and observed most of the plants listed in the Annotated Checklist. Our specimens are deposited in the herbaria of Rancho Santa Ana Botanic Garden (RSA/POM), the San Diego Museum of Natural History (SD), and the University of California, Riverside (UCR), with many duplicates housed at BCMEX, CAS/DS, ENCB, HCIB, INIF, MEXU, UC, UCBE, and US. We have also looked at specimens collected by others, though not exhaustively, and we include some records from Wiggins (1980) and recent monographs. We report many southward range extensions based on specimens at SD collected mostly by the second author, Reid Moran. In listing collection and observation sites we have given full citations typically for only two collections, mostly by the first two authors. For more recent collections, we consulted the online database on the flora of Baja California maintained by the San Diego Museum of Natural History (<http://www.bajafloora.org>). This website also features 17 field books written by Moran between 1936 and 1993 that document his plant collecting activities in Baja California.

Townshend Stith Brandegee was the first botanist to visit the SSPM during May 1893 (Moran 1952). With a party of naturalists he traveled from Tijuana to San Telmo, Valladares, Arroyo Santa Cruz, La Grulla, probably La Encantada, and the upper Gulf slope, returning by the same route after two weeks in the high Sierra. Brandegee (1893) briefly described his trip. Making his subject the southern extension of California flora, he listed all plants seen on the trip that he did not know to grow farther south. These included 123 species for the Sierra San Pedro Mártir and foothills, but he noted that this was not a complete list.

As part of their remarkable biological explorations in Baja California, E. W. Nelson and E. A. Goldman visited the Sierra in 1905, mostly in July. After exploring Cañón de la Esperanza and Cañón de la Providencia on the desert side, they traveled from Paso San Matías (29 Jun) to El Piñón, the headwaters of Río San Rafael, Vallecitos, La Grulla, Rancho Santo Tomás, Rancho San Antonio (28 Jul), and out to San Quintín. They collected birds and mammals and the more conspicuous and important plants, mainly trees and shrubs. Goldman (1916) made notes on plants collected, with a few good photographs, and descriptive notes on the main collecting sites (Goldman 1951). Nelson (1921) described the expedition day by day, discussed the geography and plant and animal life of Baja California, again with good photographs, and summarized scientific explorations generally.

A few others brought back small collections from the high Sierra; we have seen specimens of George Robertson in 1916 (UC), Lawrence Huey in 1923 and 1926 (Huey 1927), Aida Meling in 1931 (DS), and Margaret Bancroft in 1941 (SD).

Ira Wiggins of Stanford University made four important early trips into various parts of the Sierra at various seasons (Lindsay and Higgins 1970). In September 1930, Wiggins and Delzie Demaree traveled from Rancho San José to La Grulla and La

Fig. 5–10. Sierra San Pedro Mártir flora.—5. Jeffrey pine forest with montane forest of manzanita *Arctostaphylos* sp. and *Salvia pachyphylla* along trail from Los Llanitos to La Encantada Meadow (ca. 2440 m).—6. *Pinus lambertiana* and *P. jeffreyi* at La Grulla (ca. 2135 m).—7. *Pinus contorta* subsp. *murrayana* and some *P. jeffreyi* at Vallecitos Meadow (ca. 2400 m).—8. *Populus tremuloides* and *Pinus jeffreyi* (background) at Los Llanitos (ca. 2440 m).—9. Small pond at lower (W) end of La Grulla Meadow, with *Hydrocotyle ranunculoides* and other aquatics (ca. 2135 m).—10. The endemic cypress, *Hesperocyparis montana*, near Los Llanitos (ca. 2450 m).

Encantada, with a short visit to Vallecitos. From 15 Sep to 6 Oct 1938, Wiggins and Dr. A. M. Vollmer journeyed from Rancho San José up the Río Santo Domingo and to the former Misión San Pedro Mártir, La Grulla, La Encantada, and Vallecitos, north to the Sierra Juárez, and back along the lower slopes of the SSPM to Rancho San José. In May 1941, Wiggins and Vollmer traveled from Rancho San José to La Grulla and Llano Santa María, down to the desert by the El Cajón trail, south to the El Banco trail, west to San Antonio del Duarte and north through the foothills to Rancho San José (Wiggins 1944). In 1946, Wiggins, Vollmer, and H. M. Hill explored from Rancho San José up the Río Santo Domingo and to ex-Misión San Pedro Mártir and La Grulla, then back to Rancho San José. There may have been later trips. In June 1954, Kenton Chambers made an interesting collection at 610–1830 m in Cañón del Diablo, on the east side of the Sierra (Chambers 1955).

Moran and Thorne made their first trip into the high Sierra in August 1967, packing in from Rancho San Pedro Mártir via Corral de Sam to Vallecitos, Los Llanitos, La Encantada, Santa Rosa, and La Grulla, and down by La Joya to Encinal (Fig. 15–18). The next year saw the building of a first jeep road from Corral de Sam to what we now call “Cerro Observatorio” to start developing an astronomical observatory. In the next two years and after, roads improved, making the high country more easily accessible. Many botanists have since collected there, including Moran and Thorne. Moran visited Santa Eulalia near the south end of the plateau (1963), “Cerro Venado Blanco,” upper Arroyo Copal, Cañón del Diablo and Picacho del Diablo (1979), and La Vibora. Thorne and associates from the Rancho Santa Ana Botanic Garden made several collecting trips, collecting heavily at Paso San Matías, Rancho San José up to Oak Pasture, the entrance to SSPM National Park and below, La Corona de Abajo and above, Vallecitos, Upper Vallecitos, Los Llanitos, “Cerro Observatorio,” and ridges east and north, “Cerro Venado Blanco” and “Cerro Botella Azul,” road to La Tasajera, and places in between these collecting sites. Since the 1980s—and especially during the late 1990s and early 2000s—José Delgadillo and Jon Rebman have collected extensively in the area.

Biogeography

The flora of the high country of the Sierra San Pedro Mártir has its closest relationships with the mountains of southern California and the rest of the montane Pacific west and is the southeasternmost portion of the California Botanical Region. However, over 30 species and one variety are unreported from Alta California (California north of the Mexican border), but are known to the east in Arizona and other southwestern states, and often northern Mexico (Appendix 1). Several others are found only in the desert mountains of southeastern California and farther east. There is also a strong endemic element (Appendix 2). Of the 453 indigenous species belonging to 236 genera in 75 families, 48 species are endemic to the Baja California peninsula, or about eleven percent of the indigenous flora (Table 2). Of these, 23 species and one variety seem to be restricted to the Sierra San Pedro Mártir, about five percent of the total indigenous flora. The naturalized (non-native) element of the flora contributes an additional three families, 15 genera, and 34 species (indicated by an asterisk), representing ca. seven

percent of the total flora of 487 species (cf. Moran 1977; Thorne and Moran 1986).

The growth habits, habitats, elevational ranges, frequency terms, and flowering dates provided in the Annotated Checklist are pertinent just to this range. Figures 11–14 show photographs of a tiny selection of the SSPM flora.

The SSPM is an important center of biodiversity, representing not only the southern limit of the California Floristic Province but also retaining a flora that is still subject to natural fire regimes long supplanted by programs of fire suppression in areas north of the border. Its unique significance for conservation was recognized in 1947 with the establishment of the San Pedro Mártir National Park that extends across some 63,000 ha (Minnich et al. 1998). The extent of the national park covers the north and central plateau from “Cerro Venado Blanco” in the north through the meadows at Vallecitos, La Grulla, and La Encantada in the south and is roughly demarcated by the coordinates 30°49′–31°05′N and 115°16′–115°38′W. The eastern park boundary is close to the Observatory and the Picacho del Diablo, but the national park excludes, for example, Misión San Pedro Mártir, Santa Rosa, and Rancho Santo Tomás in the south (see Map 1 and Table 3). Adjacent areas outside the national park are subject to communal (ejido) land-use patterns. The area covered in this checklist extends beyond the national park boundaries, especially to the south. Modified boundaries that would take better account of the biological diversity whilst preserving existing land use patterns have been suggested (Bojórquez-Tapia et al. 2004).

Geography

Collection localities for each taxon are listed in the Annotated Checklist from lowest to highest elevation. Individual localities are presented alphabetically in Table 3, with information on elevation and latitude/longitude coordinates. Most localities can also be traced on Map 1.

Maps are provided for the ranges of most tree species and several important or dominant shrub species. The ranges were derived from aerial photographs and vegetation data analyzed using Geographic Information System (GIS) software by Richard Minnich (Minnich et al. 2000a), and final maps were generated by Robert Johnson of the Center for Conservation Biology at the University of California at Riverside.

ANNOTATED CHECKLIST

Frequency terms are defined usually as follows: rare = 1 or 2 collection or observation sites; infrequent = 3 or 4; frequent = 5 to 8; common = 9 or more. The terms “abundant,” “locally abundant,” and “dominant” are used where appropriate. Collections added from the SD website (www.bajaflores.org) do not always specify frequency of occurrence. Especially helpful distributional information was supplied by Kearney et al. (1951), Correll and Johnson (1970), Fisher (1988), and Lenz (1992).

Non-native taxa are indicated by an asterisk. Family classification follows Thorne and Reveal (2007; updates available at: <http://www.rsabg.org/research-department/155>). The primary sources for names of genera and lower ranks were Wiggins (1980) and Hickman (1993), with updates from other sources (Lindsay 1955; Flora of North America Editorial Committee 1993+; Delgadillo 2004) supplied where relevant. Those plants unrecorded in Wiggins (1980) are so mentioned. Appendix 3 cross-references plant names used elsewhere with those used in this checklist.

Fig. 11–14. Sierra San Pedro Mártir flora.—11. *Echinocereus triglochidiatus* var. *pacificus* and *Dudleya pauciflora* near Los Llanitos (ca. 2590 m).—12. *Monardella macrantha* and *Galium wiggmsii* near Vallecitos (ca. 2290 m).—13. *Swertia parryi* in chaparral below Oak Pasture (ca. 1700 m).—14. El Palmarito, grove of blue fan palms, *Erythea armata*, at La Suerte, 05 Jun 1963.

Fig. 15–18. Collectors and collecting.—15. Senior author at Meling Ranch prepared for a week or so of collecting in the high country back, Aug 1967.—16. Reid Moran and portable driers under shelter just before the rain storm at Agua Yerba Buena, Vallecitos (ca. 2300 m), 16 Aug 1967.—17. Guide Juanito and pack mules on Meling Ranch at foot of the range ready for the ascent, with *Adenostoma* chaparral behind mules, 22 Aug 1967.—18. Portable drier set-up in cave at La Grulla encampment (ca. 2135 m), 21 Aug 1967.

Table 2. Statistical summary of taxa represented in the SSPM high country (excluding taxa from Table 1).

Class	Indigenous			Additional subsp./var.	Naturalized		
	Families	Genera	Species		Families	Genera	Species
Lycopodiaceae	1	1	2				
Filices	7	10	14				
Coniferae	2	5	10				
Angiospermae							
Dicotyledons	50	180	323	8	3	13	22
Monocotyledons	15	40	103	4	0	2	12
Total (indigenous):	75	236	453	12	3	15	34
Total (including naturalized):	78	251	487				
Endemic to SSPM				23 species + 1 var. in 23 genera and 12 families			
Endemic to the rest of Baja CA				25 species + 9 subsp./vars. in 22 genera and 15 families			
Total Baja CA endemics				48 species in 41 genera and 21 families and 10 subsp./vars.			
New to Baja CA				8 species			
Not recorded from Baja CA in Wiggins (1980)				107 spp., 17 subsp./vars.			
Unreported from Alta CA, but known from states to NE of Baja CA				31 species in addition to Baja CA endemics			

Largest families	Indigenous species	Additional subspecies/varieties	Naturalized species	Total species number
Asteraceae	65	4	3	68
Poaceae	47	1	12	59
Fabaceae	29		1	30
Cyperaceae	18	1		18
Rosaceae	18			18
Juncaceae	17	1		17
Brassicaceae	16	1	2	18
Polemoniaceae	14	1		14
Plantaginaceae	12		1	13
Lamiaceae	11		2	13
Hydrophyllaceae	10			10
Polygonaceae	9	1	2	11

Largest genera	Indigenous species	Additional subspecies/varieties
<i>Juncus</i>	15	1
<i>Carex</i>	13	
<i>Muhlenbergia</i>	12	
<i>Lotus</i>	10	
<i>Mimulus</i>	10	
<i>Chenopodium</i>	8	
<i>Eriogonum</i>	6	1
<i>Phacelia</i>	6	
<i>Pinus</i>	6	
<i>Lupinus</i>	5	
<i>Penstemon</i>	5	
<i>Quercus</i>	5	

FERNS AND FERN ALLIES

LYCOPODIAE

SELAGINELLACEAE

SELAGINELLA ASPRELLA Maxon. Common and locally abundant perennial mat-former on rocky outcrops between 2430 and 3075 m; Cañón del Diablo down to 1460 m, head of Arroyo Copal, Vallecitos and above, Corral Meadow, Yerba Buena, Cerro Venado Blanco and Cerro Observatorio, 2840 m, 19 Jun 1985, R.F. Thorne 60879 et al. (RSA) and ridges between, and summit of Picacho del Diablo, 3075 m, 5 May 1978, R.V. Moran 25602 (RSA, SD); N to the southern Sierra Nevada of CA.

SELAGINELLA EREMOPHILA Maxon. Rare perennial mat-former in chaparral at Santa Rosa, 2050 m, 20 Aug 1967, R.V. Moran & R.F. Thorne 14429 (RSA, SD), Arroyo Rancho Picacho, J. Delgadillo s.n. (BCMEX); and down to 1000 m on desert slopes, as in Paso San Matías, and much lower; N along western edge of the Colorado Desert in CA, also in AZ.

FILICES

ASPLENIACEAE

ASPLENIUM SEPTENTRIONALE (L.) Hoffm. Rare perennial, only La Encantada in north-facing crevices of granitic boulder, 2200 m, 19 Aug 1967, R.V. Moran & R.F. Thorne 14343 (RSA, SD); rare in southern Sierra Nevada, but E through AZ to NM, OK, and SC, also in Eurasia. Not recorded in Wiggins (1980).

Table 3. List of collection localities with corresponding elevations and coordinates. Areas outside our limits are in parentheses. Names of localities in double quotes are our own designations and have not been used heretofore (double quotes are omitted in the annotated checklist).

Locality	Elevation	Coordinates
Alto de Corona (La Corona de Arriba, Prado de Corona)	2200–2500 m	31°00'N–115°34'W
Arroyo Copal	1850–2600 m	31°04'N–115°27'W
Arroyo La Zanja (La Sanca Creek)	2000–2050 m	30°53'N–115°32'30"W
Arroyo San José (upper part) Cañón del Diablo	1850–2500 m	31°00'N–115°24'W
Cañada el Cajon	1800–2100 m	30°49'N–115°20'W
“Cerro 2040”	2040 m	30°40'N–115°21'W
“Cerro Botella Azul”	2600–2940 m	30°58'N–115°23'50"W
“Cerro Chato”	1850 m	30°35'N–115°14'W
“Cerro La Encantada”	2500 m	30°56'N–115°24'10"W
“Cerro Observatorio 2828” (“Cerro de La Cupula”)	2700–2840 m	31°02'30"N–115°28'W
“Cerro Venado Blanco”	2650–2810 m	31°05'N–115°29'W
Corral de Sam	2000–2100 m	31°05'N–115°55'W
Corral Meadow	2550 m	31°06'45"N–115°29'50"W
Dead Horse Meadows	2650 m	31°05'20"N–115°29'50"W
Head of Arroyo Copal	2600–2660 m	30°03'30"N–115°27'40"W
La Corona de Abajo	2000–2100 m	30°57'N–115°36'W
La Corona de Arriba (Alto de Corona, Prado de Corona, Upper Corona)	2200–2500 m	31°00'N–115°34'W
La Encantada (Fig. 4, 5)	2200 m	30°55'N–115°24'W
La Grulla (Fig. 6, 9)	2100 m	30°54'N–115°27'W
La Tasajera	2200–2500 m	30°57'N–115°30'45"W
La Vibora, Arroyo de La Grulla	1900 m	30°52'N–115°30'30"W
Los Llanitos (S of Upper Vallecitos) (Fig. 5, 8, 10)	2300–2500 m	30°58'N–115°26'W
North of Vallecitos	2460–2650 m	31°01'30"N–115°21'30"W
(Oak Pasture)	1650–1750 m	30°59'N–115°37'W
Park entrance (near La Corona de Abajo)	2080 m	30°57'50"N–115°35'10"W
(Paso San Matias)	920–1050 m	31°19'N–115°30'W
Picacho del Diablo (Fig. 1)	2550–3095 m (peak)	30°59'30"N–115°22'30"W
(Rancho San José = Rancho Meling) (Fig. 15, 17)	650 m	30°59'N–115°44'W
(Rancho San Pedro Mártir)	1700 m	31°03'N–115°36'W
Rancho Viejo	2100 m	30°55'30"N–115°27'50"W
Ridge E of “Cerro Observatorio”	2780 m	31°02'30"N–115°27'W
Río San Antonio	700 m	30°48'N–115°39'W
Santa Eulalia	1850 m	30°41'N–115°18'W
Santa Rosa	2050 m	30°48'N–115°21'W
Upper Río San Rafael	2400–2560 m	ca. 31°05'N–115°30'W
Upper Vallecitos	2430–2650 m	31°00'N–115°29'W
Vallecitos (Fig. 7, 16)	2280–2480 m	31°01'N–115°28'W
Yerba Buena	2460–2650 m	31°02'N–115°27'30"W

BLECHNACEAE

WOODWARDIA FIMBRIATA Sm. Infrequent perennial, along stream in Upper Cañón del Diablo, 1700–2030 m; 2030 m, 4 May 1978, *R.V. Moran 25576* (SD); also at 1.1 mi SE of Mike's Sky Ranch along Río San Rafael, 1280 m, 12 Aug 1998, *J.P. Rebman 5523* (SD); through cismontane Baja California (Mexico) and CA to British Columbia (Canada), also on desert margins and in AZ and NV mountains.

DENNSTAEDTIACEAE

PTERIDIUM AQUILINUM (L.) Kuhn var. PUBESCENS Underw. Frequent and locally abundant rhizomatous perennial fern in open pine forest, 1475–2100 m; Alto de Corona, Arroyo Copal, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14472* (RSA, SD); La Tasajera, La Encantada, upper Vallecitos Meadow, 2430 m, 1 Sep 1985, *R.F. Thorne 57236 et al.* (RSA) and S, and Cerro Venado Blanco; distributed widely in western North America to AK, MT, TX, and Mexico.

DRYOPTERIDACEAE

CYSTOPTERIS FRAGILIS (L.) Bernh. Brittle fern. Rare small delicate rhizomatous fern only on E slope of Cerro 2828, on E rim, 2800 m,

24 Aug 1977, *R.V. Moran 15403* (SD); S to Cape Region and N through CA to AK, E to Atlantic Coast, in Eurasia and tropical America.

DRYOPTERIS FILIX-MAS (L.) Schott. Rare perennial, only by waterfall in upper Cañón del Diablo, 2050 m, 4 May 1978, *R.V. Moran 25572* (SD); a circumboreal fern also rare in eastern CA and AZ, but more common in northwestern Rocky Mts., the northeastern US, and throughout Eurasia. Not recorded in Wiggins (1980).

WOODSIA OREGANA D.Easton. Rare cliff fern. Upper Vallecitos Road, 2450 m, 27 Aug 1988, along streambed, *R. Noyes 687 et al.* (RSA). N through CA to British Columbia (Canada) and E to AZ, OK and northern US. Not recorded in Wiggins (1980).

WOODSIA PHILLIPSII Windham. Apparently frequent perennial fern restricted to SSPM, SE of Vallecitos and ca. 3 mi S of the Observatory, up a canyon with an intermittent stream en route to Pedro's Dome, 2430 m, 30 Sep 2008, *J.P. Rebman 16012* (SD); Cerro Venado Blanco, S summit ridge, 2750 m, 15 Sep 1968, *R.V. Moran 15653* (SD); Cerro Venado Blanco and Cerro Observatorio and ridges to N and E, 2780 m, 1 Sep 1985, *R.F. Thorne 61149 et al.* (RSA). Not recorded in Wiggins (1980).

WOODSIA PLUMMERAE Lemmon. Common perennial on shaded, moist ledges, 2200–3050 m; La Encantada, above Vallecitos, Los Llanitos, Corral Meadow, above Yerba Buena, 2650 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14210* (RSA, SD); and near summit of El Picacho del Diablo, 3050 m, 5 May 1978, *R.V. Moran 25606* (SD); rare in New York Mts. of eastern Mojave Desert, but through AZ to western TX and northern Mexico.

EQUISETACEAE

EQUISETUM HYEMALE L. subsp. *AFFINE* (Engelm.) Calder & R.H. Taylor. Rare erect perennial, only along a stream in upper Arroyo Copal, where locally abundant, 2000 m, 25 Aug 1968, *R.V. Moran 15465* (RSA, SD); widely distributed in North America and Eurasia.

EQUISETUM LAEVIGATUM A. Braun. Rare erect perennial, 1130–2100 m, along La Zanja Creek at La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14467* (RSA, SD); at head of Alto de Corona, 2256 m, 9 Jun 1962, *J.D. Olmsted 4725* (RSA); more frequent at lower elevations as in the Cañón del Diablo at 1700 m where locally abundant; widely distributed in North America, including CA, and south to Guatemala.

POLYPODIACEAE

POLYPODIUM HESPERIUM Maxon. Infrequent perennial on shaded, rocky ledges, 2200–2925 m; La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14319* (RSA, SD); S of Upper Vallecitos, summit of Cerro Observatorio, 2840 m, 8 May 1986, *R.F. Thorne 61991 et al.* (RSA); and Picacho del Diablo (2550–2925 m); through the mountains of CA to OR and west to NV.

PTERIDACEAE (ADIANTACEAE)

CHEILANTHES FENDLERI Hook. Infrequent perennial, only among rocks along upper Vallecitos road, 2430 m, 27 Aug 1988, *R. Noyes 678 et al.* (RSA); SE of Vallecitos and ca. 3 mi S of Observatory, up canyon with intermittent stream en route to Pedro's Dome, 2430 m, 30 Sep 2008, *J.P. Rebman 16015* (SD); under granite boulders at Yerba Buena, 2650 m; also Cañón del Diablo, 1550–1700 m, 6 May 1978, *R.V. Moran 25625* (RSA, SD); apparently absent from CA, but extending through AZ to CO, TX and Chihuahua (Mexico). Not recorded in Wiggins (1980).

CHEILANTHES WOONII Maxon. Common perennial in rocky places, both sides of range to 2840 m; Arroyo Copal and above, La Grulla, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14371* (RSA, SD); upper Río San Rafael, Corral Meadow, above Vallecitos, Yerba Buena and above, Cerro Venado Blanco and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60878 et al.* (RSA) and ridges to N and E; widely distributed in southwestern North America, including CA. Not recorded in Wiggins (1980).

PELLAEA MUCRONATA (D.C. Eaton) D.C. Eaton var. *MUCRONATA*. Frequent wiry perennial of dry rocky places, 760–2500 m; Cañón del Diablo, Prado de la Corona, N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60951 et al.* (RSA); Los Llanitos, 2400 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14255* (RSA, SD); and Yerba Buena; throughout cismontane CA.

PELLAEA TERNIFOLIA (Cav.) Link var. *WRIGHTIANA* (Hook.) A.F. Tryon (*PELLAEA WRIGHTIANA* Hook.). Frequent perennial in rocky crevices, 1460–2800 m; La Encantada, above Vallecitos, above Yerba Buena; Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14265* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, and Picacho del Diablo (2700–2800 m); and near La Corona de Abajo, 2100 m, 21 Jul 1988, *S. Boyd 2814 et al.* (RSA); apparently missing from CA, but E through AZ and NM to OK and TX with outpost in NC.

GYMNOSPERMS

CONIFERAE

CUPRESSACEAE

CALOCEDRUS DECURRENS (Torr.) Florin. Incense cedar. Frequent but usually not abundant tree in conifer forests, 1350–2400 m, “in most of the canyons where running water occurs” (Wiggins 1944), Cañón del Diablo on W slope of Picacho del Diablo (1700–2200 m), Arroyo Copal, La Zanja Creek, La Corona de Abajo; La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14470* (RSA, SD); La Encantada, La Tasajera; NW of Corral Meadow, 2380 m, 16 Jun 1988, *A.C. Sanders 7944 et al.* (RSA, UCR); S to near ruins of Misión San Pedro Mártir (1480 m); N rarely in Sierra Juárez and common through mts. of CA to OR and western NV. See Map 16 for range in SSPM.

HESPEROCYPARIS MONTANA (Wiggins) Bartel (*CALLITROPIS MONTANA* (Wiggins) D.P. Little, *CUPRESSUS MONTANA* Wiggins). Mountain cypress (Fig. 10). Frequent and locally abundant endemic tree up to 20 m tall and 1 m DBH (Wiggins 1933), mostly 1900–3025 m, Cañón del Diablo (down to 1150 m), Arroyo de la Grulla, Cerro La Encantada (type locality “upper end of the meadow 2300 m”), to summit of Picacho del Diablo (3095 m), as seen in photograph by Norman Clyde (1975, UCR), E of Corral Meadow on E escarpment and S along N-facing gullies on granite exposures to the primary population on Picacho del Diablo above Vallecitos, Los Llanitos, 2400 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14243* (RSA, SD); locally on ridge extending out into E escarpment 5 km E of the northern end of La Encantada (2400–2600 m), and Cerro la Botella Azul, 2840 m, 18 Jun 1988, *A.C. Sanders 7985 et al.* (RSA, UCR); restricted to SSPM and with strong preference there for granite. See Map 17.

JUNIPERUS CALIFORNICA Carrière. California juniper. Scattered small trees, according to Wiggins (1980) “occurring on both flanks of the Sierra San Pedro Mártir, from lower foothills ca. 1300 m to about 2000 m,” but not observed by us above 1800 m; infrequent in foothills down to 700 m, and El Coyote, 900 m, 23 Aug 1967, *R.V. Moran & R.F. Thorne 14511* (RSA, SD); wide-ranging tree in northern Baja California N of Sierra Libertad, and on desert slopes N to Kern Co., and interior cismontane CA to San Luis Obispo Co.

PINACEAE

ABIES CONCOLOR (Gordon & Glend.) Lindl. var. *CONCOLOR*. White fir. Common and locally abundant tree in conifer forests, especially on N slopes, 1800–3095 m, N to 4 km N of Rancho Nuevo and S almost to La Grulla and summits E of La Encantada, more abundant on granitic than metamorphic rocks; Cañón del Diablo, Arroyo Copal, La Tasajera, Los Llanitos, Corral Meadow, 2320 m, 16 Jun 1988, *A.C. Sanders 7943 et al.* (RSA, UCR); above Vallecitos, Cerro Observatorio, 2840 m, 8 May 1986, *R.F. Thorne 61987 et al.* (RSA) and Cerro Venado Blanco and ridges between, and Picacho del Diablo (to summit as seen in photograph by Norman Clyde (1975, UCR); disjunctly N to Cuyamaca Peak and through southern CA mountains to E Mojave ranges and southern Rocky Mts. See Map 18 for its range with *PINUS LAMBERTIANA* in SSPM; the two species have virtually identical ranges in SSPM.

PINUS CONTORTA Loudon subsp. *MURRAYANA* (Grev. & Balf.) Critchf. Lodgepole pine (Fig. 7). Frequent and locally abundant tree, 2300–3095 m, often dominant with *P. JEFFREYI* and *POPULUS TREMULOIDES* in open subalpine forest fringing meadows and along watercourses at upper Vallecitos Meadow, 2430 m, 18 Sep 1983, *R.F. Thorne 57230 et al.* (RSA) and La Tasajera, but also locally on high peaks N of Cerro Botella Azul, 2500 m, 18 Jun 1989, *A.C. Sanders 7955 et al.* (RSA, UCR) and Cerro Observatorio with *ABIES CONCOLOR*, *PINUS LAMBERTIANA*, and *POPULUS TREMULOIDES* disjunctly N to Mt.

San Jacinto and through CA mts. to AK. See Map 12 for range in SSPM.

PINUS COULTERI D. Don. Coulter pine. Stands of this pine collected at 2280 m by *R. Minnich s.n.* (UCR); 4 km N of Corral Meadow (1800–2200 m), 2280 m, 16 Jun 1988, *A.C. Sanders 7945 et al.* (RSA, UCR); and at Cerro 2040 by *G. Gastil s.n.* (UCR). Small populations descend arroyos to 6 km W of Cerro 2040, 1500–2000 m. A few trees on a summit 2 km SSE of Cerro 2040; N rarely in Sierra Juárez and through cismontane CA to Contra Costa Co. See Map 11 for range in SSPM.

PINUS JEFFREYI Grev. & Balf. Jeffrey pine (Fig. 4–6, 8). The dominant conifer, forming open park-like forests on the plateau from about 1850–2900 m; La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14483* (RSA, SD); near Cerro Observatorio, 2765 m, 5 Aug 1986, *R.F. Thorne 61992 et al.* (RSA); also following streams as riparian, fringing forest down through the chaparral to as low as 650 m on Río San Antonio where trees were collected by Wiggins (1944: 291) and Moran in 1967, and observed there by Crespi in 1769 (see Minnich and Franco-Vizcaino 1998: 44); rare on E escarpment, about 50 trees on Cerro San Matías; N through Sierra Juárez and mts. of CA to southern OR. See Map 15 for range in SSPM.

PINUS LAMBERTIANA Douglas. Sugar pine (Fig. 6). Common and often locally abundant tree on rocky ridges, especially N-facing, 1700–3050 m; S to Cerro la Vibora and ridge just W of the southern end of La Grulla and to 3 km NW of Corral Meadow, 2320 m, 16 Jun 1988, *A.C. Sanders 7942 et al.* (RSA, UCR) including La Encantada, NW of La Corona de Abajo, Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14266* (RSA, SD); Cerro Observatorio and Cerro Venado Blanco and ridges between them, and Picacho del Diablo (nearly to summit); disjunctly N to Cuyamaca Mountain and through mts. CA to southern OR; more abundant on granitic than metamorphic rocks. See Map 18 for range of *ABIES CONCOLOR* and *PINUS LAMBERTIANA* in SSPM.

PINUS MONOPHYLLA Torr. & Frém. Single-leaf pinyon. Scattered small pinyon almost entirely on desert slopes, 800–1700 m as in Cañón del Diablo (1350–1700 m) but rarely also in montane chaparral at Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14423* (RSA, SD); 2 mi N of Rancho San Antonio, 1125 m, 3 May 1970, *R.V. Moran 23053* (RSA, SD); collected on the Sierra Asmblea of the peninsula and N along the desert slopes of Sierra Juárez to deserts of southern CA. See Map 14 for its range in SSPM.

PINUS QUADRIFOLIA Parl. Four-needle pinyon. Frequent scattered pinyon in the chaparral of the W slope of the range down to 1500 m. Common on the upper eastern escarpment from 1550–2780 m, as at Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14424* (RSA, SD); head of Arroyo Copal, Corral Meadow, Yerba Buena, Cerro Observatorio, and the adjacent ridge to the E, 2780 m, 19 Jun 1985, *R.F. Thorne 60892 et al.* (RSA); and Cañón del Diablo from 1550–2200 m on the desert slopes of the range; N through Sierra Juárez to the Wedge of the Colorado Desert in Riverside Co., CA. See Map 13 for range of *P. QUADRIFOLIA* in SSPM.

ANGIOSPERMS

DICOTYLEDONS

ADOXACEAE

SAMBUCUS NIGRA subsp. *CAERULEA* (Raf.) B.L. Turner (*SAMBUCUS MEXICANA* C. Presl). Blue elderberry. Rare small tree found mostly from 500–1100 m, but collected in upper Cañón del Diablo at 2125 m, 4 May 1978, *R.V. Moran 25570* (RSA, SD); on talus of steep E slope above Diablo Canyon, 2690 m, 7 Jul 1990 (SD); also Arroyo Rancho Picacho at 1445 m, 5 May 1998, *J. Delgadillo s.n.* (SD); May–Jun; N to central CA and

E through AZ to UT and western TX and S to tropical America.

*AMARANTHACEAE

**AMARANTHUS ALBUS* L. Tumbleweed. Rare erect weedy annual tumbleweed, only in rough garden in woods behind park entrance, 2080 m; more common at lower altitudes, as at Rancho San José, 19 Jul 1968, *R.V. Moran 15318* (RSA, SD); Jun–Oct; naturalized widely from tropical America.

**AMARANTHUS BLITOIDES* S. Watson (A. *GRAECIZANS* L. misapplied). Rare weedy prostrate perennial at La Encantada, 2200 m; also at Rancho San José, 650 m, 19 Jul 1968, *R.V. Moran 15317* (RSA, SD); Jun–Jul; widely distributed weed in North America.

**AMARANTHUS RETROFLEXUS* L. Infrequent erect weedy coarse annual, 1850–2200 m, roadside W of La Corona de Abajo, woods behind park entrance, and burned over chaparral above La Corona de Abajo; at La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran 14289, 14351* (SD); Jun–Nov; widely naturalized weed from tropical America.

ANACARDIACEAE

RHUS OVATA S. Watson. Sugar bush. Infrequent shrub in Cañón del Diablo towards Picacho del Diablo from 1950–2200 m, and in chaparral W of La Corona de Abajo, 1850–2000 m to Arroyo Copal, 2500 m, 1.5 km N of Cerro Observatorio, 4 Jun 1988, *S. Boyd 2337 et al.* (RSA); much more common at lower elevations through the range as at NE slopes of Cerro Chato 1850 m, 8 Jun 1969, *R.F. Thorne 31980 et al.* (RSA); May–Jun; N in chaparral to Trinity Co., CA, and western AZ and S in Baja California (Mexico) to Volcán las Tres Virgenes.

APIACEAE

BERULA ERECTA (Huds.) Coville. Cutleaf water-parsnip. Rare, but locally abundant perennial along streams and in wet meadows, 650–2200 m; La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14435* (RSA, SD); La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14353* (RSA, SD); Jun–Sep; N through CA to British Columbia (Canada) and widely distributed in Northern Hemisphere.

CICUTA MACULATA L. var. *MACULATA*. Water hemlock. Rare perennial, apparently new to Baja CA, 1900 m, La Vibora, Arroyo la Grulla, 4 km SW of La Grulla, 9 Aug 1997, *R.V. Moran 24390* (SD); N through CA to AK and E to central Mexico. Not recorded in Wiggins (1980).

LOMATIUM LUCIDUM (Nutt. ex Torr. & A. Gray) Jeps. Biscuit-root, Indian-root. Rare perennial along the upper Río San Rafael, 1890 m, 8 Jun 1962, *J.D. Olmsted 4648* (RSA); 1 mile west of former Misión San Pedro Mártir at 1425 m, 1 Jun 1975, *R.V. Moran 22162* (SD); also in chaparral at lower elevations to 1100 m along river; Apr–May; N to Santa Barbara Co., CA. Not recorded in Wiggins (1980).

SPHENOSCIADIUM CAPITELLATUM A. Gray. Swamp white heads, ranger's buttons. Infrequent in moist arroyos, 1730–2525 m; Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61422 et al.* (RSA) and above; above Yerba Buena, 2525 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14228* (RSA, SD); Jul–Aug; N through higher mts. of CA and NV to OR and ID. Not recorded in Wiggins (1980).

APOCYNACEAE (INCL. ASCLEPIADOIDEAE)

APOCYNUM ANDROSAEMIFOLIUM L. Bitter dogbane. A rare perennial listed by Woodson (1930) as var. *INCANUM* A. DC. on the basis of a collection from Vallecitos, 2439 m, 15 Jul 1905, *E.A. Goldman 1221* (MO); species not seen by us in Baja California (Mexico); N through CA mts. to eastern North America and Canada. Not recorded in Wiggins (1980).

APOCYNUM CANNABINUM L. (var. *GLABERRIMUM* A.DC.). Indian hemp. Rare erect rhizomatous perennial, 1450–2100 m; Arroyo Copal, 2600 m, 16 Jul 1988, *S. Boyd & T. Ross 2539* (RSA); La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14491* (RSA, SD); Jul–Aug; widely distributed N through CA to Vancouver Island (Canada) and E to Atlantic Coast. Not recorded in Wiggins (1980).

ASCLEPIAS ERIOCARPA Benth. Kotolo, Indian milkweed. Rare erect perennial, sandy meadows and margins of pine forest, 2100–2280 m, Rancho Viejo, 2100 m, 3 Jul 1972, *R.V. Moran 19181* (RSA, SD) and Vallecitos, 2286 m, 25 Sep 1930, *I.L. Wiggins & D. Demaree 5044* (POM); Jul–Aug; N to northern CA and NV.

ASCLEPIAS FASCICULARIS Decne. Narrow-leaf milkweed. Infrequent erect perennial of rocky places and sandy arroyos, 2100–2280 m, between Rancho San José and La Encantada, 1 mi W of La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14501* (RSA, SD); Vallecitos, 2286 m, 25 Sep 1930, *I.L. Wiggins & D. Demaree 4909* (POM); Jul–Aug; N through CA to WA, ID, and E to TX and Mexico.

ARALIACEAE

HYDROCOTYLE RANUNCULOIDES L.f. Water pennywort (Fig. 9). Rare creeping rhizomatous aquatic perennial of shallow water in sandy meadows at La Grulla and La Encantada, 2100–2200 m, 18 Sep 1930, *I.L. Wiggins & D. Demaree 4909* (POM); La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran 14337* (SD); also collected by T. S. Brandegee without exact location; Jun–Sep; N through Sierra Juárez and CA to WA and E to Atlantic Coast, also widely distributed in South America and Europe.

ASTERACEAE

ACHILLEA MILLEFOLIUM L. subsp. *CALIFORNICA* (Pollard) D.D.Keck. Yarrow. Common and locally abundant perennial in rocky arroyos, 2300–2550 m; La Tasajera, Vallecitos, Corral Meadow, Los Llanitos, Yerba Buena and above, Cerro Venado Blanco, 2345 m, 16 Sep 1998, *J.P. Rebman & B. Vinton 5617* (RSA, SD) and N, base of Cerro Botella Azul, 19 Jul 1988, *S. Boyd 2677 et al.* (RSA); Cerro Observatorio and ridges to N; also common below 2000 m down to 875 m; May–Jul; N through cismontane CA to WA.

AGERATINA HERBACEA (A.Gray) R.M.King. & H.Rob. (*EUPATORIUM HERBACEUM* (A.Gray) Greene). Common perennial of rocky slopes, 2000–2800 m; below Alto de Corona, 2650 m, 18 Sep 1983, *R.F. Thorne 57252 et al.* (RSA); N of Corral de Sam, Arroyo Copal and above, Cañón del Diablo, La Encantada and above at Horse Flats, Los Llanitos, Yerba Buena, 2650 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14206* (RSA, SD); SE of Vallecitos and ca. 3 mi S of Observatory, up a canyon with intermittent stream en route to Pedro's Dome, 2430 m, 30 Sep 2008, *J.P. Rebman 15985* (SD); also Cerro Venado Blanco and Cerro Observatorio, and ridges between them; Sep–Oct; N through Sierra Juárez and AZ to desert ranges of the E Mojave Desert, CA and E to CO, NM, and northern Mexico. Not recorded in Wiggins (1980).

AGOSERIS HETEROPHYLLA (Nutt.) Greene. Mountain dandelion. Infrequent perennial of dry places, 1700–2200 m, head of Prado de la Corona, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 23305* (RSA, SD); and Los Llanitos; also Oak Pasture turnoff, 1725 m, 31 May 1976, *R.V. Moran 23342* (RSA, SD); Jun–Sep; N through CA and NV to British Columbia (Canada).

AMAURIOPSIS DISSECTA (A.Gray) Rydb. (*BAHIA DISSECTA* (A.Gray) Britton). Yellow ragweed. Common perennial of open pine forests, 1600–2800 m; above La Corona de Abajo, N of Corral de Sam, La Zanja Creek (type locality for var. *ANISOPAPPA* S.F.Blake), La Corona de Arriba, Vallecitos and above, Los Llanitos, above Yerba Buena, 2550 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14191* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, and ridge E of latter, 2800 m, 18 Sep 1983, *R.F. Thorne 57278 et al.*

(RSA); Aug–Sep; N in mts. of southern CA to NV and UT and E to WY, TX, and northern Mexico.

ANTENNARIA PARVIFOLIA Nutt. (A. *APRICA* Greene). Pussy-toes. Frequent perennial mat-former in open conifer forest and on granitic cliff faces, 2350–2900 m; Upper Vallecitos, 2600 m, 30 May 1976, *R.V. Moran 23305* (RSA, SD); La Tasajera, Corral Meadow, Cerro Botella Azul, Cerro Venado Blanco, and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60880 et al.* (RSA) and Picacho del Diablo; Jun–Jul; absent from CA but N through AZ and NV to Manitoba and Yukon (Canada) and E to NM, ND, New England. Not recorded in Wiggins (1980).

ARTEMISIA DOUGLASIANA Besser. Mugwort. Rare perennial, only Arroyo La Grulla, in sandy soil above stream, 1825 m, 10 Aug 1977, *R.V. Moran 24478* (SD); N to Tijuana and through CA, N to NV, WA and ID.

ARTEMISIA DRACUNCULUS L. Tarragon. Common perennial in dry, sandy meadows, roadsides, and rocky places, 650–2800 m; Arroyo Copal, La Corona de Abajo and below, La Corona de Arriba, La Encantada, La Tasajera, 2285 m, 15 Sep 1998, *J.P. Rebman 5572* (SD); S summit ridge, Cerro Venado Blanco, 2750 m, 15 Sep 1968, *R.V. Moran 15655* (SD); Jul–Oct, N through CA to AK and Siberia and E to WI and TX.

ARTEMISIA LUDOVICIANA Nutt. subsp. *ALBULA* (Wooton) D.D.Keck. Silver wormwood. Frequent perennial on rocky slopes and in open pine forest, 750–2800 m; Arroyo Copal, La Encantada, Vallecitos and above, 2500 m, 28 Aug 1988, *R. Noyes 693 et al.* (RSA); Corral Meadow, Los Llanitos, Yerba Buena, Cerro Venado Blanco and Cerro Observatorio and adjacent ridge to E, 2800 m, 18 Sep 1983, *R.F. Thorne 57275 et al.* (RSA); Aug–Nov; N to southern Sierra Nevada of CA and E to CO, OK, TX, and Sonora (Mexico).

ARTEMISIA LUDOVICIANA Nutt. subsp. *INCOMPTA* (Nutt.) Keck. Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran 14131* (SD); SE of Vallecitos and approx. 3 mi S of the Observatory; along the highest ridge en route to Pedro's Dome, 2630 m, 30 Sep 2008, *J.P. Rebman 15988* (SD); N from Santa Rosalia to southern CA and E to CO, TX and Sonora (Mexico).

ARTEMISIA TRIDENTATA Nutt. subsp. *TRIDENTATA*. Big Great Basin sagebrush. Infrequent shrub in chaparral W of La Corona de Abajo, 1850 m, at La Encantada in open Jeffrey pine forest, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14369* (RSA, SD); 1.1 mi SE of Mike's Sky Ranch along Río San Rafael, 1280 m, Aug 12, 1998, *J.P. Rebman 5541* (SD); and locally abundant in Jeffrey pine forest on flats at Santa Eulalia and Mission San Pedro Mártir, 1800–1900 m; but collected as low as 800 m and even nearly to sea level along the Río Santo Domingo; Aug–Oct; wide-ranging and abundant shrub in western North America N through CA to British Columbia (Canada), SD, and NM. See Map 3 for range in SSPM.

BACCHARIS SALICIFOLIA (Ruiz & Pav.) Pers. Mule fat. NE of Oak Pasture, 1800 m, 2 Sep 1974, *R.V. Moran 21323* (SD); apparently new to Baja CA, but known from northern CA and E to TX, and Mexico, also South America. Not recorded in Wiggins (1980).

BACCHARIS SERGILOIDES A.Gray. Desert baccharis. Frequent dense shrublet mostly on granitic slopes, 2000–2900 m; below La Corona de Abajo, 2650 m, 18 Sep 1983, *R.F. Thorne 57254 et al.* (RSA); Cañón del Diablo, La Encantada, head of Arroyo Copal, Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14263* (RSA, SD); Corral Meadow, Cerro Venado Blanco and Cerro Observatorio, and Picacho del Diablo; Jul–Oct; N through CA deserts to NV and UT and E to Sonora (Mexico).

BAHIA NEOMEXICANA A.Gray (*SCHKUHRIA MULTIFLORA* Hook. & Arn.). Rare annual, apparently collected only in sandy soil at La Encantada, 2200 m; N to Clark Mts. of eastern CA and E to CO, TX, and northern Mexico, also South America.

BAILEYA PLENIRADIATA Harv. & A.Gray. Desert marigold. Rare annual, only in dry meadow at La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14311* (RSA, SD); but commoner at lower elevations, down to 920 m, as at Rancho La Suerte, 1130 m, 2 Jun

- 1963, *R.F. Thorne 31900 et al.* (RSA); Apr–Jun, Aug–Nov; from Cataviña N through CA deserts to Inyo Co., and NV and E to UT, TX, and northern Mexico.
- BIDENS HETEROSPERMA** A.Gray. Beggar's tick. Frequent annual of open pine forests and margins of meadows, 2200–2800 m; La Encantada, 2200 m, 18 Sep 1930, *I.L. Wiggins & D. Demaree 4882* (POM); Yerba Buena, head of Arroyo Copal, and Cerro Botella Azul, Cerro Venado Blanco, Cerro Observatorio, and Cerro 2828, 2800 m, 14 Sep 1968, *R.V. Moran 15614* (RSA, SD); Aug–Oct; absent from CA but NE through AZ to SC, NM, and northern Mexico.
- BRICKELLIA CALIFORNICA** (Torr. & A.Gray) A.Gray. Brickellbush. Infrequent perennial of rocky slopes, 1950–2200 m; between La Corona de Abajo and La Corona de Arriba, and W of Rancho La Botella, 1750 m, 5 Sep 1966, *R.V. Moran 13514* (RSA, SD); La Vibora, Arroyo La Grulla, 4 km SW of La Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24427* (SD); Cañón del Diablo, N of Corral de Sam, 2100 m, 16 Sep 1967, *R.V. Moran 14540* (RSA, SD); more frequent at lower elevations; Jul–Oct; N through CA to OR and E to CO, OK, TX, and northern Mexico.
- BRICKELLIA GRANDIFLORA** (Hook.) Nutt. Frequent perennial of rocky slopes, 2000–2800 m; above Alto de Corona, 2700 m, 18 Sep 1983, *R.F. Thorne 57259 et al.* (RSA); head of Arroyo Copal, 2600 m, 16 Jul 1988, *S. Boyd & T. Ross 2555* (RSA); La Encantada, Los Llanitos, Corral Meadow, Cerro Venado Blanco and Cerro Observatorio, and ridge to E of latter; Aug–Oct; N through Sierra Juárez through CA to WA and MT and E to MO, IL, and AL.
- BRICKELLIA SUBSESSILIS** B.L.Rob. (*B. BETONICIFOLIA* A.Gray; *B. SESSILE* B.L.Rob.). NNW of Observatory and E of the ranch at base of Cerro Venado Blanco, along canyons toward eastern edge of escarpment, 2345 m, 16 Sep 1998, *J.P. Rebman 5601* (SD). Endemic to SSPM, unless recognized under *B. BETONICIFOLIA* (B. Turner pers. comm.).
- CHAENACTIS PARISHII** A.Gray. Parish's chaenactis. Infrequent perennial of open pine forests, 1800–2200 m; La Grulla, La Tasajera, and on road to Corral de Sam, 1850 m, 2 Jun 1968, *R.V. Moran 15090* (RSA, SD); above Rancho San Pedro Mártir, W of La Corona de Abajo, 2000 m, 3 Jul 1973, *R.V. Moran 21093* (RSA, SD); Jun–Jul(–Sep); N through Sierra Juárez to mts. of Riverside Co., CA.
- CHRYSOHAMNUS NAUSEOSUS** (Pall.) Britton [rubber rabbitbrush] subsp. *CONSIMILIS* (Greene) H.M.Hall & Clem. Rare suffrutescent perennial on road to Corral de Sam, 1900 m, 15 Aug 1967, *R.V. Moran & R.F. Thorne 14117* (RSA, SD); Sep–Nov; N through Sierra Juárez and CA to OR and ID and E to WY, CO, and NM.
- CIRSIIUM OCCIDENTALE** (Nutt.) Jeps. var. *CALIFORNICUM* (A.Gray) D.J.Keil & C.E.Turner. California thistle. Rare perennial on rocky slopes, 1450–2800 m; Art's Camp east of Vallecitos, 2400 m, 2 Jul 1982, *R.V. Moran 30990* (SD); Santa Rosa and Cerro Observatorio, 2849 m, 19 Jun 1985, *R.F. Thorne 60899 et al.* (RSA); May–Jun; also N through Sierra Juárez to central CA.
- CIRSIIUM SCARIOSUM** Nutt. (*C. SCARIOSUM* var. *AMERICANUM* (A.Gray) D.J.Keil [Keil 2006: 156–157]; *C. DRUMMONDII* Torr. & A.Gray and *C. FOLIOSUM* (Hook.) DC., misapplied, *C. TIOGANUM* Congdon). Elk thistle. Frequent and locally abundant acaulescent perennial on sandy meadows, 2100–2430 m; La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14469* (RSA, SD); La Encantada, Vallecitos, 2830 m, 7 May 1986, *R.F. Thorne 61948 et al.* (RSA); Los Llanitos, and Corral Meadow; May–Aug; N through Sierra Juárez, CA, and NV to OR and E to UT, WY, and CO.
- CIRSIIUM TRACHYLOMUM** S.F.Blake. Rare perennial in granitic soil among pines, 2100–2225 m; Oak Pasture 1900 m, 28 Jun 1996, *J.P. Rebman 3316* (SD); La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14486* (RSA, SD); La Encantada (type locality “in granitic soil along small canyon at upper end of meadow ... elev. about 2200 m”); also collected inside Cañón del Diablo at 1370 m and at Potrero de Los Encinos; Jun–Oct; also in southern Sierra Juárez but endemic to Baja California (Mexico).
- CONYZA CANADENSIS** (L.) Cronquist. Horseweed. Frequent weedy annual of moist places, 1500–2430 m; Yerba Buena and above; and Los Llanitos, 2400 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14248* (RSA, SD); Arroyo Copal, La Corona de Abajo, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61402 et al.* (RSA); Jul–Sep; also CA and widely distributed in North and South America and introduced in Eastern Hemisphere.
- CONYZA SCHIEDEANA** (Less.) Cronquist (*LAËNNECIA SCHIEDEANA* (Less.) G.L.Nesom). Infrequent annual of sandy meadows and forested rocky slopes, 1900–2840 m; Vallecitos Meadow, 2430 m, 18 Sep 1985, *R.F. Thorne 57219 et al.* (RSA); Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14268* (RSA, SD); and Cerro Observatorio; Aug–Sep; apparently absent from CA but W to AZ, CO, NM, and northern Mexico. Not recorded in Wiggins (1980).
- DIETERIA ASTEROIDES** Torr. var. *ASTEROIDES* (*MACHAERANTHERA TEPHRODES* (A.Gray) Greene). Above Rancho San Pedro Mártir on road to Sam's Corral, 2000 m, 16 Sep 1967, *R.V. Moran 14554* (SD); N to Sonoran Desert of CA and southern NV and E to southwestern NM and northern Mexico (possibly *D. CANESCENS* var. *CANESCENS* (Pursh.) Nutt.).
- DIETERIA ASTEROIDES** Torr. var. *LAGUNENSIS* (D.D.Keck) D.R.Morgan & R.L.Hartm. (*MACHAERANTHERA ASTEROIDES* (Torr.) Greene var. *LAGUNENSIS* (D.D.Keck) B.L.Turner). Laguna Mountains aster. Infrequent perennial of sandy soil and rocky places, 1200–2550 m; W of La Corona de Abajo, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14458* (RSA, SD); Horse Flats above La Encantada, and Cerro La Encantada, 2400 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14356* (RSA, SD); Aug–Dec; N through CA deserts to UT and E to Sonora (Mexico).
- DIETERIA CANESCENS** (Pursh.) Nutt. var. *CANESCENS*. Rare annual to perennial, above Rancho San Pedro Mártir on road to Sam's Corral, 2000 m, 16 Sep 1967, *R.V. Moran 14554* (SD); N through CA to WA and central Canada, E to AZ and CO. Not recorded in Wiggins (1980).
- ERICAMERIA BRACHYLEPIS** (A.Gray) H.M.Hall. Boundary goldenbush. Rare, above Rancho San Pedro Mártir, on road to Sam's Corral, 2000 m, 16 Sep 1967, *R.V. Moran 14553* (SD); N to southern CA. Not recorded in Wiggins (1980).
- ERICAMERIA MARTIRENSIS** Wiggins (*HAPLOPAPPUS MARTIRENSIS* (Wiggins) S.F.Blake). Common endemic subshrub of granitic crevices, 2000–3050 m; below and N of Corral de Sam, above La Corona de Abajo, La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14499* (RSA, SD); La Encantada (type locality: “on granitic soil on an open slope at the margin of the meadow”), above Vallecitos, Los Llanitos, La Tasajera, Corral Meadow, above Yerba Buena, Cerro Venado Blanco, and Cerro Observatorio, 2780 m, 1 Sep 1985, *R.F. Thorne 61445 et al.* (RSA); and Picacho del Diablo (2525–3050 m); Aug–Sep; apparently restricted to SSPM.
- ERICAMERIA PARISHII** (Greene) H.M.Hall var. *PENINSULARIS* (Moran) G.L.Nesom. (*ERICAMERIA ARBORESCENS* (A.Gray) Greene subsp. *PENINSULARIS* (Moran) Urbatsch, *HAPLOPAPPUS ARBORESCENS* (A.Gray) H.M.Hall subsp. *PENINSULARIS* (Moran)). Golden-fleece. Frequent and locally abundant endemic showy shrub of chaparral, meadow margins, and open slopes, 1200–2200 m; Oak Pasture, 1900 m, 28 Jun 1996, *J.P. Rebman 3316* (SD); W of La Corona de Abajo, above park entrance, Santa Rosa, La Grulla and W, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14502* (RSA, SD); also at La Corona de Arriba and La Encantada; Aug–Sep; var. endemic to northern Baja California (Mexico), but also in Sierra Juárez and on coastal peaks.
- ERIGERON DIVERGENS** Torr. & A.Gray. Fleabane. Common showy annual of open sandy meadows, 1850–2650 m; above Arroyo Copal, above La Corona de Abajo, La Encantada and above, at Horse Flats, La Tasajera, Vallecitos and above, 2540 m, 18 Sep 1983, *R.F. Thorne 57243 et al.* (RSA); Los Llanitos, Yerba Buena and above, 2550 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14191* (RSA, SD); valleys between Cerro Venado Blanco and Cerro

- Observatorio; May–Sep; N through Sierra Juárez, CA, and AZ to British Columbia (Canada) and E to SD, TX, and northern Mexico.
- ERIGERON FOLIOSUS* Nutt. var. *FOLIOSUS*. Rare perennial, at La Corona de Abajo, 2000 m, 30 Aug 1963, *R.V. Moran 11261* (SD); E of Observatory peak and toward Cañada del Diablo, 2780 m, 1 Sep 1985, *R.F. Thorne 61452 et al.* (RSA, SD); commoner at lower elevations, down to 1100 m; May–Sep; N through CA to British Columbia (Canada) and MT.
- ERIGERON SPECIOSUS* (Lindl.) DC. (*E. SPECIOSUS* var. *MACRANTHUS* (Nutt.) Cronquist). Showy fleabane. Common showy perennial of rocky slopes, 2000–2800 m; Arroyo Copal and above, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14376* (RSA, SD); La Tasajera, Vallecitos and above, 2430 m, 1 Sep 1985, *R.F. Thorne 61436 et al.* (RSA); Los Llanitos, Yerba Buena, Cerro Venado Blanco, and Cerro Observatorio, ridges between and ridge to E of latter; Jul–Sep; unreported from CA, but N through AZ and UT to British Columbia (Canada) and Alberta (Canada), and E to CO, OK, and TX.
- ERIGERON TRACYI* Greene. Bajío de las Viegas, 2590 m, 1 Jul 1998, *J. Delgadillo s.n.* (SD); near crest of mountain range in open meadow ca. 2 mi SE of Observatory, 2985 m, 29 Jun 1998, *J.P. Rebman 5436* (SD). Apparently restricted to SSPM. Not recorded in Wiggins (1980).
- GNAPHALIUM PALUSTRE* Nutt. Rare streamside annual, only at La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14447* (RSA, SD); Vallecitos, 2450 m, 27 Aug 1988, *R. Huges 683 et al.* (RSA); but much more common at lower elevations, down to 1200 m and even to sea level; Apr–Oct; through much of the peninsula and N through CA to British Columbia (Canada) and E to Alberta (Canada), WY, and TX.
- GUTIERREZIA SAROTHRAE* (Pursh) Britton & Rusby. Snakeweed. Infrequent perennial of rocky slopes and chaparral, 1850–2050 m, N–NW of Observatory and E of the ranch at base, 2345 m, 16 Sep 1998, *J.P. Rebman 5614* (HCIB, SD); W of La Corona de Abajo, head of Arroyo Copal, 16 Jul 1988, *S. Boyd & T. Ross 2565* (RSA); Upper Vallecitos, at Santa Rosa; more abundant lower to 1650 m; Jun–Oct; N from Isla Cedros through CA and AZ to OR and E to Manitoba (Canada), ND, KS, TX, and northern Mexico.
- HAZARDIA SQUARROSA* (Hook. & Arn.) Greene var. *GRINDELIOIDES* (DC.) W.C.Clark (*HAPLOPAPPUS SQUARROSUS* Hook. & Arn. subsp. *GRINDELIOIDES* (DC.) D.D.Keck). Saw-toothed goldenbush. Rare, but locally abundant erect shrubby perennial only in chaparral W of La Corona de Abajo, 1850–2000 m; commoner at lower elevations, as at 2 mi below Corona de Abajo, 1700 m, 20 Sep 1983, *R.F. Thorne 57303 et al.* (RSA); Arroyo Santa Cruz, 3 mi E of Valladares, 800 m, 5 Jul 1969, *R.V. Moran 16284* (SD); Sep–Oct; N through Sierra Juárez to southern CA and the Channel Islands.
- HAZARDIA VERNICOSA* (Brandege) W.D.Clark. Rare shrubby perennial; Vallecitos, 2400 m, 15 May 1995, *Delgadillo s.n.* (SD); also from near San Vicente to El Rosario; endemic to Baja CA.
- HELIANTHUS CALIFORNICUS* DC. California sunflower. Rare perennial; La Vibora, Arroyo la Grulla, 4 km SW of La Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24426* (SD); S of Upper Corona Meadow, 2200 m, 31 Aug 1963, *R.V. Moran 11297* (SD); more common at lower elevations; Aug–Oct; N through Sierra Juárez to central CA.
- HETEROTHECA BRANDEGEEI* (Robins. & Greenm.) Semple (*CHRYSOPSIS BRANDEGEEI* B.L.Rob. & Greenm., *H. MARTIRENSIS* Moran). Goldenaster. Common and locally abundant endemic perennial mat-former on granitic ridges especially along E rim of plateau, 2000–3050 m; 2 mi E of Corral de Sam, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60870 et al.* (RSA); Cañón del Diablo, S of La Tasajera, Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14257* (RSA, SD); ca. 4 km W of Observatory, above Yerba Buena, Cerro Botella Azul, Cerro Venado Blanco, and Cerro Observatorio (type locality for *H. MARTIRENSIS* “in crevices on flat granitic surfaces at 2800 m elevation”), and Picacho del Diablo (2130–3080 m); May–Aug; apparently restricted to SSPM.
- HIERACIUM ALBIFLORUM* Hook. Hawkweed. Frequent perennial in open pine forests, 2200–2750 m; La Encantada, Alto de Corona, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60859 et al.* (RSA); Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14136* (RSA, SD); and Cerro Venado Blanco and Cerro Observatorio; May–Aug; N through CA to AK and E to WY and CO.
- HIERACIUM BOLANDERI* A.Gray. S of Vallecitos near Cerro la Botella Azul, 2440 m, 27 Jun 1998, *J.P. Rebman 5398* (SD); N slope 1.3 km S of Cerro 2828, 2500 m, 21 Aug 1977, *R.V. Moran 24564* (SD).
- HIERACIUM FENDLERI* Sch. Bip. Frequent perennial of open pine forests, 2250–2840 m; Alto de Corona, W and E of Vallecitos, Los Llanitos, above Yerba Buena, 2600 m, 1 Jun 1968, *R.V. Moran 15068* (RSA, SD); and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60901 et al.* (RSA); Apr–Jul; from Cape Region N to AZ and E to SD, TX, and northern Mexico; unreported from CA.
- HULSEA MEXICANA* Rydb. Mexican hulsea. Frequent coarse annual or biennial of decomposed granitic soil, 650–2200 m; above La Corona de Abajo at park entrance, 2100 m, 4 Jun 1988, *S. Boyd 2361 et al.* (RSA); above head of Prado de la Corona, La Grulla, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14290* (RSA, SD); Corral Meadow, and Cerro Observatorio; May–Sep; N through Sierra Juárez to San Diego Co., CA.
- HYMENOPAPPUS FILIFOLIUS* Hook. var. *LUGENS* (Greene) Jeps. Frequent perennial of open pine forests, 1400–2840 m; upper Arroyo San José, La Tasajera, 2 mi W of Vallecitos, 2250 m, 2 Jun 1968, *R.V. Moran 15080* (RSA, SD); Yerba Buena, ca. 4 km W of Observatory, and Cerro Venado Blanco and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60908 et al.* (RSA); May–Jul; N through Sierra Juárez to southern CA mts. and E to AZ and UT.
- HYMENOTHRIX WRIGHTII* A.Gray. Rare perennial, only Santa Rosa at edge of chaparral, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14417* (RSA, SD); also known down to 1495 m, as Arroyo de San Rafael, 22 Sep 1968, *D. E. Breedlove 16417* (SD); Sep–Oct; N through Sierra Juárez to mts. of San Diego Co., CA, and E to AZ, NM, and Sonora (Mexico).
- ISOCOMA MENZIESII* (Hook. & Arn.) G.L.Nesom subsp. *MENZIESII* (*HAPLOPAPPUS VENETUS* subsp. *OXYPHYLLUS* (Greene) H.M.Hall). Goldenbush. Rare perennial subshrub along road in chaparral between Rancho San Pedro Mártir and Corral de Sam: 1800 m, 15 Aug 1967, *R.V. Moran 14166* (SD) and 1900 m, 16 Sep 1967, *R.V. Moran 14556* (SD); more frequent in chaparral down to coast; Jul–Sep; N to San Diego and Orange cos. of coastal CA. Not recorded in Wiggins (1980).
- LOGFIA FILAGINOIDES* (Hook. & Arn.) Morefield (*FILAGO CALIFORNICA* Nutt.). Herba impia. Rare erect annual, only above La Corona de Abajo, 2100 m; May–Jul; also Cerro Matomi, N through CA and AZ to NV and UT and E to NM, TX, and Sonora (Mexico).
- PACKERA MORANII* (T.M.Barkley) C.Jeffrey (*SENECIO MORANII* T.M.Barkley). Moran’s ragwort. Frequent showy perennial of rocky slopes, 1900–2750 m; upper Cañón del Diablo (1900–2500 m); 2050 m, 4 May 1978, *R.V. Moran 25573* (RSA, SD); above Vallecitos Meadow, 2540 m, 18 Sep 1983, *R.F. Thorne 57237 et al.* (RSA); rim above Cañón del Diablo ca. 2 mi NW of Cerro Botella Azul, Yerba Buena, Cerro Observatorio, and Cerro Venado Blanco (type locality, where “common among granite boulders on SE slope, S summit ridge, elev. ca. 2725 m”), and Picacho del Diablo; Aug–Sep; also found in desert ranges S to Volcán las Tres Vírgenes but apparently endemic in Baja California. Not recorded in Wiggins (1980).
- PECTIS PAPPOSA* Harv. & A.Gray var. *PAPPOSA*. Chinchweed. Rare, Head of Arroyo Copal, 2300 m, 25 Aug 1968, *R.V. Moran 15462* (SD); N through Sierra Juárez to CA deserts in Inyo Co. and AZ, and E to UT and NM.
- PSEUDOGNAPHALIUM BIOLETTII* Anderb. (*GNAPHALIUM BICOLOR* Bioletti). Everlasting cudweed. Frequent biennial of rocky places and open pine forests, mostly 2500–2800 m; head of Arroyo Copal, and Cerro Venado Blanco and Cerro Observatorio, 2800 m, 18 Sep 1985, *R.F.*

- Thorne 57267 et al.* (RSA); also commonly found at much lower altitudes, even to sea level; May–Oct; over most of the peninsula and N on the islands and cismontane CA to Santa Cruz and Madera cos.
- PSEUDOGNAPHALIUM MACOUNII** (Greene) Kartesz. NW of Observatory, ca. 1.1 mi S of ranch at base of Cerro Venado Blanco, 2345 m, 15 Sep 1998, *J.P. Rebman 5586* (SD); Vallecitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14150* (RSA, SD); not recorded from CA in The Jepson Manual (Hickman 1993), but widely distributed from AZ to Canada and E to WV and TX. Not recorded in Wiggins (1980).
- PSEUDOGNAPHALIUM MICROCEPHALUM** (Nutt.) Anderb. (GNAPHALIUM CANESCENS DC. subsp. MICROCEPHALUM (Nutt.) Stebbins & D.J. Keil). Cudweed. Frequent biennial of decomposed granitic soils, 1600–2800 m; Arroyo Copal, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14430* (RSA, SD); La Corona de Abajo and above, Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14258* (RSA, SD); and Corral Meadow; Jun–Oct; N to central CA.
- PSEUDOGNAPHALIUM STRAMINEUM** (Kunth) Anderb. (GNAPHALIUM STRAMINEUM Kunth, G. CHILENSE Spreng.). Everlasting. Frequent annual of moist sandy places, 875–2650 m; La Grulla, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61403 et al.* (RSA); Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14181* (RSA, SD); and Cerro Observatorio; Jun–Oct; N through CA and AZ to WA and British Columbia (Canada) and E to MT, NM, and TX, also NC.
- SENECIO MARTIRENSIS** T.M. Barkley. Martir ragwort. Frequent endemic perennial of open sandy flats and rocky slopes, 2400–3080 m; La Corona de Arriba, Vallecitos, above Yerba Buena, 2550 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14192* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, 2840 m, 1 Sep 1985, *R.F. Thorne 61477 et al.* (RSA); (type: “fairly common” on N slope of Cerro 2828, and Picacho del Diablo; Jul–Sep; apparently restricted to SSPM. Not recorded in Wiggins (1980).
- SENECIO SPARTIOIDES** Torr. & A. Gray. Broom groundsel. Frequent erect perennial of granitic slopes and margins of meadows, 2200–2600 m; La Encantada, ridge NW of La Corona de Abajo, La Tasajera, 2285 m, 14 Sep 1998, *J.P. Rebman & B. Vinton 5561* (RSA, SD); Vallecitos, and Los Llanitos, 2600 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14274* (RSA, SD); Jul–Sep; N through high mts. to Inyo through White mts. of CA and E to Rocky Mts.
- SOLIDAGO CONFINIS** A. Gray. Southern goldenrod. Rare glabrous perennial, according to Wiggins (1980) “San Pedro Mártir up to about 2760 m,” Arroyo Copal, steep canyon on E side along crest of range 1.5 km N of Cerro Observatorio, 16 Jul 1988, *S. Boyd 2571* (RSA, SD); N through Sierra Juárez to northern Mojave Desert mts. of CA.
- SOLIDAGO SPATHULATA** DC. var. *NEOMEXICANA* (A. Gray) Cronquist (S. SIMPLEX Kunth var. SIMPLEX [Semple and Cook 2006: 114]). New Mexican goldenrod. Frequent perennial, 2500–3050 m, NNW of Observatory and E of ranch at base of Cerro Venado Blanco, along canyons toward E edge of escarpment, 2345 m, 16 Sep 1998, *J.P. Rebman 5608* (SD); N slope, N side of Cerro 2828, 2800 m, 24 Aug 1968, *R.V. Moran 15455* (SD); Cerro Observatorio and rocky ridge to E, 2800 m, 18 Sep 1983, *R.F. Thorne 57283 et al.* (RSA); Yerba Buena, head of Arroyo Copal, 1.3 km S of Cerro 2828, 2828 m, 21 Aug 1977, *R.V. Moran 24563* (RSA, SD); and Picacho del Diablo (to 3050 m); Aug–Sep; this variety apparently absent from CA, but NE through AZ, UT and NE to ID and MT. Not recorded in Wiggins (1980).
- SOLIDAGO VELUTINA** DC. subsp. *CALIFORNICA* (Nutt.) Semple (S. CALIFORNICA Nutt.). California goldenrod. Common rhizomatous perennial on rocky slopes of arroyos, 900–2840 m; La Corona de Abajo and W and N, Arroyo Copal, E of Corral de Sam, La Encantada, Vallecitos and above, Corral Meadow, Los Llanitos, Yerba Buena and above, 2600 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14198* (RSA, SD); and Cerro Venado Blanco and Cerro Observatorio, and ridges between them, ca. 2800 m, 1 Sep 1985, *R.F. Thorne 64180 et al.* (RSA); Jul–Sep; N through Sierra Juárez and CA to OR.
- ***SONCHUS ASPER** (L.) Hill subsp. *ASPER*. Prickly sow thistle. Rare annual weed in meadow and along stream at La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14456* (RSA, SD); commoner down to 875 m; Aug, but probably most months; naturalized from Europe.
- SPHAEROMERIA MARTIRENSIS** (Wiggins) A.H. Holmgren, L.M. Shultz & Lowrey (TANACETUM MARTIRENSIS Wiggins, T. BAJACALIFORNICUM Moran). Frequent endemic perennial mat-former “in rock crevices and in gravelly soil at 2500–3050 m, E rim between Cerro Venado Blanco and Cerro Botella Azul,” Cerro Venado Blanco and Cerro Observatorio (type locality where “common in crevices of N- and E-facing rocks and cliffs on east rim, elev. ca. 2800 m”), 1 Sep 1985, *R.F. Thorne 61444 et al.* (RSA); near summit of El Picacho del Diablo, 3050 m, 5 May 1978, *R.V. Moran 25609* (SD); Jul–Oct; apparently restricted to SSPM.
- STENOTUS PULVINATUS** (Moran) G.L. Nesom (HAPLOPAPPUS PULVINATUS Moran). Rare endemic tiny perennial in crevices of E- and N-facing granitic outcrops and cliffs, Cerro Observatorio (type locality on E rim at 2800 m); mountain crest overlook area at end of fire road on peak just S of Observatory Peak, 2577 m, 31 Jul 1997, *J.P. Rebman 4176* (SD); W-facing slopes of Picacho del Diablo in chute from 2650 to 2875 m, 5 May 1978, *R.V. Moran 25596* (RSA, SD); Aug–Sep; apparently restricted to SSPM.
- STEPHANOMERIA MONOCEPHALA** Moran. Infrequent endemic cushion perennial, head of Arroyo Copal 1.5 km N of Cerro Observatorio, 2660 m, 16 Jul 1988, *S. Boyd & T. Ross 2573* (RSA); on slopes above Cañón del Diablo, 2500–2050 m; Cerro Observatorio, the type locality “in crevices of north- and east-facing rocks and cliffs at 2800 m elevation, east rim,” rocky ridge to E, 2780 m, 19 Jun 1985, *R.F. Thorne 60891 et al.* (RSA); NE slope below Cerro Botella Azul (2500–2740 m), and Picacho del Diablo (2500–3050 m); apparently restricted to SSPM.
- STEPHANOMERIA TENUIFOLIA** (Raf.) H.M. Hall. Wire-lettuce. Rare perennial, only at Santa Rosa on rocky canyonside, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14396* (RSA, SD). N through Sierra Juárez to CA, WA, ID and E to UT and NM.
- STEPHANOMERIA VIRGATA** Benth. subsp. *PLEUROCARPA* (Greene) Gottlieb. Rare stiffly erect annual of rocky slopes and in chaparral, 1850–2100 m; 2 mi below La Corona de Abajo, 1700 m, 20 Sep 1983, *R.F. Thorne 57304 et al.* (RSA); only W of and above La Corona de Abajo, 2100 m, 21 Jul 1988, *S. Boyd 2830 et al.* (RSA); Jun–Nov; N from Bahía de los Angeles through CA to western NV and OR.
- SYMPHYOTRICHUM SPATHULATUM** (Lindl.) G.L. Nesom var. *SPATHULATUM* (ASTER OCCIDENTALIS (Nutt.) Torr. & A. Gray). Rare rhizomatous perennial, meadow along road to Tasajera ca. 1.7 mi S of Observatory road in Vallecitos, 2445 m, 1 Oct 2008, *J.P. Rebman 16049* (SD); dry meadow W of Vallecitos, 2450 m, 23 Aug 1968, *R.V. Moran 15399* (SD). N through Sierra Juárez and CA to British Columbia (Canada) and E to CO.
- ***TARAXACUM LAEVIGATUM** (Willd.) DC. Red-seeded dandelion. Perennial weed, frequent and locally abundant in permanently moist places, as sandy meadows and streambeds, 2080–2550 m; by pool at park entrance, La Encantada, Vallecitos, 2430 m, 7 May 1986, *R.F. Thorne 61957 et al.* (RSA); Los Llanitos, Corral Meadow, and SW end Cerro Venado Blanco, 17 Jul 1988, *S. Boyd 2622 et al.* (RSA); May–Jul; naturalized from Europe. Not recorded in Wiggins (1980).
- ***TARAXACUM OFFICINALE** F.H. Wigg. Common dandelion. Near crest of mountain range, in open meadow ca. 2 mi SE of Observatory, 2985 m, 28 Jun 1998, *J.P. Rebman 5417* (SD). Naturalized from Europe.

XANTHISMA WIGGINSII (S.F.Blake) D.R.Morgan & R.L.Hartm. (MACHAERANTHERA WIGGINSII (S.F.Blake) R.L.Hartm.; HAPLOPAPPUS WIGGINSII S.F.Blake). Frequent and locally abundant endemic annual on sandy flats and meadows, 2000–2475 m; Santa Rosa, La Grulla, La Encantada (type locality on “gravelly slopes and margins of meadow”), 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14346* (RSA, SD); Vallecitos, 2430 m, 18 Sep 1983, *R.F. Thorne 57233 et al.* (RSA); and Yerba Buena; Aug–Sep; apparently restricted to SSPM.

BERBERIDACEAE

BERBERIS HIGGINSIAE Munz. Higgin’s barberry. Rare shrub, summit of Cerro Chato, 1900 m, 3 Jun 1963, *R.V. Moran 11105* (SD). N through Sierra Juárez to the Mojave Desert of CA and E to CO and NM.

BORAGINACEAE

CRYPTANTHA MICRANTHA (Torr.) I.M.Johnst. var. LEPIDA (A.Gray) I.M.Johnst. (C. MICRANTHA subsp. LEPIDA (A.Gray) K.Mathew & P.H.Raven; C. LEPIDA (A.Gray) I.M.Johnst. proposed). Infrequent but locally abundant annual on decomposed granitic soil, 1000–2200 m; W of and between park entrance at La Corona de Abajo, ca. 2160 m, 20 Jun 1985, *R.F. Thorne 60955 et al.* (RSA); and La Corona de Arriba, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14475* (RSA, SD); and La Encantada; May–Aug; N through Sierra Juárez and mts. of southern CA to Mono Co. and E to UT, TX, and northern Mexico. Not recorded in Wiggins (1980).

CRYPTANTHA sp. nov. (aff. C. MURICATA (Hook. & Arn.) A.Nelson & J.F.Macbr.). Common and locally abundant erect annual in sandy or rocky open places, 2100–2800 m; La Grulla, La Encantada, La Tasajera, Vallecitos and above, 2430 m, 1 Sep 1985, *R.F. Thorne 61425 et al.* (RSA); Yerba Buena, Los Llanitos, 2550 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14272* (RSA, SD); Corral Meadow, and Cerro Venado Blanco and Cerro Observatorio; Jul–Sep; apparently restricted to SSPM. New species under study by Michael Simpson, San Diego State University. Not recorded in Wiggins (1980).

HACKELIA PINETORUM (Greene ex A.Gray) I.M.Johnst. Stickseed. Infrequent perennial, collected only on rocky slopes of Cerro Observatorio, 2550–2800 m, 18 Sep 1983, *R.F. Thorne 57295 et al.* (RSA); and eastern slope of Cerro 2828, 2800 m, 10 Aug 1969, *R.V. Moran 16535* (RSA, SD); Jul–Sep; unlisted from Baja CA and absent from CA, but NE to AZ and E to NM and western TX. Not recorded in Wiggins (1980).

PLAGIOBOTHRYIS COLLINUS (Phil.) I.M.Johnst. var. FULVESCENS Higgins. La Grulla, 2050 m, 8 Jun 1982, *R.V. Moran 30931* (SD); in aspen canyon ca. 1.4 mi NE of entrance, 3.5 mi W of Vallecitos, 2370 m, 1 Oct 2008, *J.P. Rebman 16047* (SD). N from Sierra San Borja to southern CA and E to AZ and Mexico, also Chile. Not recorded in Wiggins (1980).

PLAGIOBOTHRYIS COLLINUS (Phil.) I.M.Johnst. var. URSINUS (A.Gray) Higgins. Popcornflower. Rare annual in Jeffrey pine forest at Santa Eulalia, 1850 m, 11 Jun 1963, *R.V. Moran 11132* (RSA, SD); May–Jun; unlisted from Baja CA, but N through Sierra Juárez to mts. of southern CA. Not recorded in Wiggins (1980).

BRASSICACEAE

BARBAREA ORTHOCERAS Ledeb. Winter cress. Rare, La Grulla, 2050 m, 9 Jun 1982, *R.V. Moran 30942* (SD). N through CA to AK and E to eastern North America and Mexico; also eastern Asia. Not recorded in Wiggins (1980).

BOECHERA PERENNANS (S.Watson) W.A.Weber (ARABIS PERENNANS S.Watson). Rockcress. Frequent perennial on shaded rocky slopes, 2600–2650 m; upper Arroyo San José, Cañón del Diablo, above Arroyo Copal, Corral Meadow, Yerba Buena, 2650 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14123* (RSA, SD); and Cerro

Observatorio, 2600 m, 7 May 1986, *R.F. Thorne 61970 et al.* (RSA); also found at lower elevations down to 1100 m; May–Jun; N from Sierra San Borja through Sierra Juárez to Panamint Mts. of CA and E to AZ, CO, UT, NM, and TX.

*BRASSICA GENICULATA (Desf.) J.Ball (HIRSCHFELDIA INCANA (L.) Lagr.-Foss.). Rare erect biennial weed, only on berm at end of La Tasajera road, 2350 m; May–Aug; naturalized mustard from Europe.

DESCURAINIA INCANA (Fisch. & C.A.Mey.) Dorn (incl. D. RICHARDSONII (Sweet) O.E.Schulz and D. RICHARDSONII subsp. VISCOSA (Rydb.) Detling). Tansy mustard. Infrequent annual of sandy open places, 2200–2430 m, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14323* (RSA, SD); La Corona de Arriba, and Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61409 et al.* (RSA); also down to 1450 m; Jun–Sep; N from central Baja CA through Sierra Juárez and CA to WA and Yukon (Canada) and E to MT, WY, CO, NM, and Sonora (Mexico).

DESCURAINIA OBTUSA (Greene) O.E.Schulz (incl. subsp. ADENOPHORA (Wooton & Standl.) Detling and subsp. OBTUSA). Infrequent annual on sandy flats, 1900–2550 m; Santa Eulalia, 1850 m, 4 Jun 1963, *R.V. Moran 11148* (SD); La Grulla, La Encantada, and Yerba Buena and above, 2550 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14193* (RSA, SD); Aug–Sep; N from Hanson’s Lagoon through Sierra Juárez, CA, and AZ to OR and E to NM and Sonora (Mexico).

DRABA CORRUGATA S.Watson var. DEMAREEI (Wiggins) C.L.Hitchc. Common tufted biennial or perennial on rocky slopes in pine forest, 2000–2800 m; Corral de Sam, 2000 m, 15 Aug 1967, *R.V. Moran & R.F. Thorne 14120* (RSA, SD); Cañón del Diablo, La Encantada (type locality “under pines ... 2200 m”), NW of La Corona de Abajo, La Tasajera, Vallecitos, Los Llanitos, Yerba Buena, Cerro Observatorio and ridge to E, 2840 m, 19 Jun 1985, *R.F. Thorne 60905 et al.* (RSA); and Picacho del Diablo; Jun–Sep; variety apparently restricted to SSPM.

ERYSIMUM CAPITATUM (Douglas ex Hook.) E.Greene subsp. CAPITATUM. Rare wallflower. Near summit of Cerro Chato, 3 Jun 1963, 1900 m, *R.V. Moran 11112* (SD). N through CA to WA, Saskatchewan (Canada) and E to central US.

HUTCHINSIA PROCUMBENS (L.) Desv. Rare annual, only La Grulla in sandy meadow, 2135 m, 1 Jul 1982, *R.V. Moran 30970* (SD) and 1 mi W of former Misión San Pablo Mártir, 1425 m, 31 May 1975, *R.V. Moran 22105* (RSA, SD); also down to 760 m; Apr–May; widely distributed in North America, including CA and Eastern Hemisphere.

LEPIDIUM MONTANUM Nutt. var. CANESCENS (Thell.) C.L.Hitchc. Rare perennial, according to Wiggins (1980) on “decomposed granite soil, meadows among yellow pines, 2000 to 2500 m, Sierra San Pedro Mártir;” Jun–Aug; N through CA to OR and E to UT.

LEPIDIUM VIRGINICUM L. var. PUBESCENS (Greene) Thell. Pepperwort. Frequent annual of open sandy places, 2000–2475 m; La Corona de Abajo to La Corona de Arriba, La Encantada, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60846 et al.* (RSA); Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14229* (RSA, SD); near crest of mountain range, in open meadow ca. 2 mi SE of Observatory, 2985 m, 29 Jun 1998, *J.P. Rebman 5438*; May–Sep; N from Laguna Mts. of Cape Region through Sierra Juárez, CA, and AZ to WA and ID and E to WY, CO, and NM.

LEPIDIUM VIRGINICUM L. var. ROBINSONII (Thell.) C.L.Hitchc. Rare pepperwort. Vallecitos, 2475 m, 9 Aug 1969, *Witham 375* (SD). N to southwestern CA.

PENNELLIA MICRANTHA (A.Gray) Nieuwl. Rare erect purple-flowered annual, sandy openings on rocky slopes, ca. 2500 m, only upper Vallecitos Meadow, 2400 m, 10 Sep 1991, *R.V. Moran 31060* (SD) and at Yerba Buena in small arroyo, 2800 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14152* (RSA, SD); Aug–Sep; absent from CA but N to AZ and E to CO, NM, western TX, and Chihuahua (Mexico). Not recorded in Wiggins (1980).

- PHYSARIA KINGII (S.Watson) O'Kane & Al-Shehbaz subsp. LATIFOLIA (A.Nelson) O'Kane & Al-Shehbaz (LESQUERELLA KINGII (S.Watson) S.Watson subsp. LATIFOLIA (A.Nelson) Rollins & E.A.Shaw). Bladderpod. Rare annual only at Santa Eulalia, 1850 m, 4 Jun 1963, *R.V. Moran 11139* (SD); May–Jun; more common in Sierra Juárez, N to desert ranges of CA, UT, and NV.
- PHYSARIA PENINSULARIS (Wiggins) O'Kane & Al-Shehbaz (LESQUERELLA PENINSULARIS Wiggins). Rare endemic annual of sandy meadows, ca. 2100–2200 m, La Encantada (type locality in “open meadow ... 2100 m”), 19 Aug 1967, *R.V. Moran & R.F. Thorne 14379* (RSA, SD) and Rancho Viejo, 2100 m, 3 Jul 1972, *R.V. Moran 19177* (RSA, SD); Jul–Aug; apparently restricted to SSPM.
- RORIPPA CURVISILICA (Hook.) Bessey ex Britton. Yellow cress. La Vibora, Arroyo la Grulla 4 km SW of La Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24411* (SD). N through Sierra Juárez and CA to AK and E to Rocky Mts.
- *RORIPPA NASTURTIUM-AQUATICUM (L.) Hayek (NASTURTIUM OFFICINALE R.Br.). Water cress. Rare weedy sprawling perennial, locally abundant in shallow water and on wet mud of streams, 875–2200 m, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14441* (RSA, SD); and La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14298* (RSA, SD); more frequent at lower elevations; May–Aug; naturalized from Eurasia.
- RORIPPA TENERRIMA E.Greene. La Grulla, 2100 m, 1 Jul 1982, *R.V. Moran 30974* (SD). N through CA to British Columbia (Canada) and E to central US. Not recorded in Wiggins (1980).
- STREPTANTHUS CAMPESTRIS S.Watson. Southern jewelflower. Rare stout erect biennial of rocky slopes, 1600–2195 m; Santa Rosa, and between La Corona de Abajo and La Corona de Arriba, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2752* (RSA); more frequent at lower elevations as at Rancho La Suerte, 1130 m, 4 Jun 1963, *R.F. Thorne 32055* (RSA); May–Jun; N from the Sierra San Borja through the Sierra Juárez and CA mts. to Kern Co.
- THELYPODIUM WRIGHTII A.Gray subsp. WRIGHTII. Rare tall biennial of rocky slopes, only at Corral de Sam, 2000 m, 30 Jul 1970, *R.V. Moran 18050* (RSA, SD); road N of Sam's Corral, 2000 m, 16 Sep 1967, *R.V. Moran & R.F. Thorne 14538* (RSA, SD); Jun–Aug; N through Sierra Juárez to AZ, but apparently absent from CA, E to western UT, CO, NM, and TX, and Chihuahua (Mexico).

CACTACEAE

- ECHINOCEREUS TRIGLOCHIDIATUS Engelm. var. PACIFICUS Engelm. (ECHINOCEREUS MOMBERGERIANUS G.Frank). Hedgehog cactus (Fig. 11). Frequent clumped cactus in crevices in granite, 1050–2500 m, Corral de Sam, above La Corona de Abajo, Cañón del Diablo (1050–1600 m), Corral Meadow, Yerba Buena, Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14267* (RSA, SD); and between Cerro Venado Blanco and Cerro Observatorio; May–Jun; apparently restricted to northern Baja California. Not recorded in Wiggins (1980).
- OPUNTIA ENGELMANNII Salm-Dyck ex Engelm. var. ENGELMANNII (OPUNTIA PHAEACANTHA Engelm. var. DISCATA (Griffiths) L.D.Benson & Walk). Prickly-pear. Infrequent, usually sterile, of sandy meadows and rocky, dry slopes, 2000–2500 m, upper Arroyo Copal, S of La Encantada, Yerba Buena, and Arroyo El Huico, 1230 m, 23 Aug 1977, *R.V. Moran 24601* (RSA, SD); N through desert slopes of mts. to San Bernardino Co., CA, and E to TX and northern Mexico. Not recorded in Wiggins (1980).

CAMPANULACEAE

- HETEROCODON RARIFLORUM Nutt. Rare but locally abundant sprawling annual, only at and above park entrance at La Corona de Abajo in moist sand along streamlets and on granitic rocks wet with seepage, 2080–2150 m, 21 Jul 1988, *S. Boyd 2826 et al.* (RSA) and 27 Aug 1988, *R. Noyes 637 et al.* (RSA); May–Jul; N

through CA and NV to British Columbia (Canada) and E to ID and MT; not previously reported from Baja CA and not recorded in Wiggins (1980).

- LOBELIA CARDINALIS L. var. PSEUDOSPLENDENS McVaugh (subsp. GRAMINEA (Lam.) McVaugh). Cardinal flower. Rare showy erect annual of moist places, only at Vallecitos, 2285 m, 25 Sep 1930, *I.L. Wiggins & D. Demaree 5046* (DH, POM); and lower at La Joya, 1500 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14507* (RSA, SD); Jul–Oct; N through Sierra Juárez into Inyo Co., CA, and NV and E to western TX, and Mexico, and Panama. Not recorded in Wiggins (1980).

- LOBELIA DUNNII Greene var. SERRATA (A.Gray) McVaugh (var. DUNNII). Infrequent delicate annual of moist, shaded places, 600–2000 m, Arroyo La Zanja, 2000 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14503* (RSA, SD) & ca. 2740 m, 17 Sep 1930, *I.L. Wiggins & D. Demaree* (DH, POM); Arroyo Copal, and La Encantada; more frequent at lower elevations; Jul–Oct; also N in Sierra Juárez to southern CA.

CAPRIFOLIACEAE

- LONICERA SUBSPICATA Hook. & Arn. (incl. vars. DENUDATA Rehder and JOHNSTONII D.D.Keck). Honeysuckle. Infrequent woody climber in chaparral W of La Corona de Abajo and above, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2784* (RSA); toward La Corona de Arriba, 1850–2200 m; and in canyon of Cerro La Encantada, 2300 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14361* (RSA, SD); more common at lower elevations; May–Jul; N through Sierra Juárez to cismontane areas of central CA.
- SYMPHORICARPOS LONGIFLORUS A.Gray subsp. MARTIRENSIS ined. (S. OREOPHILUS of Wiggins). Snow berry. Common and locally abundant endemic low shrub with arching branches, La Corona de Abajo, Santa Rosa, La Encantada, above Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61437 et al.* (RSA); along Cañón del Diablo (2300–2625 m), head of Arroyo Copal, Corral Meadow, Yerba Buena, upper Río San Rafael, Los Llanitos, Cerro La Encantada, Cerro Venado Blanco, and Cerro Observatorio; and ridge to E, and western slope of Picacho del Diablo, 2360 m, 5 May 1978, *R.V. Moran 25619* (RSA, SD); May–Aug; this subsp. apparently restricted to SSPM and Sierra Juárez.
- SYMPHORICARPOS ROTUNDIFOLIUS A.Gray var. PARISHII (Rydb.) Dempster. Rare trailing shrub; S of Vallecitos near Cerro la Botella Azul, 2440 m, 27 Jun 1998, *J.P. Rebmán 5376* (SD); E rim of Cerro 2828, 2800 m, 5 Jul 1968, *R.V. Moran 15264* (SD). N to southern CA including desert mountains and E to NM. Not recorded in Wiggins (1980).

CARYOPHYLLACEAE

- ARENARIA LANUGINOSA (Michx.) Rohrb. subsp. SAXOSA (A.Gray) Maguire (A. CONFUSA Rydb.; STELLARIA LAGUNENSIS M.E.Jones). Sandwort. Common perennial of shaded places, especially on sandy slopes and in pine duff, 1500–2840 m, above and N of La Corona de Abajo, La Grulla, La Encantada, above Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 6139 et al.* (RSA); Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7904 et al.* (RSA, UCR); Los Llanitos, Yerba Buena, and Cerro Venado Blanco and Cerro Observatorio; May–Sep; N through Sierra Juárez to San Bernardino Mts., CA, and NV and E to UT, CO, NM, and TX.
- DRYMARIA LEPTOPHYLLA (Cham. & Schltdl.) Fenzl ex Rohrb. (incl. var. TENELLA (A.Gray) J.Duke). Infrequent annual of sandy or gravelly flats, 2200–2475, La Encantada, Vallecitos, 2450 m, 5 Sep 1977, *R.V. Moran 24651* (RSA, SD); and Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14240* (RSA, SD); Jun–Oct; from Cape Region N to AZ and E to CO, NM, western TX and southern Mexico; absent from CA.

SAGINA SAGINOIDES (L.) H.Karst. (incl. var. *HESPERIA* Fernald). Pearlwort. Frequent perennial of sandy, moist places, 875–2500 m, La Grulla, 5 mi SW of La Grulla, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61404 et al.* (RSA); Corral Meadow, Yerba Buena, 2450 m, 4 Sep 1978, *R.V. Moran 26240* (RSA, SD); and Cerro Venado Blanco; May–Sep; N through CA mts. to British Columbia (Canada), and E to Alberta (Canada), MT, WY, NM, and TX, also Quebec (Canada) and Scandinavia (circumboreal). Not recorded in Wiggins (1980).

SILENE LACINIATA Cav. subsp. *BRANDEGEEI* C.L.Hitchc. & Maguire. Rare catchfly. Corral de Sam, 2100 m, 1 Sep 1963, *R.V. Moran 11307* (SD); Arroyo La Corona de Abajo, in river bed, 2231 m, 4 Oct 1998, *J. Delgadillo s.n.* (SD). N from Cape Region mountains to southern CA.

SILENE LACINIATA Cav. subsp. *LACINIATA*. Infrequent catchfly. ENE of the campground along road to Proyecto Condor ca. 0.7 mi NE of the SSPM office and formal entrance; about 4 mi W of Vallecitos and about 5.6 mi SW of Observatory, 2470 m, 1 Oct 2008, *J.P. Rebman 16038*; Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14145* (RSA, SD). Southwestern US including CA and Baja CA. Not recorded in Wiggins (1980).

SILENE LACINIATA Cav. subsp. *MAJOR* C.L.Hitchc. & Maguire. Mexican campion. Common erect perennial of sandy open pine forests, 2000–3075 m, La Corona de Abajo, Corral de Sam, La Encantada, Upper Vallecitos, La Tasajera, Los Llanitos, Vallecitos and above, Cerro Venado Blanco and Cerro Observatorio, ridge to E of latter, 2780 m, 1 Sep 1985, *R.F. Thorne 61497 et al.* (RSA); and Picacho del Diablo; May–Sep; N through Sierra Juárez to central CA. Not recorded in Wiggins (1980).

SILENE VERECUNDA S.Watson subsp. *PLATYOTA* (S.Watson) C.L.Hitchc. & Maguire. Catchfly. Infrequent erect perennial of open pine forests, 2100–2200 m, above park entrance at La Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2762* (RSA); La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14479* (RSA, SD); and La Encantada; Jun–Sep; N through Sierra Juárez to northern CA.

STELLARIA NITENS Nutt. Starwort. Shining chickweed. Rare annual, only in burn above La Corona de Abajo, 2100 m; more frequent to coast as canyon 2 km SW of El Socorro, 1220 m, 9 May 1978, *R.V. Moran 25758* (SD); Apr–Jul; N to Sierra Juárez, CA and AZ to British Columbia (Canada) and E to ID, MT, and UT.

CERATOPHYLLACEAE

CERATOPHYLLUM DEMERSUM L. Hornwort. Rare submersed aquatic of shallow ponds, 2100–2200 m, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14438* (RSA, SD); La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14314* (RSA, SD); also at lower elevations, as the Rio San Antonio, 650 m; Jun–Sep; widely distributed in Baja CA, CA, and elsewhere as subcosmopolitan aquatic.

CHENOPODIACEAE

CHENOPODIUM BERLANDIERI Moq. Rare pitseed goosefoot. Vicinity of old corral in a meadow of Vallecitos ca. 1.2 mi S of Observatory road in upper Vallecitos, 2445 m, 1 Oct 2008, *J.P. Rebman 16062* (SD). N through Sierra Juárez, Gulf of Mexico, and CA to central Canada.

CHENOPODIUM aff. *DESSICATUM* A.Nelson. Rare annual, meadow along road to Tasajera ca. 0.75 mi S of Observatory road in Vallecitos, 2465 m, 1 Oct 2008, *J.P. Rebman 16054* (SD). N to southern CA, including Mojave Desert and E to Great Basin, WY, and CO. Not recorded in Wiggins (1980).

CHENOPODIUM FREMONTII S.Watson var. *ATROVIRENS* (Rydb.) Fosberg (C. *ATROVIRENS* Rydb.). Goosefoot. Common erect annual of sandy pine forests and rocky granitic ridges, 760–2800 m; in rough garden

in woods behind park entrance at La Corona de Abajo, 2080 m; more frequent at lower elevations, as below La Corona de Abajo, 1700 m, 20 Sep 1983, *R.F. Thorne 57305 et al.* (RSA); Rancho San José (Meling Ranch), 650 m, 19 Jul 1968, *R.V. Moran 15314* (SD); W of and above La Corona de Abajo, Corral de Sam, Santa Rosa, La Encantada, La Tasajera, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61389 et al.* (RSA); Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14187* (RSA, SD); Cerro Observatorio and ridge to E, and S of Cerro Venado Blanco; Jun–Oct; N through CA to British Columbia (Canada) and E to Saskatchewan (Canada), SD, TX, and northern Mexico.

CHENOPODIUM HIANIS Standl. Rare annual, known only from La Encantada, 2200 m (DS); Apr–Sep; N through CA to British Columbia (Canada) and E to WY, CO, NM, and TX.

CHENOPODIUM INCANUM (S.Watson) A.Heller. Rare annual; SE of Vallecitos and ca. 3 mi S of Observatory, along highest ridge en route to Pedro's Dome, 2630 m, 30 Sep 2008, *J.P. Rebman 15992* (SD). N from Sierra San Borja through Sierra Juárez, and CA to ID, and E to UT and Alberta (Canada).

CHENOPODIUM INCISUM Poir. Frequent annual of open sandy places, 2050–2475 m, Santa Rosa, La Encantada, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61391 et al.* (RSA); also Yerba Buena; Jul–Sep; N to AZ and E to NM, CO, and western TX; unreported from CA.

CHENOPODIUM PRATERICOLA Rydb. Infrequent slender erect annual of dry sandy meadows and rocky places, 2200–2840 m, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14305* (RSA, SD); Vallecitos, and Cerro Observatorio, 2840 m, 1 Sep 1985, *R.F. Thorne 61476 et al.* (RSA); May–Sep; N through Sierra Juárez to CA and eastern US. Not recorded in Wiggins (1980).

DYSPHANIA GRAVEOLENS (Willd.) Mosyakin & Clemants (**CHENOPODIUM GRAVEOLENS** Willd.). Yerba Buena, 2475 m, 18 Aug 1967, *R.V. Moran 14184* (SD); SE of Vallecitos and ca. 3 mi S of Observatory, along highest ridge en route to Pedro's Dome, 2630 m, 20 Sep 2008, *J.P. Rebman 15990* (SD). Not recorded in Wiggins (1980), nor in The Jepson Manual (Hickman 1993).

***SALSOLA TRAGUS** L. (S. *AUSTRALIS* R.Br.). Russian thistle. Rare introduced annual weed on roadside in burn above La Corona de Abajo, 2100 m; 21 Jul 1988, *S. Boyd et al. 2828* (RSA); Jun–Oct; naturalized from Eurasia.

CRASSULACEAE

DUDLEYA PAUCIFLORA Rose (Fig. 11). Common showy cespitose rosette succulent of rocky outcrops and cliffs, 1200–3025 m (type locality: Sierra San Pedro Mártir, probably near La Grulla), Arroyo Copal, below Corral de Sam, Upper Corona Meadow, above Vallecitos; Los Llanitos, 2400 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14249* (RSA, SD); Yerba Buena and above, Cerro Venado Blanco and Cerro Observatorio, 2800 m, 18 Sep 1989, *R.F. Thorne 57300 et al.* (RSA); and ridge to E of latter, and Picacho del Diablo (2350–3025 m); Jul; apparently restricted to SSPM. Not recorded in Wiggins (1980).

SEDUM NIVEUM Davidson. Stonecrop. Infrequent sprawling mat-forming succulent perennial of rocky ridges in conifer forest, 2540–2970 m, northeastern slope Cerro Botella Azul, Cerro Observatorio, N–NW of Observatory and E of the ranch at base and ridge to E above Cañón Diablo, 2345 m, 16 Sep 1998, *J.P. Rebman 5599* (SD); and E slope, Cerro 2828, on E rim, 2800 m, 21 Jul 1968, *R.V. Moran 15333* (SD); Aug–Sep; also known from desert ranges of Riverside and San Bernardino cos., CA.

*CUCURBITACEAE

***CITRULLUS COLOCYNTHIS** (L.) Schrad. var. *LANATUS* (Thunb.) Matsum. & Nakai (C. *VULGARIS* Schrad.). Watermelon. Rare adventive, only 3.5 mi above Rancho San Pedro Mártir on road to Sam's Corral,

1850 m, 9 Aug 1969, *R. V. Moran 16528* (SD); May–Oct; naturalized from Old World.

DATISCEAE

DATISCA GLOMERATA (Presl) Baill. Durango root. Infrequent perennial, 1.1 mi SE of Mike's Sky Ranch along Río San Rafael, 1280 m, 11 Aug 1998, *Rebman 5509* (SD); canyon ca. 2 mi above Rancho San Pedro Mártir, 1730 m, 31 Jul 1970, *R. V. Moran 18061* (SD); La Vibora, Arroyo la Grulla 4.0 km SW of La Grulla, 1900 m, 9 Aug 1977, *R. V. Moran 24388* (SD). N through Sierra Juárez to northern CA and western NV.

ERICACEAE

ARCTOSTAPHYLOS PATULA Greene subsp. *PLATYPHYLLA* (A.Gray) P.V.Wells. Manzanita. Abundant colonial shrub on rocky slopes and in open pine forests, 2000–3050 m, La Corona de Abajo, 2200 m, 8 May 1986, *R. F. Thorne 62003 et al.* (RSA); La Corona de Arriba, Jeffrey pine flat 2 km of Cerro 2040, La Tasajera, S of Upper Vallecitos, Corral Meadow, Yerba Buena, Cerro Venado Blanco and Cerro Observatorio and ridges between them and to E of latter above Cañón del Diablo, 2780 m, 19 Jun 1985, *R. F. Thorne 60893 et al.* (RSA); and Picacho del Diablo (2000–3025 m); preference for granitic rocks; Apr–Jun; disjunctly N to San Jacinto Mts., and through CA and NV to WA and MT and E to UT and CO. See Map 8 for range in SSPM.

Possible hybrid: *A. PATULA* x *A. PENINSULARIS*. 2.5 km N of Corona guard station, 2300 m, 21 Aug 1977, *R. V. Moran 24581* (RSA, SD); and NW of Encantada, 2255 m, 25 Sep 1930, *I. L. Wiggins & D. Demaree 5021* (DH, RSA). Not recorded in Wiggins (1980).

ARCTOSTAPHYLOS PENINSULARIS P.V.Wells. Peninsula manzanita. Dominant shrub of the chaparral on western and eastern sides, 1900–2200 m (also 1200–2700 m); Santa Eulalia, W of and at La Corona de Abajo, 1750 m, 8 May 1986, *R. F. Thorne 62004 et al.* (RSA); Santa Rosa, 2050 m, 20 Aug 1967, *R. V. Moran & R. F. Thorne 14421* (RSA, SD); Arroyo Copal, E slope at head, 2550 m, 24 Aug 1968, *R. V. Moran 15445* (SD); also Cerro 2040, W of Corral de Sam, La Corona de Arriba and W, Picacho del Diablo (to 2700 m), and Corral Meadow; more frequent at lower elevations; Apr–May; from Sierra Libertad N through Sierra Juárez to mts. of southern CA. See Map 9 for range in SSPM. Not recorded in The Jepson Manual (Hickman 1993).

ARCTOSTAPHYLOS PRINGLEI Parry subsp. *DRUPACEA* (Parry) P.V.Wells. Manzanita. Common shrub of chaparral between La Tasajera and La Grulla, 1500–2800 m, La Encantada; La Corona de Abajo, 2200 m, 8 May 1986, *R. F. Thorne 62000 et al.* (RSA); Cerro La Encantada, 2300 m, 19 Aug 1967, *R. V. Moran & R. F. Thorne 14354* (RSA, SD); and beyond to La Corona de Arriba, above Vallecitos, Los Llanitos, head of Arroyo Copal, ridge 4 km NW of Corral Meadow, Picacho del Diablo (2100–2525 m), and Cerro Venado Blanco and Cerro Observatorio; Apr–Jun(–Aug); N through Sierra Juárez to mts. of southern CA (typical subspecies N to AZ and NV and E to UT).

ARCTOSTAPHYLOS PUNGENS Kunth. Pointleaf manzanita. Rare shrub, 3 mi S of Santa Eulalia, 1850 m, and observed by J. D. Olmsted in chaparral with *A. PRINGLEI* subsp. *DRUPACEA* at ca. 2200 m; more frequent at lower elevations down to 1200 m as Rancho San Pedro Mártir, 1700 m, 17 Sep 1967, *R. V. Moran 14565* (RSA, SD); and Oak Grove, 1750 m, 20 Jun 1985, *R. F. Thorne 60975a et al.* (RSA); Mar–Apr; N through Sierra Juárez to southern CA and NV and E to UT, NM, and TX, and S to Oaxaca (Mexico).

PTEROSPORA ANDROMEDEA Nutt. Pinedrops. Rare slender mycophyte, observed but not collected by David Charlton, Dennis Kucera, and Dave Bramlett in pine forest on southern slope of Cerro Botella Azul, ca. 2600 m; Jun–Aug; N through CA to British Columbia (Canada)

and E to CO, NM, and SD, on to the Atlantic Coast. Not recorded in Wiggins (1980).

PYROLA PICTA Sm. subsp. *INTEGRA* (A.Gray) Piper. Wintergreen. Rare perennial, collected only near La Tasajera, at base of granitic boulders in pine forest, 2000–2300 m, 22 Jun 1986, *C. Brey 162* (RSA, SD); and 20 Jul 1988, *S. Boyd 2723 et al.* (RSA); Jun–Jul; N through CA to WA. Variety *APHYLLA* (Sm.) ined., a rare, largely leafless variety, was found only in the sandy Dead Horse Meadow N of Cerro Venado Blanco, 2650 m, 17 Jul 1988, *S. Boyd et al. 2601* (RSA); Jul–Aug; N through CA to British Columbia (Canada) and MT. Not recorded in Wiggins (1980).

SARCODES SANGUINEA Torr. Snow plant. Frequent red fleshy mycophyte in open conifer forest, 2250–2475 m; Upper Vallecitos, La Tasajera, Vallecitos and above, 2430 m, 18 Jun 1985, *R. F. Thorne 60873 et al.* (RSA); 3 mi ESE of La Corona de Arriba, Corral Meadow, Los Llanitos, 2600 m, 26 Jun 1986, *J. P. Rebman & R. Sosa 3277* (RSA, SD); Yerba Buena, and southern slope of Cerro Venado Blanco; May–Jun; N through CA and NV to OR.

EUPHORBACEAE

EUPHORBIA PALMERI S.Watson. Spurge. Common, clumped perennial of open pine forests, 1450–2650 m, La Tasajera, Vallecitos and above, Los Llanitos, Yerba Buena and above, 2650 m, 16 Aug 1967, *R. V. Moran & R. F. Thorne 14208* (RSA, SD); 2.5 km W of Observatory, Cerro Venado Blanco and Cerro Observatorio, 2600 m, 7 May 1986, *R. F. Thorne 61965 et al.* (RSA); and ridges between them; May–Jun(–Aug); N through Sierra Juárez to CA and NV and E to AZ and UT.

EUPHORBIA SERPYLLIFOLIA Pers. Prostrate spurge. Infrequent prostrate annual, 2200–2450 m, La Encantada, 2200 m, 19 Aug 1967, *R. V. Moran & R. F. Thorne 14320* (RSA, SD) and NW; and Upper Vallecito meadow, 2450 m, 5 Sep 1977, *R. V. Moran 24657* (SD); also down to 625 m on Rancho San José; Aug–Oct; N through Sierra Juárez and CA to British Columbia (Canada) and E to AZ, MI, TX, and Mexico.

FABACEAE

AMORPHA CALIFORNICA Nutt. False indigo. Common shrub of rocky slopes, especially in arroyos, 1650–2600 m, La Corona de Abajo and above, Arroyo Copal and above, E of Corral de Sam, S of La Tasajera, Vallecitos, 2460 m, 19 Jun 1985, *R. F. Thorne 60947 et al.* (RSA) and above, above Los Llanitos, 2200 m, 27 Jun 1996, *J. P. Rebman & R. Sosa 3293* (RSA, SD); Yerba Buena and above, and Cerro Observatorio; Jun–Aug; N through Sierra Juárez to mts. of CA and AZ.

ASTRAGALUS CIRCUMDATUS Greene. Milk vetch. Frequent and locally abundant spreading perennial of open sandy places, 2200–2500 m, above La Corona de Abajo, La Encantada, Vallecitos, 2430 m, 18 Jun 1985, *R. F. Thorne 60839 et al.* (RSA); and W, 2.5 km W of Observatory, and Yerba Buena, 2475 m, 16 Aug 1967, *R. V. Moran & R. F. Thorne 14238* (RSA, SD); waifs reported to near sea level at Colonia Guerrero; May–Aug; also found in Sierra Juárez but endemic to Baja California.

ASTRAGALUS DOUGLASII (Torr. & A.Gray) A.Gray var. *GLABERRIMUS* M.E.Jones. Infrequent sprawling perennial at Santa Eulalia, 1850 m, and Oak Meadow below Corona de Abajo, 1950 m, 21 Jul 1988, *S. Boyd 2834 et al.* (RSA); and above at 2100–2200 m and base of Cerro Botella Azul, 19 Jul 1988, *S. Boyd 2656 et al.* (RSA); mostly below 1600 m; Apr–Jul; endemic to Baja California, ranging from SSPM S to Laguna Chapala Seca and Sierra Vizcaino.

ASTRAGALUS GRUINUS Barneby. Abundant endemic perennial of sandy meadows and open pine forests, 1800–2840 m, W of and at La Corona de Abajo, Arroyo Copal and above, La Encantada, La Tasajera, Upper Vallecitos, 2430 m, 1 Sep 1985, *R. F. Thorne 61392 et al.* (RSA); Corral Meadow, Vallecitos (type locality), Yerba

- Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14133* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, and ridges between them; May–Oct; largely restricted to SSPM, but occasional waifs down toward coast, as near Villa Guerrero (20 m).
- ASTRAGALUS PRORIFER* M.E.Jones. Infrequent sprawling perennial of pine forests and chaparral, 1050–2210 m, Santa Eulalia, 1850 m, 4 Jun 1963, *R.V. Moran 11133* (RSA, SD); La Corona de Abajo, 2100 m, 21 Jul 1988, *S. Boyd 2812* et al. (RSA); and La Grulla; more frequent in chaparral at lower elevations; type locality: San Pedro Mártir; May–Jul; restricted to the Baja California peninsula from Desierto de San Felipe and SSPM foothills to Comondú, Loreto, and Laguna San Ignacio.
- HOITA ORBICULARIS* (Lindl.) Rydb. (*PSORALEA ORBICULARIS* Lindl.). Rare perennial, arroyo SSE of Oak Pasture, 1600 m, 28 Jul 1970, *R.V. Moran 17958* (SD); Oak Pasture/Los Manzanos, along road between Meling Ranch and Observatory, 1900 m, 28 Jun 1996, *J.P. Rebman 3315* (SD). N to northern CA.
- LOTUS ARGYRAEUS* (Greene) Greene. Deer vetch. Common sprawling perennial of sandy places and open pine forests, 625–2800 m, Cañón del Diablo, Santa Rosa, La Encantada, Upper Río San Rafael, S of La Tasajera, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14139* (RSA, SD); head of Arroyo Copal, Cerros Venado Blanco and Cerro Observatorio, 2600 m, 7 May 1986, *R.F. Thorne 61975* et al. (RSA); and ridges between them and to E of latter; Apr–Sep; N from Sierra San Borja and SSPM through Sierra Juárez to mts. of southern CA.
- LOTUS GRANDIFLORUS* (Benth.) Greene. Rare perennial, just above park entrance W of La Corona de Abajo on decomposed granitic soil, 2020 m, 3 Jul 1973, *R.V. Moran 21092* (RSA, SD); and more frequent at lower elevations as at 1675 m, 18 Jun 1985, *R.F. Thorne 60806* et al. (RSA); Apr–Jul; N through Isla Guadalupe and Sierra Juárez to northern CA.
- LOTUS HEERMANNII* (Durand & Hilg.) Greene var. *HEERMANNII*. Rare sprawling perennial above park entrance at La Corona de Abajo, 2100 m, in burn along streamlet and in seepage area over granite outcrops and 4 km E of Socorro, 1650 m, 20 Jun 1977, *R.V. Moran 24248* et al. (RSA, SD); and canyon above Meling Ranch, 1676 m, Aug 1966, *Helen Smith s.n.* (SD); May–Oct; N through Sierra Juárez to central CA.
- LOTUS HUMISTRATUS* Greene. Vallecitos, 2400 m, 22 May 1987, *J. Delgadillo s.n.* (SD). N to Sierra Juárez to northern CA and E to AZ, NM and northern Sonora (Mexico).
- LOTUS NEVADENSIS* (S.Watson) Greene. Common prostrate perennial of sandy meadows and open pine forests, 650–2840 m, Arroyo Copal, above La Corona de Abajo, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14367* (RSA, SD); and NW, La Tasajera, Corral Meadow, Vallecitos and W, Los Llanitos, Yerba Buena, head of Arroyo Copal, Cerro Venado Blanco and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60907* et al. (RSA); and ridges between them; May–Sep; N through Sierra Juárez and CA and NV mts. to WA.
- LOTUS OBLONGIFOLIUS* (Benth.) Greene var. *OBLONGIFOLIUS*. Common sprawling, rhizomatous perennial of moist places in arroyos, 875–2500 m, La Corona de Abajo and above, Arroyo Copal, La Encantada, Corral Meadow, N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60941* et al. (RSA); Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14172* (RSA, SD); head of Arroyo Copal, and Cerro Venado Blanco; Jun–Sep; N through Sierra Juárez to central CA and E to NV and AZ.
- LOTUS PURSHIANUS* (Benth.) Clem. & E.G.Clem. Rare weakly erect annual, La Grulla, in moist sandy meadow, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14434* (RSA, SD); also down to Río San Rafael at El Potrero, 1280 m, 11 Aug 1998, *J.P. Rebman 5510* (SD); May–Aug; N through Sierra Juárez and CA to British Columbia (Canada) and E to the Dakotas, AR, LA, NC, and Mexico. Not recorded in Wiggins (1980).
- LOTUS RIGIDUS* (Benth.) Greene. Frequent erect perennial of sandy chaparral, 760–2200 m, W of park entrance, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14384* (RSA, SD); La Corona de Abajo and above, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2781* (RSA); and La Encantada; more frequent at lower elevations; Apr–Nov; N from Isla Cedros and Cerro Azufre through SSPM foothills and Sierra Juárez to Inyo Co., CA, and NV and E to AZ, UT and NM.
- LOTUS STRIGOSUS* (Nutt.) Greene. Rare spreading annual, only upper Arroyo San José on sandy bottom at border of Jeffrey pine forest, 2200–2225 m, 7 Jun 1962, *J.D. Olmsted 4577* (RSA); more common at lower elevations, down to 650 m at Rancho San José, 20 Jun 1985, *R.F. Thorne 60998* et al. (RSA); Apr–Jul; N from Cerro San Luis through SSPM foothills and Sierra Juárez to central CA and AZ.
- LOTUS UTAHENSIS* Ottley vel. aff. Common ascending perennial of sandy meadows and open pine forests, 2000–2650 m, La Corona de Abajo, Santa Rosa, La Tasajera, Corral Meadow, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60848* et al. (RSA); Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14122* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, and ridges between them; Jul–Sep; apparently restricted to SSPM and Sierra Juárez. Not recorded in Wiggins (1980).
- LUPINUS BICOLOR* Lindl. Miniature annual lupine. La Grulla, 2050 m, 8 Jun 1982, *R.V. Moran 30932* (SD). N through CA to British Columbia (Canada) and naturalized in AZ.
- LUPINUS EXCUBITUS* M.E.Jones subsp. *AUSTROMONTANUS* (A.Heller) R.M.Beauch. Grape soda lupine. Frequent showy flowered erect perennial, 1100–2830 m, Santa Eulalia, W of and above La Corona de Abajo, above Arroyo Copal, Corral Meadow, ca. 4 km W of Observatory, and Cerro Venado Blanco, 2600 m, 3 Jun 1988, *S. Boyd 2329* et al. (RSA); and Cerro Observatorio, 2600 m, 7 May 1986, *R.F. Thorne 61964* et al. (RSA); May–Aug; N from Cerro San Luis through SSPM and Sierra Juárez to Kern Co., CA.
- LUPINUS FORMOSUS* Greene var. *FORMOSUS*. Rare erect perennial, cited by C. P. Smith (1938) from La Grulla and Vallecitos, 2100–2450 m; specimens not seen by us; probably Apr–Jun; N through Sierra Juárez to northern CA.
- LUPINUS HYACINTHINUS* Greene (L. *ANDERSONII* S.Watson var. *SUBLINAEARIS* C.P.Sm.). Abundant erect perennial of rocky slopes, 2200–2840 m, 2 mi E of La Corona de Abajo, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14352* (RSA, SD); La Tasajera, Upper Vallecitos, E end Vallecitos, Los Llanitos, above Arroyo Copal, and Cerro Venado Blanco and Cerro Observatorio, 2800 m, 18 Sep 1983, *R.F. Thorne 57270* et al. (RSA); Jun–Sep; N through Sierra Juárez to mts. of southern CA.
- LUPINUS LATIFOLIUS* J.Agardh subsp. *WIGGINSII* (C.P.Sm.) Kenney & D.B.Dunn. Infrequent erect endemic perennial on moist, decomposed granite, at La Grulla, 2050 m, 8 Jun 1982, *R.V. Moran 30925* (SD); and high peaks E of La Encantada (type locality), 2100–2500 m, 30 Jun 1982, *R.V. Moran 30962* (SD); photo of type (RSA); also along stream at Oak Pasture, 1600 m, and Oak Grove, 1750 m, 20 Jun 1985, *R.F. Thorne 60971* et al. (RSA); May–Aug; also in Sierra Juárez but otherwise apparently restricted to mts. of Baja CA. Not recorded in Wiggins (1980).
- MARINA ORCUTTII* (S.Watson) Barneby var. *ORCUTTII* (DALEA *ORCUTTII* S.Watson). California marina. Rare annual, Santa Rosa, on rocky slope, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14405* (RSA, SD); also lower down ca. 9.1 mi S of Hwy 1 at Rancho El Picacho; NE of Mike's Sky Ranch, 1410 m, 10 Aug 1998, *J.P. Rebman 5467* (SD); May–Aug; found also in Sierra Juárez, S to Sierra San Francisco, and N disjunctly to the Santa Rosa Mts., Riverside Co., CA.
- **MELILOTUS INDICUS* (L.) All. Sourclover. Rare erect weedy annual, only in meadow at La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran &*

- R.F. Thorne 14485* (RSA, SD); more frequent at lower elevations down to San José, 650 m; May–Aug; naturalized from Eurasia.
- RUPERTIA RIGIDA* (Parish) J.W.Grimes (*PSORALEA RIGIDA* Parish). Parish's psoralea, scurf-pea. Infrequent erect perennial in open Jeffrey pine forest, 1850–2550 m, Santa Eulalia, 1850 m, 4 Jun 1963, *R.V. Moran 1452* (RSA, SD); Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14415* (RSA, SD); and 3 km NW of Corral Meadow; more frequent at lower elevations down to 1400 m at Los Encinos; May–Jul; N through Sierra Juárez to mts. of southern CA.
- TRIFOLIUM MICROCEPHALUM* Pursh. Clover. Frequent, prostrate perennial of seepage slopes and stream margins, 2000–2530 m, La Corona de Abajo and above, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2759* (RSA); Upper Vallecitos, Vallecitos, Los Llanitos, and Yerba Buena and above, 2525 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14226* (RSA, SD); May–Sep; N from Cape Region and Isla Guadalupe and cismontane CA to British Columbia (Canada) and E to NV and AZ.
- TRIFOLIUM VARIEGATUM* Nutt. Infrequent perennial in moist meadows, near La Corona de Abajo, 2100 m, 20 Jul, 1988, *S. Boyd & T. Ross 3774* (RSA); SW end of Cerro Venado Blanco, 2810 m, 17 Jul 1988, *S. Boyd 2620 et al.* (RSA); and base of Cerro Botella Azul, 2600 m, 19 Jul 1988, *S. Boyd 2683 et al.* (RSA); N through CA and AZ, sporadically to British Columbia (Canada), MT and CO.
- TRIFOLIUM WIGGINSII* J.M.Gillett. Common and locally abundant endemic prostrate perennial of moist, open, sandy places, 2200–2500 m, sometimes forming dense mats, upper Arroyo San José, La Encantada, La Tasajera, Upper Vallecitos, Corral Meadow, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61400 et al.* (RSA); and dry meadow to W (type locality), Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14171* (RSA, SD); and Cerro Venado Blanco; May–Sep; apparently restricted to SSPM.
- TRIFOLIUM WILDENOVII* Sprengel. Occasional along stream near La Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2787* (RSA). N through CA, sporadically to British Columbia (Canada) and E to ID and NM, also South America. Not recorded in Wiggins (1980).
- TRIFOLIUM WORMSKIOLDII* Lehm. Rare perennial, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran 14301* (SD); La Encantada open meadow with running stream, S of Los Llanitos, 2200 m, 27 Jun 1996, *J.P. Rebman 3283* (SD). N through CA to British Columbia (Canada) and E to ID, WY, UT, CO, NM, and Mexico.
- TRIFOLIUM* sp. nov. Rare, weakly erect or sprawling perennial, only in *CUPRESSUS*-lined arroyo at Los Llanitos along stream, 2300 m; Jul; apparently restricted to SSPM and Sierra Juárez. Possibly endemic to SSPM. Not recorded in Wiggins (1980).

FAGACEAE

- QUERCUS AGRIFOLIA* Née var. *OXYADENIA* (Torr.) J.T.Howell. Coast live oak. Stands ascend to 1500–1900 m from Oak Pasture to Arroyo de Soto, km 75 to the Observatory, 1900 m, 23 Sep 1989, *J. Delgadillo s.n.* (SD). Farther S, a stand at La Zanja spills off the plateau. The southernmost outpost is along Arroyo El Horno 3.5 km SW of the Misión San Pedro Mártir ruins at 1200–1400 m (30°47'115°330'W); also Cañada el Pinacate, 1000 m, 23 Aug 1977, *R.V. Moran 24593* (SD); N of Oak Pasture there are frequent stands to 1800 m (and one to 1900 m) along W base of Sierra Corona almost to Rancho San Pedro Mártir, 1700 m, 17 Sep 1967, *R.V. Moran 14576* (SD). Farther N, colonies move away from SSPM to the Río San Rafael and the airstrip near Mike's Sky Ranch. There is a very isolated colony on the E escarpment 9 km N of Corral Meadow, about halfway between the N end of the SSPM plateau and Cerro San Matías; Mar–Apr; variety N through Sierra Juárez to southern CA. See Map 20 for range in SSPM.

- QUERCUS CHRYSOLEPIS* Liebm. Canyon live oak. Common large shrub or small tree on steep rocky slopes, 1670–3040 m, above Socorro, La Corona de Abajo, above Vallecitos, 2540 m, 18 Sep 1983, *R.F. Thorne 57248 et al.* (RSA); Los Llanitos, Yerba Buena, 2660 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14205* (RSA, SD); head of Arroyo Copal, Corral Meadow, Cerro Venado Blanco and Cerro Observatorio, ridge to E of latter, and Picacho del Diablo; rarely larger trees as above Rancho San Pedro Mártir. Some specimens above Vallecitos and at Yerba Buena approach too closely in foliage and fruit the montane race of *QUERCUS CEDROSENSIS* C.H.Mull. Common on upper slopes of Cerro San Matías. Abundant on granites, but uncommon on metamorphic rocks except on the steepest slopes of the upper E escarpment; Apr–Jun; N from Sierra Asamblea to Sierra Juárez, Cerro Blanco, and CA to OR and E to AZ and Sonora (Mexico). See Map 21 for range in SSPM.
- QUERCUS PENINSULARIS* Trel. Peninsular oak. Frequent, large shrub or small tree of rocky slopes in open, coniferous forest, 850–2840 m, (type locality: Sierra San Pedro Mártir); very abundant on metamorphic rocks, especially S of La Grulla and La Encantada, 2400 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14360* (RSA, SD); Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60896 et al.* (RSA); 3 km W of the Observatory, and 3–4 km N of Corral Meadow; reaches 20 m height at edges of meadows in the S, as at Santo Tomás and Santa Eulalia; also Cañón Diablo (down to 850 m), La Corona de Abajo, Arroyo Copal and above; Apr–Jun; endemic to Baja California mts. but ranging N from Sierra Libertad to Sierra Juárez. Closely related to *Q. EMORYI* of AZ, NM, and northwestern Mexico. See Map 22 for range in SSPM.
- QUERCUS TURBINELLA* Greene subsp. *TURBINELLA*. Shrub live oak. Rare, Cerro Chato, N slope, 1900 m, 3 Jun 1963, *R.V. Moran 11115* (SD). N from Sierra San Borja to New York Mts. of the eastern Mojave Desert of CA and E to NV, AZ, CO, and TX.
- QUERCUS WISLIZENI* A.DC. var. *FRUTESCENS* Engelm. Interior live oak. Infrequent large shrub of chaparral, 1850–2000 m, Sierrita La Corona, 2453 m, 4 Oct 1998, *J. Delgadillo s.n.* (BCMEX); also just above Oak Pasture W of La Corona de Abajo, 1700 m, 20 Sep 1983, *R.F. Thorne 57314 et al.* (RSA); and photographed by Richard Minnich near Corral de Sam with *CEANOTHUS LEUCODERMIS* and *ARCTOSTAPHYLOS PENINSULARIS*; Apr–May; N through mts. of southern CA to northern CA. Not recorded in Wiggins (1980).

GARRYACEAE

- GARRYA FLAVESCENS* S.Watson var. *PALLIDA* (Eastw.) Ewan. Silk-tassel bush. Rare shrub of rocky slopes, NE slope of Cerro Chato, 1850 m, 3 Jun 1963, *R.F. Thorne et al. 31985, 31990, and 32000* (RSA); Park entrance, 2000 m, 4 Aug 1986, *Passini-Salazar s.n.* (BCMEX); ranging N through Sierra Juárez to northern CA, AZ, and UT.
- GARRYA GRISEA* Wiggins. Frequent shrub of rocky slopes, especially in arroyos, 1350–2650 m, Cañón Diablo (1350–1975 m), Arroyo Copal and above, Cerro La Encantada, 2300 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14364* (RSA, SD); (type locality: “small canyon at the upper end of the meadow”), Yerba Buena, above Vallecitos Meadow, 2540 m, 18 Sep 1983, *R.F. Thorne 57238 et al.* (RSA); and Cerro Venado Blanco and Cerro Chato; Apr–May; restricted to Baja California, but ranging from Cerro Azufre and Volcán las Tres Vírgenes N to Sierra Juárez.
- GARRYA VEATCHII* Kellogg. Rare but locally abundant shrub of chaparral, 1850–2100 m, W of La Corona de Abajo and just above La Corona de Abajo; also with *G. FLAVESCENS* var. *PALLIDA* at 1850 m at Cerro Chato, 3 Jun 1963, *R.F. Thorne 31999 et al.* (RSA); more common at lower elevations in chaparral, as below La Corona de Abajo, 1675 m, 18 Jun 1985, *R.F. Thorne 60798 et al.* (RSA); (Nov) Apr–May; N from Isla Cedros and Sierra Libertad to Cerro Blanco, Cerro Bola, Sierra Juárez southern CA.

GENTIANACEAE

GENTIANELLA AMARELLA (L.) Börner subsp. *ACUTA* (Michx.) J.M.Gillet. Gentian. Frequent, annual of wet meadows and moist arroyos, 2100–2650 m, Arroyo La Zanja, La Grulla, La Encantada, above Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61441 et al.* (RSA); Los Llanitos, and Yerba Buena, 2650 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14220* (RSA, SD); Jul–Oct; N through CA mts. and E to AK, New England, and Mexico; species also in Eurasia. Not recorded in Wiggins (1980).

SWERTIA PARRYI (Torr.) Kuntze (*FRASERA PARRYI* Torr.). Green gentian (Fig. 13). Infrequent erect perennial, Vallecito de la Canoa, 1900 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14505* (RSA, SD) and below La Corona de Abajo, 1900 m, on decomposed granitic soil near streambed and in open pine forest; more frequent at lower elevations as on NE slope at Cerro Chato, 1800 m, 3 Jun 1963, *R.F. Thorne 32006 et al.* (RSA) and down to 1200 m; May–Jul; N through Sierra Juárez and CA to OR and E into AZ and Sonora (Mexico).

GERANIACEAE

***ERODIUM CICUTARIUM** (L.) L'Hér. Filaree, storksbill. Frequent annual of weedy places and sandy meadows, 2200–2600 m, La Corona de Abajo, also W of and above La Corona, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14324* (RSA, SD); Vallecitos, Corral Meadow, and Cerro Observatorio, 2600 m, 7 May 1986, *R.F. Thorne 61982 et al.* (RSA); much commoner at lower elevations; Apr–Jun (Aug–Nov); weed early naturalized from Mediterranean region.

GERANIUM CAESPITOSUM E.James (*G. ATROPURPUREUM* A.Heller). Cranesbill, geranium. Common, erect perennial of rocky places and open pine forests, mostly along streams in arroyos, 1600–2750 m, Arroyo Copal, La Corona de Abajo, Arroyo La Zanja, La Tasajera, Upper Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61426 et al.* (RSA); Corral Meadow, Vallecitos and above, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14170* (RSA, SD); and Cerro Venado Blanco and Cerro Observatorio; Jun–Sep; N through Sierra Juárez to AZ and E to UT, CO, NM, TX, and Chihuahua (Mexico); unreported from CA and not recorded in Wiggins (1980).

GERANIUM GRACILE Ledeb. ex Nordm. Rare perennial, SE of Vallecitos and ca. 3 mi S of Observatory, up canyon with intermittent stream en route to Pedro's Dome, 2430 m, 30 Sep 2008, *J.P. Rebman 16006* (SD); Los Llanitos, SE of Vallecitos, 2600 m, 26 Jun 1996, *J.P. Rebman 3270* (SD). E to NM, UT, CO, TX, and northern Mexico. Unreported from CA.

GROSSULARIACEAE

RIBES CEREUM Douglas. Wax currant. Infrequent shrub, only steep rocky slopes on E slope of Cerro de la Cupula, 2550 m, 27 Jul 1970, *R.V. Moran 17891* (RSA, SD); E slope Cerro 2828, and peak of Cerro Observatorio, 2470–2830 m, where locally abundant, 88 May 1986, *R.F. Thorne 61985 et al.* (RSA); May–Jul; N through mts. of CA to British Columbia (Canada) and E to Rocky Mts. Not recorded in Wiggins (1980).

HYDRANGEACEAE

PHILADELPHUS MICROPHYLLUS A.Gray subsp. *STRAMINEUS* (Rydb.) C.L.Hitchc. Mock-orange. Common low shrub of rocky places, 2200–2930 m, above Arroyo Copal, upper Vallecitos, 2560 m, 19 Jun 1985, *R.F. Thorne 60915 et al.* (RSA); La Encantada and peak to E, Corral Meadow, Los Llanitos, Yerba Buena, Cerro Venado Blanco and Cerro Observatorio, and ridges between and to E of latter, 2780 m, 1 Sep 1985, *R.F. Thorne 61462 et al.* (RSA); Jun–Aug; N through Sierra Juárez to desert mts. of San Bernardino and Inyo cos., CA, and E to NV, UT, and NM.

HYDROPHYLLACEAE

ERIODICTYON ANGUSTIFOLIUM Nutt. Narrow-leaved yerba santa. Common and locally abundant shrub of rocky, granitic slopes, 600–2650 m, Cañón del Diablo (625–1975 m), S fork Río San Rafael, Arroyo Copal, from W of to above La Corona de Abajo, 2650 m, 18 Sep 1983, *R.F. Thorne 57249 et al.* (RSA); E of Corral de Sam, La Encantada, Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14260* (RSA, SD); Corral Meadow, and S slope Cerro Observatorio; more abundant at lower elevations; May–Aug; N from Volcán Las Tres Vírgenes and Sierra San Borja through Sierra Juárez to eastern Mojave Desert, CA, NV, and AZ and E to UT.

NAMA DICHOTOMUM (Ruiz & Pav.) Choisy subsp. *DICHOTOMUM*. Purple mat. Rare, erect annual of sandy or gravelly meadows, 2450–2500 m, Upper Vallecitos, 2450 m, 5 Sep 1977, *R.V. Moran 24652* (RSA, SD); Vallecitos, and Yerba Buena, 2475 m, 14 Sep 1968, *R.V. Moran 15610* (SD); Aug–Sep; N to New York Mts. of eastern San Bernardino Co., CA, and E to AZ, NM, TX, and Mexico. Not recorded in Wiggins (1980).

NEMOPHILA PEDUNCULATA Benth. Rare annual, only at La Grulla on “decomposed granite soil or gravel, in shade of trees and overhanging boulders,” at 2100 m, and lower at La Concepción 1450 m, 31 May 1968, *R.V. Moran 15049* (SD); Apr–Aug; N through Sierra Juárez, CA, and NV to British Columbia (Canada) and ID.

PHACELIA AFFINIS A.Gray. Phacelia. Rare, erect annual, only Santa Eulalia, 1850 m, 4 Jun 1963, *R.V. Moran 11125* (RSA, SD); more common down to 1000 m as at La Concepción, 1600 m, 31 May 1968, *R.V. Moran 15014* (SD); Apr–Jun; N from Volcán Las Tres Vírgenes and Sierra San Borja through SSPM and Sierra Juárez to CA and NV and E to AZ, UT, NM, and Sonora (Mexico).

PHACELIA BRACHYLOBA (Benth.) A.Gray. Infrequent erect annual of sandy arroyos and hillsides, Santa Eulalia, 1850 m, 4 Jun 1963, *R.V. Moran 11124* (RSA, SD); above La Corona de Abajo (where abundant in burn), 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2776* (RSA); and at Vallecitos; more frequent at lower elevations, at least down to 1130 m; May–Sep; N through Sierra Juárez and deserts and cismontane areas to Monterey Co., CA.

PHACELIA DISTANS Benth. Rare weakly erect annual, only N of Corral de Sam, 2100 m; more frequent at lower elevations down to 650 m, as at Rancho San José, 1 Mar 1931, *A. Meling 36* (RSA, SD); and 1.1 mi SE of Mike's Sky Ranch along Río San Rafael, 1280 m, 12 Aug 1998, *J.P. Rebman 5538* (SD); Apr–Jun; N from Desierto de Vizcaino through SSPM and Sierra Juárez to central CA and E to NV, AZ, TX, and Sonora (Mexico).

PHACELIA HETEROPHYLLA Pursh subsp. *VIRGATA* (Greene) Heckard. Rare perennial, on banks of La Sanca Creek, ca. 5 mi NW of La Grulla, 2042 m, 17 Sep 1930, *I.L. Wiggins 4852* (POM); and base of Cerro Botella Azul, 19 Jul 1988, *S. Boyd 2666 et al.* (RSA); Apr–Jul; N through CA to OR, WA, and E to ID, MT, WY, and UT.

PHACELIA MUTABILIS Greene. Infrequent, erect perennial of open pine forest, 2400–2500 m, Vallecitos and above, 2430 m, 18 Sep 1983, *R.F. Thorne 57236 et al.* (RSA); Los Llanitos, and Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14159* (RSA, SD); also lower at La Encantada open meadow with running stream, S of Los Llanitos, 2200 m, 27 Jun 1996, *J.P. Rebman 3287* (SD); and at Oak Pasture, 1675 m; Jun–Sep; N through CA mts. to NV, OR, WA, and ID. Not recorded in Wiggins (1980).

PHACELIA RAMOSISSIMA Lehm. var. *SUFFRUTESCENS* Parry. Rare, weak perennial, 2100–2300 m, above La Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2800* (RSA); and at Vallecitos, 2500 m, 25 Sep 1930, *I.L. Wiggins & D. Demaree 5047* (DH, POM); also lower in Paso San Matías, 920 m; May–Sep; N from Sierra San Borja through Sierra Juárez and cismontane areas of CA to WA and E to AZ and ID.

TURRICULA PARRYI (A.Gray) J.F.Macbr. Poodle-dog bush. Rare subshrub, La Vibora, Arroyo la Grulla 4 km SW of La Grulla in

sand near stream, 1900 m, 10 Aug 1977, *R.V. Moran 24468* (SD). N through Sierra Juárez to central CA, including the Panamint Mts. of the Mojave Desert.

HYPERICACEAE

HYPERICUM ANAGALLOIDES Cham. & Schltdl. St. John's wort. Common sprawling herb of moist stream margins and seepage areas, 1000–2650 m, above La Corona de Abajo, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14468* (RSA, SD); La Tasajera, Corral and Dead Horse meadows, N of Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60817 et al.* (RSA); Los Llanitos, above Yerba Buena, and Cerro Observatorio; Jun–Aug; N from Laguna Mts. of Cape Region, to CA, and NV to British Columbia (Canada) and E to MT. Not recorded in Wiggins (1980).

HYPERICUM FORMOSUM Kunth subsp. *SCOUERI* (Hook.) C.L.Hitchc. Rare erect perennial among rocks near stream in Arroyo La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14453* (RSA, SD); also lower at La Joya on Valladares Creek, 1475 m, 29 Jul 1970, *R.V. Moran 18006* (SD); Jun–Aug; N through CA and NV to British Columbia (Canada) and E to MT, UT, and CO. Not recorded in Wiggins (1980).

LAMIACEAE

DRACOCEPHALUM PARVIFLORUM Nutt. False dragon-head. Infrequent annual or short-lived perennial on sandy flats and rocky slopes in pine forests, 2200–2800 m, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14329* (RSA, SD); Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14239* (RSA, SD); also Corral Meadow and Cerro Observatorio; May–Aug; NE through NV and AZ to southern British Columbia (Canada) and E to western MN and NE; unreported from CA and not recorded in Wiggins (1980).

HEDEOMA MARTIRENSIS Moran. Mock-pennyroyal. Frequent endemic wiry sprawling perennial of rocky ledges, 2300–2800 m, Arroyo Copal and above, Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7930 et al.* (RSA, UCR); N of Yerba Buena (type locality at 2700 m on E rim); Cerro Botella Azul, S of Cerro Venado Blanco, ridge E of Cerro Observatorio, 2780 m, 19 Jun 1985, *R.F. Thorne 60889 et al.* (RSA); and Picacho del Diablo; Jun–Jul; apparently restricted to SSPM. Not recorded in Wiggins (1980).

**MARRUBIUM VULGARE* L. Horehound. Rare weedy perennial of dry ground, only at La Encantada near cabin, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14322* (RSA, SD); much more common at lower elevations, as at Rancho San José (Meling Ranch), 650 m, 19 Jul 1968, *R.V. Moran 15316* (SD); Apr–Sep; naturalized from Europe.

MENTHA ARVENSIS L. Mint. Infrequent rhizomatous perennial of wet places, 2100–2500 m, La Grulla, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14450* (RSA, SD); and La Encantada, 2300 m, 27 Jun 1996, *J.P. Rebman 3301* (SD); also at lower elevations, as at El Potrero, 875 m; Jun–Oct; N through Sierra Juárez and CA to British Columbia (Canada) and E to Atlantic Coast.

**MENTHA SPICATA* L. Spearmint. Rare erect rhizomatous perennial in wet places, 2080–2440 m, as by pool at park entrance and at Vallecitos where established along stream in arroyo, 2430 m, 1 Sep 1985, *R.F. Thorne 61419 et al.* (RSA); La Tasajera, 2420 m, 16 Sep 2000, *J.L. León de la Luz 9935* (HCIB); Jun–Oct; naturalized from Europe.

MONARDELLA LANCEOLATA A.Gray. Mustang mint. Rare annual of open coniferous forests, 2100–2300 m, at La Grulla, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14474* (RSA, SD); and between La Encantada and Rancho San José, 2285 m, 25 Sep 1930, *I.L. Wiggins & D. Demaree 5043* (DH, POM); also at lower elevations, as Los Encinos, 1400 m, and Rancho San José, 700 m; Jun–Sep; N through Sierra Juárez to the Laguna Mts. of San Diego Co., CA.

MONARDELLA LINOIDES A.Gray subsp. *STRICTA* (Parish) Epling. Common erect perennial of rocky places, 1200–2800 m, La Corona de Abajo and above, Arroyo Copal and above, E of Corral de Sam, La Encantada and high peaks above, Los Llanitos, Corral Meadow, Yerba Buena, Cerro Venado Blanco and Cerro Observatorio, 2780 m, 1 Sep 1985, *R.F. Thorne 61455 et al.* (RSA); and ridge to E of latter; Jun–Sep; N through Sierra Juárez to mts. of central CA.

MONARDELLA MACRANTHA A.Gray subsp. *MACRANTHA* (Fig. 12). Common showy sprawling rhizomatous perennial of rocky slopes and open conifer forests, 1600–3075 m; El Alto de Corona, 2400 m, 28 Jul 1970, *R.V. Moran 17903* (SD); Arroyo Copal and above, above La Corona de Abajo, Tasajera, La Encantada, Vallecitos, Corral Meadow, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14143* (RSA, SD); and Cerro Venado Blanco and Cerro Observatorio, ridge to E of latter, 2800 m, 18 Sep 1983, *R.F. Thorne 57279 et al.* (RSA) and Picacho del Diablo; Jul–Sep; N through Sierra Juárez to Monterey Co., CA.

PRUNELLA VULGARIS L. subsp. *LANCEOLATA* (W.P.C.Barton) Hultén. Self-heal. Rare perennial of rocky stream beds in Jeffrey pine forest, 2400–2600 m; SE of Vallecitos and ca. 3 mi S of the Observatory, up a canyon with an intermittent stream en route to Pedro's Dome, 2430 m, 30 Sep 2008, *J.P. Rebman 15986* (SD); Vallecitos and above Yerba Buena, 2600 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14222* (RSA, SD); also lower at Oak Pasture, 1650 m; May–Sep; N from Cape Region through Sierra Juárez and CA to AK, and Atlantic states, also eastern Asia.

SALVIA PACHYPHYLLA Munz subsp. *MERIDIONALIS* R.M.Taylor. Sage (Fig. 5). Common and often abundant colonial low shrub of open pine forests, 1400–2840 m; above La Corona de Abajo, E of Corral de Sam, common between La Grulla and Santa Rosa, La Encantada, La Tasajera, Vallecitos, Los Llanitos, 4 km N of Corral Meadow, Yerba Buena, 2600 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14200* (RSA, SD); head of Arroyo Copal, and Cerro Venado Blanco and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60903 et al.* (RSA); Jun–Sep; N through Sierra Juárez to San Bernardino Mts. and desert ranges of central CA and E to AZ. (Other subspecies endemic to Baja California).

STACHYS AJUGOIDES Benth. var. *RIGIDA* Jeps. & Hoover (incl. *S. RIGIDA* Benth. subsp. *QUERCETORUM* (A.Heller) Epling). Hedge-nettle. Common erect rhizomatous perennial of moist stream beds in meadows and arroyos, 875–2500 m; La Grulla, La Corona de Abajo and above, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61424 et al.* (RSA); Corral Meadow, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14174* (RSA, SD); and Cerro Venado Blanco and Cerro Observatorio; May–Aug; N through Sierra Juárez and CA to OR and WA.

TRICHOSTEMA LANCEOLATUM Benth. Bluecurls. Rare erect annual locally abundant in seepage area over granitic outcrops in burn above La Corona de Abajo, 2100 m, 27 Aug 1978, *R. Noyes 662 et al.* (RSA) and 20 Jul 1988, 0.75 mi up main road from entrance gate, *S. Boyd 2799* (RSA, BCMEX); Aug–Oct; N through coastal areas of Californias to OR and British Columbia (Canada).

TRICHOSTEMA PARISHII Vasey. Rare erect perennial, 1800–1900 m; 3.0 mi S of Santa Eulalia, 1890 m, 4 Jun 1963, *R.V. Moran 11159* (SD); Oak Pasture/Los Manzanos, 1900 m, 28 Jun 1996, *J.P. Rebman 3313* (BCMEX); more frequent down to 700 m; Apr–Jul; N through Sierra Juárez to southern CA.

LENNOACEAE

PHOLISMA ARENARIUM Nutt. ex Hook. Sand-food. Rare, fleshy parasite, on road to Parque Nacional de SSPM, ca. 2 mi below entrance to park, in road construction sand quarry, 1830 m, 14 Jul 1995, *T. Oberbauer s.n.* (SD); 14 mi SW of gate at UNAM Observatory on graded road from San Telmo, 1850 m, 29 May 1982, *Yatskiyevych 195* (SD). N to central CA on coastal and desert sands, and E to western AZ.

LINACEAE

LINUM ARISTATUM Engelm. var. *AUSTRALE* (A.Heller) Kearney & Peebles. Flax. Rare erect annual of gravelly flats, 2475–2600 m; Yerba Buena, 2650 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14207* (RSA, SD); and Cerro Venado Blanco; Jun–Aug; unreported from CA; NE through AZ to NV, and E to CO, western TX, and Chihuahua (Mexico). Not recorded in Wiggins (1980).

LINUM LEWISII Pursh. Frequent, slender erect perennial of sandy meadows and open pine forests, 1850–2650 m; Los Llanitos, 2400 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14283* (RSA, SD); and Santa Eulalia, E of La Corona de Abajo, Santa Rosa, Horse Flats above La Encantada, N of Upper Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60948 et al.* (RSA); May–Sep; N through Sierra Juárez and CA to AK, and E to James Bay (Canada), TX, and Chihuahua (Mexico).

LINUM NEOMEXICANUM Greene. Frequent annual of gravelly and rocky places, 2000–2600 m; Corral de Sam, La Encantada, Vallecitos and above, above Yerba Buena, 2600 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14201* (RSA, SD); and slopes of Cerro Observatorio, 2650 m, 18 Sep 1983, *R.F. Thorne 57255 et al.* (RSA); Jul–Sep; unreported from CA, NE to AZ, NM, and Chihuahua (Mexico). Not recorded in Wiggins (1980).

LYTHRACEAE

LYTHRUM CALIFORNICUM Torr. & A.Gray. Rare perennial herb, Arroyo la Grulla, 5 km SW of La Grulla, 1875 m, 10 Aug 1977, *R.V. Moran 24484* (SD). N from Cataviña to Sierra Juárez to northern CA, and E to central US and northern Mexico.

MALVACEAE

FREMONTODENDRON CALIFORNICUM (Torr.) Coville. Fremontia, flannel-bush. Infrequent shrub of chaparral, 1800–2040 m; Cerro Chato, 1800 m, 3 Jun 1963, *R.F. Thorne 32014a et al.* (RSA); Arroyo El Horno 3–4 km NE of Misión San Pedro Mártir below (SW) of Alcatraz, and E of Cerro 2040 with *PINUS COULTERI*; more frequent at lower elevations as 3 mi N of La Corona de Abajo, 1675 m, 18 Jun 1985, *R.F. Thorne 60794 et al.* (RSA); May–Jul; N through Sierra Juárez and southern CA mts. to Shasta Co., CA, and E to AZ.

MALACOTHAMNUS FASCICULATUS (Torr. & A.Gray) Greene subsp. *FASCICULATUS*. Bush mallow. Infrequent perennial of rocky slopes and chaparral, 1400–2100 m; junction with road to San Rafael, 1700 m, 8 Jun 1962, *J.D. Olmsted 4672* (RSA); Corral de Sam, Arroyo Copal, and Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14427* (RSA, SD); May–Oct; N through cismontane Baja California to Ventura Co., CA.

**MALVA PARVIFLORA* L. Cheeseweed, little mallow. Rare annual weed, vicinity of old corral in a meadow of Vallecitos ca. 1.2 mi S of Observatory road in upper Vallecitos, 2445 m, 1 Oct 2008, *J.P. Reberman 16063* (SD). Widespread weed, native to Eurasia.

SIDALCEA MALVIFLORA (DC.) Benth. subsp. *SPARSIFOLIA* C.L.Hitchc. Checker mallow. Rare sprawling perennial, 2000–2200 m; La Grulla near stream, 2040 m, 21 Sep 1938, *I.L. Wiggins 9066* (DH, RSA); and La Encantada at edge of sandy meadow, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14285* (RSA, SD); May–Sep; N through Sierra Juárez to northern CA and OR.

ONAGRACEAE

CAMISSONIA STRIGULOSA (Fisch. & C.A.Mey.) P.H.Raven. Rare annual only at Santa Eulalia, 1850 m, and Oak Meadows area, 1950 m, 21 Jul 1988, *S. Boyd 2841 et al.* (RSA); but much more common at lower elevations to 650 m, as at Oak Pasture, 1750 m, 7 May 1986, *R.F. Thorne 61944 et al.* (RSA); Apr–Jun; N through Sierra Juárez to northern CA.

CAMISSONIOPSIS HIRTELLA (Greene) W.L.Wagner & Hoch (*CAMISSONIA HIRTELLA* (Greene) P.H.Raven). Suncup. Infrequent annual of sandy soil, 1850–2000 m; Oak Meadow area, 1950 m, 21 Jul 1988, *S. Boyd 2844 et al.* (RSA); Santa Eulalia, W of La Corona de Abajo, and Corral de Sam; commoner at lower elevations to 650 m, as near Río San Rafael, 1370 m, 8 Jun 1962, *J.D. Olmsted 4656* (RSA); Apr–Jun(–Aug); N through Sierra Juárez and cismontane Baja California to northern CA.

EPILOBIUM CANUM (Greene) P.H.Raven subsp. *LATIFOLIUM* (Hook.) P.H.Raven (*ZAUSCHNERIA CALIFORNICA* subsp. *LATIFOLIA* (Hook.) D.D.Keck). California-fuchsia. Infrequent showy perennial of rocky places, 1875–2350 m; Arroyo La Grulla, 1875 m, 10 Aug 1977, *R.V. Moran 24473* (RSA, SD); La Corona de Abajo and above, and Vallecitos, 2285 m, 25 Sep 1930, *I.L. Wiggins & D. Demaree 5045* (DH, POM); commoner at lower elevations down to 800 m; Jul–Nov; N through Sierra Juárez and CA to OR and NM. Not recorded in Wiggins (1980).

EPILOBIUM CILIATUM Raf. subsp. *CILIATUM* (*EPILOBIUM ADENOCAULON* Hausskn. var. *PARISHII* (Trel.) Munz). Willow herb. Common perennial in moist sandy meadows and arroyos, 650–2650 m; Arroyo Copal, Upper Corona, La Encantada, Vallecitos and N, 2460 m, 19 Jun 1985, *R.F. Thorne 60943 et al.* (RSA); head of Arroyo Copal, Los Llanitos, above Yerba Buena, 2650 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14216* (RSA, SD); Picacho del Diablo, and slopes of Cerro Observatorio and Cerro Venado Blanco; Jun–Sep; N from Cape Region mountains through Sierra Juárez, CA, and AZ to AK and E to Newfoundland (Canada), NC, and Mexico; also Eurasia.

EPILOBIUM GLABERRIMUM Barbey subsp. *GLABERRIMUM*. Infrequent perennial along streams in moist arroyos, 2350–2500 m; N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60944 et al.* (RSA); Yerba Buena, and 3 km SW of Cerro Botella Azul, 2470 m, 18 Jun 1988, *A.C. Sanders 7958 et al.* (RSA, UCR); S of La Tasajera, Corral Meadow, Los Llanitos, 2600 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14275* (RSA, SD); Jun–Aug; N through CA and NV mts. to WA and E to MT and UT.

GAYOPHYTUM DIFFUSUM Torr. & A.Gray subsp. *PARVIFLORUM* F.H.Lewis & Szweyk. Common and often locally abundant erect annual of sandy, open pine forest, 875–2600 m; Arroyo La Zanja, Rancho Viejo, Upper Corona, La Encantada, La Tasajera, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61408 et al.* (RSA); Corral Meadow, Los Llanitos, Cerro Venado Blanco; S of Vallecitos in wet, open meadow near Cerro la Botella Azul, 2590 m, 28 Jun 1998, *J.P. Reberman 5403* (SD); Jun–Sep; N through Sierra Juárez and CA to British Columbia (Canada), and E to WY, SD, CO, and NM.

OENOTHERA CALIFORNICA (S.Watson) S.Watson subsp. *CALIFORNICA*. Evening primrose. Infrequent, but locally abundant perennial of sandy meadows, 1400–2600 m; La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14316* (RSA, SD); Upper Vallecitos, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60844 et al.* (RSA); and Los Llanitos; May–Oct; N from Central Desert through Sierra Juárez to Inyo and Kern cos., CA, NV, and AZ.

OENOTHERA ELATA Kunth subsp. *HIRSUTISSIMA* (S.Watson) W.Dietr. (*O. HOOKERI* Torr. & A.Gray subsp. *GRISEA* (Bartlett) Munz). Infrequent tall biennial along streams, 650–2200 m; Arroyo La Zanja, and La Encantada to Vallecitos, 1980 m, 24 Aug 1941, *G. Lindsey s.n.* (POM); upper Arroyo Copal, 2000 m, 25 Aug 1968, *R.V. Moran 15501* (RSA, SD); Jun–Oct; N through Sierra Juárez and CA to WA and E to CO, OK, and TX. Not recorded in Wiggins (1980).

OROBANCHACEAE (INCL. SOME RHINANTHOIDEAE)

CASTILLEJA APPLEGATEI Fernald subsp. *MARTINII* (Abrams) T.I.Chuang & Heckard. Indian paintbrush. Common perennial of open pine forests and rocky slopes, 1800–2800 m; Santa Eulalia, Arroyo Copal and above, La Corona de Abajo and to La Corona de Arriba, N of Corral de Sam, La Tasajera, La Encantada and

Horseflats and above, Corral Meadow, head of Arroyo Copal, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14129* (RSA, SD); and Cerro Venado Blanco and Cerro Observatorio, 2800 m, 18 Sep 1983, *R.F. Thorne 57296 et al.* (RSA); and ridges between them; May–Sep; N through Sierra Juárez to southern CA and southern NV.

CASTILLEJA MINOR (A.Gray) A.Gray subsp. *SPIRALIS* (Jeps.) T.I.Chuang & Heckard (C. *STENANTHA* A.Gray). Frequent slender annual of streamsides and wet soil of arroyos, 875–2500 m; Arroyo Copal, La Corona de Abajo and above; La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14345* (RSA, SD); Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14162* (RSA, SD); and Cerro Venado Blanco pass; Apr–Aug (Sep); N through Sierra Juárez to central CA.

CASTILLEJA OPHIOCEPHALA Tank & J.M.Egger (*OPHIOCEPHALUS ANGUSTIFOLIUS* Wiggins). Common erect endemic annual (suggested as the only genus endemic to the SSPM) of moist, sandy meadows, 2200–2800 m; La Encantada (type locality: “granitic soil under pines about the margins of the main meadow” [DS]), La Tasajera, Los Llanitos, 2300 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14284* (RSA, SD) and SW; Vallecitos and N and W, 2560 m, 19 Jun 1985, *R.F. Thorne 60922 et al.* (RSA); Yerba Buena, Cerro Observatorio, and valley to N; Jul–Sep; apparently restricted to SSPM.

CORDYLANTHUS NEVINII A.Gray. Bird’s beak. Infrequent erect annual of gravelly or rocky slopes and open pine forest, 1300–2275 m; Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14407* (RSA, SD); 1 mi E of Corral de Sam, and La Corona de Arriba; La Corona de Abajo, 2200 m, 21 Jul 1988, *S. Boyd & T. Ross 2808* (RSA); Jul–Sep; N through Sierra Juárez to the mts. of southern CA.

CORDYLANTHUS RIGIDUS (Benth.) Jeps. subsp. *INVOLUTUS* (Wiggins) T.I.Chuang & Heckard. (*CORDYLANTHUS INVOLUTUS* Wiggins). Infrequent, but locally abundant erect annual in chaparral and open *Pinus jeffreyi* forest; W of to above La Corona de Abajo, 2080 m, 27 Aug 1988, *R. Noyes 639 et al.* (RSA); and 4 mi above, 2400 m, 2 Sep 1985, *R.F. Thorne 61499 et al.* (RSA); more frequent at lower elevations to type locality “dry gravelly hillsides near Rancho San José about 600 m;” May–Sep; subsp. apparently restricted to SSPM and Sierra Juárez.

OROBANCHE FASCICULATA Nutt. Broom rape. Rare erect root parasite; La Encantada 2200 m; more frequent at lower elevations down to 1000 m as N of Oak Pasture, 1700 m, 3 Jul 1973, *R.V. Moran 21099* (SD); Apr–Sep; N from central desert through Sierra Juárez and CA to WA and British Columbia and Yukon (Canada), and E to NM, MI, and TX.

OROBANCHE PARISHII (Jeps.) Heckard subsp. *PARISHII*. Infrequent root parasite, 1750–2600 m; La Encantada (with *ARTEMISIA DRACUNCULUS*), 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14312* (RSA, SD); and ca. 2 mi NW of Los Llanitos, 2450 m, 17 Aug, 1967, *R.V. Moran & R.F. Thorne 14242* (RSA, SD); and W of Cerro Venado Blanco; also at Oak Pasture, 1750 m; May–Jul; N through Sierra Juárez to the mts. of southern CA.

PHRYMACEAE

MIMULUS CARDINALIS Benth. Cardinal monkeyflower. Frequent and locally abundant erect red-flowered annual of streamsides, 1600–2500 m; Corral Meadow, Los Llanitos, 2400 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14246* (RSA, SD); and Yerba Buena; Arroyo Copal, N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60927 et al.* (RSA) and above; more frequent at lower elevations; May–Sep; N from Isla Cedros through Sierra Juárez and CA to OR and E to AZ, NV, UT, and Sonora (Mexico).

MIMULUS EXIGUUS A.Gray. San Bernardino Mountains monkeyflower. Rare tiny annual, 1700–2100 m; on dried mud at Oak Pasture, 1725 m, 31 May 1976, *R.V. Moran 23339* (RSA, SD); along streamlet and in seepage over granite, only above La Corona de

Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2788* (RSA); May–Jul; N through Sierra Juárez to San Bernardino Mts. of CA.

MIMULUS FLORIBUNDUS Lindl. Yellow monkeyflower. Frequent erect yellow-flowered, viscid annual of stream margins and moist sand of meadows, 875–2560 m; La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14476* (RSA, SD); La Corona de Abajo and above, Vallecitos, 2430 m, 19 Jun 1985, *R.F. Thorne 60824 et al.* (RSA); and N of Cerro Observatorio; more frequent at lower elevations; Apr–Jul; N disjunctly from Cape Region through Sierra Juárez, CA and AZ to British Columbia (Canada) and E to WY, CO, SD, and Chihuahua (Mexico).

MIMULUS GUTTATUS DC. (incl. *M. TILINGII* Regel). Common erect yellow-flowered annual of seepage over granite, moist sandy streamsides and wet meadows, 875–2500 m; Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 62809 et al.* (RSA); and Yerba Buena; Cañón del Diablo (above 1200 m); Arroyo La Zanja, La Corona de Abajo, La Corona de Arriba, Los Llanitos, Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7907 et al.* (RSA, UCR); more frequent at lower elevations as along the Río San Rafael; mostly Apr–Aug; N from Cape Region to Sierra Juárez and CA to AK and E to Rocky Mts. and central Mexico.

MIMULUS NASUTUS Greene. Yellow-flowered annual of wet sandy places, 2100–2500 m; near Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2761* (RSA); Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14175* (RSA, SD); E to AZ and N from Cape Region through Sierra Juárez to British Columbia (Canada) and ID, and Chihuahua (Mexico); included in *M. GUTTATUS* by many taxonomists.

MIMULUS PALMERI A.Gray (incl. *M. DIFFUSUS* A.L.Grant). Palomar monkeyflower. Rare annual in sandy, moist places, only arroyo NW of Los Llanitos, 2450 m, 3 Sep 1979, *R.V. Moran 28015* (RSA, SD); Sep; N through Sierra Juárez to southern Sierra Nevada and adjacent Mojave desert, CA.

MIMULUS PILOSUS (Benth.) S.Watson. Frequent erect yellow-flowered annual in seepage areas and in sandy arroyos, 2000–2550 m; La Corona de Abajo 0.75 mi up main road from entrance gate and above, 2100 m, 7 Jul 1988, *S. Boyd 2803* (BCMEX, RSA); La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14443* (RSA, SD); Vallecitos and Corral Meadow; more common at lower elevations, down to 650 m at Rancho San José; Apr–Sep; N through Sierra Juárez and CA to WA and E to NV, AZ and UT.

MIMULUS PRIMULOIDES Benth. subsp. *PRIMULOIDES*. Rare annual, La Tasajera region, SW of Observatory, ca. 4.8 mi S of Observatory road, open meadow with a stream, 2315 m, 15 Sep 1998, *J.P. Rebman 5584* (SD). N through CA to NV and WA. Not recorded in Wiggins (1980).

MIMULUS PURPUREUS A.L.Grant [incl. var. *PAUXILLUS* A.L.Grant]. Purple monkeyflower. Frequent, erect purplish-red or magenta-flowered annual of moist, sandy meadows and arroyos, 2100–2560 m; La Grulla, above La Corona de Abajo, 2100 m, 21 Jul 1988, *S. Boyd 2882 et al.* (RSA); Los Llanitos, and Vallecitos, near Cerro La Botella Azul, 2590 m, 28 Jun 1998, *J.P. Rebman & A. Russell 5401* (RSA, SD); type locality is Sierra San Pedro Mártir; May–Jul; N through Sierra Juárez to San Bernardino Mts. of CA.

MIMULUS RUBELLUS A.Gray. Rare erect purple-flowered annual, only in seepage over granite; above La Corona de Abajo, 2100 m, 4 Jun 1988, *S. Boyd 2347 et al.* (RSA); more frequent at lower elevations, as at Oak Pasture turnoff, 1650 m, 8 May 1978, *R.V. Moran 25697* (RSA, SD); Apr–Jun; N through Sierra Juárez to Mojave Desert and White Mts. of CA and E to AZ, WY, NV, NM, and CO.

PLANTAGINACEAE

ANTIRRHINUM COULTERIANUM Benth. Snapdragon. Rare annual only at Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14394* (RSA, SD); Apr–May; N through Sierra Juárez and coastal mts. to southern CA.

- KECKIELLA TERNATA** (Torr.) Straw subsp. **TERNATA**. Infrequent, but locally abundant sprawling, somewhat viny shrub with orange-red flowers in chaparral, 1850–2100 m; W of La Corona de Abajo and above, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2750* (RSA); in open Jeffrey pine forests N of Corral de Sam, and head of Arroyo Copal 1.5 km N of Cerro Observatorio [elev. not stated], 16 Jul, 1988, *S. Boyd & T. Ross 2578* (RSA); more frequent down to 1600 m; Jun–Nov; N through Sierra Juárez to the mts. of southern CA.
- LIMOSELLA ACAULIS** Sessé & Moc. Mudwort. Infrequent rhizomatous aquatic in shallow water and wet mud of small ponds and streams, 2100–2430 m; La Grulla, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14299* (RSA, SD); Vallecitos and Upper Vallecitos, 2430 m, 18 Sep 1983, *R.F. Thorne 57226 et al.* (RSA); May–Oct; N through Sierra Juárez to central CA and E to AZ, NM, and central Mexico.
- PENSTEMON CALIFORNICUS** (Munz & I.M.Johnst.) D.D.Keck. California beardtongue. Frequent, mauve-flowered rhizomatous perennial of dry sandy or rocky slopes, 1950–2450 m; Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14398* (RSA, SD); La Corona de Arriba, and 2 km SW of La Grulla; La Corona de Abajo, and above, 2450 m, 20 Jun 1985, *R.F. Thorne 60952 et al.* (RSA); May–Jul; N through Sierra Juárez to San Jacinto Mts., Riverside Co., CA.
- PENSTEMON CENTRANTHIFOLIUS** (Benth.) Benth. Scarlet bugler. Infrequent rhizomatous perennial with bright red flowers; at Santa Eulalia in open pine forest, 1850 m; also at Rancho Concepción, 1900 m, 7 Jul 1968, *R.V. Moran 15299* (SD); at Oak Pasture/Los Manzanos; along road between Meling Ranch and Observatory, 1900 m, 28 Jun 1996, *J.P. Rebman 3318* (BCMEX, HCIB, SD); Arroyo de Soto, km 75 camino al Observatorio, 1900 m, 2 Jul 1998, *J. Delgadillo s.n.* (BCMEX, HCIB, SD); but much more frequent at lower elevations to 1450 m; Apr–Jul; N from Sierra San Borja through Sierra Juárez to Lake Co., CA.
- PENSTEMON CLEVELANDII** A.Gray subsp. **CLEVELANDII**. Cleveland's beardtongue. Infrequent, erect mauve-flowered perennial of open pine forest, 1000–2840 m; Cerro Chato, 1850 m, 3 Jun 1963, *R.F. Thorne 31993 et al.* (RSA); Corral de Sam, above S fork of Rio San Rafael, and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60910 et al.* (RSA); Apr–May; N from Bahía Los Angeles through Sierra Juárez to San Diego Co., CA.
- PENSTEMON LABROSUS** (A.Gray) Hook.f. Red beardtongue. Common erect rhizomatous perennial with bright red flowers, rocky places in open pine forest, 1450–2840 m; La Corona de Abajo, La Encantada, La Tasajera, Vallecitos, Corral Meadow, Los Llanitos, Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14233* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60904 et al.* (RSA) and ridges between them; Jun–Aug; N through Sierra Juárez and southern CA mts. to Ventura Co., CA.
- PENSTEMON SPECTABILIS** Thurb. subsp. **SPECTABILIS**. Blue beardtongue. Rare erect perennial of chaparral and open pine forest, 1850–2000 m; only 2 mi above Rancho San Pedro Mártir, 1850 m, 2 Jun 1968, *R.V. Moran 15091* (RSA, SD) and W of La Corona de Abajo; much more common at lower elevations in chaparral, as 2.5 mi W of Valladares, 750 m, 4 Jul 1969, *R.V. Moran 16265* (RSA, SD); Apr–Jun; N from Sierra San Borja through Sierra Juárez to Los Angeles Co., CA.
- PLANTAGO ERECTA** E.Morris subsp. **ERECTA**. Plantain. Frequent, tufted annual of sandy places, 2200–2700 m; La Encantada, La Tasajera, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61316 et al.* (RSA); Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14147* (RSA, SD); ridge S of Cerro Venado Blanco and peak of Cerro Observatorio; Apr–Sep; N from Central Desert through cismontane CA to southern OR and E through AZ to TX, and Chihuahua (Mexico). Not recorded in Wiggins (1980).
- ***PLANTAGO MAJOR** L. Common plantain. Rare weedy acaulescent perennial, 2080–2200 m; only by pool at park entrance and in wet meadow at La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14315* (RSA, SD); but more frequent at lower elevations, as at Rancho San José, 650 m, 19 Jul 1968, *R.V. Moran 15322* (RSA, SD); May–Oct; naturalized from Eurasia.
- VERONICA AMERICANA** (Raf.) Schwein. (Raf.) Benth. American brooklime. Infrequent rhizomatous sprawling perennial of shallow water and wet soil along streams, 2200–2550 m; La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14297* (DS); Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60825 et al.* (RSA); Corral Meadow and Cerro Venado Blanco; May–Aug; disjunctly N through CA to AK, and E to Atlantic Coast and central Mexico, also in northeastern Asia.
- VERONICA PEREGRINA** L. subsp. **XALAPENSIS** (Kunth) Pennell. Purselain speedwell. Frequent erect annual of moist sandy places, 1450–2500 m; Santa Eulalia, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14306* (RSA, SD); La Corona de Arriba, Upper Vallecitos, 2430 m, 18 Sep 1983, *R.F. Thorne 57224 et al.* (RSA); Corral Meadow and Yerba Buena; Apr–May; widely distributed on peninsula as well as through CA, North and South America.
- VERONICA SERPYLLIFOLIA** L. subsp. **HUMIFUSA** (Dicks.) Syme. Speedwell. Infrequent, sprawling perennial of wet soil of intermittent streams, 2520–2650 m; Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7896 et al.* (RSA, UCR); also on Cerro Venado Blanco and Cerro Observatorio, 2650 m, 19 Jun 1985, *R.F. Thorne 60914 et al.* (RSA), and between them; not previously reported from Baja California; Apr–Jul; widely distributed subaquatic, including CA. Not recorded in Wiggins (1980).

POLEMONIACEAE

- ERIASTRUM DENSIFOLIUM** (Benth.) H.Mason subsp. **DENSIFOLIUM**. Rare subfruticose perennial, La Corona de Abajo, Km 85, 2280 m, 13 Jan 1998, *Delgadillo s.n.* (SD). N to southern CA, including Mojave Desert. This subsp. not recorded in Wiggins (1980).
- ERIASTRUM DENSIFOLIUM** (Benth.) H.Mason subsp. **ELONGATUM** (Benth.) H.Mason. Infrequent, but locally abundant perennial; more frequent at lower elevations down to 1000 m as at live oak grove, 1750 m, 20 Jun 1985, *R.F. Thorne 60963 et al.* (RSA); and W of to above La Corona de Abajo on roadsides and in cleared area in chaparral in gravelly soil, 1850–2100 m, 21 Jul 1988, *S. Boyd 2820 et al.* (RSA); May–Oct; N from northern edge of Central Desert through Sierra Juárez to southern CA.
- GILIA DIEGENSIS** (Munz) A.D.Grant & V.E.Grant. Infrequent annual, 1000–2200 m; Santa Eulalia, 1950 m, 4 Jun 1963, *R.V. Moran 11123* (RSA, SD); and La Corona de Abajo and Rancho Viejo, 2050 m, 29 Jun 1982, *R.V. Moran 30955* (RSA, SD); but more common at lower elevations; May–Jun; N through Sierra Juárez to Los Angeles Co., CA.
- GILIA** cf. **MEXICANA** A.D.Grant & V.E.Grant. Infrequent sprawling annual of dry gravelly meadows with scattered *PINUS JEFFREYI*, 1450–2100 m; La Grulla, 2050 m, 9 Jun 1982, *R.V. Moran 30946* (RSA, SD); and Santa Eulalia, above La Corona de Abajo, Rancho Viejo, 2100 m, 3 Jul 1972, *R.V. Moran 19182* (RSA, SD); Apr–Jul; N from Sierra San Borja through Sierra Juárez and NE to AZ and NM; may actually represent an undescribed species of *GILIA* (sect. *ARACHNION*); morphologically it is intermediate between *G. MEXICANA* and *G. FLAVOCINTA* subsp. *AUSTRALIS*; species not reported from CA.
- GILIA SINUATA** Benth. Rare erect annual of sandy creek bottom in *PINUS JEFFREYI* forest at Santa Eulalia, 1850 m; also 9 mi S of Rte. 3 on road to Mike's Sky Ranch, 10 May 1991, *J.P. Rebman s.n.* (BCMEX); Apr–Jun; N through Sierra Juárez, CA, and NV to WA and E to AZ, ID, CO, NM, and TX.
- IPOMOPSIS EFFUSA** (A.Gray) Moran. Baja California ipomopsis. Common annual of open pine forest, sandy-gravelly flats, and moist stream bottoms, 1600–2500 m; Vallecitos, 2430 m, 18 Jun

- 1985, *R.F. Thorne 60833 et al.* (RSA); Los Llanitos, Yerba Buena, and S of Cerro Venado Blanco; and Santa Eulalia, above Corral de Sam, La Corona de Abajo, upper Arroyo San José, La Encantada, La Tasajera, Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7920 et al.* (RSA, UCR); Apr–Sep; largely restricted to Sierra Juárez and SSPM, but reported also from Pinto Wash, Imperial Co., CA.
- POMOPSIS TENUIFOLIA* (A.Gray) V.E.Grant. Slender-leaved ipomopsis. Infrequent red-flowered perennial, mostly in openings in chaparral or on dry slopes, 1000–2300 m; 3 mi S of Santa Eulalia, W of La Corona de Abajo, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14397* (RSA, SD); and Vallecitos, 2285 m, 25 Sep 1930, *I.L. Wiggins & D. Demaree 5048* (DH, RSA); Apr–Oct; N through Sierra Juárez to San Diego Co., CA.
- LEPTOSIPHON MELINGII* (Wiggins) J.M.Porter & L.A.Johnson. Common and often abundant decumbent matted perennial of sandy-gravelly meadows and openings in pine forest, 800–2800 m, Santa Eulalia, Arroyo Copal, La Corona de Abajo, above and ESE of La Corona de Abajo, Corral de Sam, La Encantada (type from “gravelly soil along the margins of an open meadow ... 2100 m”); La Tasajera, Vallecitos, Corral Meadow, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14135* (RSA, SD); and cerros Venado Blanco and Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60902 et al.* (RSA); Apr–Oct; endemic to Baja CA N from Cerro Matomi to SSPM and Sierra Juárez. Not recorded in Wiggins (1980).
- LEPTOSIPHON PYGMAEUS* (Brand) J.M.Porter & L.A.Johnson subsp. *CONTINENTALIS* (P.H.Raven) J.M.Porter & L.A.Johnson. Meadow, La Grulla, 2050 m, 9 Jun 1982, *R.V. Moran 30947* (SD); N to southern CA. Not recorded in Wiggins (1980).
- LINANTHUS ORCUTTHII* (A.Gray ex Parry) Jeps. Orcutt’s linanthus. Rare annual of dry, gravelly slopes, 1850–2050 m; Santa Eulalia, 1850 m, 4 Jun 1963, *R.V. Moran 11137* (SD); and downstream from La Grulla, 2050 m, 8 Jun 1982, *R.V. Moran 30922* (RSA, SD); also lower at La Concepción, 1600 m and 3 km E of El Socorro, 1450 m; Apr–Jun; N through Sierra Juárez to Palomar Mts., San Diego Co., CA.
- NAVARRETTIA ATRACTYLOIDES* (Benth.) Hook. & Arn. Rare annual of sandy soil; only La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14471* (RSA, SD); and La Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2790* (RSA); but commoner at lower elevations down to 800 m; Apr–Aug; N through Sierra Juárez to N CA.
- NAVARRETTIA HAMATA* Greene. Rare annual with mephitic odor; only above La Corona de Abajo in burned over chaparral, 2100 m; and below at Rancho San José, 650 m, 20 Jun 1985, *R.F. Thorne 61001 et al.* (RSA); Apr–Jul; N from Isla Guadalupe and SSPM through Sierra Juárez to Monterey Co., CA.
- PHLOX AUSTRUMONTANA* Coville subsp. *AUSTRUMONTANA*. Phlox. Infrequent sprawling prickly perennial of decomposed granitic soil in open pine forest and at edge of chaparral, 1700–2400 m, as at ca. 1 km before La Tasajera, 2258 m, 1 Jul 1998, *J. Delgadillo s.n.* (BCMEX); and at Vallecitos, 2400 m, 22 May 1987, *J. Delgadillo s.n.* (BCMEX); also at Santa Eulalia, Santa Rosa, and E of Llano Santa Rosa; May–Jun; N through Sierra Juárez, CA, and NV to OR and E to AZ, ID, UT, and CO.
- SALTUGILIA AUSTRALIS* (H.Mason & A.D.Grant) L.A.Johnson. Infrequent annual of decomposed granitic soil, upper limits of chaparral with scattered pinyons to very open pine forest, 900–2100 m; only above La Corona de Abajo, 2100 m and below at 3 km E of El Socorro, 1450 m, 9 May 1978, *R.V. Moran 25732* (RSA, SD); Apr–Jul; N from Sierra San Borja through Sierra Juárez to southern CA.
- SALTUGILIA CARUIFOLIA* (Abrams) L.A.Johnson. Infrequent annual, 875–2300 m, Santa Eulalia, 1850 m, 4 Jun 1963, *R.V. Moran 11127* (RSA, SD); and above Rancho San Pedro Mártir, N of La Corona de Abajo, 2100 m, 21 Jul 1988, *S. Boyd 2821 et al.* (RSA), and Vallecitos; but commoner at lower elevations; May–Jul–(Sep); N through Sierra Juárez and coastal hills to San Diego Co., CA.
- POLYGONACEAE
- ERIOGONUM DAVIDSONII* Greene. Wild buckwheat. Infrequent but locally abundant erect annual of decomposed granitic soil especially in chaparral from W of to above La Corona de Abajo, on road to N end of range, 2040 m, 6 Jun 1962, *J.D. Olmsted 4531* (RSA); and at Corral de Sam, 2100 m; more frequent at lower elevations as at Rancho La Suerte, 1130 m, 4 Jun 1963, *R.F. Thorne 32028 et al.* (RSA), down to 650 m; May–Nov; N through Sierra Juárez to central CA.
- ERIOGONUM FASCICULATUM* Benth. subsp. *POLIFOLIUM* (Benth.) S.Stokes. Rare erect perennial, only at Santa Rosa, 2050 m, in chaparral on decomposed granitic soil, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14428* (RSA, SD); much more common at lower elevations as at Rancho San Pedro Mártir, 1700 m, 17 Sep 1967, *R.V. Moran 14577* (RSA, SD), down to 900 m; Apr–Oct; N from Sierra San Borja through Sierra Juárez to central CA and E to AZ and UT.
- ERIOGONUM HASTATUM* Wiggins. Common annual of open sandy areas in chaparral, open pine forest, meadows and creek beds, 875–2500 m, 3 mi below La Corona de Abajo, 1675 m, 18 Jun 1985, *R.F. Thorne 60807 et al.* (RSA); La Tasajera, Upper Vallecitos, Vallecitos, Corral Meadow, La Encantada (type locality), 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14375* (RSA, SD); Los Llanitos, Yerba Buena, and Cerro Observatorio; Jun–Sep; endemic to Baja California, in SSPM and Sierra Juárez.
- ERIOGONUM NUDUM* Benth. subsp. *PAUCIFLORUM* (S.Watson) Munz. Frequent erect rosette perennial of open, rocky or gravelly slopes or canyon sides in pine forest and margins of meadows, 1600–2100 m, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14385* (RSA, SD); Corral de Sam, Yerba Buena, S slope of Cerro Observatorio, 2800 m, 18 Sep 1983, *R.F. Thorne 57264 et al.* (RSA); Corral Meadow, and ridges between Cerro Venado Blanco and Cerro Observatorio; Jul–Oct; N through Sierra Juárez to the mts. of southern CA.
- ERIOGONUM PARISHII* S.Watson. Infrequent, but locally abundant erect, densely branched annual of open sandy places, especially on roadsides in chaparral, 875–2200 m, W of to above La Corona de Abajo, 2080 m, 27 Aug 1988, *R. Noyes 653 et al.* (RSA); La Encantada, 2200 m, 18 Sep 1930, *I.L. Wiggins & D. Demaree 4913* (DH, POM); and N of Vallecitos; more frequent at lower elevations; Jun–Nov; N through Sierra Juárez to the mts. of southern CA.
- ERIOGONUM WRIGHTII* Benth. var. *MEMBRANACEUM* Jeps. Infrequent sprawling subshrub in chaparral with scattered pinyons on margins of sandy meadows and on adjacent rocky slopes, 1200–2050 m, vicinity of La Corona de Abajo, 2080 m, 27 Aug 1988, *R. Noyes 642 et al.* (RSA); and Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14401* (RSA, SD); Jun–Oct; N from Sierra San Borja through foothills of SSPM and Sierra Juárez to the mts. of southern CA.
- ERIOGONUM WRIGHTII* Benth. var. *ORESBIUM* Reveal. Common and locally abundant low caespitose mat-forming perennial of Jeffrey pine forest, 1575–2840 m, La Corona de Abajo, La Encantada, La Tasajera, Upper Vallecitos, Vallecitos and above, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14128* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, 2700 m, 18 Sep 1983, *R.F. Thorne 57257 et al.* (RSA) and ridges between them; May–Oct; endemic variety (better subspecies) apparently restricted to SSPM and higher peaks of Sierra Juárez.
- POLYGONUM AMPHIBIUM* L. (var. *STIPULACEUM* N.Coleman). Water smartweed. Rare aquatic perennial with floating leaves, rooted in muddy bottoms of ponds in open meadows, 2100–2200 m, La Grulla, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14432* (RSA, SD); and La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14342* (RSA, SD); Jun–Sep; N through Sierra Juárez and CA to AK and E to Atlantic Coast.
- **POLYGONUM AVICULARE* L. subsp. *DEPRESSUM* (Meisn.) Arcang. and subsp. *AVICULARE* (P. ARENASTRUM Boreau). Common knotweed, doorweed. Infrequent prostrate perennial weed of moist, sandy

meadows, 2100–2450 m, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14451* (RSA, SD); La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14348* (RSA, SD); and Vallecitos; Apr–Nov; naturalized from Eurasia.

POLYGONUM DOUGLASHII Greene (intermediate between subsp. *DOUGLASHII* and subsp. *JOHNSTONII* (Munz) C.Hickman). Wild buckwheat. Rare erect annual of sandy bank of small stream in meadow and in open Jeffrey pine forest at Vallecitos, 2400–2500 m, 1 Sep 1985, *R.F. Thorne 61410 et al.* (RSA); Jun–Sep; N through CA to WA and E to NV and ID.

***RUMEX CRISPUS** L. Curly dock. Rare perennial weed in wet, sandy meadow and along stream at La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14455* (RSA, SD); commoner at lower elevations; Apr–Nov; naturalized from Europe.

RUMEX SALICIFOLIUS Weinm. var. *DENTICULATUS* Torr. (*R. CALIFORNICUS* Rech.f.). Willow dock. Common perennial of wet sandy meadows and stream margins, 875–2500 m, La Corona de Abajo and above, La Grulla, Upper Vallecitos, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60831 et al.* (RSA, SD); Corral Meadow, 2520 m, 16 Jun 1983, *A.C. Sanders 7905 et al.* (RSA, UCR); Los Llanitos, Yerba Buena, and Cerro Venado Blanco; Apr–Sep; N through Sierra Juárez to CA and Yukon (Canada), and E to NV, AZ, and MT.

PORTULACACEAE

CALYPTRIDIMUM MONANDRUM Nutt. Pusypaws. Frequent prostrate succulent annual of sandy open places, 900–2500 m; 3 mi below La Corona de Abajo, 1675 m, 18 Jun 1985, *R.F. Thorne 60810 et al.* (RSA); also at La Tasajera region, SW of Observatory; ca. 7 mi S of the Observatory road, 2285 m, 15 Sep 1998, *J.P. Rebman 5579* (SD); also at Santa Eulalia, Upper Vallecitos, Corral Meadow, Vallecitos, Los Llanitos, Yerba Buena, peak of Cerro Observatorio; Apr–Jun; N through Sierra Juárez to Monterey and Mono cos., CA, and E to NV and Sonora (Mexico).

CALYPTRIDIMUM MONOSPERMUM Greene (*C. UMBELLATUM* of Wiggins). Infrequent prostrate succulent perennial of sandy open places, 2400–2500 m, La Encantada, Vallecitos, 2430 m, 8 May 1986, *R.F. Thorne 61994 et al.* (RSA); and Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14186* (RSA, SD); Jun–Aug; N through Sierra Juárez and CA to British Columbia (Canada) and E to Rocky Mts.

CALYPTRIDIMUM PARRYI A.Gray subsp. *NEVADENSE* (J.T.Howell) Munz. Rare annual, Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran 14185* (SD); SE of Vallecitos and ca. 3 mi S of Observatory, along the highest ridge en route to Pedro's Dome, 2630 m, 30 Sep 2008, *J.P. Rebman 15994* (SD). Taxonomic revision in progress at SDSU. N to central CA and western NV. Not recorded in Wiggins (1980).

***PORTULACA OLERACEA** L. Common purslane. Rare succulent prostrate annual weed, 1675–2200 m, only La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14328* (RSA, SD); Apr–Sep; naturalized from tropics.

RANUNCULACEAE

AQUILEGIA FORMOSA Fisch. (incl. var. *HYPOLASIA* (Greene) Munz). Columbine. Common orange-red-flowered erect perennial of streamsides and seepy places, 875–2800 m; La Corona de Arriba, La Encantada, Arroyo San José, Corral Meadow, Vallecitos, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14154* (RSA, SD); Cerro Venado Blanco; and N of Cerro Observatorio, 2800 m, 18 Sep 1983, *R.F. Thorne 57292 et al.* (RSA); May–Aug; N through Sierra Juárez and CA to AK and MT.

CLEMATIS LIGUSTICIFOLIA Nutt. Virgin's bower. Infrequent perennial vine, 900–2750 m, below La Corona de Abajo, 1800 m, 13 Oct 1935, *J. Delgadillo s.n.* (RSA); of Vallecito de la Canoa, 1900 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14506* (RSA, SD); above

Vallecitos, and summit of Cerro Venado Blanco; more frequent at lower elevations; Jun–Sep; N through Sierra Juárez, CA and AZ to British Columbia (Canada), and E to NM and ND.

CLEMATIS PAUCIFLORA Nutt. Infrequent perennial vine of chaparral and dry rocky slopes, 1100–2500 m; Corral de Sam, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14330* (RSA, SD) and Los Llanitos, 2500 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14259* (RSA, SD); Apr–May; N from Sierra San Borja through Sierra Juárez to the mts. of southern CA.

MYOSURUS MINIMUS L. Mouse-tail. Found in vernal wet places, Vallecitos, 2420 m, 7 Jul 1980, *Cass 482* (SD). Widespread annual N from Isla Guadalupe through CA to British Columbia (Canada), eastern US and Eurasia.

RANUNCULUS AQUATILIS L. var. *CAPILLACEUS* (Thuill.) DC. Water buttercup. Infrequent submersed aquatic perennial with floating white flowers in ponds or slow streams, 1475–2200 m, La Corona de Arriba, La Grulla, La Encantada and Corral Meadow, also at lower elevations as at former Misión San Pedro Mártir, 1475 m, 1 Jun 1975, *R.V. Moran 22116* (SD); Apr–Jul; N through Sierra Juárez to CA and widely distributed aquatic in eastern and western hemispheres.

RANUNCULUS CYMBALARIA Pursh subsp. *SAXIMONTANUS* (Fernald) Thorne. Desert crowfoot. Infrequent, yellow-flowered rhizomatous perennial of wet margins of streams and ponds, 650–2430 m, Santa Eulalia, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14338* (RSA, SD); Vallecitos, 2430 m, 3 May 1986, *R.F. Thorne 61955 et al.* (RSA) and Corral Meadow; Apr–May; N through Sierra Juárez and CA to British Columbia (Canada) and E to Manitoba (Canada), AZ, TX, and New England.

RANUNCULUS HYDROCHAROIDES A.Gray. Marsh crowfoot. Listed by Wiggins (1980) from “marshes, streams, and springs, usually between 2000 and 2900 m, Sierra San Pedro Mártir;” Benson (1948) cited from La Encantada along the stream, 2194 m, 18 Sep 1930, *I.L. Wiggins & D. Demaree 4907*, and a collection by T. S. Brandegee in 1893; also at La Grulla, 2050 m, 24 Oct 1992, *J. Delgadillo s.n.* (BCMEX); rare aquatic N to CA and E to AZ, NM, and Mexico.

RANUNCULUS UNCINATUS D.Don. Buttercup. Infrequent erect annual in open moist sandy meadows, 2200–2650 m; Upper Corona, Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7887 et al.* (RSA, UCR); Dead Horse meadows, and southwestern end Cerro Venado Blanco, 2800 m, 17 Jul 1988, *S. Boyd 2589 et al.* (RSA); May–Jul; N through CA mts. to AK and E to Rocky Mts. Not recorded in Wiggins (1980).

THALICTRUM FENDLERI Engelm. ex A.Gray (var. *QUADRINERVATUM* B.Boivin). Meadow-rue. Common, erect perennial of moist or bouldery places, 2200–2500 m, La Encantada (type locality); above La Corona de Abajo, Corral Meadow, N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60929 et al.* (RSA); and above, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14153* (RSA, SD); Cerro Venado Blanco and N of Cerro Observatorio; May–Aug; N through Sierra Juárez and CA mts. to WA, and E to WY, western TX, and northern Mexico.

RHAMNACEAE

CEANOTHUS CORDULATUS Kellogg. Mountain whitethorn. Common thicket-forming shrub among boulders and on rocky slopes in open pine forests, 2080–2800 m, above La Corona de Abajo, 2200 m, 8 May 1986, *R.F. Thorne 62001 et al.* (RSA); La Encantada, La Tasajera, Corral Meadow, Vallecitos and above, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14148* (RSA, SD); Los Llanitos, above Arroyo Copal, and Cerro Venado Blanco and Cerro Observatorio; most abundant in intense burns within past 50 yr, as at Corona Arriba, 3 km E of Corona Arriba, W and N of Corral Meadow, and Cerro Botella Azul; Jun–Aug; disjunctly N to San Jacinto Mts. and through other CA mts. to NV and OR.

CEANOTHUS GREGGII A.Gray subsp. *PERPLEXANS* (Trel.) Jeps. Gregg's whitethorn. Uncommon shrub of chaparral on W slopes and infrequent on E slopes of range, 1200–2100 m, with basically same range as *ADENOSTOMA FASCICULATUM*, Santa Eulalia, 3 mi below La Corona de Abajo, 1675 m, 18 Jun 1985, *R.F. Thorne 60804 et al.* (RSA); Santo Tomás, and Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14420* (RSA, SD); Mar–Apr; N from Volcán las Tres Vírgenes through Sierra Juárez to San Bernardino Mts., southern CA, and western AZ.

CEANOTHUS LEUCODERMIS Greene. Chaparral whitethorn. Uncommon, tall glaucous shrub of chaparral and open pine forest, 1500–2400 m, Corral de Sam, 2.5 mi up La Corona de Abajo, 2200 m, 8 May 1986, *R.F. Thorne 62002 et al.* (RSA); Arroyo Copal and above, Cerro 2040, and trail from Santa Rosa to Cañada el Cajon (1830–2400 m) and down to El Socorro, 1240 m, 9 May 1978, *R.V. Moran 25755* (RSA, SD); Mar–Apr; N through Sierra Juárez to central CA.

FRANGULA CALIFORNICA (Eschsch.) A.Gray subsp. *TOMENTELLA* (Benth.) Kartesz & Gandhi (*RHAMNUS CALIFORNICA* Eschsch. subsp. *TOMENTELLA* (Benth.) C.B.Wolf). California coffeeberry. Locally abundant large shrub of chaparral, but common on gentle slopes and flats in open pine forest, 650–2600 m, Cañón del Diablo (down to 650 m), Santa Eulalia, W of to above La Corona de Abajo, Arroyo Copal and above, Santa Rosa, La Encantada, La Tasajera, 4 km N of Corral Meadow, N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60934 et al.* (RSA); Los Llanitos, above Yerba Buena, 2600 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14197* (RSA, SD); and Cerro Venado Blanco; May–Jul; N through Sierra Juárez to northern CA. This subspecies not recorded in Wiggins (1980).

RHAMNUS ILICIFOLIA Kellogg. Holly-leaf redberry. Infrequent shrub of chaparral, 1850–2050 m, W of to above La Corona de Abajo and at Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14395* (RSA, SD); more frequent at lower elevations to 1525 m, as Oak Grove, 1750 m, 20 Jun 1985, *R.F. Thorne 60977 et al.* (RSA); Apr–Jun; N through Sierra Juárez to northern CA and AZ. Not recorded in Wiggins (1980).

ROSACEAE

ADENOSTOMA FASCICULATUM Hook. & Arn. Chamise. Dominant shrub of chaparral on western margins of plateau below 1900 m, 725–2050 m; Santa Eulalia, W of La Corona de Abajo, 2100 m, 21 Jul 1988, *S. Boyd 2823* (BCMEX, RSA); Cerro 2040, and Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14418* (RSA, SD); May–Jul; N through Sierra Juárez to northern CA. See Map 7 for its range in SSPM.

ADENOSTOMA SPARSIFOLIUM Torr. Red shank. Infrequent but locally abundant shrub of chaparral margins of plateau, 1200–2000 m, with strong preference for granites; Arroyo de Soto, Km 75 al Observatorio, 1900 m, 23 Sep 1989, *J. Delgadillo s.n.* (BCMEX); 3 mi S and at Santa Eulalia and at Corral de Sam from above Rancho San Pedro Mártir, also at lower elevations as Rancho San Pedro Mártir, 1700 m, 17 Sep 1967, *R.V. Moran 14569* (SD); Jul–Nov; N through Sierra Juárez to San Luis Obispo Co., CA. See Map 10 for its range in SSPM.

AMELANCHIER UTAHENSIS Koehne. Service-berry. Infrequent, erect colonial shrub of rocky slopes and arroyos, 1500–2500 m; La Encantada, E end Vallecitos, 2550 m, 30 May 1976, *R.V. Moran 23309* (RSA, SD); Corral Meadow, and Los Llanitos, 2400 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14254* (RSA, SD); more frequent at lower elevations; Apr–May; N through Sierra Juárez to mts. of CA and E to MT and NM. Not recorded in Wiggins (1980).

CERCOCARPUS BETULOIDES Torr. & A.Gray subsp. *BETULOIDES*. Birch-leaf mountain-mahogany. Rare shrub of chaparral; SW slope above Campo Noche, Cañón del Diablo, 1975 m, 4 May 1978, *R.V. Moran 25583* (SD); also observed by Richard Minnich at Santa Eulalia, 1850 m, photos by R. Minnich, Apr 1974 (RSA

494936); much more common at lower elevations in chaparral of western slope as ca. 9.1 mi S of Hwy 1 at Rancho El Picacho, NE of Mike's Sky Ranch 1410 m, 10 Aug 1998, *J.P. Rebman 5457* (SD); also photographed by R. Minnich at several places along the wash of Cañón del Diablo from 1400–1800 m; Mar–Apr; N through Sierra Juárez and cismontane CA and AZ to OR.

CERCOCARPUS LEDIFOLIUS Nutt. var. *INTERMONTANUS* N.Holmgren. Curl-leaf mountain-mahogany. Rare shrub known only from an E. Heller specimen collected in 1902 (UC) from SSPM; until recently found as several shrubs on ridge E of Cerro Observatorio just above Cañón del Diablo, 2780 m, 1 Sep 1985, *R.F. Thorne 61469 et al.* (BCMEX, RSA, SD); Apr–May; disjunctly N to San Jacinto Mts. and through CA mts. to WA and E to Rocky Mts. See Map 5 for range in SSPM. Not recorded in Wiggins (1980).

FALLUGIA PARADOXA (D. Don) Endl. Apache plume. Rare erect shrub known only from 10 m below summit of Picacho del Diablo, 3085 m, 10 Nov 1978, *R.V. Moran 26376* (SD); probably May–Jun; disjunctly N to mts. of eastern Mojave Desert, CA and NV, and E to TX and Mexico. Not recorded in Wiggins (1980).

FRAGARIA VESCA L. (subsp. *CALIFORNICA* (Cham. & Schltdl.) Staudt.). Wood strawberry. Frequent low rhizomatous perennial of moist, sandy streambeds and open places in pine forest, 1600–2500 m, Arroyo Copal, La Corona de Abajo, Corral and Dead Horse meadows, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14176* (RSA, SD) and W of Cerro Venado Blanco, also San Pedro Mártir, no elevation, 10 May 1893, *T.S. Brandegee s.n.* (UC); Apr–Jun; N through Sierra Juárez to northern CA and E to eastern North America and Europe.

HETEROMELES ARBUTIFOLIA (Lindl.) M. Roem. subsp. *ARBUTIFOLIA*. Toyon. Rare tall shrub; only at Cerro Chato, 1850 m, 3 Jun 1963, *R.F. Thorne 32002 et al.* (RSA); and La Vibora, Arroyo La Grulla 4 km SW of la Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24439* (RSA, SD); but more common in chaparral at lower elevations, as in Cañón del Diablo, 1700 down to 1550 m; Apr–Jul; N disjunctly from Cape Region and Isla Guadalupe through Sierra Juárez and coastal regions to cismontane CA.

HOLODISCUS MICROPHYLLUS Rydb. subsp. *MICROPHYLLUS* (var. *SERICUS* Ley). Oceanspray. Common and often locally abundant low spreading shrub among boulders, along intermittent streams, and on ledges and cliffs, 2500–2950 m; above Arroyo Copal, Corral Meadow, N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60950 et al.* (RSA); and above Los Llanitos, Yerba Buena, N–NW of Observatory, and E of the ranch at base of Cerro Venado Blanco, 2345 m, 16 Sep 1998, *J.P. Rebman 5607* (BCMEX); also Cerro Observatorio and mountains above La Encantada; Jul–Sep; disjunctly N to San Jacinto Mts. of Riverside Co., CA, and southern NV. Not recorded in Wiggins (1980).

HORKELIA CLEVELANDII (Greene) Rydb. var. *BREVIBRACTEATA* (Wiggins) Ertter & Reveal. Cleveland's horkelia. Frequent rhizomatous perennial of moist sandy meadows and open pine forests, 875–2560 m; Santa Eulalia, La Corona de Abajo, La Grulla, La Encantada; vicinity of campground along road to Proyecto Condor ca. 0.25 mi NE of SSPM office and formal entrance, ca. 4 mi W of Vallecitos and ca. 6 mi SW of Observatory, 2500 m, 30 Sep 2008, *J.P. Rebman 16026* (SD); Upper Vallecitos, 2560 m, 19 Jun 1985, *R.F. Thorne 60923 et al.* (RSA); Vallecitos, Los Llanitos, and 3 km SW of Cerro La Botella Azul, 18 Jun 1988, *A.C. Sanders 7978 et al.* (RSA, UCR); Jun–Jul; N through Sierra Juárez to San Jacinto Mts. of Riverside Co., CA.

IVESIA ARGYROCOMA (Rydb.) Rydb. var. *MORANII* Ertter & Reveal. Silver-haired ivesia. Frequent perennial of meadows and open pine forest on decomposed granitic soils, 2250–2500 m; Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60843 et al.* (RSA); Los Llanitos, Corral Meadow, ca. 4 km W of Cerro Observatorio, 2420 m, 17 Jun 1988, *A.C. Sanders 7948 et al.* (RSA, UCR); and Yerba Buena; Jun–Aug; disjunctly N to San Bernardino Mts. of CA.

POTENTILLA GLANDULOSA Lindl. subsp. *GLANDULOSA*. Cinquefoil. Rare perennial, only at La Corona de Abajo and above, 2080–2100 m; along small stream in open Jeffrey pine forest and burned over chaparral, 4 Jun 1988, *S. Boyd 2357 et al.* (RSA); more frequent at lower elevations as at live oak grove, 1750 m, 20 Jun 1985, *R.F. Thorne 60968 et al.* (RSA); May–Jul; N through cismontane Californias to British Columbia (Canada) and E to AZ, ID, UT, NM, and SD.

POTENTILLA GLANDULOSA Lindl. subsp. *REFLEXA* (Greene) Keck. Frequent perennial of moist meadows and streamsides, 1450–2500 m; La Corona de Abajo, Corral Meadow, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60866 et al.* (RSA); Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14177* (RSA, SD); and Cerro Venado Blanco; Apr–Jun; N through Sierra Juárez and CA mts. to OR and NV.

POTENTILLA GRACILIS Douglas ex Hook. var. *FASTIGIATA* (Nutt.) S.Watson. Rare, rhizomatous perennial, La Grulla, 2100 m, 29 Jun 1982, *R.V. Moran 30952* (SD). N through meadows to CA and western North America. Not recorded in Wiggins (1980).

POTENTILLA LUTEOSERICA Rydb. (P. *PINETORUM* Wiggins, P. *WHEELERI* of Wiggins). Frequent and locally abundant sprawling perennial endemic on sandy meadows, 1450–2800 m; Santa Eulalia, La Encantada (type locality of P. *PINETORUM* Wiggins), 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14331* (RSA, SD); La Tasajera, Upper Vallecitos, Vallecitos, 2430 m, 18 Sep 1983, *R.F. Thorne 57219 et al.* (RSA); Los Llanitos and Corral Meadow; Jul–Aug; apparently restricted to SSPM.

POTENTILLA RIMICOLA (Munz & I.M.Johnst.) Ertter. Frequent perennial of crevices in cliff faces, 2200–2800 m; along trail to La Encantada from Los Llanitos, 2200 m, 27 Jun 1996, *J.P. Rebman 2191* (SD); head of Arroyo Copal, Los Llanitos, 2400 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14282* (RSA, SD); Yerba Buena, and Cerro Observatorio, 2840 m, 8 May 1986, *R.F. Thorne 61988 et al.* (RSA); and Cerro Venado Blanco; near crest of mountain range, in open meadow ca. 2 mi SE of Observatory, 2985 m, 29 Jun 1998, *J.P. Rebman 5428* (SD); Jul–Aug; N through Sierra Juárez. Rare in CA, N to San Jacinto Mts., Riverside Co.

PRUNUS EMARGINATA (Hook.) Walp. Bitter cherry. Rare white-flowered shrub locally abundant in montane chaparral with scattered *PINUS JEFFREYI* ca. 5 km up Observatory road from park entrance toward La Corona de Arriba, 2400 m, 8 May 1986, *R.F. Thorne 61997 et al.* (BCMEX, RSA); Apr–May; disjunctly N through CA to British Columbia (Canada) and E to ID, MT, and WY. Not recorded in Wiggins (1980).

ROSA CALIFORNICA Cham. & Schtdl. California rose. Rare shrub found at La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14291* (RSA, SD); and La Grulla, 2050 m, 24 Oct 1992, *J. Delgadillo s.n.* (BCMEX); but more frequent at lower elevations to 875 m; May–Sep; N through Sierra Juárez and cismontane CA to southern OR.

RUBIACEAE

GALIUM ANDREWSII A.Gray subsp. *ANDREWSII*. Phlox-leaved bedstraw. Rare mat-forming perennial in full sun at edge of large rocks near streambed at La Corona de Arriba, 2200 m, and 1 km before La Tasajera, 2259 m, 1 Jul 1998, *J. Delgadillo s.n.* (BCMEX); more frequent in chaparral down to 1400 m; May–Aug; N through Sierra Juárez to central CA.

GALIUM MARTIRENSE Dempster & Stebbins. Martir bedstraw. Infrequent sprawling perennial of dry places, 800–2400 m; La Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2802a* (RSA); and above to La Corona de Arriba, Santa Rosa and El Alto de Corona, 2400 m, 28 Jul 1970, *R.V. Moran 17904* (RSA, SD); more common at lower elevations, with Oak Pasture the type locality; Apr–Jun; apparently restricted to SSPM and Sierra Juárez.

GALIUM WIGGINSII Dempster (Fig. 12). Wiggins' bedstraw. Common endemic erect perennial of rocky places, 1650–2900 m, Santa Rosa, Corona de Abajo, La Encantada (type locality); La Tasajera, Corral Meadow, Vallecitos, 2560 m, 19 Jun 1985, *R.F. Thorne 60917 et al.* (RSA); head of Arroyo Copal, Los Llanitos, Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14124* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio and ridges between, and high peaks above La Encantada; Jul–Sep; apparently restricted to SSPM.

GALIUM WRIGHTII A.Gray. Rare bedstraw. Ridgetop above and E of Vallecitos area, 2600 m, 25 Jun 1996, *J.P. Rebman 3259* (SD). Disjunctly N from Cerro Matomi to Sierra Juárez to CA's Clark Mts. in the Mojave Desert and E to AZ, NM, western TX and northern Mexico.

SALICACEAE

POPULUS BALSAMIFERA L. subsp. *TRICHOCARPA* (Torr. & A.Gray) Brayshaw. Black cottonwood. Rare, young trees along old dry stream channel; La Vibora, Arroyo la Grulla, 4 km SW of La Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24433* (RSA, SD); also collected by *R.V. Moran 18073* on Río San Rafael, 1325 m, 31 Jul 1970; disjunctly N to CA and AK, E to northern Rocky Mts.

POPULUS FREMONTII S.Watson subsp. *FREMONTII*. Alamo. Rare tree, only on dry hillside; La Encantada, 2210 m, 22 Sep 1930, *I.L. Wiggins & D. Demaree 5007* (DH, RSA); more frequent lower down as at Rancho San Pedro Mártir, 1700 m, 17 Sep 1967, *R.V. Moran 14591* (SD); occasional from La Paz north through CA and E to AZ and Rocky Mts.

POPULUS TREMULOIDES Michx. Quaking aspen (Fig. 8). Frequent and sometimes locally abundant small tree at edge of sandy meadows and especially with *PINUS CONTORTA* subsp. *MURRAYANA* in open conifer forests, at Corral de Sam, Vallecitos, Upper Vallecitos, and La Tasajera; Los Llanitos, 2400 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14280* (RSA, SD); with *ABIES CONCOLOR* forest on higher peaks from Corral Meadow to E of La Encantada; also Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60784 et al.* (RSA); isolated population near a stream just W of Santa Rosa; strong preference for granite; Apr–Jun; disjunctly N to San Bernardino Mts. and Sierra Nevada, CA, to AK and E to Atlantic Coast. See Map 19 for range in SSPM.

SALIX BONPLANDIANA Kunth. Bonpland's willow. Infrequent shrub or small tree along streams, 2080–2500 m, La Corona de Abajo, La Grulla, Los Llanitos, Yerba Buena; and 3 km SW of Cerro La Botella Azul, 2470 m, 18 Jun 1988, *A.C. Sanders 7469 et al.* (RSA, UCR); much more frequent at lower elevations as at Rancho San Pedro Mártir, 1700 m, 17 Sep 1967, *R.V. Moran 14585* (RSA, SD) down to 800 m or even lower; Mar–Apr; E from Cape Region to AZ and NM and S to Mexico and Guatemala. Not recorded in the Jepson Manual (Hickman 1993).

SALIX LAEVIGATA Bebb. Red willow. 0.5 km NE of an abandoned cabin along Arroyo Rancho Viejo, 6 mi S of Vallecitos Meadow, 2470 m, 18 Jun 1988, *A.C. Sanders 7969* (SD). N to CA, southern OR and northern NV, E to AZ, Mexico, and northern Central America.

SALIX LASIOLEPIS Benth. Arroyo willow. Frequent large shrub or small tree, 1500–2400 m, La Corona de Abajo and above; Santa Rosa, La Grulla, Vallecitos, 2430 m, 8 May 1986, *R.F. Thorne 61996 et al.* (RSA); head of Arroyo Copal and Los Llanitos, 2400 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14279* (RSA, SD); more common at lower elevations even to near sea level as in Arroyo Socorro. Possible intergrade between *SALIX BONPLANDIANA* Kunth and *SALIX LAEVIGATA* Bebb. (red willow). Rare large shrub or small tree of 3 m in coniferous forest on rocky slopes; 3 km SW of Cerro La Botella Azul, 2470 m, 18 Jun 1988, *A.C. Sanders 7959 et al.* (RSA, UCR); and Rancho La Suerte, 1130 m, 4 Jun 1963, *R.F. Thorne 32066 et al.* (RSA). Mar–Apr; N through Sierra Juárez and CA to WA and ID.

SAURURACEAE

ANEMOPSIS CALIFORNICA (Nutt.) Hook. & Arn. Yerba mansa. Rare rhizomatous perennial, in moist meadow at La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14318* (RSA, SD); and Cañada Cerro Venado Blanco, 2295 m, 2 Jun 1998, *J. Delgadillo s.n.* (BCMEX); more common at lower elevations as at Rancho La Suerte, 1130 m, 4 Jun 1963, *R.F. Thorne 32022 et al.* (RSA) down to 845 m or lower; Apr–Aug; N from Baja Cape Region through Sierra Juárez to Sacramento Valley, CA, and E to CO and TX.

SAXIFRAGACEAE

HEUCHERA RUBESCENS Torr. var. VERSICOLOR (Greene) M.G. Stewart (H. LEPTOMERIA Greene var. PENINSULARIS Rosend., Butters, & Lakela). Alumroot. Common caespitose perennial on rocky outcrops, 1900–3050 m; Los Llanitos; SE of Vallecitos, 2600 m, 26 Jun 1996, *J.P. Rebman 3272* (SD); La Vibora, Arroyo Copal and above, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14386* (RSA, SD); Vallecitos and above, Corral Meadow, Cerro Venado Blanco and Cerro Observatorio and ridges between, and near summit of Picacho del Diablo (3050 m); May–Jul; N through Sierra Juárez to Cuyamaca Mts. of San Diego Co., CA.

SAXIFRAGA ERIOPHORA S. Watson. Saxifrage. Frequent, caespitose perennial in rock crevices, 2250–2800 m, head of Arroyo Copal, Vallecitos and above and E, Corral Meadow, Cerro Venado Blanco, and Cerro Observatorio, 2840 m, 19 Jun 1985, *R.F. Thorne 60894 et al.* (RSA); east slope of Cerro 2828, on east rim, 2800 m, 24 Aug 1968, *R.V. Moran 15406* (SD); and western slope of Picacho del Diablo (to 2625 m) above Cañón del Diablo; May–Aug; unreported from CA, but NE to AZ, NM, and S to Chihuahua (Mexico). Not recorded in Wiggins (1980).

SOLANACEAE

NICOTIANA ATTENUATA Torr. Tobacco. Infrequent, erect annual of open sandy places, especially roadsides, 1850–2200 m; W of La Corona de Abajo to La Corona de Arriba, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14372* (RSA, SD); and Vallecitos, 2400 m, 28 Aug 1988, *R. Noyes 710 et al.* (RSA); more frequent in chaparral down to 750 m; May–Oct; N through Sierra Juárez and CA to British Columbia (Canada) and E to MT, NM, TX, and Sonora (Mexico).

*PHYSALIS PHILADELPHICA Lam. Tomatillo. Rare coarse annual, escaping from rough garden in woods back of park entrance, 2080 m; Jul–Oct; naturalized from American tropics.

*SOLANUM PHYSALIFOLIUM Rusby var. NITIDIBACCATUM (Bitter) Edmonds (S. SARRACHOIDES of Wiggins). Nightshade. Rare weedy introduced annual, only at La Corona de Arriba, 2200 m, 31 August 1963, *R.V. Moran 11291* (RSA, SD); Apr–Oct; naturalized from Eurasia.

SOLANUM XANTI A. Gray (incl. var. MONTANUM Munz). Purple nightshade. Rare perennial at head of Arroyo Copal on dry slope of steep canyon below ridge, 2600 m, 16 Jul 1988, *S. Boyd 2553* (BCMEX, RSA); N of Cerro Observatorio, 2500 m; more common at lower elevations as 6 mi W of Rancho San José (Meling), 590 m, 21 Jan 1973, *R.V. Moran 19569* (SD); fruiting in Jul; N from Cape Region mountains disjunctly N to Sierra Juárez to northern CA.

*TAMARICACEAE

*TAMARIX RAMOSISSIMA Ledeb. Tamarisk. Rare weedy shrub, reported from Corral Meadow, 2550 m, much more common at lower elevations as Rancho La Suerte, 1130 m, 4 Jun 1963, *R.F. Thorne 32068 et al.* (RSA); and Rancho San José, 650 m, 20 Jun 1985, *R.F. Thorne 60981 et al.* (RSA); Apr–Jul; naturalized from Mediterranean region.

URTICACEAE

URTICA DIOICA L. subsp. HOLOSERICEA (Nutt.) Thorne. Hoary nettle. Infrequent, erect stinging perennial of moist meadows, roadsides, and rocky streambeds, 2280–2550 m; Vallecitos, Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14231* (RSA, SD); La Encantada, 2300 m, 27 Jun 1997, *J.P. Rebman 3308* (HCIB); and Corral Meadow, more frequent at lower elevations down to 650 m; Apr–Sep; N through Sierra Juárez and coastal areas of CA to WA and ID.

VISCACEAE

ARCEUTHOBIUM AMERICANUM Engelm. Lodgepole-pine dwarf mistletoe. A dwarf mistletoe parasitic on lodgepole pine, PINUS CONTORTA subsp. MURRAYANA, to be expected at ≥ 1800 m and reported by Delgadillo (2004), but no specimens from Mexico seen by the authors.

ARCEUTHOBIUM CALIFORNICUM Hawsw. & Wiens. Sugar-pine dwarf mistletoe. A dwarf mistletoe parasitic on PINUS LAMBERTIANA, to be expected at ≥ 1800 m and reported by Delgadillo (2004), but no specimens from Mexico seen by the authors.

ARCEUTHOBIUM CAMPYLOPODUM Engelm. Western dwarf mistletoe. Infrequent though locally abundant mistletoe parasitic on PINUS JEFFREYI, 2040–2200 m; La Grulla, upper end of La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14374* (RSA, SD); and trail to Vallecitos and Cerro 2040; May–Jul; N through Sierra Juárez and CA to OR and ID. Not recorded in Wiggins (1980).

PHORADENDRON LIBOCEDRI (Engelm.) Howell. (P. JUNIPERINUM A. Gray). Incense-cedar mistletoe. Infrequent, though locally abundant, parasitic on CALOCEDRUS DECURRENS, 2050–2200 m; La Corona de Abajo, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14473* (RSA, SD); La Corona de Arriba and head of Arroyo Copal; Apr–Jun; N through Sierra Juárez and CA mts. to OR.

PHORADENDRON PAUCIFLORUM Torr. (P. BOLLEANUM (Seem.) Eichler). Fir mistletoe. Common and locally abundant mistletoe parasitic on ABIES CONCOLOR and HESPEROCYPARIS MONTANA, 1700–2600 m, W slope of Picacho del Diablo (1700–2200 m); NW of La Corona de Abajo, La Encantada, Corral Meadow, Upper Vallecitos, 2560 m, 19 Jun 1985, *R.F. Thorne 60916 et al.* (RSA); Los Llanitos, 2600 m, 26 Jun 1996, *J.P. Rebman 3276* (BCMEX, HCIB); Cerro Venado Blanco and Cerro Observatorio, and ridges between them; Apr–Jun; N through Sierra Juárez to central Sierra Nevada in CA and E to AZ, southern AR, and northern Mexico.

PHORADENDRON VILLOSUM (Nutt.) Nutt. Oak mistletoe. Rare parasite on chaparral shrubs, as on ADENOSTOMA SPARSIFOLIUM along Observatory road, 1900 m, and on PRUNUS ILICIFOLIA subsp. ILICIFOLIA at Rancho San Pedro Mártir, 1700 m; more frequent at lower elevations on various trees; Apr–Jun; N through Sierra Juárez and CA to OR and E to TX and Mexico.

MONOCOTYLEDONS

AGAVACEAE

AGAVE DESERTI (Engelm.) Gentry subsp. PRINGLEI (Engelm.) Gentry. Pringle's agave. Rare, leaf-succulent rosette shrub observed, but not collected at pass N of La Encantada, 2300 m; more frequent in chaparral on Pacific slope of range down to 1000 m, as at Rancho San Pedro Mártir, 1700 m, 5 Jul 1968, *R.V. Moran 15256* (RSA, SD); in small arroyo, 1 mi NW of Oak Pasture, 1600 m, 18 May 1975, *R.V. Moran 21983* (SD); and Paso San Matías, 900 m; as high as 2000 m in Cañón del Diablo but more common below; Jul–Aug; apparently restricted to montane slopes of SSPM and Sierra Juárez (Gentry 1978).

AGAVE MORANII Gentry. Moran's agave. Endemic rosette shrub listed by Gentry (1978) as restricted to southern Sierra San Pedro Mártir and its eastern bajadas between 450–1850 m; common on SW slope

above Campo Noche, Cañón del Diablo in small arroyo, 1975 m, 4 May 1978, *R.V. Moran 25580* (SD); south slope in chaparral, as La Vibora, Arroyo la Grulla, 4.0 km SW of La Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24434* (SD); and probably the species observed above Arroyo Copal, ca. 2000 m; Jun–Jul (Gentry 1978). Not recorded in Wiggins (1980).

HESPEROYUCCA PENINSULARIS (McKelvey) Clary (*YUCCA WHIPPLEI* Torr. subsp. *EREMICA* Epling & Haines). Our Lord's candle. Rare caespitose rosette perennial producing numerous suckers, photographed in Apr 1974 by R. Minnich (RSA); at Santa Eulalia, 1900 m, where locally abundant; also 25 km to SW of Cerro Observatorio, 1870 m, 3 May 1987, *P. Tenorio L. & C. Romero 13289* (MEXU, RSA); more frequent at lower elevations; Feb–Mar; endemic to Baja California, N from Sierra Libertad especially along E desert slopes of SSPM and Sierra Juárez.

YUCCA SCHIDIGERA Ortgies. Mohave yucca. Rare, rosette shrub of rocky slopes in chaparral, 1300–2050 m; W of La Corona de Abajo (where rather abundant), 1950 m, 28 Jul 1970, *R.V. Moran 17926* (RSA, SD); and at Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14425* (RSA, SD); more frequent at lower elevations on both slopes of range; Mar–Apr; N from Cataviña through Sierra Juárez to southern CA and E to southern NV and western AZ.

ALLIACEAE

ALLIUM EUROTOPHILUM Wiggins. Wild onion. Frequent and locally abundant bulbous perennial endemic on rocky slopes at high elevations, 2300–2800 m, Vallecitos, Yerba Buena and above; Cerro Venado Blanco, 2345 m, 16 Sep 1998, *J.P. Rebman & B. Vinton 5600* (RSA, SD); also Cerro Botella Azul and Cerro Observatorio, ca. 2600 m, 1 Sep 1985, *R.F. Thorne 61481 et al.* (RSA), and ridges between them; type locality: shaded mountain canyon, 2800 m, SSPM, in deep mucky leafmold; Jun–Sep; apparently restricted to SSPM.

ARACEAE (INCL. LEMNACEAE)

LEMNA GIBBA L. Duckweed. Rare tiny floating thalloid aquatic on pond at La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14334* (RSA, SD) though also collected by T. S. Brandegee in San Pedro Mártir; more frequent at lower elevations as at Rancho San José, 650 m, 19 May 1975, *R.V. Moran 21995* (RSA, SD) (there with *L. MINUSCULE* Herter and *L. TRISULCA* L.); N to CA, widely distributed in Northern Hemisphere.

LEMNA MINOR L. Rare duckweed. La Grulla, in creek, 2100 m, 21 Aug 1967, *R.V. Moran 14437* (SD); N to CA and worldwide in distribution.

LEMNA TRISULCA L. Frequent small floating paddle-shaped aquatic in quiet streams, 875–2100 m; La Vibora, Arroyo La Grulla 4 km SW of La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14448* (RSA, SD); Arroyo La Zanja, La Grulla, and common on pond; Rancho Viejo, 2100 m, 3 Jul 1972, *R.V. Moran 19180* (SD); also down at Rancho El Potrero, 875 m, 5 Jul 1969, *R.V. Moran 16301* (RSA, SD); N to CA, subcosmopolitan aquatic.

LEMNA TURIONIFERA Lindolt. Rare, floating thalloid aquatic in quiet streams, as at La Vibora, Arroyo La Grulla 4 km SW of La Grulla, 1900 m, 10 Aug 1967, *R.V. Moran 24460* (RSA, SD), and at La Grulla; N to CA, widely distributed aquatic.

ARECACEAE

ERYTHEA ARMATA S. Watson (*BRAHEA ARMATA* S. Watson). Blue palm. A Baja California endemic, listed by Wiggins (1944) from S Sierra San Pedro Mártir “in large numbers in a great many canyons on both sides of the divide between El Banco and Los Emes on the eastern side and extending upward to an altitude of nearly 7000 ft [2135 m],” but not seen by us above 1700 m; as far N as Cañón Agua Caliente on the E side and as far N as Arroyo San Pablo on the W side. Most

abundant in the far southern SSPM, especially at Arroyo Berrendo, Arroyo El Represo, and Mesa Matomi; in Arroyo Socorro 9 mi from mouth at 175 m and at El Palmerito, La Suerte (Fig. 14), 1130 m, on W slopes of range. Many stands along arroyos were destroyed by catastrophic floods produced by Hurricane Nora in Sep 1997 [25 cm precipitation were recorded in one day at La Grulla]. Stands on cliffs and fault seeps survived above the flash floods. Distribution of the blue palm is shown in the vegetation map in *Land of Chamise and Pines* (Minnich and Franco-Vizcaino 1998). Only one seen on this trip, streambank just below El Horno Mine, up canyon ca. 2 mi E of San Isidoro, 975 m, 31 May 1975, *R.V. Moran 22098* (SD); May; N from Sierra Libertad to northeastern desert slopes of Sierra Juárez.

ASPARAGACEAE

MAIANTHEMUM STELLATUM (L.) Link (*SMILACINA STELLATA* (L.) Desf.). False Solomon's seal. Rare, rhizomatous perennial not seen by us in range, but collected by T. S. Brandegee (1893: 209), see *San Pedro Mártir*; probably Jun–Jul; disjunctly N through CA to AK and E to Atlantic Coast. Not recorded in Wiggins (1980).

CYPERACEAE

CAREX ALMA L.H. Bailey (*CAREX AGROSTIOIDES* Mack.). Sedge. Infrequent, rhizomatous perennial of wet crevices and other moist places mostly on E slope, 600–2650 m; head of Arroyo Copal, 2650 m, 16 Jul 1988, *S. Boyd & T. Ross 2567* (RSA); above La Corona de Abajo and Cerro Venado Blanco, 2650 m, 15 Sep 1968, *R.V. Moran 15680* (RSA, SD); also Cañón del Diablo at 1100 m; Apr–Jun; N to central CA and E to NV and AZ.

CAREX ATHROSTACHYA Olney. Rare caespitose perennial of damp sandy soil along stream below and at La Grulla, 2050–2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14491* (RSA, SD) and occasionally in bottom of arroyo; Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14389* (RSA, SD); Jun–Aug; disjunctly N through CA to AK and E to Rocky Mts. Not recorded in Wiggins (1980).

CAREX DOUGLASHII Boott. Rare, rhizomatous perennial forming turf in sandy meadow under a Jeffrey pine at Vallecitos campground, 2430 m, 18 Jun 1985, *R.F. Thorne 60849 et al.* (BCMEX, RSA); otherwise seen by us only S of El Condor in Sierra Juárez at 1300 m; May–Oct; N through Californias to British Columbia (Canada) and E to NM and New England.

CAREX EURYCARPA Holm. Rare rhizomatous perennial along La Grulla Creek in canyon ca. 2 km below flats; probably Jul; disjunctly N through northern CA to eastern WA and central ID. Not recorded in Wiggins (1980) or The Jepson Manual (Hickman 1993).

CAREX FRACTA Mack. Rare erect perennial, only along intermittent stream between Cerro Venado Blanco and Cerro Observatorio, 2500 m; not previously reported from Baja California; Jun–Jul; disjunctly N through CA to WA. Not recorded in Wiggins (1980).

CAREX GLOBOSA Boott. Frequent, but inconspicuous rhizomatous perennial of dry, rocky slopes in pine forest, 2100–2800 m; La Tasajera, Vallecitos and above, 2430 m, 18 Jun 1985, *R.F. Thorne 60856 et al.* (RSA); Los Llanitos, Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14139* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, and ridges between them; Apr–May; N through Sierra Juárez to Humboldt Co., CA. Not recorded in Wiggins (1980).

CAREX HASSEI L.H. Bailey. Rare perennial of moist stream margins, 1500–2250 m; only La Grulla and La Corona de Arriba, 2255 m, 9 Jun 1962, *J. Olmsted 4735* (RSA); and La Joya on Valladares Creek, 1500 m, 31 May 1976, *R.V. Moran 23317* (RSA, SD); May–Jun; disjunctly N through CA and NV to British Columbia and Yukon (Canada) and E to AZ and UT. Not recorded in Wiggins (1980).

CAREX LANUGINOSA Michx. Woolly sedge. Rare perennial in wet meadow at La Grulla, 2050 m, 9 Jun 1982, *R.V. Moran 30939* (RSA, SD); May–Jul; disjunctly N through CA to British Columbia (Canada) and E to the Atlantic Coast. Not recorded in Wiggins (1980).

CAREX PRAEGRACILIS W.Boott. Rare, rhizomatous perennial in moist sandy area E of Vallecitos, 2550 m, occasionally in bottom of arroyo; camino Vallecitos-La Tasajera, 2540 m, 29 Oct 1995, *J. Delgadillo s.n.* (SD); Santa Rosa; but more frequent at lower elevations down to 900 m; Apr–Jun; N through Sierra Juárez and CA to Yukon (Canada) and E to MI, also in South America.

CAREX ROSSII W.Boott (*CAREX DEFLEXA* var. *ROSSII* (W.Boott) L.H.Bailey). Rare sedge, ca. 50–75 m NNW of main Observatory, 2775 m, 30 Jul 1997, *J.P. Rebman 4166* (SD). N through CA to northern Canada and E to AZ, CO, and north-central US. Not recorded in Wiggins (1980).

CAREX SENTA W.Boott. Frequent, large caespitose perennial, 1475–2550 m; below La Grulla, N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60926 et al.* (RSA); Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7890 et al.* (RSA, UCR); Yerba Buena S of Cerro Venado Blanco and upper Río San Rafael; Jun–Aug; disjunctly N to northern CA and E to AZ.

CAREX SUBFUSCA W.Boott. Common caespitose perennial along streams and in other moist places, 1600–2600 m; near Corona de Abajo, 2100 m, 21 Jul 1988, *S. Boyd 2819 et al.* (RSA); Santa Rosa, La Tasajera, S of Vallecitos and above, La Tasajera, Los Llanitos, Yerba Buena, upper Río San Rafael; base of Cerro Botella Azul, 2600 m, 19 Jul 1988, *S. Boyd 2648 et al.* (RSA); Cerro Venado Blanco, and Los Llanitos; May–Sep; N through Sierra Juárez and CA to British Columbia (Canada) and E to NV and AZ.

CAREX UTRICULATA Boott (*C. ROSTRATA* Stokes). Rare perennial only in moist meadow at La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14496* (RSA, SD); Jun–Aug; disjunctly N through CA to AK and E to Atlantic Coast, also in Eurasia. Not recorded in Wiggins (1980).

CYPERUS FENDLERIANUS Boeckl. Galingale. Frequent, erect tuberous perennial of open pine forests, 2000–2700 m; upper Arroyo Copal, Los Llanitos, 2550 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14273* (RSA, SD); Yerba Buena, 2500 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14151* (RSA, SD); and Cerro Botella Azul and Cerro Observatorio; Jul–Sep; NE to AZ and E to CO, NM, TX, and Mexico, unreported from CA.

CYPERUS SQUARROSUS L. (*C. ARISTATUS* Rottb., *C. INFLEXUS* Muhl.). Rare, but locally abundant annual, 2080–2150 m; only by pool at park entrance at La Corona de Abajo, 2080 m, 27 Aug 1988, *R. Noyes 648 et al.* (RSA) and above on granite outcrops wet with seepage, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2756* (RSA); Jun–Oct; N through Sierra Juárez and cismontane Baja California and CA to British Columbia (Canada) and E to Atlantic Coast, widely distributed as subcosmopolitan semi-aquatic plant.

ELEOCHARIS ACICULARIS (L.) Roem. & Schult. var. *ACICULARIS*. Spikerush. Rare, tiny rhizomatous perennial above La Corona de Abajo where locally abundant on granite outcrops wet with seepage, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2757 & 2758* (RSA); La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14496* (RSA, SD); May–Aug; N through Sierra Juárez to CA, widely distributed in North America and Eurasia.

ELEOCHARIS ACICULARIS (L.) Roem. & Schult. var. *BELLA* Piper (*ELEOCHARIS BELLA* (Piper) Svenson). Infrequent caespitose annual of streambanks and moist meadows, 875–2430 m; La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14445* (RSA, SD); La Encantada, and Upper Vallecitos, 2430 m, 18 Sep 1982, *R.F. Thorne 57228 et al.* (RSA); May–Sep; N through Sierra Juárez and CA to WA and E to ID, NM, and Mexico.

ELEOCHARIS MACROSTACHYA Britt. (*E. PALUSTRIS* of Am. auth.). Rare, but locally abundant tall rhizomatous aquatic perennial of ponds, 2100–2200 m; only La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran &*

R.F. Thorne 14488 (RSA, SD); and La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14339* (RSA, SD); Apr–Nov; N through Sierra Juárez and coastal Baja California to CA, widely distributed throughout temperate North America and Mexico.

ELEOCHARIS PARISHII Britt. (possibly not distinct from *E. MONTEVIDENSIS* Kunth). Infrequent, rhizomatous perennial along streams and in wet meadows, 875–2200 m; Cañón del Diablo, La Corona de Abajo, 2080 m, 27 Aug 1988, *R. Noyes 656 et al.* (RSA); La Grulla and La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14295* (RSA, SD); Apr–Sep; N from Cape Region through Sierra de Juárez and coastal Baja California to CA and OR, and E to AZ, NM, and Chihuahua (Mexico).

IRIDACEAE

SISYRINCHIUM IDAHOENSE E.P.Bicknell (*S. BELLUM* of Wiggins in part). Blue-eyed-grass. Infrequent erect perennial of moist stream sides, 2200–2400 m; La Corona de Arriba and Los Llanitos, 2400 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne 14247* (RSA, SD); and base of Cerro Botella Azul, 19 Jul 1988, *S. Boyd & A. Liston 2703* (RSA); Jul–Aug; disjunctly N through CA mts. to WA and ID.

JUNCACEAE

JUNCUS ARCTICUS Willd. var. *MEXICANUS* (Willd. ex Schult. & Schult.f.) Balslev (*JUNCUS MEXICANUS* Willd.). Mexican rush. Frequent and locally abundant rhizomatous perennial of streamways and moist, sandy meadows, Santa Rosa, Arroyo La Zanja, La Grulla; Arroyo Campo Padre Kino camino a Bajío de las Viejas, 2420, 11 Oct 1998, *J. Delgadillo s.n.* (SD); Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61440 et al.* (RSA); in wet sand by stream, arroyo 2 km SE of Yerba Buena, 2450 m, 4 Sep 1978, *R.V. Moran 26248* (SD). Los Llanitos, Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14165* (RSA, SD); and Cerro Venado Blanco; May–Aug; N from Cape Region disjunctly to Sierra Juárez and to White Mts. of CA and E to AZ, TX, and Mexico. N through CA to WA and E to CO and TX, also South America.

JUNCUS ARTICULATUS L. Rush. Rare, rhizomatous perennial only in moist ground; near Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2809 & 2811* (RSA); apparently only collections from Baja California; N through CA to British Columbia (Canada), eastern North America, Eurasia. Not recorded in Wiggins (1980).

JUNCUS BALTICUS Willd. Baltic rush. Rare, rhizomatous perennial only at edge of water in meadows, as at La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14490* (RSA, SD); and Corral Meadow, 2550 m; more frequent down to 900 m; May–Jul; N through Sierra Juárez to CA, widely distributed in North America and Old World.

JUNCUS BRYOIDES F.J.Herm. Dwarf rush. Rare tiny annual, only on granite outcrops wet with seepage; as above La Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2770* (RSA); also Oak Pasture, 1725 m, 8 May 1978, *R.V. Moran 25693* (RSA, SD); Apr–Jul; N through Sierra Juárez to Sierra Nevada, CA and E to UT. Not recorded in Wiggins (1980).

JUNCUS BUFONIUS L. var. *BUFONIUS*. Toad rush. Frequent annual of wet meadows and streambanks, 2000–2300 m, La Corona de Abajo and above Vallecitos; La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14286* (RSA, SD); Los Llanitos and 2 km SE of Yerba Buena, 2450 m, 4 Sep 1978, *R.V. Moran 26245* (RSA, SD); more common at lower elevations down to 875 m; Apr–Aug; N through Sierra Juárez and coastal areas to CA, subcosmopolitan, semiquatic plant.

JUNCUS BUFONIUS L. var. *OCCIDENTALIS* F.J.Herm. (*J. SPHAEROCARPUS* of authors). Rare, erect annual of moist sand, fairly common in wet sand by stream; arroyo only, 2 km SE of Yerba Buena, 2450 m, 4 Sep 1978, *R.V. Moran 26245* (SD); Apr–Aug; N through Sierra Juárez and CA to OR and E to ID and AZ, also in Eastern Hemisphere.

- JUNCUS DUBIUS* Engelm. Frequent rhizomatous perennial in and along streambeds, 1900–2650 m, La Vibora, Arroyo La Zanja, La Corona de Abajo and above Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61418 et al.* (RSA); La Tasajera and Yerba Buena, 2650 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14217* (RSA, SD); Jul–Aug; N through Californias to OR.
- JUNCUS EFFUSUS* L. subsp. *AUSTROCALIFORNICUS* H.L.Lint. Infrequent cespitose perennial of streambeds, 2000–2460 m; Arroyo Copal, 2000 m, 25 Aug 1968, *R.V. Moran 15506* (RSA, SD); Corral Meadow, above Vallecitos, and SW end of Cerro Venado Blanco, 2800 m, 17 Jul 1988, *S. Boyd 2614 et al.* (RSA); Jun–Sep; N through Californias W of deserts to British Columbia (Canada).
- JUNCUS ENSIFOLIUS* Wikstr. var. *MONTANUS* (Engelm.) C.L.Hitchc. Occasional on streambanks, la Vibora, Arroyo La Grulla 4 km SW of La Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24404* (SD); fairly common in wet sand by stream, arroyo 2 km SE of Yerba Buena, 2450 m, 4 Sep 1978, *R.V. Moran 26246* (SD). N through CA to AK and western Canada and E to UT and Mexico. Not recorded in Wiggins (1980).
- JUNCUS MACROPHYLLUS* Coville. Common erect rhizomatous perennial of moist sandy meadows and stream edges, 650–2430 m, Arroyo Zanja, La Corona de Abajo and above La Grulla, La Tasajera, La Corona de Arriba; Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60819 et al.* (RSA); Cerro La Encantada, 2300 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14362* (RSA, SD); and Los Llanitos; also frequent at lower elevations down to 875 m; May–Aug; N through Sierra Juárez to Ventura Co., CA and E across deserts to AZ.
- JUNCUS MERTENSII* Bong. subsp. *GRACILIS* (Engelm.) F.J.Herm. Rare rhizomatous perennial of open sandy pineland wet by seepage near La Tasajera, 2350 m, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60820 et al.* (RSA); and wet sand by stream at Yerba Buena, 2430 m; apparently not previously reported for Baja California; Jun–Aug; disjunctly N through CA mts. to British Columbia (Canada) and E to Rocky Mts.
- JUNCUS OXYMERIS* Engelm. Infrequent erect cespitose perennial along streams; La Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2789* (RSA); La Corona de Arriba, damp soil in arroyo, Upper Corona Meadow, 2200 m, 31 Aug 1963, *R.V. Moran 11293* (SD); and Vallecitos, 2200–2430 m; Jun–Aug; N through mts. and cismontane Californias to WA.
- JUNCUS RUGULOSUS* Engelm. Wrinkled rush. Infrequent, but sometimes locally abundant rhizomatous perennial of seepage areas and streamways, 1900–2200 m; La Vibora, 4 km SW of La Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24399* (RSA, SD); Arroyo Copal, 2000 m, 25 Aug 1968, *R.V. Moran 15471* (RSA, SD); and S of La Corona de Arriba; more frequent at lower elevations down to 980 m; Apr–Aug; N through montane and cismontane areas of Californias to San Luis Obispo Co., CA.
- JUNCUS SAXIMONTANUS* A.Nelson (f. *BRUNNESCENS* (Rydb.) F.J.Herm.). Rocky Mountains rush. Infrequent rhizomatous perennial on banks of Arroyo La Zanja, 2050 m; base of Cerro Botella Azul, 2440 m, 19 Jul 1988, *S. Boyd 2697 et al.* (RSA); and Cerro Venado Blanco, ca. 2700 m, 17 Jul 1988, *S. Boyd 2604 et al.* (RSA); apparently not previously reported from Baja California; Jul–Sep; disjunctly N to mts. of southern CA and E to AZ, CO, and Mexico. Not recorded in Wiggins (1980).
- JUNCUS TIEHMII* Ertter (J. *KELLOGGII* of Wiggins). Tiehm's rush. Frequent and often locally abundant, but inconspicuous tiny annual of moist open sandy meadows and pine forests, 875–2560 m, above La Corona de Abajo, La Grulla; La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14302* (RSA, SD); Upper Vallecitos, 2560 m, 19 Jun 1983, *R.F. Thorne 60919 et al.* (RSA); and 2 km S of Yerba Buena; May–Aug; N through Sierra Juárez to mts. of southern CA.
- JUNCUS XIPHIOIDES* E.Mey. Common erect perennial of moist stream sides, 1130–2500 m; La Grulla, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14307* (RSA, SD); Upper

Vallecitos, Vallecitos, Los Llanitos, Yerba Buena, Corral Meadow, 2520 m, 16 Jun 1998, *A.C. Sanders 7891 et al.* (RSA, UCR); Cerro Venado Blanco, and N of Cerro Observatorio; May–Sep; N through Sierra Juárez and CA to OR and E to AZ.

- LUZULA COMOSA* E.Mey. Hairy wood rush. Infrequent erect perennial; N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60937 et al.* (BCMEX, RSA, SD); along stream at Yerba Buena, 2500 m; and S of Corral Meadow, 2550 m; genus and species not previously reported for Baja California; May–Jul; disjunctly N through CA mts. to AK and E to Rocky Mts. Not recorded in Wiggins (1980).

LILIACEAE (CALOCHORTOIDEAE)

- CALOCHORTUS CONCOLOR* (Baker) Purdy. Mariposa lily. Rare, bulbiferous perennial in chaparral openings W of La Corona de Abajo, 2000 m, also below at 1750 m, 20 Jun 1985, *R.F. Thorne 60958 et al.* (RSA) and 18 Jun 1985, *R.F. Thorne 60814 et al.* (RSA); more frequent in chaparral at lower elevations to 1700 m; May–Jul; N through Sierra Juárez to southern slopes of San Bernardino Mts., CA.
- CALOCHORTUS WEEDII* Alph. Wood var. *PENINSULARIS* Ownbey. Rare bulbous perennial, locally common in chaparral, E of Vallecitos (Art's Camp), 2400 m, 2 Jul 1982, *R.V. Moran 30994* (SD). Possibly N into San Diego Co. (Wiggins 1980). Not recorded in The Jepson Manual (Hickman 1993).

NOLINACEAE

- NOLINA PALMERI* S.Watson subsp. *PALMERI*. Palmer's beargrass. Common, erect rosette shrub to 2–3 m on rocky slopes in both chaparral and open conifer forest, 1800–2650 m, Santa Eulalia, Arroyo Copal, Cañón del Diablo, La Tasajera, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14426* (RSA, SD); La Encantada, 2500 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14358* (RSA, SD); Vallecitos and above, NW escarpment (to 2440 m), and S slope of Cerro Observatorio; May–Jun; apparently restricted to SSPM and Sierra Juárez of Baja California.

ORCHIDACEAE

- EPIPACTIS GIGANTEA* Hook. Stream orchid. Infrequent rhizomatous perennial of moist places, 625–2200 m, Cañón del Diablo (625–1830 m), Arroyo Copal, La Vibora 4 km SW of La Grulla, 1900 m, 9 Aug 1977, *R.V. Moran 24387* (RSA, SD); and upper end of La Encantada, 2200 m, 22 Sep 1930, *I.L. Wiggins & D. Demaree 4991* (DH, POM); also above Rancho San Pedro Mártir, 1730 m and down to 875 m; May–Aug; N from Cape Region disjunctly through Sierra Juárez, especially in desert canyons, and CA to British Columbia (Canada) and E to AZ, SD, and TX.
- PLATANThERA LEUCOSTACHYS* Lindl. (*HABENARIA DILATATA* var. *LEUCOSTACHYS* (Lindl.) Ames, *PLATANThERA DILATATA* var. *LEUCOSTACHYS* (Lindl.) Luer). Bog orchid. Downstream from La Grulla, 2100 m, 1 Jul 1982, *R.V. Moran 30966* (SD). N through CA to AK and E to MT, UT, and CO.
- PLATANThERA SPARSIFLORA* (S.Watson) Schltr. Sparse-flowered bog-orchid. Rare erect bulbiferous perennial in wet places along streams, 650–2100 m, only head of Arroyo Copal, 2600 m, 16 Jul 1988, *S. Boyd & T. Ross 2536* (RSA) and La Grulla; also 2 mi above Rancho San Pedro Mártir, 1730 m, 31 Jul 1970, *R.V. Moran 18064* (RSA, SD) and at Rancho Meling, ca. 650 m; Jun–Aug; disjunctly N through CA mts. to WA and E to Rocky Mts.

POACEAE (SEE ALSO GOULD AND MORAN 1981)

- AGROSTIS EXARATA* Trin. Bent grass. Common and variable cespitose perennial of moist arroyo beds and dry meadows, 1600–2550 m, Cañón del Diablo, La Corona de Abajo and above, La Grulla, NW of Los Llanitos, 2400 m, 17 Aug 1967, *R.V. Moran & R.F. Thorne*

- 14251 (RSA, SD); Vallecitos and W, 2430 m, 15 Sep 1985, *R.F. Thorne 61432 et al.* (RSA); Yerba Buena, and Cerro Venado Blanco; Jun–Sep; N from Cape Region through peninsula and CA to AK and E to NE, TX, and Mexico.
- AGROSTIS SCABRA* Willd. Tickle grass. Common cespitose perennial of moist stream beds and meadows, 875–2550 m, La Corona de Abajo and above, La Tasajera, La Grulla, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61431 et al.* (RSA); Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14168* (RSA, SD); Los Llanitos, Cerro Venado Blanco, and N of Cerro Observatorio; Jul–Sep; N through Sierra Juárez to CA and widespread in North America from Canada to Mexico. Not recorded in Wiggins (1980).
- **AGROSTIS STOLONIFERA* L. (var. *PALUSTRIS* (Huds.) Farw.). Creeping bent. Rare weedy stoloniferous erect perennial, only by falls in creek at La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14466* (RSA, SD); Jun–Sep; naturalized from Eurasia. Not recorded in Wiggins (1980).
- **AGROSTIS VIRIDIS* Gouan (A. *SEMIVERTICILLATA* (Forssk.) C.Ch.). Rare weedy stoloniferous perennial of wet places, 2200–2550 m, as sandy meadows at La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14293* (RSA, SD) and Corral Meadow; much more common at lower elevations as at Rancho San José, 650 m, 20 Jun 1985, *R.F. Thorne 60983 et al.* (RSA); May–Aug; naturalized from Eastern Hemisphere.
- ALOPECURUS AEQUALIS* Sobol. Short-awn foxtail. Rare, erect perennial, only in quiet pool in stream, Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7894 et al.* (RSA, SD, UCR); May–Jul; apparently not previously reported from Baja California but widely distributed in Northern Hemisphere. Not recorded in Wiggins (1980).
- ARISTIDA ARIZONICA* Vasey. Three-awn. Infrequent cespitose perennial of rocky slopes in open Jeffrey pine forest, 2050–2830 m, above La Corona de Abajo, near Upper Vallecitos road, 2500 m, 28 Aug 1988, *R. Noyes 697 et al.* (RSA); Yerba Buena, 2450 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14190* (RSA, SD); and peak of Cerro Observatorio; May–Jul; unreported from CA but NE through AZ and NV to CO, TX, and northern Mexico. Not recorded in Wiggins (1980).
- ARISTIDA SCHIEDEANA* Trin. & Rupr. (A. *ORCUTTIANA* Vasey). Infrequent cespitose erect perennial of rocky slopes, 1850–2540 m, Arroyo la Grulla, Santa Rosa, and above Vallecitos, 2540 m, 18 Sep 1983, *R.F. Thorne 57245 et al.* (RSA); also along Río San Rafael, 1280 m, 12 Aug 1998, *J.P. Rebman & M.E. Rosendiz 55134* (RSA, SD) and down Cañón del Diablo, 1165 m; Aug–Sep; N from Cape Region through Sierra Juárez to San Diego Co., CA, and E to western TX and S through Mexico to Guatemala (Gould and Moran 1981).
- BLEPHARONEURON TRICHOLEPIS* (Torr.) Nash. Pine drop-seed. Frequent cespitose perennial on rocky slopes in open pine forest and especially on ridges on western rim of Cañón del Diablo, 2200–2800 m, La Encantada, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61428 et al.* (RSA); La Tasajera, Yerba Buena, Arroyo Copal, and Cerro Observatorio, 2780 m, 1 Sep 1985, *R.F. Thorne 61466 et al.* (RSA) and ridge to E; Aug–Oct; unreported from CA but NE through AZ to UT, CO, NM, and western TX.
- BOUPELOU CURTIPENDULA* (Michx.) Torr. (var. *CAESPITOSA* Gould & Kapadia). Side-oats grama. Rare erect cespitose perennial of rocky slopes, Arroyo La Grulla, 1850 m, 10 Aug 1977, *R.V. Moran 24476* (RSA, SD) and Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14391* (RSA, SD); more frequent at lower elevations on both slopes of range, down to 775 m; May–Oct; N from Cape Region through SSPM and Sierra Juárez to San Bernardino Co., CA; species E through AZ to Atlantic states and S to Mexico, also Argentina.
- BROMUS CARINATUS* Hook. & Arn. California brome. Frequent erect annual or weak perennial of open pine forest and sandy arroyo beds, 1400–2200 m, La Vibora, La Corona de Abajo, Arroyo La Zanja, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14327* (RSA, SD); Los Llanitos, and Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7915 et al.* (RSA, UCR); Apr–Aug; N from Sierra San Francisco through peninsula to Sierra Juárez, and CA to British Columbia (Canada) and E through western USA, and S to Mexico and Central America.
- BROMUS CILIATUS* L. (*BROMUS RICHARDSONII* Link). Fringed brome. Common and often locally abundant erect perennial of rocky slopes in open pine forest and especially on rocky ridges along Cañón del Diablo, 1900–2800 m, La Vibora, Corral de Sam, La Grulla, La Encantada, above Vallecitos, Los Llanitos, La Tasajera, 2285 m, 14 Sep 1998, *J.P. Rebman & B. Vinton 5558* (RSA, SD); Yerba Buena, Cerro Venado Blanco and Cerro Observatorio, and ridge to E, 2780 m, 1 Sep 1985, *R.F. Thorne 61465 et al.* (RSA); occasional among rocks on E slope of Cerro 2828, on E rim, 2800 m, 24 Aug 1968, *R.V. Moran 15408* (SD); disturbed area near top of Cerro 2828, 2800 m, 10 Aug 1969, *Witham 407* (SD); Jul–Aug; N through Sierra Juárez and CA to WA, AK, and E to Atlantic Coast.
- **BROMUS DIANDRUS* Roth (B. *RIGIDUS* Roth). Rippgut grass. Rare annual weed, near cabin at La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14326* (RSA, SD) and La Grulla, 2050 m, 9 Jun 1982, *R.V. Moran 30938* (SD); much more common at lower elevations; Apr–Jun; naturalized from Europe.
- **BROMUS MADRITENSIS* L. subsp. *RUBENS* (L.) Husnot. Foxtail chess. Rare annual weed, only in burned over chaparral above La Corona de Abajo, 2100 m, 20 Jul 1988, *S. Boyd & T. Ross 2769* (BCMEX, RSA); much more common at lower elevations; Apr–Jun; abundantly naturalized from Europe.
- **BROMUS TECTORUM* L. Cheat grass, downy brome. Frequent and locally abundant weedy annual, 1400–2750 m, S of Upper Vallecitos, Corral Meadow, Vallecitos, Yerba Buena, Cerro La Botella Azul, 2440 m, 27 Jun 1998, *J.P. Rebman & A. Russell 5389* (RSA, SD) and Cerro Observatorio, 2600 m, 7 May 1986, *R.F. Thorne 61981 et al.* (RSA); population of this species crashed in 1991 due to the March Miracle of 1.5 m of snow over a period of 30 days; it has been uncommon since; May–Jul; widely naturalized from Eurasia.
- DESCHAMPSIA CESPITOSA* (L.) Beav. subsp. *CESPITOSA*. Rare cespitose perennial, only at edge of wet meadow, La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14492* (RSA, SD); Jul–Aug; N through Sierra Juárez to CA, widely distributed in Northern Hemisphere. Not recorded in Wiggins (1980).
- DESCHAMPSIA DANTHONIODES* (Trin.) Munro. Annual hairgrass. Dry meadow, la Grulla, 2050 m, 8 Jun 1982, *R.V. Moran 30915* (SD); muddy shore of stream in meadow, La Grulla, 2100 m, 1 Jul 1982, *R.V. Moran 30975* (SD). N through CA to AK, and E to AZ, also South America.
- DESCHAMPSIA ELONGATA* (Hook.) Benth. Slender hairgrass. Frequent and locally abundant cespitose perennial along intermittent streams, 2200–2450 m, La Corona de Abajo, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61427 et al.* (RSA); Yerba Buena, Los Llanitos, Cerro Venado Blanco, ca. 2700 m, 17 Jul 1988, *S. Boyd 2631 et al.* (RSA); and N of Cerro Observatorio; also at Rancho el Potrero, 875 m; May–Aug; disjunctly N through CA to AK and E to AZ, WY, and NM, also Chile.
- DICHANTHELIUM OLIGOSANTHES* (Schult.) Gould var. *SCRIBNERIANUM* (Nash) Gould (*PANICUM OLIGOSANTHES* Schult. var. *SCRIBNERIANUM* (Nash) Fern.; *P. SCRIBNERIANUM* Nash). Panicgrass. Rare perennial from knotty base, only in crevice in bare granite, gorge 5 km SW of La Grulla, 1850 m, 10 Aug 1977, *R.V. Moran 24477* (RSA, SD); Jun–Jul; N through CA to Canada and E to eastern US. Not recorded in Wiggins (1980).
- ELYMUS ELYMOIDES* (Raf.) Swezey subsp. *BREVIFOLIUS* (J.G.Sm.) Barkworth (*SITANION HYSTRIX* (Nutt.) J.G.Sm., *S. LONGIFOLIUM* J.G.Sm., *E. LONGIFOLIUS* (J.G.Sm.) Gould). Squirreltail. Common cespitose perennial of open pine forest, 1500–2600 m, upper San José Creek, La Tasajera, Corral Meadow, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61397 et al.* (RSA); Los Llanitos, Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14155* (RSA, SD); upper Río

- San Rafael, Cerro Venado Blanco and Cerro Observatorio, and ridges between them; Apr–May; N from cerros Matomi and Potrero through Sierra Juárez and CA to OR and British Columbia (Canada), and E to MT, SD, TX, and northern Mexico.
- ELYMUS GLAUCUS* Buckley subsp. *GLAUCUS*. Blue wildrye. 14.5 mi SW of UNAM Observatory gate on graded road from San Telmo, 1820 m, 29 May 1982, *Yatskiyevich 198* (SD). N through CA to AK, E through Great Plains to northern Mexico.
- ELYMUS TRACHYCAULUS* (Link) Shinn. subsp. *SUBSECUNDUS* (Link) Å.Löve & D.Löve (AGROPYRON TRACHYCAULON Steud.; A. SUBSECUNDUM (Link) Hitchc.). Slender wheatgrass. Infrequent rhizomatous perennial of rocky slopes, dry meadows, and sandy stream-sides, 1500–2500 m, La Vibora; Los Llanitos, and arroyo 2.0 km SE of Yerba Buena, 2450 m, 4 Sep 1978, *R.V. Moran 26247* (SD); Jun–Jul; N through Sierra Juárez to CA and widespread through northern and western North America.
- ELYMUS TRACHYCAULUS* (Link) Shinn. subsp. *TRACHYCAULUS*. La Grulla, 2100 m, 1 Jul 1982, *R.V. Moran 30973* (SD). N through CA to AK and E to eastern US.
- ERAGROSTIS INTERMEDIA* Hitchc. Lovegrass. Rare erect cespitose perennial of rocky slopes, 580–2050 m, SW of La Grulla, 1850 m, 10 Aug 1977, *R.V. Moran 24482* (RSA, SD) and Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14431* (RSA, SD); also at lower elevations, as Rancho La Suerte, 1130 m, 4 Jun 1963, *R.F. Thorne 32062 et al.* (RSA); on both slopes of range, especially in desert canyons; Aug–Oct; N from Cape Region through desert ranges and Sierra Juárez to AZ and E to southwestern AR and S through Mexico to Guatemala; not reported from CA.
- ERAGROSTIS PECTINACEA* (Michx.) Nees var. *PECTINACEA* (E. DIFFUSA Buckl.). Rare diffuse weedy annual, only near cabin, La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14325* (RSA, SD); Aug–Sep; N from Cape Region to Sierra Juárez and southern CA and E to KS, NM, TX, and GA. Not recorded in Wiggins (1980).
- FESTUCA BAJACALIFORNIANA* Gonz.-Led. & S.D.Koch. Cerro 2828, near Observatory, 2475 m, 9 Aug 1969, *Witham 412* (SD); N slope of Cerro 2828, 2800 m, 14 Sep 1968, *R.V. Moran 15619* (Type; SD). Endemic to Baja CA. Not recorded in Wiggins (1980).
- FESTUCA BRACHYPHYLLA* Schult. & Schult.f. subsp. *BREVICULMIS* Fred. Fescue. Infrequent variable cespitose perennial of rocky ridges along rim of Cañón del Diablo, 2750–2800 m, Los Llanitos, Cerro 2828, 2800 m, 24 Aug and 17 Sep 1968, *R.V. Moran 15409* (RSA, SD); Cerro Venado Blanco and Cerro Observatorio, 2780 m, 1 Sep 1985, *R.F. Thorne 61461 et al.* (RSA) and ridge to E of latter; Aug–Oct; widely distributed in the Northern Hemisphere, including CA. Not recorded in Wiggins (1980).
- **FESTUCA BRACHYPHYLLA* Schult. & Schult.f. (*VULPIA BROMOIDES* (L.) Gray). Weedy annual cited as ranging from “coast to 2350 m in Sierra San Pedro Mártir” by Gould and Moran (1981); Apr–Jun; naturalized from Europe. Not recorded in Wiggins (1980).
- **FESTUCA MEGALURA* Nutt. (*VULPIA MYUROS* (L.) C.C.Gmel. var. *HIRSUTA* (Hack.) Asch. & Graebner). Infrequent, weedy annual of dry, sandy or rocky places, 2300–2500 m, Los Llanitos, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60842 et al.* (RSA) and Yerba Buena, 2425 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14163* (RSA, SD); much commoner at lower elevations; Apr–Jun; widely naturalized from Europe.
- FESTUCA OCTOFLORA* Walt. (*VULPIA OCTOFLORA* (Walt.) Rydb.). Infrequent annual of open sandy places, 2200–2430 m, La Encantada, upper southwestern dry fork of Río San Rafael, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60841 et al.* (RSA) and Yerba Buena; more common at lower elevations, as at Oak Pasture, 1750 m, 7 May 1986, *R.F. Thorne 61946 et al.* (RSA); Apr–Jun; N from Cape Region and Isla Cedros through peninsula to CA, widespread in North America.
- FESTUCA REFLEXA* Buckley (F. PACIFICA Piper; *VULPIA MICROSTACHYS* (Nutt.) Munro var. *CILIATA* (A.Gray ex Beal) Lonard & Gould; *V. MICROSTACHYS* (Nutt.) Munro var. *PAUCIFLORA* (Beal) Lonard & Gould). Erect annual cited from “near sea level to over 2300 m in Sierra San Pedro Mártir” by Gould and Moran (1981), La Grulla, 2050 m, 8 Jun 1982, *R.V. Moran 30930* (SD); Apr–Jun; N from Cape Region through peninsula and CA to British Columbia (Canada) and E to western AZ, MT, and UT.
- HORDEUM BRACHYANTHERUM* Nevski. Rare cespitose perennial locally common in meadows at La Grulla, 2100 m, 22 Aug 1967, *R.V. Moran & R.F. Thorne 14487* (RSA, SD) and Corral Meadow, 2550 m; May–Aug; N through CA to AK and E to Labrador (Canada) and NM.
- **HORDEUM MURINUM* L. subsp. *GLAUCUM* (Steud.) Tzvel. Wild barley. Rare weedy annual, only at La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14321* (RSA, SD); but more common at lower elevations; Apr–May; naturalized from the Mediterranean region. Not recorded in Wiggins (1980).
- KOELERIA MACRANTHA* (Ledeb.) Schult. (K. PYRAMIDATA (Lam.) P.Beauv. misapplied). Junegrass. Frequent tufted perennial of open pine forests 2400–2500 m, La Tasajera, Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60857 et al.* (RSA); Los Llanitos, Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14144* (RSA, SD); Corral Meadows, Cerro Venado Blanco and Cerro Observatorio, and ridges between them; May–Jul; disjunctly N to montane CA and widely distributed in western North America, also Europe. Not recorded in Wiggins (1980).
- **LOLIUM PERENNE* L. Perennial ryegrass. Rare weedy erect rhizomatous perennial, only in *Cupressus* arroyo at Los Llanitos, 2450 m, in moist soil near stream and Arroyo Rancho Viejo, 2100 m, 18 Jun 1988, *A.C. Sanders 7979 et al.* (RSA, UCR); May–Sep; naturalized from Europe.
- LYCURUS PHLEOIDES* Kunth. Wolf tail. Rare cespitose perennial of rocky slopes, 2050–2500 m, only Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14402* (RSA, SD) and Yerba Buena; but more frequent in desert canyons down to 1525 m; Aug–Oct; ranging N from Cape mts. through SSPM and Sierra Juárez to New York Mts. of E San Bernardino Co., CA, and E to AZ, UT, CO, NM, TX, and Mexico.
- MUHLENBERGIA ARSENEI* Hitchc. Tough muhly. Common tufted perennial from decumbent, shortly rhizomatous base in crevices of rocky ridges and arroyos, 1900–2830 m, La Vibora, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14408* (RSA, SD); La Tasajera, 2285 m, 15 Sep 1988, *J.P. Rebman & B. Venton 5573* (RSA, SD); La Encantada, Campo del las Viejas N of La Encantada, above Vallecitos, Yerba Buena, head of Arroyo Copal, Cerro Observatorio, and rocky ridge E of latter; Jul–Sep; disjunctly N to Clark Mts. of E San Bernardino Co., CA, and E to UT and NM. Not recorded in Wiggins (1980).
- MUHLENBERGIA ASPERIFOLIA* (Nees & Meyen) Parodi. Scratch grass. Infrequent rhizomatous spreading perennial of moist, open alkaline places along streams, 1675–2200 m, Arroyo La Zanja, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14410* (RSA, SD); La Grulla, and La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14288* (RSA, SD); also Oak Pasture; Jul–Oct; N through Sierra Juárez and CA to British Columbia (Canada) and E to Atlantic states and Mexico, also in southern South America.
- MUHLENBERGIA EMERSLEYI* Vasey. Muhly. Rare robust cespitose perennial of rocky slopes in open pine forest, 2050–2150 m, only at Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14404* (RSA, SD) and above La Corona de Abajo; also Arroyo El Picacho SE of Rancho Nuevo, 1650 m; Aug–Sep; N from Cape mts. through SSPM and Sierra Juárez and E to AZ, TX, and Mexico; not reported from CA. Not recorded in Wiggins (1980).
- MUHLENBERGIA FILIFORMIS* (Thurb.) Rydb. Pull-up muhly. Frequent sprawling annual of streamways and moist meadows, 1500–2550 m, La Vibora, above La Corona de Abajo, 2080 m, 27 Aug 1988, *R. Noyes 647 et al.* (RSA); La Grulla, La Encantada, La Joya, on Arroyo Valladares, Los Llanitos, above Vallecitos, 2430 m, 18 Sep 1983, *R.F. Thorne 57232 et al.* (RSA); and Corral Meadow; Jun–

- Aug; disjunctly N through CA mts. to British Columbia (Canada) and E to SD, KS, NM, and northern Mexico. Not recorded in Wiggins (1980).
- MUHLENBERGIA FRAGILIS** Swallen. Delicate muhly. Rare delicate annual of moist sandy soil and rocky outcrops, only N of Vallecitos, 2000 m; also down Arroyo El Picacho, 1350 m, 17 Sep 1977, *R.V. Moran 24875* (SD); N through Sierra Juárez to southern CA and E through AZ to western TX and Mexico. Not recorded in Wiggins (1980).
- MUHLENBERGIA MINUTISSIMA** (Steud.) Swallen. Frequent delicate annual of open sandy places, 2100–2750 m, Corral de Sam, La Grulla, La Encantada, above Arroyo Copal, Upper Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61412 et al.* (RSA); Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14182* (RSA, SD); and Cerro Venado Blanco; Jul–Oct; N through Sierra Juárez and CA to WA and E to MT, TX, and southern Mexico.
- MUHLENBERGIA PAUCIFLORA** Buckley. Few-flowered muhly. Frequent loosely tufted perennial from knotty, wiry base on rocky slopes and in open Jeffrey pine forest, 2200–2750 m, La Encantada and SE, head of Arroyo Copal, 2350 m, 16 Jul 1988, *S. Boyd & T. Ross 2583* (RSA); Yerba Buena, 2550 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14211* (RSA, SD); and Cerro Venado Blanco; Aug–Sep; disjunctly N to New York Mts. of eastern San Bernardino Co., CA and E through AZ to UT, CO, western TX, and northern Mexico.
- MUHLENBERGIA REPENS** (J.Presl) Hitchc. Infrequent spreading rhizomatous perennial, La Grulla, Rancho Viejo where local in dry sandy soil of meadow, 2100 m, 3 Jul 1972, *R.V. Moran 19176* (SD); and La Encantada, 2200 m, 30 Jun 1982, *R.V. Moran 30961* (RSA, SD); N from Cape mts. E through AZ to TX and Mexico; not reported in The Jepson Manual for CA (Hickman 1993). Not recorded in Wiggins (1980).
- MUHLENBERGIA RICHARDSONIS** (Trin.) Rydb. Mat muhly. Infrequent mat-forming perennial from short scaly rhizomes in sandy stream beds and arroyos, 2200–2430 m, La Tasajera trail N of Rancho Viejo, La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14444* (RSA, SD); La Encantada, 2200 m, 19 Aug 1967, *R.V. Moran & R.F. Thorne 14350* (RSA, SD); and Los Llanitos; Jun–Aug; disjunctly N through CA mts. to WA and Alberta (Canada), E to Atlantic Coast, and S to NM and Chihuahua (Mexico).
- MUHLENBERGIA RIGENS** (Benth.) Hitchc. Deergrass. Common coarse cespitose perennial of streamways and arroyos, 1500–2500 m, La Vibora, La Corona de Abajo and above, La Encantada, Los Llanitos, Vallecitos and N, 2460 m, 19 Jun 1985, *R.F. Thorne 60946 et al.* (RSA); Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14146* (RSA, SD); Cerro Observatorio, between latter and Cerro Venado Blanco, and El Picacho del Diablo; Jun–Sep; N from Cape Region through SSPM and Sierra Juárez to southern CA and E to TX and northern Mexico.
- MUHLENBERGIA WOLFII** (Vasey) Rydb. Infrequent delicate annual often growing with *M. minutissima* in moist sand, 2200–2500 m, La Encantada, Vallecitos Meadow, 2400 m, 27 Aug 1988, *R. Noyes 673 et al.* (RSA); Upper Vallecitos, 2430 m, 18 Sep 1983, *R.F. Thorne 57227 et al.* (RSA); and Yerba Buena; Aug–Sep; unreported from CA, but N from Cape region through AZ to CO, NM, and Mexico. Not recorded in Wiggins (1980).
- MUHLENBERGIA WRIGHTII** Vasey. Rare perennial from hard, knotty base, only on flat in Jeffrey pine forest at Yerba Buena, 2450 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14236* (RSA, SD); unreported from CA, but NE through AZ to UT, NM, CO, and OK.
- PANICUM BULBOSUM** Kunth. Panicgrass. Rare erect bulbous perennial of rocky slopes in conifer forest above Yerba Buena, above Vallecitos, 2540 m, 18 Sep 1983, *R.F. Thorne 57246 et al.* (RSA); not previously reported from Baja California (Norte); N from Cape Region and E through AZ to TX and S through NM to Central America and northern South America; not reported from CA. Not recorded in Wiggins (1980).
- PASPALUM DISTICHUM** L. Knot grass. Rare rhizomatous perennial of shallow streams, only at La Grulla, 2100 m; more frequent at lower elevations; Jun–Oct; N from Cape Region through coastal and montane regions to Sierra Juárez and CA, subcosmopolitan aquatic grass.
- *POA ANNUA** L. Annual bluegrass. Infrequent though locally abundant weedy tufted annual of moist, sandy places, 2080–2430 m, La Corona de Abajo, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14292* (RSA, SD); and Vallecitos, 2430 m, 18 Jun 1985, *R.F. Thorne 60815 et al.* (RSA); common at lower elevations as at La Concepción, 1500 m; Apr–Aug; naturalized widely from Europe.
- POA BAJAENSIS** Soreng. Baja bluegrass. Frequent and locally abundant cespitose perennial in open Jeffrey pine forest and sandy meadows, 2200–2950 m, La Corona de Abajo, La Corona de Arriba, Vallecitos, 2430 m, 1 Sep 1985, *R.F. Thorne 61394 et al.* (RSA); Corral Meadow, 2520 m, 16 Jun 1988, *A.C. Sanders 7895 et al.* (RSA, UCR); Cerro Botella Azul, Cerro Venado Blanco, and Cerro Observatorio, rim of Cañón del Diablo above Yerba Buena, and El Picacho del Diablo; Apr–Jul; endemic to the high country of SSPM (Soreng 2001). Not recorded in Wiggins (1980).
- POA FENDLERIANA** (Steud.) Vasey subsp. *LONGILIGULA* (Scribn. & Williams) Soreng. Rare cespitose perennial along stream among boulders in open pine forests only N of Vallecitos, 2460 m, 19 Jun 1985, *R.F. Thorne 60933 et al.* (RSA); near crest of mountain range; in open meadow approx. 2 mi SE of the Observatory, 2985 m, 28 Jun 1998, *J.P. Rebman 5412* (BCMEX); also in Cañón del Diablo, 1700 m; May–Jul; N through Sierra Juárez and CA to British Columbia (Canada) and E to SD and northern Mexico.
- POA ORCUTTIANA** Vasey. Vallecitos, 2400 m, 22 May 1987, *J. Delgadillo s.n.* (SD). Possibly endemic to Baja CA. Not recorded in Wiggins (1980).
- *POA PRATENSIS** L. Kentucky bluegrass. Infrequent weedy rhizomatous perennial in sandy meadows and along streams, 2050–2550 m, La Grulla, 2050 m, 29 Jun 1982, *R.V. Moran 30956* (RSA, SD); Los Llanitos, and Corral Meadow; May–Aug, widely naturalized blue grass from Eurasia.
- *POLYPOGON MONSPELIENSIS** (L.) Desf. Beard grass. Infrequent weedy annual of wet sandy places, 2080–2500 m, La Corona de Abajo, La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14294* (RSA, SD); 1 mi S of La Tasajera, ca. 2300 m, 20 Jul 1988, *S. Boyd 2742 et al.* (RSA) and Yerba Buena; much more common at lower elevations; Apr–Aug; widely naturalized from Europe.
- SPOROBOLUS CRYPTANDRUS** (Torr.) A.Gray. Sand dropseed. Infrequent cespitose perennial of sandy soil or rocky slopes, 2100–2430 m, Corral de Sam, Santa Rosa, 2050 m, 20 Aug 1967, *R.V. Moran & R.F. Thorne 14390* (RSA, SD); and vicinity of old corral in a meadow of Vallecitos approximately 1.2 mi S of the Observatory road in upper Vallecitos, 2445 m, 1 Oct 2008, *J.P. Rebman 16067* (SD); also in Paso de San Matias, 1050 m; May–Aug; N from Bahía Magdalena through SSPM and Sierra Juárez to CA, widely distributed in temperate North America into Mexico.
- STIPA CORONATA** Thurb. (*ACHNATHERUM CORONATUM* (Thurb.) Barkw.). Needlegrass. Infrequent perennial of rocky or sandy slopes in chaparral, W of La Corona de Abajo, ca. 1900 m and 2 mi SE of Cerro Observatorio, 2985 m, 29 Jun 1998, *J.P. Rebman 5434 & A. Russell* (RSA, SD) but elevational range cited by Gould and Moran (1981) as 1400–2000 m; also collected on Cerro Chato at 1900 m and in Paso San Matias at 950 m; Apr–Jun; N from Sierra San Borja through SSPM and Sierra Juárez to Napa Co., CA.
- STIPA PINETORUM** M.E.Jones (*ACHNATHERUM PINETORUM* (M.E.Jones) M.E.Barkworth). Rare tufted perennial in open, coniferous forest at head of Arroyo Copal, 2600 m, 16 Jul 1988, *S. Boyd & T. Ross 2584* (RSA); unreported from Baja California in Gould and Moran (1981); N through CA to ID and E to NM. Not recorded in Wiggins (1980).

STIPA PRINGLEI (Beal) Scribn. (PIPTOCHAETIUM PRINGLEI (Beal) Parodi). Frequent handsome caespitose perennial of rocky slopes in open Jeffrey pine forest, 2100–2600 m, Vallecitos, N of Rancho Viejo, Los Llanitos, Yerba Buena, 2475 m, 16 Aug 1967, *R.V. Moran & R.F. Thorne 14126* (RSA, SD); base of Cerro Venado Blanco, 2345 m, 16 Sep 1998, *J.P. Rebman & B. Vinton 5596* (RSA, SD) and Cerro Observatorio, ridges between them, and ridge to E of latter; Jun–Aug; unreported from CA but NE through AZ to TX and Chihuahua (Mexico). Not recorded in Wiggins (1980).

STIPA SPECIOSA Trin. & Rupr. Desert needlegrass. Rare densely caespitose perennial, only in chaparral W of and above La Corona de Abajo, 1850–2100 m; also on N slope of Cerro Azufre, 1650 m, 20 Oct 1971, *R.V. Moran 18726* (RSA) and ca. 9.4 km NNW de Cataviña, 640 m, 29 Mar 2001, *T.R. Van Devender s.n.* (HCIB); Apr–May; N from Volcán las Tres Vírgenes through desert and peninsular ranges to southern CA and E to AZ and CO, also in South America.

POTAMOGETONACEAE

POTAMOGETON NATANS L. Floating-leaved pondweed. Rare perennial aquatic with floating leaves, in stream at La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14439* (RSA, SD) and 2050 m, 24 Oct 1992, *J. Delgadillo et al.* (RSA, UABC); also in stream at Rancho el Portrero 875 m; Jun–Aug; widely distributed aquatic in Northern Hemisphere, including CA. Not recorded in Wiggins (1980).

POTAMOGETON PECTINATUS L. (STUCKENIA PECTINATA (L.) Börner). Fennel-leaf pondweed. Rare submersed aquatic in muddy pond at La Encantada, 2200 m, 18 Aug 1967, *R.V. Moran 14313* (SD); May–Aug; widely distributed aquatic in temperate and tropical regions of world, including CA.

POTAMOGETON PUSILLUS L. Small pondweed. Rare submersed aquatic in ponds and shallow streams at La Grulla and La Encantada, 2100–2200 m; La Grulla, in stream, 2100 m, 21 Aug 1967, *R.V. Moran 14439* (SD); La Encantada, pond, 2200 m, 19 Aug 1967, *R.V. Moran 14341* (SD); also in Río San Rafael, 150 m; May–Jul; N through Sierra Juárez and CA to AK and E to Atlantic Coast, also Eurasia.

TYPHACEAE

TYPHA DOMINGENSIS Pers. Southern cattail. Rare rhizomatous emersed aquatic perennial at La Encantada, 2200 m, 22 Sep 1930, *I.L. Wiggins & D. Demaree 5009* (DH, POM); much more common at lower elevations; Jun–Jul; N disjunctly through peninsula to CA, widely distributed aquatic in Americas and Europe, including CA.

ZANNICHELLIACEAE

ZANNICHELLIA PALUSTRIS L. Horned-pondweed. Rare submersed aquatic, only in ponds at La Grulla, 2100 m, 21 Aug 1967, *R.V. Moran & R.F. Thorne 14449* (RSA, SD) and La Encantada, 2100–2200 m, 18 Aug 1967, *R.V. Moran & R.F. Thorne 14287* (RSA, SD); also in Río San Rafael; Apr–Sep; N from Cape Region through peninsula to CA, subcosmopolitan aquatic.

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LITERATURE CITED

- BOJÓRQUEZ-TAPIA, L. A., H. DE LA CUEVA, S. DÍAZ, D. MELGAREJO, G. ALCANTAR, M. J. SOLARES, G. GROBET, AND G. CRUZ-BELLO. 2004. Environmental conflicts and nature reserves: redesigning Sierra San Pedro Mártir National Park, Mexico. *Biol. Conservation* **117**: 111–126.
- BRANDEGEE, T. S. 1893. Southern extensions of California flora. *Zoö* **4**: 199–210.
- CHAMBERS, K. L. 1955. A collection of plants from the eastern flank of the Sierra San Pedro Mártir, Baja California. *Contr. Dudley Herb.* **4**: 323–330.
- CORRELL, D. S. AND JOHNSTON, M. C. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner, Texas, USA. 1881 p.
- DELGADILLO, J. 2004. El bosque de coníferas de la Sierra de San Pedro Mártir, Baja California. Secretaría de Medio Ambiente y Recursos Naturales, Instituto Nacional de Ecología, México, D.F. 159 p., illus. in color.
- FISHER, R. D. 1988. The national parks of northwest Mexico II. Sunracer Publications, Tucson, Arizona, USA. 104 p.
- FLORA OF NORTH AMERICA EDITORIAL COMMITTEE (editors). 1993+. Flora of North America North of Mexico, 15+ vols. Oxford University Press, New York, USA.
- GASTIL, R. G., R. P. PHILLIPS, AND E. C. ALLISON. 1975. Reconnaissance geology of the state of Baja California. *Mem. Geol. Soc. Amer.* **140**: 170 (illustrated, 3 maps in pocket).
- GENTRY, H. S. 1978. The agaves of Baja California. *Occas. Pap. Calif. Acad. Sci.* **130**: 1–119 (illustrated).
- GOLDMAN, E. A. 1916. Plant records of an expedition to Lower California. *Contr. U.S. Natl. Herb.* **16**(14): viii + 309–371, pls. 104–1330 (map).
- . 1951. Biological investigations in Mexico. *Smithsonian Misc. Collect.* **115**: 1–476, map, illus.
- GOULD, F. W. AND R. MORAN. 1981. The grasses of Baja California. *Mem. San Diego Soc. Nat. Hist.* **12**: 1–140, illus.
- HICKMAN, J. C. (editor). 1993. The Jepson manual: higher plants of California. University of California Press, Berkeley, USA. 1400 p. illus.
- HUEY, L. M. 1927. A discussion of the zonal status of the Sierra San Pedro Martir, Lower California, Mexico, with descriptions of a new kangaroo rat and a new woodpecker from that region. *Trans. San Diego Soc. Nat. Hist.* **5**(1): 1–10.
- KEARNEY, T. H., R. H. PEEBLES, AND COLLABORATORS. 1951. Arizona flora. University of California Press, Berkeley and Los Angeles, USA. 1032 p.
- KEIL, D. J. 2006. *Cirsium*, pp. 95–164. In Flora of North America Editorial Committee [eds.], Flora of North America North of Mexico, vol. 19, Magnoliophyta: Asteridae, part 6: Asteraceae, part 1. Oxford University Press, New York, USA.
- LENZ, L. W. 1992. An annotated catalogue of the plants of the Cape Region, Baja Mexico Sur, Mexico. The Cape Press, Claremont, California, USA. 114 p.
- LINDSAY, G. E. 1955. The taxonomy and ecology of the genus *Ferocactus*. Ph.D. thesis, Stanford University, Palo Alto, California, USA. 349 p.
- AND E. B. HIGGINS. 1970. Notes concerning the botanical explorers and exploration of Lower California, Mexico. A paper prepared for Biology 199, Stanford University, Winter Quarter, 1955. Stanford, CA: s.n. Reprinted by Belvedere Scientific Fund. Library, California Academy of Sciences, San Francisco, USA.

- MINNICH, R. A. 2001. Fire and elevational zonation of chaparral and conifer forests in the Peninsular ranges of La Frontera, pp. 120–155. In G. L. Webster and C. J. Bahjre, Changing plant life of La Frontera. University of New Mexico Press, Albuquerque, USA.
- , M. G. BARBOUR, J. H. BURK, AND J. SOSA-RAMÍREZ. 2000a. California mixed-conifer forests under unmanaged fire regimes in the Sierra San Pedro Mártir, Baja California, Mexico. *J. Biogeogr.* 27: 105–129.
- AND E. F. FRANCO-VIZCAÍNO. 1998. Land of chamise and pines: historical accounts and current status of northern Baja California's vegetation. *Univ. Calif. Publ. Bot.* 80: 1–166, illus.
- , ———, AND R. J. DEZZANI. 2000b. The El Niño/Southern Oscillation and precipitation variability in Baja California, Mexico. *Atmosfera* 13: 1–20.
- , ———, J. SOSA-RAMÍREZ, J. H. BURK, W. J. BARRY, M. G. BARBOUR, AND H. DE LA CUEVA-SALCEDO. 1998. A land above: protecting Baja California's Sierra San Pedro Mártir within a biosphere reserve. *Journal of the Southwest* 39: 613–695.
- MORAN, R. 1952. The Mexican itineraries of T. S. Brandegee. *Madroño* 11: 153–160, pl. 3.
- . 1977. Botany of Sierra San Pedro Mártir trip. San Diego Natural History Museum, California. mimeo. 10 p.
- NELSON, E. W. 1921. Lower California and its natural resources. *Mem. Nat. Acad. Sci.* 16: 1–194, illus., map in pocket.
- SEMPLE, J. C. AND R. E. COOK. 2006. *Solidago*, pp. 107–166. In Flora of North America Editorial Committee [eds.], Flora of North America North of Mexico, vol. 20, Magnoliophyta: Asteridae, part 7: Asteraceae, part 2. Oxford University Press, New York, USA.
- SMITH, C. P. 1938. A preliminary catalog of the lupines of Baja California and Sonora. *Spec. Lupinorum* 2: 28.
- SORENG, R. J. 2001. A new species of *Poa* L. (Poaceae) from Baja California, Mexico. *Madroño* 48: 123–127.
- THORNE, R. F. AND R. V. MORAN. 1986. An annotated checklist of vascular plants of the conifer forests of the Sierra San Pedro Mártir, Baja California, Mexico, mimeo. 57 p.
- AND J. L. REVEAL. 2007. An updated classification of the class Magnoliopsida (“Angiospermae”). *Bot. Review (Lancaster)* 73: 67–182.
- WIGGINS, I. L. 1933. New plants from Baja California. *Contr. Dudley Herb.* 1: 161–187, pls. 11–17.
- . 1944. Notes on the plants of northern Baja California. *Contr. Dudley Herb.* 3: 289–312.
- . 1980. Flora of Baja California. Stanford University Press, Palo Alto, California, USA. 1025 p.
- WOODSON, R. E. 1930. Studies in the Apocynaceae. I. A critical study of the Apocynoideae (with special reference to the genus *Apocynum*). *Ann. Missouri Bot. Gard.* 17: 1–212.

Appendix 1. List of species, other than Baja California endemics, occurring in the Sierra San Pedro Mártir but unreported from Alta California.

<i>Antennaria parvifolia</i>	<i>Hieracium fendleri</i>
<i>Aristida arizonica</i>	<i>Linum aristatum</i> var. <i>australe</i>
<i>Bidens heterosperma</i>	<i>Linum neomexicanum</i>
<i>Blepharoneuron tricholepis</i>	<i>Muhlenbergia emersleyi</i>
<i>Cheilanthes fendleri</i>	<i>Muhlenbergia repens</i>
<i>Chenopodium incisum</i>	<i>Muhlenbergia wolfii</i>
<i>Conyza schiedeana</i>	<i>Muhlenbergia wrightii</i>
<i>Cyperus fendlerianus</i>	<i>Panicum bulbosum</i>
<i>Dracocephalum parviflorum</i>	<i>Pellaea ternifolia</i> var. <i>wrightiana</i>
<i>Drymaria leptophylla</i> var. <i>tenella</i>	<i>Pennellia micrantha</i>
<i>Eragrostis intermedia</i>	<i>Pseudognaphalium macounii</i>
<i>Erigeron speciosus</i>	<i>Saxifraga eriophora</i>
<i>Geranium caespitosum</i>	<i>Solidago spathulata</i> var. <i>neomexicana</i>
<i>Geranium gracile</i>	<i>Stipa pringlei</i>
<i>Gilia</i> cf. <i>mexicana</i>	<i>Thelypodium wrightii</i> subsp. <i>wrightii</i>
<i>Hackelia pinetorum</i>	

Appendix 2. List of taxa endemic to the Sierra San Pedro Mártir (SSPM) and Baja California, Mexico.

Taxon	Region of endemicity
<i>Agave deserti</i> subsp. <i>pringlei</i>	endemic to SSPM and Sierra Juárez
<i>Agave moranii</i>	endemic to SSPM
<i>Allium eurotophilum</i>	endemic to SSPM
<i>Astragalus circumdatus</i>	endemic to Baja CA
<i>Astragalus douglasii</i> var. <i>glaberrimus</i>	endemic to Baja CA
<i>Astragalus gruinus</i>	endemic to SSPM
<i>Astragalus prorifer</i>	endemic to Baja CA peninsula
<i>Brickellia subsessilis</i>	endemic to SSPM
<i>Castilleja ophiocephala</i>	endemic to SSPM
<i>Cirsium trachylomum</i>	endemic to Baja CA
<i>Cordylanthus rigidus</i>	endemic to SSPM and Sierra Juárez
<i>Draba corrugata</i> var. <i>demareei</i>	endemic to SSPM
<i>Dudleya pauciflora</i>	endemic to SSPM
<i>Echinocereus triglochidiatus</i> var. <i>pacificus</i>	endemic to northern Baja CA
<i>Ericameria martirensis</i>	endemic to SSPM
<i>Ericameria parishii</i> var. <i>peninsularis</i>	endemic to northern Baja CA
<i>Erigeron tracyi</i>	endemic to SSPM
<i>Eriogonum hastatum</i>	endemic to SSPM and Sierra Juárez
<i>Eriogonum wrightii</i> var. <i>oresbium</i>	endemic to SSPM and higher peaks of Sierra Juárez
<i>Erythea armata</i>	endemic to SSPM and Sierra Juárez
<i>Festuca bajacaliforniana</i>	endemic to Baja CA
<i>Galium martirensis</i>	endemic to SSPM and Sierra Juárez
<i>Galium wigginsii</i>	endemic to SSPM
<i>Garrya grisea</i>	endemic to Baja CA
<i>Hazardia vernicosa</i>	endemic to Baja CA
<i>Hedeoma martirensis</i>	endemic to SSPM
<i>Hesperocyparis montana</i>	endemic to SSPM
<i>Hesperoyucca peninsularis</i>	endemic to SSPM and Sierra Juárez
<i>Heterotheca brandegei</i>	endemic to SSPM
<i>Ipomopsis effusa</i>	endemic to SSPM and Sierra Juárez plus Imperial Co., CA
<i>Leptosiphon melingii</i>	endemic to Baja CA
<i>Lobelia dunnii</i> var. <i>serrata</i>	endemic to Baja CA
<i>Lotus utahensis</i>	endemic to SSPM and Sierra Juárez
<i>Lupinus latifolius</i> subsp. <i>wigginsii</i>	endemic to Baja CA mountains
<i>Nolina palmeri</i> subsp. <i>palmeri</i>	endemic to SSPM and Sierra Juárez
<i>Packera moranii</i>	endemic to Baja CA
<i>Physaria peninsularis</i>	endemic to SSPM
<i>Poa bajaensis</i>	endemic to SSPM
<i>Potentilla luteosericea</i>	endemic to SSPM
<i>Quercus peninsularis</i>	endemic to northern Baja CA mountains
<i>Senecio martirensis</i>	endemic to SSPM
<i>Sphaeromeria martirensis</i>	endemic to SSPM
<i>Stenotus pulvinatus</i>	endemic to SSPM
<i>Stephanomeria monocephala</i>	endemic to SSPM
<i>Symphoricarpos longiflorus</i> subsp. <i>martirensis</i>	endemic to SSPM and Sierra Juárez
<i>Trifolium wigginsii</i>	endemic to SSPM
<i>Woodsia phillipsii</i>	endemic to SSPM
<i>Xanthisma wigginsii</i>	endemic to SSPM

Appendix 3. Cross-reference aid to names cited in other floristic works, where taxonomic usage differs from that used in this checklist.

Other floristic works	This checklist
<i>Achnatherum coronatum</i>	<i>Stipa coronata</i>
<i>Achnatherum pinetorum</i>	<i>Stipa pinetorum</i>
<i>Agropyron subsecundum</i>	<i>Elymus trachycaulus</i>
<i>Agropyron trachycaulon</i>	<i>Elymus trachycaulus</i>
<i>Agrostis semiverticillata</i>	<i>Agrostis viridis</i>
<i>Antennaria aprica</i>	<i>Antennaria parvifolia</i>
<i>Arabis perennans</i>	<i>Boechera perennans</i>
<i>Arenaria confusa</i>	<i>Arenaria lanuginosa</i> subsp. <i>saxosa</i>
<i>Aristida orcuttiana</i>	<i>Aristida schiedeana</i>
<i>Aster occidentalis</i>	<i>Symphyotrichum spathulatum</i> var. <i>spathulatum</i>
<i>Bahia dissecta</i>	<i>Amauriopsis dissecta</i>
<i>Brahea armata</i>	<i>Erythea armata</i>
<i>Brickellia betonicifolia</i>	<i>Brickellia subsessilis</i>
<i>Brickellia sessile</i>	<i>Brickellia subsessilis</i>
<i>Bromus richardsonii</i>	<i>Bromus ciliatus</i>
<i>Bromus rigidus</i>	<i>Bromus diandrus</i>
<i>Callitropis montana</i>	<i>Hesperocyparis montana</i>
<i>Calyptridium umbellatum</i>	<i>Calyptridium monospermum</i>
<i>Camissonia hirtella</i>	<i>Camissoniopsis hirtella</i>
<i>Carex agrostoides</i>	<i>Carex alma</i>
<i>Carex deflexa</i> var. <i>rossii</i>	<i>Carex rossii</i>
<i>Carex rostrata</i>	<i>Carex utriculata</i>
<i>Castilleja stenantha</i>	<i>Castilleja minor</i> subsp. <i>spiralis</i>
<i>Chenopodium atrovirens</i>	<i>Chenopodium fremontii</i> var. <i>atrovirens</i>
<i>Chenopodium graveolens</i>	<i>Dysphania graveolens</i>
<i>Chenopodium leptophyllum</i>	<i>Chenopodium pratericola</i>
<i>Chrysopsis brandegeei</i>	<i>Heterotheca brandegei</i>
<i>Cirsium tioganum</i>	<i>Cirsium scariosum</i>
<i>Citrullus vulgaris</i>	<i>Citrullus colocynthis</i> var. <i>lanatus</i>
<i>Cordylanthus involutus</i>	<i>Cordylanthus rigidus</i> subsp. <i>involutus</i>
<i>Cryptantha lepida</i>	<i>Cryptantha micrantha</i> var. <i>lepida</i>
<i>Cupressus montana</i>	<i>Hesperocyparis montana</i>
<i>Cyperus aristatus</i>	<i>Cyperus squarrosus</i>
<i>Cyperus inflexus</i>	<i>Cyperus squarrosus</i>
<i>Dalea orcuttii</i>	<i>Marina orcuttii</i> var. <i>orcuttii</i>
<i>Descurainia richardsonii</i>	<i>Descurainia incana</i>
<i>Descurainia richardsonii</i> subsp. <i>viscosa</i>	<i>Descurainia incana</i>
<i>Echinocereus mombergerianus</i>	<i>Echinocereus triglochidiatus</i> var. <i>pacificus</i>
<i>Eleocharis bella</i>	<i>Eleocharis acicularis</i> var. <i>bella</i>
<i>Eleocharis montevidensis</i>	<i>Eleocharis parishii</i>
<i>Eleocharis palustris</i>	<i>Eleocharis macrostachya</i>
<i>Elymus longifolius</i>	<i>Elymus elymoides</i> subsp. <i>brevifolius</i>
<i>Epilobium adenocaulon</i> var. <i>parishii</i>	<i>Epilobium ciliatum</i> subsp. <i>ciliatum</i>
<i>Eragrostis diffusa</i>	<i>Eragrostis pectinacea</i> var. <i>pectinacea</i>
<i>Ericameria arborescens</i> subsp. <i>peninsularis</i>	<i>Ericameria parishii</i> var. <i>peninsularis</i>
<i>Eupatorium herbaceum</i>	<i>Ageratina herbacea</i>
<i>Festuca pacifica</i>	<i>Festuca reflexa</i>
<i>Filago californica</i>	<i>Logfia filaginoides</i>
<i>Frasera parryi</i>	<i>Swertia parryi</i>
<i>Geranium atropupureum</i>	<i>Geranium caespitosum</i>
<i>Gnaphalium bicolor</i>	<i>Pseudognaphalium biolettii</i>
<i>Gnaphalium canescens</i> subsp. <i>microcephalum</i>	<i>Pseudognaphalium microcephalum</i>
<i>Gnaphalium chilense</i>	<i>Pseudognaphalium microcephalum</i>
<i>Gnaphalium stramineum</i>	<i>Pseudognaphalium stramineum</i>
<i>Habenaria dilatata</i> var. <i>leucostachys</i>	<i>Platanthera leucostachys</i>
<i>Haplopappus arborescens</i> subsp. <i>peninsularis</i>	<i>Ericameria parishii</i> var. <i>peninsularis</i>
<i>Haplopappus martirensis</i>	<i>Ericameria martirensis</i>
<i>Haplopappus pulvinatus</i>	<i>Stenotus pulvinatus</i>
<i>Haplopappus squarrosus</i> subsp. <i>grindelioides</i>	<i>Hazardia squarrosa</i> var. <i>grindelioides</i>
<i>Haplopappus venetus</i> subsp. <i>oxyphyllus</i>	<i>Isocoma menziesii</i> subsp. <i>menziesii</i>
<i>Haplopappus wigginsii</i>	<i>Xanthisma wigginsii</i>
<i>Heterotheca martirensis</i>	<i>Heterotheca brandegei</i>
<i>Heuchera leptomeria</i> var. <i>peninsularis</i>	<i>Heuchera rubescens</i> var. <i>versicolor</i>

Appendix 3. Continued.

Other floristic works	This checklist
<i>Hirschfeldia incana</i>	<i>Brassica geniculata</i>
<i>Juncus kelloggii</i>	<i>Juncus tiehmii</i>
<i>Juncus mexicanus</i>	<i>Juncus arcticus</i> var. <i>mexicanus</i>
<i>Juncus sphaerocarpus</i>	<i>Juncus bufonius</i> var. <i>occidentalis</i>
<i>Koeleria pyramidata</i>	<i>Koeleria macrantha</i>
<i>Laënnecia schiedeana</i>	<i>Conyza schiedeana</i>
<i>Lesquerellia kingii</i> subsp. <i>latifolia</i>	<i>Physaria kingii</i> subsp. <i>latifolia</i>
<i>Lesquerellia peninsularis</i>	<i>Physaria peninsularis</i>
<i>Lupinus andersonii</i> var. <i>sublinearis</i>	<i>Lupinus hyacinthinus</i>
<i>Machaeranthera asteroides</i> var. <i>lagunensis</i>	<i>Dieteria asteroides</i> var. <i>lagunensis</i>
<i>Machaeranthera tephrodes</i>	<i>Dieteria asteroides</i> var. <i>asteroides</i>
<i>Machaeranthera wigginsii</i>	<i>Xanthisma wigginsii</i>
<i>Nasturtium officinale</i>	<i>Rorippa nasturtium-aquaticum</i>
<i>Oenothera hookeri</i> subsp. <i>grisea</i>	<i>Oenothera elata</i> subsp. <i>hirsutissima</i>
<i>Ophiocephalus angustifolius</i>	<i>Castilleja ophiocephala</i>
<i>Opuntia phaeacantha</i> var. <i>discata</i>	<i>Opuntia engelmannii</i> var. <i>engelmannii</i>
<i>Panicum oligosanthos</i> var. <i>scribnerianum</i>	<i>Dichanthelium oligosanthos</i> var. <i>scribnerianum</i>
<i>Panicum scribnerianum</i>	<i>Dichanthelium oligosanthos</i> var. <i>scribnerianum</i>
<i>Pellaea wrightiana</i>	<i>Pellaea ternifolia</i>
<i>Phoradendron bolleanum</i>	<i>Phoradendron pauciflorum</i>
<i>Phoradendron juniperinum</i>	<i>Phoradendron libocedri</i>
<i>Piptochaetium pringlei</i>	<i>Stipa pringlei</i>
<i>Polygonum arenastrum</i>	<i>Polygonum aviculare</i> subsp. <i>aviculare</i> and <i>depressum</i>
<i>Potentilla pinetorum</i>	<i>Potentilla luteosericea</i>
<i>Potentilla wheeleri</i>	<i>Potentilla luteosericea</i>
<i>Potentilla wheeleri</i> var. <i>rimicola</i>	<i>Potentilla rimicola</i>
<i>Psoralea orbicularis</i>	<i>Hoita orbicularis</i>
<i>Psoralea rigida</i>	<i>Rupertia rigida</i>
<i>Rhamnus californica</i> subsp. <i>tomentella</i>	<i>Frangula californica</i> subsp. <i>tomentella</i>
<i>Rumex californicus</i>	<i>Rumex salicifolius</i> var. <i>denticulatus</i>
<i>Sambucus mexicana</i>	<i>Sambucus nigra</i> subsp. <i>caerulea</i>
<i>Senecio moranii</i>	<i>Packera moranii</i>
<i>Sisyrinchium bellum</i>	<i>Sisyrinchium idahoense</i>
<i>Sitanion hystrix</i>	<i>Elymus elymoides</i> subsp. <i>brevifolius</i>
<i>Sitanion longifolium</i>	<i>Elymus elymoides</i> subsp. <i>brevifolius</i>
<i>Smilacina stellata</i>	<i>Maianthemum stellatum</i>
<i>Solanum saccharoides</i>	<i>Solanum physalifolium</i> var. <i>nitidibaccatum</i>
<i>Solidago californica</i>	<i>Solidago velutina</i> subsp. <i>californica</i>
<i>Stellaria lagunensis</i>	<i>Arenaria lanuginosa</i> subsp. <i>saxosa</i>
<i>Stuckenia pectinata</i>	<i>Potamogeton pectinatus</i>
<i>Symphoricarpos oreophilus</i>	<i>Symphoricarpos longiflorus</i> subsp. <i>martirensis</i>
<i>Tanacetum bajacalifornicum</i>	<i>Sphaeromeria martirensis</i>
<i>Tanacetum martirensis</i>	<i>Sphaeromeria martirensis</i>
<i>Vulpia bromoides</i>	<i>Festuca brachyphylla</i>
<i>Vulpia microstachys</i> var. <i>ciliata</i>	<i>Festuca reflexa</i>
<i>Vulpia microstachys</i> var. <i>pauciflora</i>	<i>Festuca reflexa</i>
<i>Vulpia myuros</i> var. <i>hirsuta</i>	<i>Festuca megalura</i>
<i>Vulpia octoflora</i>	<i>Festuca octoflora</i>
<i>Yucca whipplei</i> subsp. <i>eremica</i>	<i>Hesperoyucca peninsularis</i>
<i>Zauschneria californica</i> subsp. <i>latifolia</i>	<i>Epilobium canum</i> subsp. <i>latifolium</i>
Asclepiadaceae	Apocynaceae
Scrophulariaceae	Orobanchaceae, Phrymaceae, or Plantaginaceae
Lemnaceae	Araceae
Liliaceae	Agavaceae, Alliaceae, or Nolinaceae

Map 1. Collection localities in the Sierra San Pedro Mártir.

Map 2. Distribution ranges of all conifers in the Sierra San Pedro Mártir.

Great Basin Sage Scrub

Wet Meadows

Mountain-Mahogany Chaparral

Timberland Chaparral

Maps 3–6. Distribution ranges of dominant shrub assemblages in the Sierra San Pedro Mártir.—3. Range of Great Basin sage scrub (*Artemisia tridentata*).—4. Range of wet meadows.—5. Range of mountain-mahogany (*Cercocarpus ledifolius*).—6. Range of timberland chaparral.

Chamise Chaparral

Manzanita Chaparral

Peninsula Manzanita

Red-shank Chaparral

Maps 7–10. Distribution of chaparral vegetation in the Sierra San Pedro Mártir.—7. Range of chamise chaparral (*Adenostoma fasciculatum*).—8. Range of manzanita chaparral (*Arctostaphylos patula*).—9. Range of peninsula manzanita (*Arctostaphylos peninsularis*).—10. Range of red-shank chaparral (*Adenostoma sparsifolium*).

Coulter Pine

Mixed Lodgepole Pine

Four-needle Pinyon

Single-leaf Pinyon

Maps 11–14. Distribution of conifers in the Sierra San Pedro Mártir.—11. Range of Coulter pine (*Pinus coulteri*).—12. Range of mixed lodgepole pine (*Pinus contorta* subsp. *murrayana*, with Jeffrey pine [*P. jeffreyi*]).—13. Range of four-needle pinyon (*Pinus quadrifolia*).—14. Range of single-leaf pinyon (*Pinus monophylla*).

Jeffrey Pine

Mixed Incense Cedar

Mixed Mountain Cypress

Mixed White Fir

Maps 15–18. Distribution of conifers in the Sierra San Pedro Mártir.—15. Range of Jeffrey pine (*Pinus jeffreyi*).—16. Range of mixed incense cedar (*Calocedrus decurrens*, with white fir [*Abies concolor*] and Jeffrey pine).—17. Range of mixed mountain cypress (*Hesperocyparis montana*, with white fir and Jeffrey pine).—18. Range of mixed white fir (with sugar pine [*Pinus lambertiana*]).

Quaking Aspen

Coast Live Oak

Golden-cup Oak

Peninsular Oak

Maps 19–22. Distribution of hardwood trees in the Sierra San Pedro Mártir.—19. Range of quaking aspen (*Populus tremuloides*).—20. Range of coast live oak (*Quercus agrifolia*).—21. Range of golden-cup oak (*Quercus chrysolepis*).—22. Range of peninsular oak (*Quercus peninsularis*).