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**Vascular Plants of the High Sierra San Pedro Mártir, Baja California, Mexico: an Annotated Checklist**

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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.

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 endémicos 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 rango 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.
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-Vizcaíno 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), chaparral (Map 7), manzanita chaparral (Map 8), peninsula manzanita (Map 9), red-shank chaparral (Map 10), couter 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), occurs locally along watercourses, mostly on the eastern escarpment from “Cerro 2040” in the south.

The eastern escarpment above 1800 m is covered by extensive woodlands of Pinus jeffreyi (Map 13), mostly in association with peninsula manzanita chaparral. Below 1500 m, Pinus jeffreyi is replaced by P. monophylla, one-needle pinyon (Map 14), with understory of desert chaparral dominated by Arctostaphylos pensinularis, 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, Pinus jeffreyi forest gives way to continuous, floristically richer forests that cover hillside terrains as well as floor basins. 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 jeffreyi 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 Tassajera. 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 pensinularis (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 Peninsula manzanita chaparral also extends onto the upper catchments of the eastern escarpment (Map 9).

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 chumise and red-shank chaparral. Two small colonies of Coulter pine, Pinus coulteri (Map 11), grow in dense Arctostaphylos pensinularis chaparral (Map 9) in the far north and at “Cerro 2040” in the south.
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).

<table>
<thead>
<tr>
<th>Species</th>
<th>Elevation</th>
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<tbody>
<tr>
<td>Astragalus graminus, Berula erecta, Cirsium tiogamum, 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.</td>
<td></td>
</tr>
<tr>
<td>Plant Collections</td>
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</tbody>
</table>
| 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 (SDM), 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://bajaflora.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 SSSP 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 Edward 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 Pasos Matias (29 Jun) to El Pitín, the headwaters of Rio San Rafael, Vallecitos, La Grulla, Rancho Santo Tomás, Rancho San Antonio (28 Jul), and out to San Quintin. 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 Sierrita 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 Corral de Sam to Vallecitos, Los Llanitos, La 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 Sierrita 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).

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**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 and lower ranks were Wiggins (1980) and Hickman (1993), with 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.

**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. 2000b), and final maps were generated by Robert Johnson of the Center for Conservation Biology at the University of California at Riverside.

**ANOTATED 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.bajaflora.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 wigginsii 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.

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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.
Ferns and Fern Allies

Lyco podiae

Selaginellaceae

Selaginella asprella Maxon. Common and locally abundant perennial mat-former on rocky outcrops between 2430 and 3075 m; Cañon 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.F. Moran 25602 (RSA, SD); N to the southern Sierra Nevada, but E through AZ to NM, OK, and SC, also in Eurasia. Not recorded in Wiggins (1980).

Filicae

Aspleniaceae

Asplenium septentrionale (L.) Hoffm. Rare perennial, only La Encantada in north-facing crevices of granitic boulder, 2200 m, 19 Aug 1967, R.F. 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).

<table>
<thead>
<tr>
<th>Locality</th>
<th>Elevation</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alto de Corona (La Corona de Arriba, Prado de Corona)</td>
<td>2200–2500 m</td>
<td>31°00’N–115°34’W</td>
</tr>
<tr>
<td>Arroyo Copal</td>
<td>2000–2050 m</td>
<td>30°53’N–115°32’W</td>
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<tr>
<td>Arroyo La Zanja (La Sanca Creek)</td>
<td>1850–2500 m</td>
<td>31°00’N–115°24’W</td>
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<tr>
<td>Arroyo San José (upper part) Cañón del Diablo</td>
<td>1800–2100 m</td>
<td>30°49’N–115°20’W</td>
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<tr>
<td>Cañada el Cajon</td>
<td>2040 m</td>
<td>30°40’N–115°21’W</td>
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<tr>
<td>“Cerro 2040”</td>
<td>2600–2940 m</td>
<td>30°58’N–115°23’W</td>
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<tr>
<td>“Cerro Botella Azul”</td>
<td>1850 m</td>
<td>30°35’N–115°14’W</td>
</tr>
<tr>
<td>“Cerro Chato”</td>
<td>2500 m</td>
<td>30°56’N–115°24’10’W</td>
</tr>
<tr>
<td>“Cerro La Encantada”</td>
<td>2700–2840 m</td>
<td>31°02’30’N–115°28’W</td>
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<tr>
<td>“Cerro Observatorio 2828” (“Cerro de La Cupula”)</td>
<td>2650–2810 m</td>
<td>31°05’N–115°29’W</td>
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<tr>
<td>Corral de Sam</td>
<td>2000–2100 m</td>
<td>31°05’N–115°55’W</td>
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<tr>
<td>Corral Meadow</td>
<td>2550 m</td>
<td>31°06’45’N–115°29’50’W</td>
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<tr>
<td>Dead Horse Meadows</td>
<td>2650 m</td>
<td>31°05’20’N–115°29’50’W</td>
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<td>Head of Arroyo Copal</td>
<td>2600–2660 m</td>
<td>30°03’30’N–115°27’40’W</td>
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<tr>
<td>La Corona de Abajo</td>
<td>2000–2100 m</td>
<td>30°57’N–115°36’W</td>
</tr>
<tr>
<td>La Corona de Arriba (Alto de Corona, Prado de Corona, Upper Corona)</td>
<td>2200–2500 m</td>
<td>31°00’N–115°34’W</td>
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<tr>
<td>La Encantada (Fig. 4, 5)</td>
<td>2200 m</td>
<td>30°55’N–115°24’W</td>
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<tr>
<td>La Grulla (Fig. 6, 9)</td>
<td>2100 m</td>
<td>30°54’N–115°27’W</td>
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<tr>
<td>La Tasajera</td>
<td>2200–2500 m</td>
<td>30°57’N–115°30’43’W</td>
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<tr>
<td>La Vibora, Arroyo de La Grulla</td>
<td>1900 m</td>
<td>30°52’N–115°30’30’W</td>
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<td>Los Llanitos (S of Upper Vallecitos) (Fig. 5, 8, 10)</td>
<td>2300–2500 m</td>
<td>30°58’N–115°26’W</td>
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<tr>
<td>North of Vallecitos</td>
<td>2460–2650 m</td>
<td>31°01’30’N–115°21’30’W</td>
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<tr>
<td>(Oak Pasture)</td>
<td>1650–1750 m</td>
<td>30°59’N–115°37’W</td>
</tr>
<tr>
<td>Park entrance (near La Corona de Abajo)</td>
<td>2080 m</td>
<td>30°57’30’N–115°35’10’W</td>
</tr>
<tr>
<td>(Paso San Matías)</td>
<td>920–1050 m</td>
<td>31°19’N–115°30’W</td>
</tr>
<tr>
<td>Picacho del Diablo (Fig. 1)</td>
<td>2550–3095 m (peak)</td>
<td>30°59’30’N–115°22’30’W</td>
</tr>
<tr>
<td>(Rancho San José = Rancho Meling) (Fig. 15, 17)</td>
<td>650 m</td>
<td>30°59’N–115°44’W</td>
</tr>
<tr>
<td>(Rancho San Pedro Mártir)</td>
<td>1700 m</td>
<td>31°03’N–115°36’W</td>
</tr>
<tr>
<td>Rancho Viejo</td>
<td>2100 m</td>
<td>30°55’30’N–115°27’50’W</td>
</tr>
<tr>
<td>Ridge E of “Cerro Observatorio”</td>
<td>2780 m</td>
<td>31°02’30’N–115°27’W</td>
</tr>
<tr>
<td>Rio San Antonio</td>
<td>700 m</td>
<td>30°48’N–115°39’W</td>
</tr>
<tr>
<td>Santa Ealiana</td>
<td>1850 m</td>
<td>30°41’N–115°18’W</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>2050 m</td>
<td>30°48’N–115°21’W</td>
</tr>
<tr>
<td>Upper Rio San Rafael</td>
<td>2400–2560 m</td>
<td>ca. 31°05’N–115°30’W</td>
</tr>
<tr>
<td>Upper Vallecitos</td>
<td>2430–2650 m</td>
<td>31°00’N–115°29’W</td>
</tr>
<tr>
<td>Vallecitos (Fig. 7, 16)</td>
<td>2280–2480 m</td>
<td>31°01’N–115°28’W</td>
</tr>
<tr>
<td>Yerba Buena</td>
<td>2460–2650 m</td>
<td>31°02’N–115°27’30’W</td>
</tr>
</tbody>
</table>

**BLECHINACEAE**

**WOODWARDIA Fimbriata** Sm. Infrequent perennial, along stream in Upper Cañón del Diablo, 1700–2030 m; 2030 m, 4 May 1978, R. F. 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. Rehmeyer 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. F. Moran & R. F. Thorne 14472 (RSA, SD); La Tasajera, La Encantada, upper Vallecitos Meadow, 2430 m, 1 Sep 1985, R. F. Thorne 57283 et al. (RSA) and S, and Cerro Venado Blanco; distributed widely in western North America to AK, MT, TX, and Mexico.

**Drepanopteridaceae**

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

**Drepanopteris filix-mas** (L.) Schott. Rare perennial, only by waterfall in upper Cañón del Diablo, 2050 m, 4 May 1978, R. F. 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).

**Woodia 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).

**Woodia Phillipsii** Windham. Apparently frequent perennial fern restricted to SSSP, 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. Rehmeyer 16012 (SD); Cerro Venado Blanco, S summit ridge, 2750 m, 15 Sep 1968, R. F. Moran 15653 (SD); Cerro Venado Blanco and Cerro Observatorio and ridges to N and E, 2750 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 25600 (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. Rehmman 16015 (SD); 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.

Polyvodiaceae

Polypodium hyspericum Mason. 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 m S of Observatory, up canyon with intermittent stream en route to Pedro’s Dome, 2430 m, 30 Sep 2008, J.P. Rehmman 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 wootonii Mason. 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, UCR); S to near ruins of S. Boyd 2814 et al. (RSA, UCR) and Cerro Observatorio with A. C. Sanders 7943 et al. (RSA, UCR); above 2256 m, 9 Jun 1962, J.D. Rehmman 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).

Pellaea muckenata (D.C.Eaton) D.C.Eaton var. muckenata. Frequent wiry perennial of dry rocky places, 760–2500 m; Cañón del Diablo, Prado de la Corona, N of Vallecitos, 2460 m, 19 Jan 1985, R.V. Moran 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 (Cay.) 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 Mártrir (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 (Callitropsis 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 Carriére. 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. maysana (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. Miners. 
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 2200 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. Gartil 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.

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 Rio San Antonio where trees were collected by Wiggins (1944: 291) and Moran in 1967, and observed there by Crespi in 1979 (see Minnich and Franco-Vizcaíno 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 11 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 Víbora and ridge west 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. to CA 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 higher elevations to 2000 m; La Grulla, 2100 m, 22 Aug 1967, R.V. Moran & R.F. Thorne 14415 (RSA, SD); head of Arroyo Copal, 2500 m, 15 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.

Pinus quadrifolia Parf. 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

Amaranthaceae

Amaranthus albus L. Tumbleweed. Rare erect weakly 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. gracizans L. misapplied). Rare weedly 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 weakly 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, 14551 (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

Apocynaceae (incl. Asclepiadoideae)

Apocynum androsaemifolium L. Bitter dogbane. A rare perennial collected from Vallecitos, 2439 m, 1 Sep 1985, E.A. Goldman 1221 (SD); species not seen by us in Baja California (Mexico); 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 Rio 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).

Sphenocidium 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).

Amaranthus albus L. Tumbleweed. Rare erect weakly 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.
Apoponium cannabarium L. (vul. 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 14401 (RSA, SD); Juárez and CA to WA and E to Atlantic Coast. Not recorded in Wiggins (1980).

Asclepias eriocarpa Benth. Kototo, Indian milkweed. Rare erect perennial, sandy meadows and margins of pine forest, 2100–2280 m; Arroyo La Grulla, 2100 m, 3 Jul 1972, R.V. Moran 19181 (RSA, SD) and Vallecitos, 2286 m, 25 Sep 1930, J.L. Wiggins & D. Denareae 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, J.L. Wiggins & D. Denareae 4909 (POM); Jul–Aug; N through CA to WA, ID, and E to TX and Mexico.

Araliaceae

Hydrocotyle ranunculoides L. 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, J.L. Wiggins & D. Denareae 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 1998, 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.

Agaritana herbacea (A.Gray) R.M.King. & H.Rob. (Eupatorium herbaceum (A.Gray) Greene). Common perennial of rocky slopes, 2000–2800 m; below Alto de Corrales, 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 the 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. Infre-quent perennial of dry places, 1700–2200 m, head of Prado de la Tasajera, 2285 m, 15 Sep 1998, J.P. Rebman 15988 (SD); also collected by T. Ross 2539 (POM); Jul–Oct; N to southern Sierra Nevada of CA and E to CO, OK, TX, and Sonora (Mexico).

Asteriscus denticulatus (Nutt.) subsp. inomptus (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 TX, TX and Sonora (Mexico).

Asteriscus tridentatus (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 Rio 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 Rio 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 21235 (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); Cerro Botella Azul, Cerro Venado Blanco, and Cerro Observatorio, and Picacho del Diablo; Jul–Oct; N through CA to NV and UT and E to Sonora (Mexico).

Baca neomexicana A.Gray (Sphacelotheca 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 TX, and northern Mexico, also Southern America.

Baileyella plurinodiflora Hayv. & 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. Beggars’ tick. Frequent annual of open pine forests and margins of meadows, 2200–2800 m; La Encantada, 2200 m, 18 Sep 1930, J.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 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 15514 (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. 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. betonicaeflora 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. Rehman 5601 (SD); Endemic to SSPP, only recognized under B. betonicaeflora (B. Turner pers. comm.).

*Chamaenerion Parishii* A.Gray. Parish’s chamaenerion. Infrequent perennial of open pine forests, 1800–2200 m; La Grulla, La Tasañera, and on road to Corral de Sam, 1850 m, 2 Jun 1968, R.V. Moran 15090 (RSA, SD); above Rancho San Pedro Mártr, W of La Corona de Abajo, 2000 m, 3 Jul 1973, R.V. Moran 21093 (RSA, SD); Jun–Jul–Sept; N through Sierra Juárez to nts. of Riversides Co., CA.

*Chrysothamnus nauseosus* (Fall.) 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.

*Chrysopsis occidentale* (Nutt.) Jeps. var. *californicum* (A.Gray) D.J.Keil & C.E.Turner. California thistle. Rare and locally abundant annual to perennial, above Rancho San Pedro Mártr, 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).

*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 (Laennecia schiedeana (Less.) G.L.Neesom). 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).

*Dietes asteroides* Torr. var. *asteroides* (Machaeranthus tepheredes* (A.Gray) Greene). Above Rancho San Pedro Mártr 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.).


*Dietes canescens* (Pursh.) Nutt. var. *canescens*. Rare annual to perennial, above Rancho San Pedro Mártr, on road to Sam’s Corral, 2000 m, 16 Sep 1967, R.V. Moran 14553 (SD); N through CA to OR and E to MO, IL, and AL. Not recorded in Wiggins (1980).

*Eriogonum brachylipem* (A.Gray) H.M.Hall. Boundary goldenbush. Rare, above Rancho San Pedro Mártr, 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).

*Eriogonum martirensis* Wiggins (Haplopappus martirensis (Wiggins) S.F.Blake). Common endemic subrub of granitic crevices, 2000–3050 m; and 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 Tasañera, Corral Meadow, above Yerba Buena, Cerro Venado Blanco, and Cerro Observatorio, 2780 m, 1 Sep 1985, R.V. Thorne 61445 et al. (RSA); and Peachu del Diablo (2525–3050 m); Aug–Sep; apparently restricted to SSPP.

*Eriogonum parishii* (Greene) H.M.Hall var. *peninsularis* (Moran) G.L.Neesom. (Eriogonum 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. Rehman 5316 (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.

*Eregeron 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 Tasañera, 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 14194 (RSA, SD); valleys between Cerro Venado Blanco and Cerro
HETEROTHICA BRANDEGEI (Robins. & Greenm.) Semple (Chrysopis brandegeei L.B.Kob. & Greenm., H. martirensis Moran). Gold-enaater. Common and locally abundant endemic perennial mat-forming 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.V. Thorne 14257 (RSA); La Tasajera, Los Llanitos, 2500 m, 17 Aug 1985, R.V. Moran & R.F. Thorne 14257 (RSA, SD); 4 km W of Valley of Vejotes 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).
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 Observatorio, ca. 1.1 mi S of ranch at base of Cerro Venado Blanco, 2345 m, 15 Sep 1995, J.P. Rehmam 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.) Stiebbs & 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 WA and British Columbia (Canada) and E to CO.

**Senecio martiresis** T.M.Barkley. Martir ragwort. Frequent endemic perennial of open sandy flats and rocky slopes, 2400–3080 m; La Corona de Arriba, Vallecitos, 2550 m, 16 Aug 1967, R.V. Moran & R.F. Thorne 14724 (RSA, SD); and 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).

**Seneciospartioides** Scott & 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 1995, J.P. Rehmam & B. Vinton 5561 (RSA, SD); Vallecitos, and Los Llanitos, 2600 m, 17 Aug 1967, R.V. Moran & R.F. Thorne 14724 (RSA, SD); Jul-Sep; N through high mts. to Inyo through White mts. of CA and E to Rocky Ms.

**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, NWW of Observatorio and E of ranch at base of Cerro Venado Blanco, along canyons toward E edge of escarpment, 2345 m, 16 Sep 1998, J.P. Rehmam 5608 (SD); N slope, N side of Cerro 2828, 2820 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 24363 (RSA, SD); and Picacho del Diablo (to 3100 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. california (Nutt.) Semple (S. californica Nutt.). California goldenrod. Common rhizomatous perennial on rocky slopes of arroyos, 900–2840 m; La Corona de Abajo and W; 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.

**Tecomas 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.

**Spyreromeria martiresis** (Wiggins) A.H.Holmgren, L.M.Shultz & Lowrey (Tanacetum martiresis Wiggins, T. baiocalifornicum Moran). Frequent endemic perennial mat-former “in rock crevices and in gravely 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 25690 (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. Rehmam 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 monoscela** 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, 2500–2550 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 teniusfolia** (Raft.) 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 Ángeles through CA to western NV and OR.

**Symphyotrichium spatulatum** (Lindl.) G.L.Nesom var. spatulatum (Aster occidentalis (Nutt.) Torr. & A.Gray). Rare rhizomatous perennial, meadow along road to Tassajera ca. 1.7 mi S of Observatory road in Vallecitos, 2445 m, 1 Oct 2008, J.P. Rehmam 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.

XANTHISMA wigginsi (S.F.Blake) D.R.Morgan & R.L.Hartm. (Machaeranthera wigginsi (S.F.Blake) R.L.Hartm.; Haplomappus wigginsi 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 57253 et al. (RSA); and Yerba Buena; Aug-Sep; apparently restricted to SSPM.

BERBERIDACEAE

BERBERIS hoggii '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 MIRAN ANTA (Toit.) I.M.Johnst. var. LEPIDA (A.Gray) I.M.Johnst. (C. mirantha 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. 2100 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. & Arm.) 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 Obervatorio; 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. Sticksseed. Infrequent perennial, collected only on rocky slopes of Cerro Obervatorio, 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).

PLAGIOBOTHrys COLLINUS (Phil.) I.M.Johnst. var. fulvescens Higgins. La Grulla, 2300 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. Rebmam 16047 (SD). N from Sierra San Borja to southern CA and E to AZ and Mexico, also Chile. Not recorded in Wiggins (1980).

PLAGIOBOTHrys COLLINUS (Phil.) I.M.Johnst. var. urinaria (A.Gray) Higgins. Popcornflower. Rare annual in Jeffrey pine forest at Santa Eulalia, 1830 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

BARBERA 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).

BROCHERA PERENNANS (S.Watson) W.A.Weber (Arabis perennans S.Watson). Rockcress. Frequent perennial on shaded rocky slopes, 2690–2650 m; upper Arroyo San José, Cañón del Diablo, above Arroyo Copial, 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 GENCULATAS* (Del.) J.Ball (Hirschfeldia incana (L.) Lagr.-Foss.). Rare erect biennial weed, only on barren 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 (Rydhl.) 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 14423 (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 OBSURA (Greene) O.E.Schulz (incl. subsp. adenosiphora (Wooton & Standl.) Detling and subsp. obscura). Infrequent annual on sandy flats, 1900–2550 m; Santa Eulalia, 1850 m, 4 Jun 1963, R.V. Moran 11149 (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); La Corona de Arriba, and Picacho del Diablo; Jun-Sep; variety apparently restricted to SSPM.

ERYTHRIS CAPITATA (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.

HUTCHINSONIA PROCUMBENS (L.) Desv. Rare annual, only La Grulla in sandy meadow, 2135 m, 1 Jul 1982, R.V. Moran 80970 (SD) and 1 mi W of former Misión San Pablo Mártr, 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 Mártr,” 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. Rebmam 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. RIBBONISE (Thell.) C.L.Hitchc. Rare peperwort. Vallecitos, 2475 m, 9 Aug 1969, Witham 375 (SD). N to southwestern CA.

PENNELLIA MIRAN ANTA (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 Juarez, N to desert ranges of CA, UT, and NV.

PHYSARIA PENNINSULARIS (Wiggins) O’Kane & Al-Shehbaz (LESQUERELLA PENNINSULARIS 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.

ROHIPP CUVIERIQUA (Hook.) Bessey ex Britton. Yellow cress. La Vibora, Arroyo La Grulla 4 km SW of La Grulla, 1980 m, 9 Aug 1977, R. V. Moran 24411 (SD). N through Sierra Juárez and CA to AK and E to Rocky Mts. *ROHIPP 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 14299 (RSA, SD); more frequent at lower elevations; May-Aug; naturalized from Eurasia.

ROHIPP TENEREEMA 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 jewelweed. 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, C. A.Gray subsp. vagans (DH, POM); Arroyo Copal, and La Encantada; more frequent at lower elevations; May–Jun; N from Sierra Juárez to cismontane areas of central CA.

THELYPSODIUM 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 S.Boyd & T. Ross 2752). 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-pea. 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 617 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. GRAINEA (Lam.) McVaugh). Cardinal flower. Rare showy erect annual of moist places, only at Vallecitos, 2285 m, 25 Sep 1930, I.L. Wiggins & D. Demaree 5166 (DH, POM); and lower at La Joya, 1580 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 DUNNI Greene var. SERRATA (A.Gray) McVaugh (var. DUNNI). 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. var. DENUTATA Rehder and Johnstoni 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 LONGIFOLUS A.Gray subsp. MARTINENSES (S. OEDIPHILUS 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 (2300–2623 m), head of Arroyo Copal, Corral Meadow, Yerba Buena, upper Rio San Rafael, Los Llanitos, Cerro La Encantada, Cerro Venado Blanco, and Cerro Observatorio; and ridge to E, and western slope of Pecacho 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 RUFUNDIFOLIUS A.Gray var. PARISHII (Rydby) Demp. Rare trailing shrub; S of Vallecitos near Cerro la Botella Azul, 2440 m, 27 Jun 1998, J.P. Rebman 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 LANCINOSA (Michx.) Rohrb. subsp. SAXOSA (A.Gray) Maguire (A. CONFINA Rydby; STELLARIA LAGUNENESIS 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.

DRYMAThea LEPTOPHYLLA (Cham. & Schltdl.) Fenzl ex Rohrb. (incl. var. TENELLA (A.Gray) D.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, 2235 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.V. Thorne 61497 et al. (RSA); and Picaacho 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.F. Thorne 57300 (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 (SD, RSA); 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. desiccatum 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 (Rydby) Foshger (C. atrovirens Rydby). Goosefoot. Common erect annual of sandy pine forests and rocky granite 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 61359 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 hians 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 incanum 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, 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 eastern US. Not recorded in Wiggins (1980).


*Salsola tragus L. (S. australis R.Br.). Russian thistle. Rare introduced annual weed on roadside in burn above La Corona de Abajo, 2000 m; 21 Jul 1988, S. Boyd et al. 2828 (RSA); Jun-Oct; naturalized from Eurasia.

Crassulaceae

Dudleya pauciciflora 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 57500 et al. (RSA); and ridge to E of latter, and Picaacho 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 Cañon 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 15313 (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.

**Datiscaeaceae**

*Datisca glomerata* (Pers.) Baill. Durango root. Infrequent perennial, 1.1 mi SE of Mike’s Sky Ranch along Rio San Rafael, 1280 m, 11 Aug 1998, Rehman 5509 (SD); canyon ca. 2 mi above Rancho San Pedro Mártir, 1730 m, 31 Jul 1970, R. V. Moran 1986 (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. *platypylla* (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 62063 et al. (RSA); La Corona de Arriba, Jeffrey pine flat 2 km of Cerro 2040, La Tasajera, S of Upper Vallencitos, 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 (2000–3200 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, J.L. Wiggins & D. Demaree 5021 (DH, RSA). Not recorded in Wiggins (1980).

*Arctostaphylos peninsularis* P.V.Wells. Peninsular 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 62064 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 1986, R. V. Moran 15445 (SD); also Cerro 2040, W of Cerro de San, 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* Pary subsp. *drupacea* (Pary) 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 62060 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 Vallencitos, 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).

*Petrosora andromedea* Nutt. Pinedrops. Rare slender mycohyte, observed but not collected by David Charlton, Dennis Kueber, and Dave Bramlett in pine forest on northern 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.) med., 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 mycohyte in open forest, 2200–2473 m; Upper Vallencitos, La Tasajera, Vallencitos and above, 2430 m, 18 Jun 1985, R.F. Thorne 60875 et al. (RSA); 3 mi ESE of La Corona de Arriba, Corral Meadow, Los Llanitos, 2600 m, 26 Jun 1986, J.P. Rehman & R. Sousa 3277 (RSA, SD); Yerba Buena, and southern slope of Cerro Venado Blanco; May–Jun; N through CA and NV to OR.

**Euphorbiaceae**

*Euphorbia palmeri* S.Watson. Spurge. Common, clumped perennial of open pine forests, 1450–2650 m, La Tasajera, Vallencitos 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 61963 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 serpillifolia* Potts. Prostrate spurge. Infrequent prostrate annual, 2200–2450 m, La Encantada, 2200 m, 19 Aug 1967, R.V. Moran & R.F. Thorne 14420 (RSA, SD) and NW; and Upper Vallencitos 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**

*Amarpha 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, Vallencitos, 2460 m, 19 Jun 1985, R. V. Thorne 60947 et al. (RSA) and above, Los Llanitos, 2200 m, 27 Jun 1996, J.P. Rehman & R. Sousa 5293 (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, Vallencitos, 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 Guerreru; 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 grunus* Barneby. Abundant endemic perennial of sandy meadows and open pine forests, 1800–2640 m, W of and at La Corona de Abajo, Arroyo Copal and above, La Encantada, La Tasajera, Upper Vallencitos, 2430 m, 18 Jun 1985, R.F. Thorne 61972 et al. (RSA); Corral Meadow, Vallencitos (type locality), Yerba...
Lupinus rigidosus (Benth.) Greene. Frequent erect perennial of sandy chaparral, 760–2200 m, 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 SSSP foothills and Sierra Juárez to Inyo Co., CA, and NV and E to AZ, UT and NM.

Lupinus 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. Ohmsd 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 SSSP foothills and Sierra Juárez to central CA and AZ.

Lupinus utahensis Otley var. 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); head of Arroyo Copal, Cerro Venado Blanco and Cerro Observatorio, and ridges between them; Jul–Sep; apparently restricted to SSSP 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 to CA through British Columbia (Canada) and naturalized in AZ.

Lupinus exsertus M.E.Jones subsp. astromontanus (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 SSSP 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. sublineares C.P.Sm.). Abundant erect perennial of rocky slopes, 2200–2840 m, 2 m E of La Corona de Abajo, La Encantada, 2280 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 lutifolius J.Agardh subsp. wigginii (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).

Lupinus orchutii (S.Watson) Barneby var. orchutii (Dalea orchutii 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); and 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 3467 (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 &
22 Thorne, Moran, and Minnich

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 1432 (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 WIGGINIS 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 WORMSKIIHOLDI Lehmann. 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. Rehmhan 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 AGROFOLIA Nees var. ocxadenia (Torto.) 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 runs at 1200–1400 m (30'47'11"S 330'W); also Cañada el Pinacate, 1000 m, 23 Aug 1977, R.V. Moran 24593 (SD); and 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 Martín; Mar–Apr; variety N through Sierra Juárez to southern CA. See Map 20 for range in SSPM.

QUERCUS CHRYSELEPHI 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 granite, but uncommon on metamorphic rocks except on the steepest slopes of the upper E escarpment; Apr–Jun; N from Sierra Assemblea 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 14174 (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. emoity of AZ, NM, and northwestern Mexico. See Map 22 for range in SSPM.

QUERCUS TURBINELLA Greene subsp. turrinella. Shrub live oak. Rare, Cerro Chato, N slope, 1900 m, 3 Jun 1963, R.V. Moran 11113 (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 WISLEZIANI A.D.C. var. Frutescens Engelmann. Interior live oak. Infrequent large shrub of chaparral, 1850–2000 m, Sierra 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 San with Cleothodes leucoderms and Arcostaphylos penninsulare; Apr–May; N through mts. of southern CA to northern CA. Not recorded in Wiggins (1980).

GARRYACEAE

GARRYA FLAVESCENS W.Sawson 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 Virgenes 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 et al. 31989 et al. (RSA); more common at lower elevations in chaparral, as below La Corona de Abajo, 1675 m, 18 Jun 1985, R.F. Thorne 60790 et al. (RSA); (Nov) Apr–May; N from Isla Cedros and Sierra Libertad to Cerro Blanco, Cerro Bola, Sierra Juárez southern CA.
GENTIANACEAE


Swertia parryi (Tott.) Kurizké (Fraseria parryi Tott.). Green gentian (Fig. 13). Infrequent erect perennial, Vallecito de la Canoa, 1900 m, 22 Aug 1967, R.V. Moran & R.F. Thorne 14503 (RSA, SD) and below La Corona de Abajo, 1900 m, on decomposed granite 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).

HYDROPHYLLACEAE

Erodectyon angustifolium Nutt. Narrow-leaved yerba santa. Common and locally abundant shrub of rocky, granitic slopes, 600–2650 m, Canón del Diablo (625–1975 m), S fork Rio San Rafael, Arroyo Copal, from W of to above La Corona de Abajo, 2650 m, 18 Sep 1985, 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 Virgenes and Sierra San Borja through Sierra Juárez to eastern Mojave Desert, CA, NV, and AZ and E to UT.

Nama dichotomum (Ruiz & Pas.) 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 PENDUNCULATA 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 15041 (SD); Apr–Jun; N from Volcán Las Tres Virgenes 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 5338 (SD); Apr–Jun; N from Desierto de Vizcaíno 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 57226 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).

Puccinellia microphylla A.Gray subsp. stramineus (Rydby.) C.L.Hitch. 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 lake, 2780 m, 1 Sep 1985, R.F. Thorne 91462 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.
sand near stream, 1900 m, 10 Aug 1977, R. V. Moran 2468 (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** Kutch subsp. socileri (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 at La Joya on Valliades Creek, 1473 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).

**Hedimia 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 60859 et al. (RSA); and Picacho del Diablo; Jun–Jul; apparently restricted to SSMP. 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. Leon de la Luz 9955 (JCHB); 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. Emberger 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 15906 (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 augoides** 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.

**Tachostema lancelatum** Benth. Bluecurls. Rare erect perennial, 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).

**Thymostema parviflorum** 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.

**LONICERACEAE**

**Pilosia arenaria** Nutt. ex Hook. Sand-food. Rare, fleshy parasite, on road to Parque Nacional de SSMP, 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, 1830 m, 29 May 1982, Yatskievych 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.V. 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, 2000–2650 m; Corral de Sam, La Encantada, Vallecitos and above, above Yerba Buena, 2650 m, 16 Aug 1967, R.V. Moran & R.F. Thorne 14201 (RSA); 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 Catavilia to Sierra Juárez to northern CA, and E to central US and northern Mexico.

MALVACEAE

FREMONDENDORON CALIFORNICUM (Torr.) Coville. Fremontia, flannelbush. Infrequent shrub of chaparral, 1800–2040 m; Corral de Sam, 1800 m, Jun 1963, J.P. Rebman 5403 (DH, RSA, POM); upper Arroyo Copal, and above Yerba Buena, 2600 m, 16 Aug 1967, R.V. Moran & R.F. Thorne 14227 (RSA, SD); May–Oct; 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 places of chaparral, 1400–2100 m; junction with road to San Rafael, 1700 m, 8 Jun 1962, J.D. Olmsted 4650 (RSA); Corral de Sam, Arroyo Copa, and Santa Rosa, 2050 m, 20 Aug 1967, R.V. Moran & R.F. Thorne 14316 (RSA, SD); Jul–Sep; unreported from CA, NE through AZ, NM, and E to AZ.

MALTAVA PARFYLOPIA 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. Rebman 16063 (SD). Widespread weed, native to Eurasia.

SIDALCEA MALVIFLORA (DC.) Benth. subsp. SPARISOMA C.L.Hitch. Checker mallow. Rare sprawling perennial, 2000–2200 m; La Grulla near stream, 2040 m, 21 Sep 1938, J.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.

ONAGRAEACEAE

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 Rio San Rafael, 1370 m, 15 Jun 1962, J.D. Olmsted 4656 (RSA); Apr–Jun; N through Sierra Juárez and ecosmontane Baja California to northern CA.

EPILOBIIUM CANUM (Greene) P.H. Raven subsp. LATIFOLIUM (Hook.) P.H. Raven (ZASCHENNEA CALIFORNICANA subsp. LATIFOLIA (Hook.) D.D. Keck). Californian-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, J.L. Wiggins & D. Decamous 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).

EPILOBIIUM CILIATUM Raf. subsp. CILIATUM (EPILOBIIUM ADENOCALOON Hauk. var. PARISHII (Trel.) Munz). Willow herb. Common perennial in moist sandy meadows and arroyos, 850–2650 m; Arroyo Copal, Upper Corra, La Encantada, Vallecitos and N, 2460 m, 19 Jun 1985, R.F. Thorne 60945 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.

EPILOBIIUM GLABERRIMUM Barby 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 Corral 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.

GAYOPHYTHUS DEFUSUS 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 Corra, 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. Rebman 5403 (SD); Jun–Sep; N through Sierra Juárez and CA to British Columbia (Canada), and E to WY, SD, CO, and NM.

OENOITHERA 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.

OENOITHERA ELATA Kunth subsp. hispidissima (S.Watson) W.Dietr. (O. hookeri Torr. & A.Gray subsp. orangea (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 15301 (RSA, SD); Jun–Oct; N through Sierra Juárez and CA to WA and E to CO, OK, and TX. Not recorded in Wiggins (1980).

OBORANCHACEAE (INCL SOME RHINANTHOIDEAE)

CASTILLEJA APPLAGATAE Fernald subsp. MARTINII (Abrams) T.I.Chuang & Heckard. Indian paintbrush. Common perennial of open pine forests and rocky slopes, 1800–2000 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...
Horscals 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.

Cestilellus minor (Gray) A. Gray subsp. spiralis (Jeps.) T. I. Chuang & Heckard (C. stenantha A. Gray). Frequent slender annual of streamside 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.

Cestilellus orthophyllus Tank & J. M. Egger (Orthophyllaceae 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 14234 (RSA, SD) and SW, Vallecitos and N and W, 2500 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.

Cordylineanthus nevini 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 Sum, and La Corona de Abaja; 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.

Cordylineanthus rigidus (Benth.) Jeps. subsp. involutus (Wiggins) T. I. Chuang & Heckard. (Cordylineanthus 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 61490 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.

Orobanchaceae 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.

Orobanchaceae 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.

Purshaceae

Mimulus cardinalis Benth. Cardinal monkeyflower. Frequent and locally abundant erect red-flowered annual of streamside, 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 exodus A. Gray. San Bernardino Mountains monkeyflower. Rare; tiny annual, 1700–2100 m; in 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 66824 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. tilting Regal). Common erect yellow-flowered annual of seepage over granite, most sandy streamside and wet meadows, 875–2500 m; Vallecitos, 2430 m, 18 Jun 1985, R. F. Thorne 62800 et al. (RSA); and Yerba Buena; Cañón del Diablo (above 1200 m); Arroyo La Zanja, La Corona de Abajo, La Corona de Abajo, Los Llanitos, Corral Meadow, 2520 m, 16 Jun 1988, 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. 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 pubescens A. L. Grant. (incl. var. paullillus A. L. Grant). Purple monkeyflower. Frequent, erect purplish-red or magenta-flowered annual of moist, sandy meadows and arroyos, 2100–2560 m; Purple Grailla, 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.
Keckilla ternata (Tort.) 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 forest near N of Corral de Sam, and head of Arroyo Copal 1.5 km N of Cerro Observatory [elev. not stated], 16 Jul, 1988, S. Boyd & T. Ross 2757 (RSA); rare, 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 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, 1950–2500 m; Santa Rosa, 2050 m, 20 Aug 1967, R.V. Moran & R.F. Thorne 14396 (RSA, SD); La Corona de Abajo, 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 33518 (BCMEX, HCIB, SD); Arroyo de Soto, km 75 camino al Observatory, 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. clevelandi. 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 Río San Rafael, and Cerro Observatory, 2840 m, 19 Jun 1983, 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 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 Llantios, Yerba Buena, 2475 m, 16 Aug 1967, R.V. Moran & R.F. Thorne 14253 (RSA, SD); Cerro Venado Blanco and Cerro Observatory, 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 15094 (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 Llantios, 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 Observatory; 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, annual, 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 perennis L. subsp. xalapensis (Kunth) Pennell. Purslane 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 Observatory, 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).

 Poales

 Erestrum densifolium (Benth.) H.Mason subsp. densifolium. Rare subfruticosous 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).

 Erestrum 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 60965 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, 1590 m, 4 Jun 1963, R.V. Moran 11123 (RSA, SD); 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 cf. mexicana A.D.Grant & V.E.Grant. Infrequent sprawling annual of dry gravelly meadows with scattered Pinus jeffreyi, 1450–2100 m; La Grulla, 2200 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.; above La Corona de Abajo, 2100 m and below at Rancho San Jose, 650 m, 20 Jun 1985, R.F. Thorne 61001 et al.; N through Sierra Juárez to central CA and E toAZ and UT.

**Erigeron nudum** Benth. subsp. pacificum (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 14428 (RSA, SD); much more common at lower elevations as at Rancho San Pedro Mártil, 1700 m, 17 Sep 1967, R.F. Moran 14577 (RSA, SD), down to 650 m; May–Nov; N through Sierra Juárez to central CA.

**Erigeron 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); Corral Meadow, and ridges between Cerro Venado Blanco and Corral Meadow; Jul–Oct; N through Sierra Juárez to the mts. of southern CA.

**Erigeron parviflorus** 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. Dement 4913 (DH, POM); and N of Vallecitos; more frequent at lower elevations; Jun–Nov; N through Sierra Juárez to the mts. of southern CA.

**Erigeron wrightii** Bentham. var. membranaceus 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); Corral Meadow, and ridges from Sierra Juárez to Monterey Co., CA.

**Philox austromontana** Coville subsp. austromontana. Philox. Infrequent sprawling prickly perennial of decomposed granite 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.

**Saltpogilia australis** (H.Mason & A.D.Grant) L.A.Johnson. Infrequent annual of decomposed granite 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, 1459 m, 9 May 1978, R.V. Moran 257522 (RSA, SD); Apr–Jul; N from Sierra San Borja through foothills of SSPM and Sierra Juárez to the mts. of southern CA.

**Saltpogilia carufolius** (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 Mártil, N of La Corona de Abajo, 2100 m, 21 Jul 1985, S. Boyd 2021 et al. (RSA); and Vallecitos, but commoner at lower elevations; May–Jul–Sept; N through Sierra Juárez and coastal hills to San Diego Co., CA.

**Polygonaaceae**

**Erigeron 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. Obustrat 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.

**Erigeron fasciculatum** Bentham. subsp. polifolium (Benth.) S.Stokes. Rare erect perennial, only at Santa Rosa, 2050 m, in chaparral on decomposed granite soil, 20 Aug 1967, R.V. Moran & R.F. Thorne 14428 (RSA, SD); much more common at lower elevations as at Rancho San Pedro Mártil, 1700 m, 17 Sep 1967, R. 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.

**Erigeron 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.

**Erigeron nudum** Benth. subsp. pacificum (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); and downstream from La Grulla, 2200 m, 21 Aug 1967, R.V. Moran & R.F. Thorne 14375 (RSA, SD); and above La Corona de Abajo in burned over chaparral, 2100 m; and at 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 California, in SSPM and Sierra Juárez.

**Erigeron nudum** Benth. **Erigeron nudum** Benth. var. membranaceus 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 653 et al. (RSA); and N of Vallecitos; more frequent at lower elevations; May–Nov; N through Sierra Juárez to the mts. of southern CA.

**Erigeron wrightii** Bentham. var. membranaceus 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); and downstream from La Grulla, 2200 m, 16 Aug 1967, R.V. Moran & R.F. Thorne 14128 (RSA, SD); Cerro Venado Blanco and Corral 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.

**Polygona amphiribium** L. var. sticulaceum 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); La Encantada, 2200 m, 19 Aug 1967, R.V. Moran & R.F. Thorne 14432 (RSA, SD); Jun–Sept; N from Sierra San Borja through foothills of SSPM and Sierra Juárez to AK and E to Atlantic Coast.

**Polygona amphiribium** L. var. depressum (Meisn.) Arcang. and subsp. avicularie (P. Arenastrium 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 14541 (RSA, SD); La Encantada, 2200 m, 19 Aug 1967, R.V. Moran & R.F. Thorne 14548 (RSA, SD); and Vallecitos; Apr–Nov; naturalized from Eurasia.

Polygonum douglasii Greene (intermediate between subsp. douglasii 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, 2000–2500 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 Weism. 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.

Calyptidium monandrum Nutt. Pusseypuffs. 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 15994 (SD); also at Santa Eulalia, Upper Vallecitos, Corral Meadow, Vallecitos, Los Llanitos, Yerba Buena, peak of Cerro Observatory; Apr–Jun; N through Sierra Juárez and CA to British Columbia (Canada) and E to Rocky Ms.

Calyptidium 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 14326 (RSA, SD); Apr–Sep; naturalized from tropics.

**Ranunculaceae**

Aquilegia formosa Fisch. (incl. var. hypolasia (Greene) Munz). Columbine. Common orange-red-flowered erect perennial of stream sides and seepy places, 875–2800 m; La Corona de Arriba, La Encantada, Arroyo San José, Corral Meadow, Vallecitos, Los Llanitos, Yerba Buena, 2500 m, 18 Aug 1967, R.V. Moran & R.F. Thorne 14154 (RSA, SD); Cerro Venado Blanco; and N of Cerro Observatory, 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 chapparal and dry rocky slopes, 1100–2500 m; Corral de Sam, La Encantada, 2200 m, 19 Aug 1967, R.V. Moran & R.F. Thorne 14350 (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 vernally wet places, Vallecitos, 2420 m, 7 Jul 1980, Cass 462 (SD). Widespread annual N from Isla Guadalupe through CA to British Columbia (Canada), eastern US and Eurasia.

Ranunculus aquaticus L. var. capellaneus (Thuill.) DC. Water buttercup. Infrequent submersed aquatic perennial with floating white flowers in ponds or slow streams, 1475–2200 m, La Corona de Abajo, 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 Montana (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. Brandege 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 uncinitus 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 Ms. Not recorded in Wiggins (1980).

Thalictrum fendleri Engl. ex A.Gray (var. quadrirnervatum B.Boivin). Meadow-rue. Common, erect perennial of moist or boulder places, 2200–2500 m, La Corona de Abajo, Corral Meadow, 2520 m, 16 Jun 1988, A.C. Sanders 7887 et al. (RSA, UCR); Dead Horse meadows, and southwestern end Cerro Venado Blanco, La Corona de Abajo, Corral Meadow, N of Vallecitos, 2460 m, 8 Jun 1985, R.F. Thorne 60929 et al. (RSA); and above, Los Llanitos, Yerba Buena, 2500 m, 18 Aug 1967, R.V. Moran & R.F. Thorne 14155 (RSA, SD); Cerro Venado Blanco and N of Cerro Observatory; May–Aug; N through Sierra Juárez and CA to WA, and E to WY, western TX, and northern Mexico.

**Rhamnaceae**

Ceanothus cordatus 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 Observatory; most abundant in intense burns within past 50 yr, as at Corona Arriba, 3 km E of Corona Arriba, W and of Corral Meadow, and Cerro Botella Azul; Jun–Aug; disjunctly N to San Jacinto Ms. and through other CA mts. to NV and OR.
Ceanothus greggi A.Gray subsp. perplexiens (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 Virgenes 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 2400, 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.

Fragula californica (Eichsch.) A.Gray subsp. tomentella (Benth.) Kartesz & Gandhi (Rhamnus californica Eichsch. subsp. tomente- tella (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 14495 (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 2400, and Santa Rosa, 2050 m, 20 Aug 1967, R.V. Moran & R.F. Thorne 14418 (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. 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. Delgadoillo s.n. (BCMEX); 3 mi S and at Santa Eulalia and at Corral de Sam from above Rancho San Pedro Mártr, also at lower elevations as Rancho San Pedro Mártr, 1700 m, 17 Sep 1967, R.V. Moran 14569 (BCMEX); 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, 2530 m, 30 May 1976, R.V. Moran 23509 (RSA, SD); Corral Meadow, and Los Llanitos, 2400 m, 17 Jun 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 Nueve, Cañón del Diablo, 1975 m, 4 May 1978, R.V. Moran & R.F. Thorne 12583 (SD); also observed by Richard Minnich at Santa Eulalia, 1850 m, photos by R. Minnich, Apr 1974 (RSA 489496); 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. Rebmam 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.

Ligustrum nomadum var. intermountanus 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 Jactino Mts. and through CA mts. to WA and E to Rocky Mts. See Map 5 for range in SSPM. Not recorded in Wiggins (1980).

Fragaria vesca L. (subsp. californica (Cham. & Schult.) 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 Cerro Venado Blanco; May–Jul; N through Sierra Juárez to northern CA. This subspecies not recorded in Wiggins (1980).

Heteromeles arbutifolia (Lindl.) M. Roem. exquat. arbutifolia. Toyon. Rare tall shrub; only at Cerro Chato, 1850 m, 3 Jun 1963, R.F. Thorne 32002 et al. (RSA); and La Víbora, 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 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 Ryd. subsp. microphyllus (var. sericicus Ley.). Ocean spray. 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. Rebmam 5607 (BCMEX); and Cerro Observatorio and mountains above La Encantada; Jul–Sep; disjunctly N to San Jactino Mts. of Riverside Co., CA, and southern NV. Not recorded in Wiggins (1980).

Horkelia clevelandii (Greene) Ryd. var. brevibracteata (Wiggins) Ertter & Revel. 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 Projektio 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. Rebmam 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 Jactino Mts. of Riverside Co., CA.

Ivesia argyrocoma (Ryd.) Ryd. var. marioni Ertter & Revel. 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–July; 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 streamside, 1450–2500 m; La Corona de Abajo, Corral Meadow, Vallecitos, 2430 m, 18 Jun 1985, R.F. Thorne 60866 et al. (RSA); Los Llantos, Yerba Buena, 2500 m, 16 Aug 1967, R.V. Moran & R.F. Thorne 14177 (RSA, SD); and Cerro Venado Blanco and Cerro Observatorio and ridges between, and high peaks above La Encantada; Jul–Sep; apparently restricted to SSPM.

**Galiun wiggensi** 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 Llantos, 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.

**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 Rio 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, L.L. Wiggins & D. Den nerve 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 coniferous forests, at Corral de Sam, Vallecitos, Upper Vallecitos, and La Tasajera; Los Llantos, 2400 m, 18 Aug 1967, R.V. Moran & R.F. Thorne 14280 (RSA, SD); 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 Llantos, Yerba Buena; and 3 km SW of Cerro La Botella Azul, 2470 m, 18 Jun 1988, A.C. Sanders 7446 et al. (RSA, UCR); 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 m S of Vallecitos Meadow, 2470 m, 18 Jun 1985, 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 Llantos, 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 at Arroyo Socorito. 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, 16 Jun 1988, A.C. Sanders 7959 et al. (RSA, UCR); and Rancho La Suerte, 130 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.s. (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 Tort. var. versicolor (Greene) M. G. Stewart (H. leptomelica Greene var. peninsularis Rosend., Butters, & Lakela). Alumroot. Common cespitose perennial on rocky outcrops, 1900–3050 m; Los Llanitos; SE of Vallejo, 2600 m, 26 Jun 1996, J. P. Rebmam 3272 (SD); La Vibora, Arroyo Copal and above, Santa Rosa, 2050 m, 20 Aug 1967, R. V. Moran & R. F. Thorne 14386 (RSA, SD); Vallejo 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 ephiorhiza S. Watson. Saxifrage. Frequent, cespitose perennial in rock crevices, 2250–2800 m, head of Arroyo Copal, Vallejo 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 (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 Tort. 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 Vallejo, 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 physalifoilum* Rusby var. nitidibaccatum (Bitter) Edmonds (S. sarcochoides 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 (Meliny), 590 m, 21 Jan 1973, R. V. Moran 19569 (SD); fruiting in July; 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 60891 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, 2200–2550 m; Vallejo, Yerba Buena, 2475 m, 16 Aug 1967, R. V. Moran & R. F. Thorne 14251 (RSA, SD): La Encantada, 2300 m, 27 Jun 1997, J. P. Rebmam 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 Engel. 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 Hawksw. & 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 camphylodorum Engel. Western dwarf mistletoe. Infrequent though locally abundant mistletoe parasitic on *Pinus flexilis*, 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 Vallejo and Cerro 2040; May–Jul; N through Sierra Juárez and CA to OR and ID. Not recorded in Wiggins (1980).

Phoradendron lobocedri (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 to OR.

Phoradendron pauciflorum (Tort. (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 Vallejo, 2560 m, 19 Jun 1985, R. F. Thorne 60916 et al. (RSA); Los Llanitos, 2600 m, 26 Jun 1996, J. P. Rebmam 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 villisum (Nutt.) Nutt. Oak mistletoe. Rare parasite on chaparral shrubs, as on *Adenostoma fasciculatum* 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 Matias, 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 pennsularis** (McKelvey) Clary *(Yucca whipplei Torr. subsp. eremica* Epling & Haines). Our Lord’s candle. Rare cespitose 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 1977, *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 Catavina through Sierra Juárez to southern CA and to eastern and 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. Rehmman & 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. miniscule* Herter and *L. tribulca* 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 tribulca 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 Poterrero, 875 m, 5 Jul 1969, *R. V. Moran* 16361 (RSA, SD); N to CA, subcosmopolitan aquatic.

**ARECACEAE**

* Erythrea 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 Aguas Calientes 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 Matomí; 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-Vizcaíno 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**

* Mammillaria elongata (L.) Link (*Salmiaca 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 alba L.H.Bailey (*Carex acrostisoides* 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 douglasii 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 eurycaulis 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* 60836 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, 2100 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 praeagricolae W.Boott. Rare, rhizomatous perennial in moist sandy meadow; as at 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 14393 (RSA, SD); Apr–Nov; N through Sierra Juárez and coastal Baja California to CA, widely distributed throughout temperate North America and Mexico.

Eleocharis parvissim Britton. (possibly not distinct from E. montevideensis 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


Juncaceae

Juncus articulatus L. Rush. Rare, rhizomatous perennial only in moist ground; near Corona de Abajo, 2080 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 arcticus Willd. var. mexicanus (Willd. ex Schltdl. & Schltdl.) Balashev (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 Bajo 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 26245 (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, 2080 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 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.

Juncus bryoides F.J. Herm. Dwarf rush. Rare tiny annual, only on granite outcrops with seepage; as above La Corona de Abajo, 2080 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 streambeds, 2000–2300 m, La Corona de Abajo and above Vallecitos; La Encantada, 2200 m, 18 Aug 1967, R.V. Moran & R.F. Thorne 14317 (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, semiquarantine.

Juncus bufonius L. var. occidentalis F.J. Herm. (J. rhizomataceus 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 (RSA, SD); Apr–Aug; N through Sierra Juárez and CA to OR and E to ID and AZ, also in Eastern Hemisphere.
JUNCUS DUBUS 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 61448 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. ASTROCALIFORNICUS H.L. Lind. 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 California W of deserts to British Columbia (Canada).

JUNCUS ENCLINUS Wikstr. var. MONTANUS (Engelm.) C.L. Hitch. 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 most 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 Llantos; 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 MERTENSIANUS Borg. subsp. GRACILIS (Engelm.) F.J. Herm. Rare rhizomatous perennial of open sandy pineland 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 OXYMERSIS Engelm. Infrequent erect cespitose perennial along stream; La Corona de Abajo, 2100 m, 20 Jul 1988, S. Boyd & T. Ross 2789 (RSA); La Corona de Arriba, damp soil in arroyo, Upper Corral Meadow, 2200 m, 31 Aug 1963, R.V. Moran 11293 (SD); and Vallecitos, 2200–2430 m; Jun–Aug; N through mts. and cismontane California 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 (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 900 m; Apr–Aug; N through montane and cismontane areas of California to San Luis Obispo Co., CA.

JUNCUS SAXIMONTANUS A. Nelson (f. BRUNNESCENS (Rydby) F.J.Herm.). Rocky Mountain rush. Infrequent rhizomatous perennial on banks of Arroyo La Zanja, 2500 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 E.Mey. Eriest (J. Kellogg of Wiggins). Tiehm’s rush. Frequent and often locally abundant, but inconspicuous tiny annual of moist open sand meadows and pine forests, 875–2540 m, above La Corona de Abajo, La Grulla; La Encantada, 2200 m, 18 Aug 1967, R.V. Moran & R.F. Thorne 14307 (RSA, SD); Upper Vallecitos, Vallecitos, Los Llantos, 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 COMBSA E.Mey. Hairy wood rush. Infrequent erect perennial; N of Vallecitos, 2460 m, 19 Jun 1985, R.F. Thorne 60937 et al. (BCRM, 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 (ALOCHORTIDAEAE)

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.


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, Cañon 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 14458 (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 meadows, 625–2200 m, Cañon 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, J.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.

Platianthera LUCOSTACHYS Lindl. (HABENARIANA DILATATA VAR. LUCOSTACHYS (Lindl.) Ames, PLATANThERA DILATATA VAR. LUCOSTACHYS (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.

Platianthera 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 Melng, 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, Cañon del Diablo, La Corona de Abajo and above, La Grulla, NW of Los Llantos, 2400 m, 17 Aug 1967, R.V. Moran & R.F. Thorne

*AGRESTIS 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, P. R. Moran & R. F. Thorne 14466 (RSA, SD); Jun-Sep; naturalized from Eurasia. Not recorded in Wiggins (1980).

*AGRESTIS VIRENS (A. SEMIVERTICILLATA (FORSK.) C.CHR.). Rare weedy stoloniferous perennial of wet places, 2200–2500 m, as sandy meadows at La Encantada, 2200 m, 18 Aug 1967, R. F. 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 AEGEALIS Sobol. Short-awn foxtail. Rare, erect perennial, only in quiet pool in stream, Corral Meadow, 2520 m, 16 Jun 1986, A. C. Sanders 2894 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 ARZONICA Vasey. Three-awn. Infrequent cespitose perennial of rocky slopes in open Jeffrey pine forest, 2050–2800 m, above La Corona de Abajo, Upper Vallecitos road, 2500 m, 28 Aug 1988, R. Noyes 697 et al. (RSA); Yerba Buena, 2450 m, 16 Aug 1967, R. F. Moran & R. F. Thorne 14190 (RSA, SD); and peak of Cerro Obervatorio; May–Jul; unreported from CA but NE through AZ and NV to CO, TX, and northern Mexico. Not recorded in Wiggins (1980).

ARISTIDA SCHIEDEA TRIM. & 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. Rebnack & M. E. Rosendiz 55134 (RSA, SD) and down Cañon 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 Guateuala (Gould and Morin 1981).

BLEPHARISNEMUS TRICHOLEPIDES (TORT.) Nash. Pine drop-seed. Frequent cespitose perennial on rocky slopes in open pine forest and especially on ridges on western rim of Cañon 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 Obervatorio, 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.

BORRIOLESCA CURTIPENDULA (Michx.) TORT. (VAR. CAPSITOSA GOULD & KAPADIA). Side-oats grama. Rare erect cespitose perennial of rocky slopes, Arroyo La Grulla, 1850 m, 10 Aug 1977, R. F. Moran 24476 (RSA, SD) and Santa Rosa, 2050 m, 20 Aug 1967, R. F. Moran & R. F. Thorne 14391 (RSA, SD); more frequent at lower elevations on both sides 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 and NV to central and southern Mexico.

BROMUS CARINATUS Hook. & Arn. California brome. Frequent erect annual or weak perennial of open pine forest and sandy arroyo beds, 2200–2500 m, La Vibora, La Corona de Abajo, Arroyo La Zanja, La Encantada, 2200 m, 19 Aug 1967, R. F. 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). Fingled brome. Common and often locally abundant erect perennial of rocky slopes in open pine forest and especially on rocky ridges along Cañon del Diablo, 1900–2800 m, La Vibora, Corral de San, La Grulla, La Encantada, above Vallecitos, Los Llanitos, La Tasajera, 2285 m, 14 Sep 1998, J. P. Rebnack & B. Vinton 5558 (RSA, SD); Yerba Buena, Cerro Venado Blanco and Cerro Obervatorio, and ridge to E, 2780 m, 1 Sep 1985, R. F. Thorne 61465 et al. (RSA); occasional among rocks on E slope of Cerrro 2828, on E rim, 2800 m, 24 Aug 1968, R. F. Moran 15409 (SD); disturbed area near top of Cerrro 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). Riggut grass. Rare annual weed, near cabin at La Encantada, 2200 m, 19 Aug 1967, R. F. Moran & R. F. Thorne 14326 (RSA, SD) and La Grulla, 2050 m, 9 Jun 1982, R. F. Moran 30938 (SD); much more common at lower elevations; Apr-Jun; not abundantly naturalized from Europe.

BROMUS MADRETIENSIS L. subsp. RUBENS (L.) HUSNOT. Foxtail chess. Rare annual weed, near burned over chaparral above La Corona de Abajo, 2100 m, 20 Jul 1988, S. BOYD & T. ROSA 2769 (BCMEX, RSA); much more common at lower elevations; Apr-Jun; not 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. Rebnack & A. Russell 5389 (RSA, SD) and Cerro Obervatorio, 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.

DESCPAMPA CESPIOSA (L.) BEAV. subsp. CESPIOSA. Rare cespitose perennial, only at edge of wet meadow, La Grulla, 2100 m, 22 Aug 1967, R. F. 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).

DESCPAMPA DANTHONIOIDES (TRIM.) Munro. Annual hairgrass. Dry meadow, La Grulla, 2050 m, 8 Jun 1982, R. F. Moran 30915 (SD); muddy shore of stream in meadow, La Grulla, 2100 m, 1 Jul 1982, R. F. Moran 30795 (SD); N through CA to AK, and E to AZ, also South America.

DESCPAMPA ELONGATA (Hook.) Bent. 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 Obervatorio; at Rancho el Potro, 875 m; May-Aug; disjunctly N through CA to AK and E to AZ, WY, and NM, also Chile.

DECHANTHELIUM OLOOSANHTHES (SCHULT.) GOUARD var. SCRIBNERIANUM (NASH) GOULD (PANICUM OLOOSANHTHES). Annual hairgrass. Dry meadow, La Grulla, 2050 m, 8 Jun 1982, R. F. Moran 3463 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 Obervatorio; at Rancho el Potro, 875 m; May-Aug; disjunctly N through CA to AK and E to AZ, WY, and NM, also Chile.

EULYMUS ELYMOIDES (Raf.) SWEZEY subsp. BREVIFOLIUS (J.G.SM.) BARKWORTH (SITANIO HYSTRIX (NUTT.) J.G.SM., S. LONGIFOLIUM J.G.SM., E. LONGIFOLIUS (J.G.SM.) GOULD). Squirrettail. 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 61467 et al. (RSA); Los Llanitos, Yerba Buena, 2475 m, 16 Aug 1967, R. F. Moran & R. F. Thorne 14155 (RSA, SD); upper Rio
San Rafael, Cerro Venado Blanco and Cerro Observatorio, and ridges between them; Apr–May; N from cerros Matoni 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 on graded road from San Telmo, 1820 m, 29 May 1982, Yatskievych 190 (SD). N through CA to AK, E through Great Plains to northern Mexico.

**Elymus trachycaulus** (Link) Shinn. subsp. subsecundus (Link) A.Löve & D.Löve (Agropyron trachycaulum Steud.; A. subsecundum (Link) Hitch.). Slender wheatgrass. Infrare. rhiza. t.ous 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 14325 (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 CA. Not recorded in Wiggins (1980).

**Festuca balsamifor.** Ganz.-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. & Schl.f. subsp. brevicula. Fed. Fescue. Infrare. variable cespitose perennial of rocky ridges along rim of Cuñón 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 E of latter; Aug–Oct; widely distributed in the Northern Hemisphere, including CA. Not recorded in Wiggins (1980).

**Festuca brachyphylla** Schult. & Schl.f. (Vulpia bromoides (L.) Gray). Weedy annual cited as ranging from “coast to 2350 m in Sierra San Pedro Martir” by Gould and Moran (1981); Apr–Jun; naturalized from Europe. Not recorded in Wiggins (1980).

**Festuca megagala** Nutt. (Vulpia myuros (L.) C.C.Gmel. var. hirsuta (Hack.) Asch. & Graebner). Infrare. frequent, weedy annual of dry, sandy or rocky places, 2300–2500 m, Los Llanitos, Vallejitos, 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.). Infrare. frequent annual of open sandy places, 2200–2430 m, La Encantada, upper southwestern dry fork of Rio San Rafael, Vallejitos, 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 exilens** Buckley (F. pacifica Pipic.; Vulpia microstachys (Nutt.) Muñoz var. ciliata (A.Gray ex Beal) Lonard & Gould; V. microstachys (Nutt.) Muñoz 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 14447 (RSA, SD) and Corral Meadow, 2550 m; May–Aug; N through CA to AK and E to Labrador (Canada) and NM.

**Hordeum murnium** 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 14322 (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, Vallejitos, 2430 m, 18 Jun 1985, R.F. Thorne 60837 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 7797 et al. (RSA, UCR); May–Sep; naturalized from Europe.

**Lycium pheloides** Kunth. Wolftail. 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.

**Muheinbergia arsenei** Hitchc. Tough muly. 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 14409 (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 British Columbia (Canada) and E to Atlantic states and Mexico, also in southern South America.

**Muheinbergia emersleyi** Vasey. Muly. 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, 22 Aug 1967, R.V. Moran & R.F. Thorne 14409 (RSA, SD); also Oak Pasture; Jul–Oct; N through Sierra Juárez and CA to British Columbia (Canada) and E to Atlantic states and Mexico, not reported from CA. Not recorded in Wiggins (1980).

**Muheinbergia asperifolia** (Nees & Meyen) Parodi. Scratch grass. Infrare. 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 14208 (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.
_Uhlenbergia richardsonis_ (Steud.) Swallen. Delicate muhly. Rare delicate annual of moist sandy soil and rocky outcrops, only N of Vallecitos, 2000 m; also down Arroyo El Picacho, 1530 m, 17 Sep 1977, R.V. Moran 24675 (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, The Encantada, above Arroyo Copal, Upper Vallecitos, 2430 m, 1 Sep 1985, R.V. 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 E to WA and E to MT, TX, and southern Mexico.

_Muhlenbergia pauciflora_ Buckley. Few-flowered muhly. Frequent loosely tufted perennial from knotty, waxy 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 replets_ (J.Presl) Hitchc. Infrequent spreading rhizomatous perennial, La Grulla, Rancho Viejo where local in dry sandy soil of meadow, 2100 m, 3 Jul 1972, S. Boyd & T. Ross 2583 (RSA); 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, 2240–2430 m, Las 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 Llinitos; 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 Llinitos, Vallecitos, and N, 2460 m; 19 Jun 1983, R.V. Thorne 60946 et al. (RSA); Yerba Buena, 2475 m, 16 Aug 1967, R.V. Moran & R.F. Thorne 14446 (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 wolfei_ (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 675 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 weithii_ 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 14266 (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 chamise forest above Yerba Buena, above Vallecitos, 2540 m, 18 Sep 1983, R.F. Thorne 57246 et al. (RSA); not previously reported from Baja California (Notte); N from Cape Region and E through AZ to TX and S through NM 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 Cañión 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 fendlerianna_ (Steud.) Vasey. 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 Cañion del Diablo, 1700 m; May–Jul; N through Sierra Juárez and CA to British Columbia (Canada) and E to SD and northern Mexico.


_Poa pratensis_ L. Kentucky bluegrass. Infrequent weedy rhizomatous perennial in sandy meadows and along streams, 2050–2550 m, La Grulla, 2100 m, 29 Jun 1982, R.V. Moran 30956 (RSA, SD); Los Llinitos, and Corral Meadow; May–Aug, widely naturalized blue grass from Eurasia.

_Polygonum monspeliense_ (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_ (Tolt.) 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 16667 (SD); also in Paso de San Matías, 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 Matías 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 et al. (RSA); unreported from Baja California in Gould and Moran (1981); N through CA to ID and E to NM. Not recorded in Wiggins (1980).
We would like to acknowledge the assistance of Robert Johnson, Center for Conservation Biology, University of California, Riverside, in the production of the maps for this article; Maria Cristina Martínez-Habite for the Spanish translation of the abstract; David Charlet, Richard Felger, and two anonymous reviewers for their suggestions; and Linda Worlow and Vanessa Ashworth for their editorial vigilance. We extend special thanks to Jon Rebman for his detailed review and for facilitating access to the Baja California Botanical Consortium data. Funds in support of Robert Johnson’s preparation of the maps came from the NSF Biocomplexity Grant DEB-0421530.

LITERATURE CITED


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

<table>
<thead>
<tr>
<th>Species</th>
<th>Species</th>
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<tbody>
<tr>
<td>Antennaria parvifolia</td>
<td>Hieracium fendleri</td>
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<tr>
<td>Aristida arizonica</td>
<td>Linum aristatum var. australis</td>
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<td>Bidens heterosperma</td>
<td>Linum neomexicanum</td>
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<td>Blepharoneuron tricholepis</td>
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<td>Cheilanthes fendleri</td>
<td>Muhlenbergia repens</td>
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<td>Chenopodium incisum</td>
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<td>Conyza schiedeana</td>
<td>Muhlenbergia wrightii</td>
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<td>Cyperus fendlerianus</td>
<td>Panicum bulbosum</td>
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<td>Dracocephalum parviflorum</td>
<td>Pellaea ternifolia var. wrightiana</td>
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<td>Drymaria leptophylla var. tenella</td>
<td>Pennellia micrantha</td>
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<td>Ergratisis intermedia</td>
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<tr>
<td>Hackelia pinetorum</td>
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Thorne, Moran, and Minnich


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

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Region of endemicity</th>
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<tr>
<td>Agave deserti subsp. pringlei</td>
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<tr>
<td>Agave moranii</td>
<td>endemic to SSPM</td>
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<td>Allium eurotophilum</td>
<td>endemic to SSPM</td>
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<tr>
<td>Astragalus circundatus</td>
<td>endemic to Baja CA</td>
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<tr>
<td>Astragalus douglasii var. glaberrimus</td>
<td>endemic to Baja CA</td>
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<tr>
<td>Astragalus grimus</td>
<td>endemic to SSPM</td>
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<td>Astragalus prossler</td>
<td>endemic to Baja CA peninsula</td>
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<td>Brickellia subequisilis</td>
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<td>Castilleja ophiocephala</td>
<td>endemic to SSPM</td>
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<td>Cirsium trachylosum</td>
<td>endemic to Baja CA</td>
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<td>Cordylanthus rigidus</td>
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<td>Draba corrugata var. demareei</td>
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<td>Dudleya pauciflora</td>
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<td>Echinocereus triglochidiatus var. pacificus</td>
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<td>Ericameria martirensis</td>
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<td>Ericameria parishii var. peninsularis</td>
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<td>Erigeron tracyi</td>
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<td>Eriogonum hastatum</td>
<td>endemic to SSPM and Sierra Juárez</td>
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<td>Eriogonum wrightii var. oesbiun</td>
<td>endemic to SSPM and higher peaks of Sierra Juárez</td>
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<td>Erythea armata</td>
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Appendix 3. Cross-reference aid to names cited in other floristic works, where taxonomic usage differs from that used in this checklist.

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### Other Floristic Works

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<td>Liliceae</td>
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Map 1. Collection localities in the Sierra San Pedro Martir.
Map 2. Distribution ranges of all conifers in the Sierra San Pedro Mártr.

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]).