VEGETATION AND FLORA OF THE BOLSON OF CUATRO CIENEGAS
REGION, COAHUILA, MEXICO, II (CASUARINACEAE TO
LOASACEAE).**

DONALD J. PINKAVA*

ANGIOSPERMAE – DICOTYLEDONAE

CASUARINACEAE

*Casuarina cunninghamiana*** Mig. — Introduced cultivar. Basin: P. Escobeda
P4098.

SAURURACEAE

Anemopsis californica (Nutt.) H. & A. — Alkaline marshes and flats, fairly common.
Basin: L. Santa Tecla P4273, 5618; P. Los Fresnos P4293; N end of SSM
Lewis s.n. P4333.

SALICACEAE

Salix nigra Marsh. — Infrequent tree about waterways. Basin: White 1712 (not seen;
I. M. Johnston, 1944); P. Santa Tecla P4276; Julio Canal P3929; P. Anteojo
P5517, 10527.

Salix paradoxa Kunth — Identification based on sterile collection (I. M. Johnston,
1944). SM: C. Agua, sparse on rock slides about heads of canyons M3242.

JUGLANDACEAE

**Carva illinoensis* (Wang.) K. Koch — Cultivated tree. CC: P4059.

Juglans microcarpa Berl. — SME: Potrero Arnold 100.

FAGACEAE

Quercus glaucoides Mart. & Gal. — Common in moist pine-oak canyons. SSM:
Minckley s.n.; above P. Los Fresnos P6005B. SM: Mt. Anteojo complex
Meyer s.n.; C. Pajarito M3192; C. Agua M3267; C. Hacienda H11997, MCJ
10977, W1161; C. Olmos W1190; C. Charretera IMJ8933 (GH); SW of Ocam-
po Graber 172, 187.

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- Quercus gravesii* Sudw. — Common tree, pine-oak canyons. SSM: Minckley s.n.; above P. Los Fresnos P6059 (=6092); N end MCJ10932. SM: Minckley s.n.; Mt. Anteojo complex Meyer s.n.; C. Pajarito M3172; C. Barrica W1360, 1361 (both introgressed by *Q. hypoxantha*); C. Hacienda Engard 302, H12017, W1160; C. Olmos W1187, 1188; C. Charretera IMJ8922, 9045 (both GH).
- Quercus greggii* (DC.) Trel. — Undestory shrub of conifer forests, common. SM: Mt. Anteojo complex Meyer s.n.; C. Agua M3207, 3233 (GH), 3239; SE and SSE of R. Cerro Madera MCJ9416; C. Invierno W634, 640A; C. Hacienda H11952 B, MCJ10959; SW of Ocampo Graber 161.
- Quercus greggii* (DC.) Trel. X *Q. pringlei* von Seemen — SM: C. Agua, wooded upper arroyos, pine-oak forest M3227, 3227A, 3238 (type of *Q. greggii* f. *subglabrata* Muller, GH, isotype TEX).
- Quercus hypoxantha* Trel. — Abundant in chaparral. SSM: Minckley s.n.; above P. Los Fresnos P6070 (=6099). SM: Mt. Anteojo complex Meyer s.n.; C. Agua M3213, 3214, 3232; C. Hacienda H11953, MCJ10960; C. Barrica W1215; C. Charretera IMJ9054 (CH); SW of Ocampo Graber 155, 183.
- Quercus intricata* Trel. in Standley — Abundant in Chaparral and oak-pine zones. SSM: Minckley s.n.; N end MCJ10940; above P. Los Fresnos P6014 (=6078). SM: Mt. Anteojo complex Meyer s.n.; C. Pajarito M3191; SE and SSE of R. Cerro Madera MCJ9408, 9439; C. Hacienda H11954, 13622; C. Invierno W636, 637; C. Charretera IMJ8951 (GH).
- Quercus invaginata* Trel. — Very common in oak woodland. SSM: above P. Los Fresnos P6042 (=6022). SM: Minckley s.n.; Mt. Anteojo complex Meyer s.n.; C. Pajarito M3148, 3149, 3160, 3161; SE and SSE of R. Cerro Madera MCJ9410, 9411; C. Charretera IMJ9167, 9168 (both GH); SW of Ocampo Graber 177, 185.
- Quercus muhlenbergii* Engelm — Canyon oak wood, locally común. SM: C. Olmos, restricted to this canyon and adjacent C. Arboles to the west, W1180, 1181.
- Quercus oblongifolia* Torrey — Canyons, oak-pine woods, uncommon. SM: C. Barrica W1344.
- Quercus pringlei* von Seemen — Common in upper wooded canyons, shrubby. SM: C. Agua M3206, 3222; C. Pajarito M3150 (type of *Q. filiformis* Muller, GH isotype, not seen, I. M. Johnston, 1944); above C. Hacienda H11931B; C. Barrica W1216, 1216A, 1346 through 1350, 1362, 1363, 1367, 1376; SW of Ocampo Graber 179.
- Quercus pungens* Liemb. — SM: Rincón de los Derrumbes opposite C. Barrica, south-facing dry slopes with scrub W1436.
- Quercus pungens* Liebm. var. *vaseyana* (Buckl.) Muller — Arroyos, infrequent to common SSM: ca. 8 km S of P. Becerra, two trees, W653 (not seen); opposite L. Grande P13060, 13088; 6.4 km NW of P. Los Fresnos P13147, 13161.

ULMACEAE

- Celtis pallida* Torrey — Along washes and streams, uncommon. Basin: C. Tecla Minckley s.n.; just E of Puerto Salado P5452; near P. Anteojo P5474; Río Cañón P3881, 5358.
- Celtis reticulata* Torrey — Basin: 3.2 km E of Puerto Salado P10520.

MORACEAE

*Ficus carica** L. — Cultivated fig. Basin: W side of CC P5380; S of airport P5390.

URTICACEAE

Parietaria floridana Nutt. — Río Cañón: near stream P5937.

VISCACEAE

Phoradendron bolleanum (Seem.) Eichl. — Common parasite on *Cupressus arizonica*; with some leaves elongate (more elongate more than 15 mm). SM: C. Agua M3220; C. Hacienda H11951A; SW of Ocampo Graber 158.

Phoradendron lanceolatum Engelm. — Uncommon parasite on *Quercus*. SSM: above P. Los Fresnos P5983. SM: C. Pajarito M3201.

Phoradendron tomentosum (DC.) Engelm. ssp. *tomentosum* — Very common parasite on legumes, particularly *Prosopis* and *Acacia*. Basin: 14.8 km S of Puerto Salado P5600; P. Los Fresnos P5630; P. Escobeda P4085; L. El Mojarral P4213; N end of SSM Lewis s.n.; CC, 6.4 km W P5272, 16 km MCJ9152, 15-16 km SW MCJ10336; dunes W of L. Grande P3808. SM: C. Jara IMJ 8838 (GH); C. Pajarito M3202 (GH); C. Hacienda MCJ10979.

Phoradendron villosum (Nutt.) Nutt. Common parasite on *Quercus*. SM: C. Pajarito M3173A, 3173B (both GH); C. Hacienda H11860, 12022.

POLYGONACEAE

Eriogonum jamesii Benth. in DC. var. *undulatum* (Benth. in DC.) Stokes ex Jones — Chaparral to conifer zones, fairly common. SSM; above P. Los Fresnos 96109. SM: C. Pajarito M3186 (GH), P10465; C. Hacienda H11989, (13629); C. Invierno W642; C. Charretera IMJ9004 (GH).

Polygonum hydropiperoides Michx. — Uncommon near water. Basin: P. Los Fresnos P4296; Río Cañón P3870, 4296.

CHENOPODIACEAE

Allenrolfea occidentalis (Wats.) Kuntze — Common on alkaline flats. Basin: Brown 2, Marsh 2077; CC, 6.8 Km SW H14313, 4.8 Km SW White 1915 (GH), Turner 6183, 4.3 km W H14275, 6.4 km W IMJ7139 (GH); N end of SSM Lewis s.n.; L. Salada P3672.

Atriplex canthocarpa (Torrey) Wats. — Saline gypsum flats, fairly common. Basin: Marsh 2024, 2039; L. Santa Tecla P4281; W L. El Mojarral P5171; N end of SSM P4203, 5091, 10377; Río Mesquites at road P3666; L. Salada P3629; CC, 14.5 km E H14301, 6.8 km SW H14312, 4.3 km W H14274.

Atriplex canescens (Pursh) Nutt. — Common shrub, dunes and bajas. Basin: Marsh 2025, 2051, 2067; near P. Tío Candido P5710; P. Escobeda P4090, 5723; W L. El Mojarral P5168; stabilized dunes at El Chiqueros P3956; Río Mesquites P500; dunes about L. Grande Engard 290, P3804, 5263, Turner 6191;

dunes near gypsum plant **P5056A**, B; 1.8 km S of Puerto Salado **P5572**; airport road **P5401**; Ciénega Anteojo **H14296**.

Atriplex muricata Humb. & Bonpl. ex Willd. — CC: **Marsh 2015**.

Atriplex prosopidum I. M. Johnston — Uncommon, desert flats. Basin: along Hwy 30 S of CC **H14303**, **P3712**, **5077**, **5251**; W L. El Mojarral **P5172**; L. Salada **P3678**; origin of Río Puente Chiquito **P4343**; 1.8 km S of Puerto Salado **P5571**. North of Basin: 11.4 km **H14303**; ca. 16 km Wynd **742**, **744** (both GH); near Flores **IMJ8875** (GH); S of El Oso **IMJ8877** (GH type, not seen; I. M. Johnston, 1944).

Atriplex texana Wats. — Uncommon, desert flats. Basin: **Marsh 2040**; 14.5 km E of CC **IMJ7106** (GH); Puerto Salado **P5422**, **5562**, **5854A**. North of Basin: S of El Oso **H14305**.

Chenopodium fremontii Wats. f. *farinosum* Aellen — Basin: Mt. Anteojo **P5809**; Río Cañon **P5354** (immature).

Chenopodium murale L. — Common weed. Basin: Puerto Salado **P5895**; airport road **P5398**; Río Cañón **P5356A**.

Meiomeria stellata (Wats.) Standley — Basin: 6.4 km W of CC, in sitl on saline flats, with *Dondia* [*Suaeda*] **IMJ7134** (GH).

Salicornia sp. — Salt flats, uncommon. Basin: Río Mesquites at Los Corrales **P4132**; L. Salada **P3671**.

Salsola iberica Sennen & Pau — Introduced weed, uncommon. Basin: near gypsum plant **P5052**; Río Cañón **P5328**; ca. 3.2 km N of CC **H14306**.

Suaeda mexicana Standley — Scattered shrubs near waterways. Basin: W L. El Mojarral **Arnold 70**; L. Tío Quintero **P4287A**; near headwaters of L. Chiqueros **P3947**; L. Salada **P3630**; CC, ca. 9.7 km SW **H7953**, **14317**, ca. 4.8 km W **H14292**.

Suaeda palmeri (Standley) Standley — Common shrub on desert flats. Basin: **Brown s.n.**, **P5957**; S of L. Grande **P10417**; N end of SSM **p5819**; airport road **P5396B**; Ciénega Anteojo **H14299**.

Suaeda suffruticosa Wats. var. *detonsa* I. M. Johnston — Shrub of desert flats and depressions, uncommon. Basin: L. Tío Quintero **P4287B**; W L. El Mojarral **Arnold 71**; airport road **P5396A**; Río Cañón **P5356C**, **5939**; CC, 34 km SW **H14319**, 4.8 km W **H14280**, **14296B**, **IMJ7128** (GH types).

AMARANTHACEAE

Amaranthus blitoides Wats. — Uncommon weed near roads. Basin: 2.9 Km SSW of P. Becerra **P5219A**; 6.8 km SW CC **H14311**; W side of CC **P5379**. SM: disturbed area, C. Hacienda **H11994**.

Froelichia arizonica Thornb. — Infrequent on bajadas. Basin: P. Becerra, 2.9 km SSW **P5204**, 4 km S **P5954**; 1.8 km N of L. Churince **P5237**; 0.6 km W of Puerto Salado **P5448**.

Tidestromia gemmata I. M. Johnston — Bases of bajadas, uncommon. Basin: Puerto San Marcos **P5298**; San Marcos Mesa **P3705**; N end of SSM **P5140**; Río Cañón **P4170A**.

Tidestromia lanuginosa (Nutt.) Standley — Uncommon weed, roadsides. Basin: **Marsh 2026**; Puerto Salado **P5559**; just WSW of gypsum plant **P5051**.

Tidestromia rhizomatosa I. M. Johnston — Gypseous flats, infrequent. Basin: dunes W of El Chiqueros P3951; N end of SSM Lewis s.n.; 1.8 km S of Puerto Salado P5569; CC, 3.2 km SW H14308, P13113, 4.8 km W H14281, IMJ8873 ((GH type).

Tidestromia suffruticosa (Torrey) Standley var. *coahuilana* I. M. Johnston — Lower slopes and bajadas, fairly common. SSM: Puerto San Marcos P5285B; P. Becerra P3757; N end P4246. SM: ca. 5 km W of Socorro IMJ8844 (GH).

NYCTAGINACEAE

Acleisanthes longiflora Gray — Common bajadas. Basin: 4.8 km S of R. San Marcos P5283; N end of SSM P3597, 4260, 5098; 11.7 km S of Puerto Salado P5633; W side of CC P5373; Río Cañón P3915; Mt. Anteojo P5741.

Allionia choisyi Standley — Basin: P. Becerra P3773.

Allionia incarnata L. — Common on bajadas, roadsides, flats. Basin: Cañón de Ciénegas White 1890 (GH); near P. Becerra P3755, 5215; N end of SSM P5231; 8.5 km W of P. Los Fresnos P5702; just WSW of gypsum plant P5059. SME: Potrero Arnold s.n.

Anulocaulis eriosolenus (Gray) Standley — Bajadas, uncommon. Basin: L. Churince P5243; P. Becerra P5206; CC, 11.3 km S Turner 6048, ca. 16 km SW Fowler 7 (TEX); N end of SSM P5226A, 13109; Río Cañón P4160, 5338.

Boerhavia intermedia M. E. Jones — SSM: N end, common on lower slopes P13037.

Boerhavia linearifolia Gray — Rocky lower slopes, uncommon. SSM: above P. Los Fresnos P6079, 6.4 Km NW P13162B; canyon apposite L. Grande P13078. SM: C. Pajarito M3151; C. Hacienda H11855; C. Charretera IMJ9138 (GH).

Cyphomeris gypsophiloides Standley — SM; ca. 5 km SE of R. Cerro Madera MCJ9883 (not seen; Spellenberg, pers. comm.).

Mirabilis pseudoaggregata Heimerl (= *M. coahuilensis* (Standley) Standley — Oak woodlands, not common. SM: C. Agua M3246A (not seen; Spellenberg, pers. comm.); C. Hacienda H11982; C. Charretera IMJ8942, 9137 (neither seen; Spellenberg, pers. comm.).

Mirabilis oblongifolia (Gray) Heimerl — Limestone slopes, uncommon. SSM: N end MCJ10917B. SM; C. Hacienda H13628 (possibly towards *M. glabrifolia* fide Spellenberg annotation).

Nyctaginia capitata Choisy — Bajadas and desert flats, scattered. Basin: Marsh 2019 (GH); Puerto Salado P5419; flats of La Vega Schroeder 176 (GH).

Selinocarpus angustifolius Torrey — Bajadas and flats, common. Basin: P. Becerra P3744; above W L. El Mojarral P4228; N end of SSM P5104, 10399; Río Cañón P3908, 5340; San Marcos Mesa P3698 (with broad leaves). Collection IMJ7159 (GH) from 6.4 km W of CC, mouth of canyon, is considered by Fowler as "type" of unpublished *S. undulatus*, differing from *S. angustifolius* in its having undulate leaf margins and different degree of pubescence on perianth.

Selinocarpus purpusianus Heimerl — Locally common on stabilized dunes. Basin: point of dunes Minckley s.n.; S of L. Grande P13107; Julio Canal P3943; 3.4 km W of CC P5544.

PHYTOLACCACEAE

Phytolacca octandra L. — Oak woods, slopes, uncommon. SM: C. Hacienda Engard 307, H11984.

AIZOACEAE

Sesuvium verrucosum Raf. — Abundant, gypsum flats and dunes. Basin: Marsh 2075; W L. El Mojarral P5170; shore of L. Grande Arnold 46; Río Mesquites at Los Corrales P4127; CC, from 19 to 4 km SW MCJ7648, 9156A, 7634, 7618, Leverich & Turner 12, Turner 6184B; near L. Salada P3670, 5071; L. Ferriño P5415A; Río Puente Chiquito P4340; Ciénega Anteojo H14279, P4053; 1.6 km W of Mt. Anteojo IMJ8867.

PORTULACACEAE

Portulaca mundula I. M. Johnston — Bajadas, fairly common. Basin: Puerto San Marcos P5299; 11.7 km NW of P. Los Fresnos P4315; N end of SSM p4251, 13035; SW of CC, 13 km MCJ7631, 9.7 km H14318A; Río Cañón P4169.

Portulaca oleracea L. — Common weed. Basin: L. Ferriño P5413.

Portulaca retusa Engelm. — Uncommon weed. Basin: 9.7 km SW of CC H14318B; Río Cañón P5350.

Talinaria palmeri Brandegee — Uncommon among rocks, ridgetop. SSM: N end, MCJ10937 (not seen; M.C. Johnston, pers. comm.).

Talinum angustissimum (Gray) Wootton & Standley — Infrequent, bajadas. Basin: ca. 3.2 km NW of L. Tío Quintero P4265A; 14.5 km E of CC H14302; N end of SSM P13033. SM: near R. Mesquite P13019.

Talinum aurantiacum Engelm. — SSM: 6.4 km NW of P. Los Fresnos, canyons and upper bajadas P13138.

CARYOPHYLLACEAE

Arenaria lanuginosa (Michx.) Rohrb. — Scattered in pine-oak forests. SSM: above P. Los Fresnos P6105. SM: SE and SSE of R. Cerro Madera MCJ9436; C. Hacienda H11949, 12026, MCJ10947A; SW of Ocampo Graber 164.

Drymaria laxiflora Benth. — Brushy SW slopes, locally common. SM: C. Barrica W1223.

Drymaria lyropetala I. M. Johnston var. *coahuilana* I. M. Johnston — Very common on gypsum dunes, soils and bajadas. Basin: origin of Río Puente Chiquito P4344; N end of SSM MCJ10926; P. Escobeda P4088; CC, 19 km SW MCJ 7646, 16 km SW MCJ9154, 6-8 km S & 3.2 km E Bacon 1086 (TEX), ca. 5 km W H14294B, 3.9 km SW Turner 6062; 3.4 km W of P. Becerra P5542; dunes W of El Chiqueros P3955; opposite L. Grande P13092.

Stellaria cuspidata Willd. — Oak or conifer forests, uncommon. SM: C. Hacienda H11926 (petioles glabrous); C. Barrica W1372.

NYMPHAEACEAE

Nymphaea ampla (Salisb.) DC. — Abundant in streams and pools. Basin: P. Los Fresnos P4292; L. Tío Candido P4103, and small poso nearby P5705; L. El Mojarral Engard 319, P5157; Río Mesquites at road P5010, at Los Corrales P4140; P. Becerra Brown s.n., MCJ9153; CC, 13 km S Turner 6341, 9.5 km SW H7961.

RANUNCULACEAE

- Aquilegia longissima* Gray — SM: C. Hacienda, oak-pine forest Engard 316, H12003.
Clematis coahuilensis Keil sp. nov. ined. — Dry arroyos, common. SSM: 6.4 km NW of P. Los Fresnos P13163. SM: C. Pajarito M3155, C. Hacienda H11880 (type), C. Charretera IMJ9131, 9131A.
Clematis drummondii Torrey & Gray — Common on shrubs of bajadas and flats. Basin: near P. Tío Candido P5715; Poterro, SME Arnold 24; S of airport P5387; Mt. Anteojo P5729; W side of CC P5365; Río Cañón P3866, 5355.
Clematis pitcheri Torrey & Gray var. *filifera* (Benth.) Robins. Canyons, locally common. SM: C. Hacienda Engard 306, Gentry 23252 (DES), H11869, 11889A, 11986, MCJ10951B, W1170, 1172.
Thalictrum fendleri Engelm. — Uncommon in oak-pine-fir forests, canyon. SM: C. Invierno W649C; C. Hacienda H11918.
Thalictrum grandifolium Wats. — Locally common, canyon bottom woodlands. SM: C. Barrica W1351.

BERBERIDACEAE

- Berberis eutriphylla* (Fede) Muller — Sparse in forested canyons. SM: C. Agua M3244; C. Barrica W1359.
Berberis pinifolia (Lundell) Muller var. *coahuilensis* Muller — Uncommon, lower slopes to chaparral zone. SM: Minckley s.n.; Mt. Anteojo P5730; C. Pajarito M3171 (GH, LL-TEX isotypes), P10448; ca. 5 km SE of R. Cerro Madera MCJ9379; C. Hacienda Engard 65, H11846A, 13562, MCJ10987; C. Charretera IMJ8892, 9142 (both GH).
Berberis trifoliolata Moric. — Sparse in canyons. SSM: above P. Los Fresnos P6010. SSV: C. Espantosa Schroeder 130 (GH).

MENISPERMACEAE

- Cocculus carolinus* (L.) DC. — CC: Marsh 2034.

PAPAVERACEAE

- Argemone chisosensis* Ownbey — SSM: 20.5 km N of Ejido La Noria MCJ10316.
Argemone sanguinea Greene — Bajadas and roadsides, uncommon. Basin: canal construction near Puerto Salado Meyer 10; SSM, near P. Los Fresnos P5973, N

end **P5902**; near P. Becerra **P5208, 5945**; Río Cañón **P5326**. SM: below C. Pajarito **P10487**.

FUMARIACEAE

Corydalis pseudomicrantha Fedde — SM: C. Hacienda, mid-to upper parts, gravel, **MCJ10950B**.

CRUCIFERAE

Cardamine flaccida C. & S. — SM: C. Hacienda, common in oakpine-fir forest **H19226** (based on immature specimen).

Descurainia obtusa (Greene) Schultze ssp. *Adenophora* (Wootton & Standley) Detling — Río Cañón: **P5936**.

Eruca sativa Mill. — Introduced, uncommon. Basin: Puerto Salado **P5855**; SW of CC **P10427**.

Lepidium lasiocarpum Nutt. var. *wrightii* (Gray) C. L. Hitchc. Basin: Puerto Salado **P5870B**; N end of SSM **P10407**; Río Cañón **P5336**.

Lepidium oblongum Small — Basin: Puerto Salado **P5870A**.

Lesquerella fendleri (Gray) Wats. — Desert flats and lower slopes, fairly common. SSM: above P. Los Fresnos **P5991**; N end Gentry 23246 (DES). SM: Mt. Anteojo **P5791**; flats E of C. Pajarito **P10442, 10480**.

Lesquerella mcvaughiana Rollins — SM: flats below C. Pajarito **P10483**.

Lesquerella purpurea (Gray) Wats. ssp. *foliosa* (Rollins) Rollins & Shaw — Basin: Puerto San Marcos **P5291, 5303**.

Lesquerella purpurea (Gray) Wats. ssp. *purpurea* — Basin: above P. Los Fresnos **P6101**; turnoff to L. Churince **P10428**.

Nasturtium officinale R. Br. — Río Cañón: uncommon in stream **P5932**.

Nerisyrenia camporum (Gray) Greene — Uncommon, bajadas and lower slopes. SSM: **P10374**; N end Meyer s.n.; P. Los Fresnos, 11.7 km NW **P4324**; 8.4 km NW **P5674**.

Nerisyrenia castillonii Rollins — Gypsum and saline flats, infrequent. Basin: Meyer **6**; near Puerto Salado **P5567, 5896A**; S of L. Grande **P10416B**; near CC **P5049, 5372**; near P. Anteojo **H14298B, P4041B**.

Nerisyrenia incana Rollins — Common on gypsum dunes. Basin: dunes of L. Grande **P3816, 3820, 5960, 10416A**; ca. 10 km SSW of El Chiqueros **P3979**; P. Becerra Canal **P5540**; dunes at L. Salada **P5019**; 6.4 km W of CC **IMJ7130** (GH type, not seen; cited by I. M. Johnston, 1941).

Pennellia micrantha (Wats.) Nieuwl. — SM: above C. Hacienda, crest **H11947**.

Sibaria vierecki (Schulz) Rollins — SSM: N end, common **P10388**.

Sisymbrium irio L. — Basin: Puerto Salado **P5893**.

Synthlipsis greggi Gray — North of Basin: Río Cañón **P5926**; Flats E of C. Pajarito **P10441**.

Thelypodopsis linearifolia (Gray) Al-Shehbaz — Common, oak scrubland openings. SM: C. Barrica **W1227**.

Thelypodium longipes (Rollins) Rollins Scattered in oak woods, canyons. SM: C. Hacienda **H11985**; C. Olmos **W1185**.

Thelypodium paysonii Rollins — SM: C. Jara, E of Socorro, lower part of canyon
Schroeder 12 (GH type, not seen; cited by Rollins, 1957).

Thelypodium wrightii Gray ssp. *wrightii* — SM: C. Barrica, oak woodlands, canyons
W1353, 1370.

RESEDACEAE

Oligomeris linifolia (Vahl) Macbr. — Common, desert flats and bajadas. Basin: Puer-
to Salado P5882; E of gypsum plant P5055; P. Anteojo P10528; Río Cañón
P5940.

CRASSULACEAE

Echeveria strictiflora Gray — Uncommon in crevices of rocky arroyos and canyons.
SSM: above P. Los Fresnos P4217. SM: Mt. Anteojo P5746.

Sedum parvum Hemsley — SM: C. Barrica, crevices of southwest facing cliffs,
locally common, W1218.

Sedum wrightii Gray — Lower slopes, infrequent. SSM: above P. Los Fresnos P6130.
SM: C. Hacienda H13595; C. Pajarito P10470.

SAXIFRAGACEAE

Fendlera linearis Rehder — Lower slopes up to oak-pine forests, common. SSM:
above P. Los Fresnos P5988; 1.5 km NE of R. San Marcos MCJ7677. SM:
Mt. Anteojo P5818; 8 km W of CC MCJ12082; SE & SSE of R. Cerro Madera
MCJ9399; C. Hacienda H11854B, 13624; C. Pajarito P10471.

Heuchera rubescens Torrey — SM: C. Hacienda, infrequent in oak-pine fir forest
H11912.

Philadelphus occidentalis A. Nels. — Uncommon in densely wooded arroyos and
mountain ridges. SM: C. Agua M3230; SE & SSE of R. Cerro Madera MCJ9428;
C. Hacienda H11915A; C. Invierno W643.

Philadelphus texensis Hu var. *coryanus* Hu — SSM: N end, slopes up to ponderosa
pines MCJ10942.

Philadelphus texensis Hu var. *texensis* — Uncommon, lower to mid slopes. SSM; N
end MCJ10939. SM: C. Hacienda MCJ10969.

PLATANACEAE

Platanus occidentalis L. var. *glabrata* Fren.) Sar. — SME: Potrero Arnold 22. SM:
C. Pajarito P10452.

ROSACEAE

Amelanchier denticulata (H. B. K.) Koch — Slopes, brushy canyon bottoms and cha-
parral, not common. SSM: above P. Los Fresnos P5989B; N end Gentry 23248
(DES), MCJ10921. SM: C. Agua M3265; C. Charretera IMJ9002 (TEX, not
seen; Wendt, pers. comm.).

- Cercocarpus mojadensis* C. Schneid. — Common shrub, edges of forests, slopes. SSM: above P. Los Fresnos P5995. SM: Mt. Anteojo Meyer & Landye s.n.; C. Hacienda H11877, 11936.
- Cercocarpus montanus* Raf. approaching var. *glaber* (Wats.) F.L. Martin — In mixed chaparral, common. SSM: Minckley s.n. SM: Minckley s.n. SM: Minckley s.n., C. Hacienda H13561; C. Charretera IMJ8999.
- Cercocarpus montanus* Raf. var. *paucidentatus* (Wats.) F. L. Martin — Upper slopes and ridges, locally common. SM: Mt. Anteojo Meyer & Landye s.n.; above C. Hacienda H11935; C. Charretera IMJ8980; SW of Ocampo Graber 174.
- Cowania ericifolia* Torrey — Lower to mid slopes, uncommon. SSM: above P. Los Fresnos P4237; 1.5 km NE of R. San Marcos MCJ7660; canyon opposite L. Grande P13091.
- Fallugia paradoxa* (D. Don) Endl. — Rocky canyons and arroyos, locally common. SM: Minckley s.n.; Mt. Anteojo Meyer & Landye s.n.; C. Pajarito M3152.
- Holodiscus discolor* (Pursh) Maxim. var. *dumosus* (Nutt.) Maxim. — Conifer forests, uncommon. SM: C. Hacienda H11904, 13587, MCJ10946; C. Invierno W649A.
- Lindleya mespiloides* H. B. K. — Lower slopes and arroyos, mixed chaparral, fairly common. SSM: above P. Los Fresnos P5989A, 6110. SM: Minckley s.n.; C. Pajarito M3176; ca. 5 km SE of R. Cerro Madera MCJ9386; C. Hacienda H11861, 13566; C. Charretera IMJ9116.
- Petrophytum caespitosum* (Nutt.) Rydb. — SM: common at margin of pine-fir forest, ridge, above C. Hacienda H13591; C. Pajarito P10477A.
- Prunus serotina* Ehrh. ssp. *virens* (Wootton & Standley) McVaugh var. *virens* — Conifer oak-pine and pine forests, common. SSM: above P. Los Fresnos P5975. SM: C. Hacienda H12021, MCJ10950; C. Charretera IMJ8996 (CH).
- Rosa* cf. *woodsii* Lindl. — Upper slopes, conifer forests and oak-pine canyon bottoms, uncommon. SSM: above P. Los Fresnos P6103 (sterile). SM: C. Hacienda H11897, MCJ 10958A; C. Invierno W650A; C. Barrica W1371, 1371A.
- Spiraea northcraftii* I. M. Johnston — South-facing mountain ridges, fairly common. SM: above C. Hacienda H13602; above C. Invierno W636A; C. Barrica W1222.
- Vauquelinia corymbosa* Correa — Mid to upper slopes, uncommon. SSM: N end MCJ10920; above P. Los Fresnos P6020. SM: 8 km W of CC MCJ12081A.

LEGUMINOSAE

- Acacia berlandieri* Benth. — Common on lower slopes, arroyos. SSM: C. Tecla Minckley s.n.; opposite L. Grande P5181. SM: Minckley s.n.; Mt. Anteojo P5810A; Río Cañón P5931; C. Hacienda Gentry 23255 (DES).
- Acacia greggi* Gray — Shrub zone surrounding basin, uncommon. Basin: W L. El Mojarral P5165; P. Juan Santos P4066.
- Acacia hirta* Torrey & Gray — SM: C. Charretera, oak thickets IMJ9079.
- Acacia neovernicosa* Isely — Common in shrub zone about basin. Basin: Marsh 2028. SSM: 4.8 km S of R. San Marcos P5302; San Marcos Mesa P3706; N end P5129. SM: Mt. Anteojo P4008.
- Acacia rigidula* Benth. — Lower slopes and bajadas, common. Basin: Puerto Salado, 0.6 km EP5453, 5.8 km S P5582; above P. Los Fresnos P6076. SM: above P. Anteojo P5471; C. Charretera IMJ9172.

- Acacia romeriana* Scheele — Lower slopes, uncommon. SSM: above P. Los Fresnos P6039; N end P5839. SM: NW of P. Anteojo P5468; Río Cañón P4153.
- Acacia smallii* Isely — Locally common along waterways. Basin: 5.8 km N of R. San Marcos P5322; S of airport P5389; P. Anteojo P5520; Río Cañón P5455, 5916.
- Astragalus sanguineus* Rydb. — Oak and oak-pine forests, chaparral, infrequent. SM: C. Hacienda H11999; C. Barrica W1228.
- Cassia demissa* Rose var. *radicans* Irwin & Barneby — Lower slopes, bajadas and flats, common. SSM: head of Polilla Canal Arnold s.n.; above P. Los Fresnos P6118. SM: C. Hacienda H11974, 13567; C. Charretera IMJ9082.
- Cassia monozyx* Irwin & Barneby — Arroyos and bajadas, uncommon. Basin: Marsh 2060; 6.4 km NW of P. Los Fresnos P13144; above W L. El Mojarral P4212, 5124; 13 km SW of CC MCJ7633 (NY, not seen; Irwin & Barneby, 1975). SM: bajada NW of P. Anteojo P5469; 8 km W of CC MCJ12084F (NY, not seen; Irwin & Barneby, 1975).
- Cassia pilosior* (Macbr.) Irwin & Barneby — Bajadas, Fairly common. Basin: P. Los Fresnos, 8.5 km NW P5865, 11.7 km NW P4308; San Marcos Mesa P3692; opposite L. Grande P13058A; NW of P. Anteojo P5494.
- Caesalpinia parryi* (Fisher) Eifert — Lower slopes, uncommon. SSM: 8.5 km NW of P. Los Fresnos P5701; N end P5097, 10402; opposite L. Grande P13058. SM: Mt. Anteojo P5794; 8 km W of CC MCJ12084C.
- Cercidium texanum* Gray — Bajadas, uncommon. Basin: near L. Ferriño P5408.
- Cercis canadensis* L. var. *mexicana* (Rose) M. Hopk. — Lower and mid wooded slopes, fairly common. SSM: above P. Los Fresnos P6107. SM: Mt. Anteojo Meyer & Landye s.n.; C. Hacienda MCJ10976; C. Pajarito P10460; C. Charretera IMJ9146.
- Cologania angustifolia* H. B. K. — Common vine, oak scrubland openings. SM: C. Barrica W1225.
- Dalea aurea* Nutt. — SM: C. Charretera, grassy openings in chaparral IMJ9141.
- Dalea bicolor* Humb. & Bonpl. in Willd. var. *argyrea* (Gray) Barneby — Lower slopes and arroyos, uncommon. SSM: Minckley s.n. SM: Mt. Anteojo P5757; C. Charretera IMJ8971.
- Dalea brachystachya* Gray — SM: near R. Mesquite, foothills P13026.
- Dalea formosa* Torrey — Lower slopes, uncommon. SSM: above P. Los Fresnos P6016; N end P5841, 10431.
- Dalea frutescens* Gray — Uncommon in chaparral and oak-pine zones. SM: Minckley s.n.; C. Hacienda H12019; C. Charretera IMJ8948.
- Dalea greggi* (Gray) Heller — SSM: above P. Los Fresnos P6017.
- Dalea hospes* (Rose) Bullock — SM: C. Pajarito, common in dry arroyos M3156.
- Dalea laniceps* Barneby — SME: Potrero Arnold s.n.
- Dalea lutea* (Cav.) Willd. var. *lutea* — SSM: above P. Los Fresnos P6074A, B.
- Dalea nana* Torrey var. *carnescens* (Rydb.) Kearney & Peebles Basin: 3.2 km Ne of Puerto Salado, stream area P10526D.
- Dalea neo-mexicana* Gray var. *longipila* (Rydb.) Barneby — SME: Potrero, exposed gypsum face Arnold 96.
- Dalea pogonantha* Gray var. *pogonantha* — Lower slopes and bajadas, fairly

- common. SSM: N end P5827, 5968, 10372. SM: Mt. Anteojo P5815; near R. Mesquite P13026A.
- Dalea wrightii* Gray — Bajadas and flats, fairly common. Basin: 1.8 km N of L. Churince P5244; 2.9 km SSW of P. Becerra P5187; opposite L. Grande P130990C; 5.8 km S of Puerto Salado P5576; 8 km W of CC MCJ12070A.
- Desmanthus virgatus* Willd. var. *glandulosus* B. L. Turner — Basin: 8 km W of CC MCJ12084E. North of Basin: 1.9 km W of CC-Ocampo Hwy, toward R. Mesquite P13024.
- Desmodium grahamii* Gray — Oak-pine forests, canyons, uncommon. SM: C. Hacienda H11993, 13644.
- Desmodium psilophyllum* Schlecht. — Chaparral and oak-pine zones, fairly common. SM: C. Hacienda H9451B (in part; host of *Cuscuta*), 11961, 12031, 13635.
- Eysenhardtia texana* Scheele — SSM: Minckley s.n. SM: Mt. Anteojo Meyer & Landye s.n.
- Hoffmanseggia glauca* (Ort.) Eifert — Common on bajadas and flats. Basin: Puerto Salado P5884; airport road P5397, 5398; W side of CC P5366; 10.7 km W of P. Anteojo at RR P5533, 5539B.
- Indigofera miniata* Ort. var. *miniata* — Uncommon in oak-pine forests. SM: C. Hacienda H11977.
- Leacaena retusa* Gray — Mid and upper slopes, oak-pine forests, uncommon. SSM: Minckley s.n.; above P. Los Fresnos P5996. SM: Minckley s.n.; Mt. Anteojo complex Meyer & Landye s.n.; C. Hacienda H13631, MCJ10986.
- Melilotus albus* Lam. — Introduced weed. Puerto Salado: stream area P5864.
- Medicago sativa* L. — Escaped cultigen. CC: W side P5375.
- Mimosa biuncifera* Benth. var. *lindheimeri* (Gray) Robins. — Oak and oak-pine forests, canyons, uncommon. SM: C. Agua M3268; C. Charretera IMJ8932.
- Mimosa emoryana* Benth. — SM: C. Agua, common on dry foot hills at mouth of canyon M3271.
- Mimosa* sp. — Lower canyons and bajadas, uncommon. Leaves regularly reduced to once-pinnate state. SSM: Minckley s.n. (sterile); arroyo opposite L. Grande P13073.
- Nissolia platycalyx* Wats. — Twining in shrubs of lower canyon to chaparral zone, scattered. SSM: above P. Los Fresnos P6069. SM: C. Pajarito M3175; C. Hacienda H11847, 13564; C. Charretera IMJ9118.
- Parkinsonia aculeata** L. — One small tree along Julio Canal, apparently introduced P3921.
- Phaseolus wrightii* Gray — Infrequent in oak-pine forest. SM: C. Hacienda H12004.
- Prosopis glandulosa* Torrey var. *torreyana* (Benson) M. C. Johnston — Common tree surrounding basin, forming bosques in less saline areas. Basin: P. Santa Tecla P4274, 5612; near P. Tío Candido P5709; E L. El Mojarral P3722; N end of SSM P5092; near gypsum plant P5057, 5058; 11.7 km S of Puerto Salado P5632; Río Cañón P5460, 5918; P. Anteojo P5519. Pubescent form: dunes W of L. Grande P3807; P. Anteojo P4024.
- Prosopis laevigata* (Humb. & Bonpl. ex Willd.) M. C. Johnston — Basin: P. Anteojo P5518.

- Psoralea melanocarpa* Benth. — SM: C. Hacienda, disturbed area in oak-pine forest **H11981**.
Sophora secundiflora (Ort.) Lag. — Oak-pine and chaparral zones, scattered. SSM:
 Above P. Los Fresnos **P6008**. SM: C. Hacienda **H11879**; C. Pajarito **P10448B**;
 C. Charretera **IMJ9115** (GH, not seen; cited by Rudd, 1968).

KRAMERIACEAE

- Krameria glandulosa* Rose & Painter — Basin: 0.6 km W of Puerto Salado **P5451**
 (glandless form); opposite L. Grande **P13053** (form with glands).
Krameria grayi Rose & Painter — Basin: 8 km W of P. Anteojo **P5526**.
Krameria lanceolata Torrey — SM: C. Charretera, margins of thickets **IMJ8949**.

GERANIACEAE

- Geranium atropurpureum* Heller — SM: C. Charretera, shaded canyon in lower pine
 belt **IMJ8986** (Gh, not seen; cited by Moore, 1943).
Geranium seemanni Peyr. — SM: C. Hacienda, oak-pine forest, frequent **H11983**,
13643.

OXALIDACEAE

- Oxalis albicans* H. B. K. ssp. *pilosa* (Nutt.) Eiten — SME: Potrero Arnold s.n.
Oxalis alpina (Rose) Knuth — Lower canyons, rare (only second known Coahuila
 collection, M. F. Denton, pers. com.). SSM: canyon opposite L. Grande
P13098.

LINACEAE

- Linum lewisii* Pursh — SM: C. Hacienda, disturbed area about old lumber camp,
 oak-pine forest, occasional **H11976**.
Linum rupestre (Gray) Engelm. — Common on bajadas and lower slopes. SSM:
 above P. Los Fresnos **P6021**, N end **P5832**. SME: Potrero Arnold s.n. SM:
 above P. Anteojo **P5753**; C. Hacienda **H12014**.
Linum schiedeanum Schlecht. & Cham. — Lower to mid slopes, uncommon. SSM:
 above P. Los Fresnos **P6053**. SM: C. Hacienda **MCJ10972**.

ZYGOPHYLLACEAE

- Fagonia scoparia* Brandegee — Basin: gypsum exposure on plain, 8-11 km SW of
 Rosario, common locally **IMJ8818** (GH).
Guaiacum angustifolium Engelm. — Bajadas, frequent. Basin: above P. Los Fresnos
P5979; P. Tío Candido **P4116**; opposite L. Grande **P5173**; Puerto Salado
P5435; Potrero, SME Arnold 99; L. Ferriño **P4192**; C. de Ciénegas White 1900
 (GH); ca. 16 km N of CC Wynd 748 (GH).
Kallstroemia parviflora Norton — Bajadas, infrequent. Basin: NE slopes of SSM
P4253; San Marcos Mesa **P3701**; Río Cañón **P4167**.

Larrea tridentata (DC.) Cov. — Dominant of bajadas and lower slopes. Basin: P. Los Fresnos P4321, 8.4 km NW P5678; P. Tío Candido P4117; L. El Mojarral P3595; San Marcos Mesa P3697; opposite L. Grande P5207; P. Becerra P3743; 11.7 km S of Puerto Salado P5643; Mt. Anteojo P4012; Rio Canon P3904.

Peganum mexicanum Gray — Abundant weed of bajadas and flats. Basin: Marsh 2082 (GH); Puerto Salado P5425, 5.8 km S P5580; airport road P5400; E of gypsum plant P5042; W side CC P5378.

Sericodes greggi Gray — Locally common on bajadas, Basin: Marsh 2066 (GH); N end of SSM P10408, 10439, 13040; airport road P5395; bajada above P. Anteojo P4011.

Tribulus terrestris L. — Uncommon weed. Basin: P. Becerra P3770.

RUTACEAE

Amyris marshii Standley — Uncommon on lower slopes; species with simple leaves. SSM: above P. Los Fresnos P6116; 1.5 km NE of R. Marcos MCJ7658.

Choisya katherinae Muller — Lower slopes to oak-pine zone, infrequent. SM: C. Agua M3245 (NA type, not seen; cited by Muller, 1940); SE & SSE of R. Cerro Madera MCJ9401; C. Hacienda H12018, MCJ10982; C. Barrica W1214.

Ptelea trifoliata L. ssp. *coahuilensis* (Greene) V. L. Bailey var. *coahuilensis* — Mixed chaparral and oak-pine zones, common shrub. SM: C. Hacienda H11852, 13559; C. Indio W1243; C. Charretera IMJ9130.

Thamnosma texana (Gray) Torrey — Very common on bajadas. Basin: above P. Los Fresnos P6024; N end of SSM P5136, 5843, 10403; 3.2 km NE of Puerto Salado P10522; flats near C. Pajarito P10443, 10494.

SIMAROUBACEAE

Holacantha stewartii Muller — SM: Mt. Anteojo, lower slopes P5726.

MALPIGHIACEAE

Echinopterys setosa T. S. Brandebee — Lower slopes, common. SSM: above P. Los Fresnos P6028, 6.4 km NW P12133; 1.5 km NE of R. San Marcos MCJ7659; canyon opposite L. Grande P13054, 13089, SM: C. Indio W1234.

Janusia gracilis Gray — SSM: N end, lower slopes P5105, 5899, 10405.

Mascagnia cana Small — SM: C. Indio, near mouth of canyon, two plants seen W1245.

Mascagnia lilacina (Wats.) Niedenzu in Engler & Prantl — Lower to mid slopes, infrequent climbing shrub. SSM: 6.4 km NW of P. Los Fresnos P13164A; opposite L. Grande P13056, 13087. SM: Mt. Anteojo P5773; SE & SSE of R. Cerro Madera MCJ9403; C. Hacienda H11853; C. Barrica W1231.

POLYGALACEAE

Polygala alba Nutt. var. *alba* — Bajadas and arroyos, fairly common. SSM: 2.4 km

- NE of R. San Marcos MCJ7687; 9 km SW of CC MCJ7617B. SM: C. Agua M3254; R. Cerro Madera, ca. 5 km SE MCJ9378; near C. Pajarito P10489.
- Polygala lindheimeri* Gray — Lower slopes to chaparral zone, fairly common. SP: ca. 1.6 km NE of Mina La Reforma MCJ10323B. SSM: above P. Los Fresnos P6019, 6.4 km NW P13123; 1.5 km NE of R. San Marcos MCJ7667; above L. Churince P10429; 4 km S of P. Becerra P5956; N end MCJ10929.
- Polygala longa* Blake — Arroyos and bajadas, scattered. SSM: N end MCJ10919, P13119; 1.5 im NE of R. San Marcos MCJ7681; 9 km SW of CC MCJ7617 (not seen; Wendt, pers. comm.); opposite L. Grande P13099. SM: 8 km W of CC MCJ12079E; C. Pajarito M3163; C. Hacienda H11846B; C. Barrica W1201 (not seen; Wendt, pers. comm.); C. Olmos W1177 (not seen; Wendt, pers. comm.); 5.3 km SW of R. Charretera W1197 (not seen; Wendt, pers. comm.); C. Charretera IMJ9086.
- Polygala macradenia* Gray — Lower slopes, very common. SSM: 1.5 km NE of R. San Marcos MCJ17688. SM: near R. Cerro Madera W1174 (not seen; Wnedt, pers. comm.); C. Pajarito P10493.
- Polygala nudata* Brandegee — Lower slopes to chaparral zone, uncommon. SSM: 6.4 km NW of P. Los Fresnos P13148; 1.5 km NE of R. San Marcos MCJ7689; N end MCJ10928. SM: 8 km W of CC MCJ12079B; Mt. Anteojo P5744 (in part), 5781A; C. Hacienda MCJ10986C; C. Barrica W1207 (not seen; Wendt, pers. comm.); C. Indio W1244 (not seen; Wendt, pers. comm.); 5.3 km SW of R. Charretera W1196 (not seen; Wendt, pers. comm.).
- Polygala Minutifolia* Rose — Uncommon, near S facing crest, pine-fir forest. SM: above C. Hacienda H13598; C. Barrica W1221 (TEX type, not seen; Wendt, pers. comm.).
- Polygala parrasana* Brandegee — SM: C. Barrica, SW-facing cliffs, uncommon W1220 (not seen; Wendt, pers. comm.).
- Polygala scoparioides* Chod. — SM: 8 km W of CC, S slopes MCJ12083A, 12084D (in part); Mt. Anteojo P5744 (in part); C. Indio W1237 (not seen; Wendt, pers. comm.).
- Polygala semialata* Wats. — Common on lower slopes, arroyos and bajadas. SP: ca. 1 km NE of Mina La Reforma MCJ10323C. SSM: 9 km N of Ejido La Noria MCJ10312. N end MCJ10918, P5111, 5834, 10379, 10510. SM: 8 km W of CC MCJ12084D (in part); ca. 5 km SE of R. Cerro Madera MCJ9371.
- Polygala shinnersii* W. H. Lewis — Chaparral and oak-pine zones, uncommon. SM: SE & SSE of R. Cerro Madera MCJ9432; C. Hacienda H11969, 11970, 11971. MCJ10964, W1149 (not seen; Wendt, pers. comm.); SW of Ocampo Graber 166.
- Polygala turgida* Rose — Abundant succulent along waterways and flats. Basin: Marsh 2072; ca. 1.5 km NE of Santa Tecla MCJ10332; P. Los Fresnos P4295; N end of SSM Lewis s.n., P5086, 5820; E L. El Mojarral P5164; L. Churince Engard 288, P10420A; L. El Chiqueros complex P3851; SW of CC, 13 km MCJ7639, 12 km MCJ9162; 9.5 km H7960, 6.4 km Turner 6171A.
- Polygala watsoni* Chod. — Common on lower to upper slopes. SSM: Minckley s.n. above P. Los Fresnos P6066; N end MCJ10935. SM: 8 km W of CC MCJ12079A; SE & SSE of R. Cerro Madera MCJ9434; C. Hacienda H11939, MCJ

10961, 10986D; C. Pajarito P10467; ca. 1.6 km NW of Picacho Zozaya W816
(not seen; Wendt, pers. comm.).

EUPHORBIACEAE

- Acalypha lindheimeri* Muell. Arg. — Uncommon, pine-oak zone. SSM: 6.4 km NW of P. Los Fresnos **P13154B**. SM: C. Hacienda **H11980**; C. Charretera **IMJ 9091**.
- Acalypha monostachya* Cav. (= *A. hederacea* Torrey) — SME: Potrero **Arnold 33**. SM: C. Charretera, edge of thickets **IMJ9149**.
- Argythamnia neomexicana* Muell. Arg. — Bajadas, very common. Basin: ca. 3.2 km NW of L. Tío Quintero **P4268**; P. Los Fresnos, ca. 8 km NW **P5676, 5691, 4.3 km NW P5646**; Puerto San Marcos **P5293**; N end of SSM **P10396**; P. Anteojo **P4041A**.
- Bernardia myricifolia* (Scheele) Wats. — Lower slopes, uncommon. SM: C. Hacienda **H11862**.
- Bernardia obovata* I. M. Johnston — Lower slopes, uncommon. SSM: opposite L. Grande **P13079**.
- Croton fruticosus* Englm. — Oak or oak-pine forests, common. SSM: **Minckley s.n.** SM: C. Agua **M3248**; C. Hacienda **H12009**; C. Charretera **IMJ9067**.
- Croton incanus* H. B. K. (= *C. torreyanus* Muell. Arg.) — Arroyos and bajadas, common. CC: **Marsh 2062**. SSM: P. Los Fresnos **P6052, 6.4 km NW P13077, 8.5 km NW (P5695; 2.9 km SSW of P. Becerra P5182. Mt. Anteojo P5782; C. Pajarito M3157; ca. 5 km SE of R. Cerro Madera MCJ9376**.
- Croton pottsii* (Kl.) Muell. Arg. — Lower slopes and bajadas, common. Basin: P. Los Fresnos **P6052; 8.5 km NW P5686B**; Puerto San Marcos **P5285A**; 2.9 km S of R. San Marcos **P5320**; N end of SSM **P4215, 10505**. SM: C. Charretera **IMJ9163**.
- Croton suaveolens* Torrey — Upper cayons and south-facing slopes with chaparral, uncommon. SM: C. Hacienda **MCJ9444**; C. Barrica **W1224**; C. Charretera **IMJ8955**.
- Euphorbia antisiphilitica* Zucc. — Abundant on bajadas; cuticle used as wax source for candles. SSV: N of C. Espantosa **Schroeder 107** (GH). SSM: NE slope **P5849**; 11.7 km NW of P. Los Fresnos **P4325**; near P. Tío Candido **P4124, 5725** (after wax processing); Puerto San Marcos **P5281**; opposite L. Grande **P5200**; N of Basin, flats near C. Pajarito **P10440**.
- Euphorbia astyla* Boiss. — Abundant on dunes and flats. Basin: **Marsh 2070**; dunes near L. Grande **Engard 292, P3815, 3821, Turner 6055**; L. Salada **P3627, 5037**; Río Mesquites at road **P5007**; CC, 8 km SW **Leverich & Turner 11, 4.8 km S White 1924** (GH), 3.9 km S **Turner 6064**, ca. 5 km W **H14290, 6.4 km W IMJ7135** (GH).
- Euphorbia brachycera* Engelm. var. *brachycera* — Pine forests, upper canyons, uncommon. SSM: above P. Los Fresnos **P6061**. SM: C. Hacienda **H12016**.
- Euphorbia brachycera* Engelm. var. *greggii* (Boiss.) M. C. Johnston — Infrequent, oak woodland. SM: C. Barrica **W1211**.
- Euphorbia cinerascens* Engelm. — Arroyos and bajadas, infrequent. SME: Potrero **Arnold s.n.** SM: C. Charretera **IMJ9071**.

- Euphorbia* cf. *crepitata* Wheeler — Identification tentative, based on immature specimens. SM: Mt. Anteojo, bajadas and lower slopes, uncommon P5479, 5760.
- Euphorbia exstipulata* Engelm. — Bajadas, uncommon. SSM: opposite L. Grande P13050; N end P4254.
- Euphorbia fruticulosa* Boiss. — Uncommon on gypsum dunes. Basin: near L. Grande Engard 291, P3814, 13104; SSW of CC, 14-19 km P3713, 11.3 km Urbatsch 1017 (TEX, not seen; cited by M. C. Johnston, 1975), H12548 (TEX, not seen; cited by M. C. Johnston, 1975); N end of SSM Lewis s.n.
- Euphorbia pinkavana* M. C. Johnston — SM: C. Hacienda, oakpine forests H11940, MCJ10958 (TEX type, not seen; cited by M. C. Johnston, 1975).
- Euphorbia scopulorum* Brandegee — Common on bajadas. SSM: P. Los Fresnos, 11.7 km NW P4322, 4323; near L. Churince P5245, 10424; near P. Becerra P5948; N end P4220. SM: near P. Anteojo IMJ7153 (GH), P5477.
- Euphorbia serpens* H. B. K. — Uncommon on bajadas and flats. Basin: L. Ferriño P5414; Río Cañón P5337.
- Euphorbia serpyllifolia* Pers. — Bajadas, scattered. Basin: 2.9 km SSW of P. Becerra P5219B; Mt. Anteojo P4013A.
- Euphorbia stictospora* Engelm. — Bajadas and lower slopes, uncommon. Basin: above P. Los Fresnos P6080; 2.9 km SSW of P. Becerra P5222; 4.8 km S of R. San Marcos P5294.
- Euphorbia villifera* Scheele — Lower slopes to oak woodlands, infrequent. SM: C. Pajarito P10462; C. Charretera IMJ9153.
- Jatropha dioica* Cerv. var. *graminea* McVaugh — Common on bajadas. SSM: 5 km NW of P. Los Fresnos P5651; P. Tío Candido P4115; Puerto San Marcos P5651; P. Tío Candido P4115; Puerto San Marcos P5295; N end Lewis s.n.; 15.8 km SSW of CC Minckley s.n. SM: Mt. Anteojo P4007.
- Phyllanthus polygonoides* Spreng. — Bajadas, infrequent. SSM: above P. Los Fresnos P4297A, 6084; N end P5835.
- Stillingia treculiana* (Muell. Arg.) I. M. Johnston — CC: Shreve 8454 (UC, not seen; cited by Rogers, 1951).
- Tragia amblyodonta* (Muell. Arg.) Pax & Hoffm. — Uncommon on bajadas and flats. Basin: 1.8 km N of L. Churince P5235; 2.9 km SSW of P. Becerra P5168A; opposite L. Grande P13048; Mt. Anteojo P5802.
- Tragia ramosa* Torrey — SM: C. Hacienda, disturbed area, mid canyon H11972A.

ANACARDIACEAE

- Pistacia texana* Swingle — Fairly common small tree in brushy canyons. SSM: 1.5 km NE of R. San Marcos MCJ7675; opposite L. Grande P13086. SME: Potrero Arnold 4. SM: Minckley s.n., ca. 5 km SE of R. Cerro Madera MCJ9388; C. Hacienda Engard 3128, MCJ7675; opposite L. Grande P13086. SME: Potrero Arnold 4. SM: Minckley s.n., ca. 5 km SE of R. Cerro Madera MCJ 9388; C. Hacienda Engard 3128, MCJ10985; C. Indio W1239; C. Charretera IMJ9128.
- Rhus aromatica* Ait. var. *flabelliformis* Shinnars — Uncommon shrub on lower to

mid slopes. SSM: above P. Los Fresnos **P5977, 6094** (var. undetermined on these). SM: Mt. Anteojo complex **Meyer s.n.**

Rhus microphylla Engelm. — SME: Potrero **Arnold 102.**

Rhus virens Lindh. ex Gray ssp. *virens* — Common among oaks. SSM: **Minckley s.n.**; above P. Los Fresnos **P6007**; opposite L. Grande **P13059**. SME: Potrero **Arnold s.n.** SM: **Minckley s.n.**; Mt. Anteojo **P5754.**

Toxicodendron radicans (L.) Kuntze ssp. *eximium* (Greene) Gillis — Basin: Chiqueiros complex, sand dunes near stream **P3857.**

CELASTRACEAE

Schaefferia cuneifolia Gray — Lower canyons and bajadas, uncommon. Basin: road to Santa Tecla **MCJ10912**; 6.4 km NW of P. Los Fresnos **P13130**; opposite L. Grande **P13057.**

ACERACEAE

Acer grandidentatum Nutt. — Common in lower canyon forests. SM: C. Pajarito **M3189**; C. Hacienda **Engard 303, MCJ10978**; C. Olmos **W1191.**

SAPINDACEAE

Dodonaea viscosa Jacq. — Uncommon in lower canyons. SSM: 6.4 km NW of P. Los Fresnos **P13121.**

Ungnadia speciosa Endl. — Upper bajadas and lower canyons, uncommon. SSM: 6.4 km NW of P. Los Fresnos **P13145**. SM: C. Hacienda **Engard 310.**

RHAMNACEAE

Ceanothus coeruleus Lag. — Lower slopes and exposed ridges, uncommon. SSM: above P. Los Fresnos **P6083**. SM: Mt. Anteojo **Meyer & Landye s.n.**; S. crest of range **H11929**; C. Hacienda **Gentry 23254 (DES), MCJ10986A**; C. Charretera **IMJ8927**; SW of Ocampo **Graber 184.**

Cenathus fendleri Gray — SM: C. Charretera, thickets along arroyo at lower edge of pine belt **IMJ8979.**

Ceanothus greggii Gray — Middle slopes up to ponderosa pines, common. SSM: above P. Los Fresnos **P6068**; N end **MCJ10924**. SM: C. Hacienda **H11871**; C. Pajarito **P10476.**

Colubrina greggii Gray var. *greggii* — SM: C. Charretera, along arroyos and on flats **IMJ9154.**

Colubrina texensis (Torrey & Gray) Gray var. *pedunculata* M. C. Johnston — Locally common in arroyos. Basin: R. San Marcos, 2.9 km S **P5317**; 1.5 km NE **MCJ7683**; opposite L. Grande **P13080**; ca. 3 km E of Rosario Sta. **IMJ8836**; near Est. Socorro **H7923.**

Condalia viridis I. M. Johnston — Basin: 5.8 Km S of Puerto Salado **P5578.**

Condalia warnockii M. C. Johnston var. *warnockii* — Common shrub surrounding

basin. Basin: 14.8 km S of Puerto Salado P5599; P. Escobeda P4096; L. El Mojarral P3723, 5166.

Karwinskia humboldtiana (R. & S.) Zucc. — Lower slopes and bajadas, very common. SSM: C. Tecla Minckley s.n.; opposite L. Grande P5195, 13049; N end P5108. SM: Mt. Anteojo P5470, 5781B; C. Jara IMJ8855; first canyon W of CC, N side H7944.

Rhamnus betulifolia Greene — Oak-pine canyons, common. SM: Mt. Anteojo Meyer & Landye s.n.; C. Pajarito M3159; C. Agua M3228; C. Hacienda Engard 317, H11960, 13634, MCJ9446, 10981; C. Charretera IMJ8903, 8986.

Rhamnus serrata Willd. ex Schult. — Ridges, chaparral and oak-pine zones, uncommon. SM: Mt. Anteojo Meyer & Landye s.n.; SE & SSE of R. Cerro Madera MCJ9393; C. Hacienda H11966; C. Invierno W641A; C. Barrica W1345, 1378.

Rhamnus standleyana C. B. Wolf — SM: 2 km E of Picacho Zozaya, one plant in mossy forest near crest IMJ9031 (GH, not seen; cited by L. A. Johnston, 1975).

Sageretia wrightii Wats. — Uncommon among shrubs, lower slopes. SM: C. Agua M3266; ca. 5 km SE of R. Cerro Madera MCJ9391; C. Hacienda Engard 301, H11876, MCJ10970; C. Barrica W1384.

Ziziphus obtusifolia (Torrey & Gray) Gray — Uncommon shrub surrounding basin. Basin: 5.8 km N of R. San Marcos P5321; P. Escobeda P4094; W L. El Mojarral P5167; Río Cañón P3897.

VITACEAE

Cissus incisa (Nutt.) Des Moul — Canyons, uncommon vine. SSM: 6.4 km NW of P. Los Fresnos P13141. SM: Río Cañón, along stream P5325, 5919.

Vitis arizonica Engelm. — SM: C. Hacienda, lower slopes Engard 304, H12028, 13647, MCJ10980.

Vitis riparia Michx. — Fairly common in canyons. SM: C. Invierno W650D; C. Hacienda W1162, 1163, 1164, 1166, 1167 and hybrid intermediates to *V. arizonica* W1159, 1165.

MALVACEAE

Abutilon hypoleucum Gray — CC: Hoult & Harrell s.n. (TEX), rocky canyon soil Hoult & West s.n. (TEX).

Abutilon incanum (Link) Sweet — CC: Marsh 2030; rocky or sandy soil Hoult s.n. (TEX).

Abutilon malacum Wats. — Very common on bajadas. Basin: Hoult s.n. (TEX); 11.7 km NW of P. Los Fresnos P4318; L. Churince P10425; 2.9 km S of R. San Marcos P5310; P. Becerra, 4 km S P5953, 2.9 km SSW P5185; N end of SSM P5905, 10375; Río Cañón P5327.

Abutilon sp. — Bajadas and arroyos, not common. Basin: opposite L. Grande P5193; N end of SSM P13044; near CC Hoult s.n. (TEX); Mt. Anteojo P5481, 5785.

Herissantia crispa (L.) Brizicky — Río Cañón: 4.8 km N of CC P5923.

Hibiscus cardiophyllus Gray — Basin: Hoult s.n. (TEX), Hoult & Harrell s.n. (TEX); 6.4 km NW of P. Los Fresnos P13132.

Hibiscus coulteri Harv. — Bajadas, very common. Basin: 11.7 km N of Los Fresnos P4319; 1.5 km NE of R. San Marcos MCJ7664; N end of SSM P10508; E of L. Grande P5180; near CC Hoult s.n. (TEX). SM: Minckley s.n.; C. Pajarito M3194.

Malva parviflora L. — Uncommon weed. Basin: Puerto Salado P5866, 5892; Río Cañón P5357.

Malvastrum coromandelion (L.) Garcke — Río Cañón P3910, 5331.

Meximalva filipes (Gray) Fryx. — SME: Potrero Arnold 7.

Pavonia lasiopetala Scheele — SM: C. Barrica, brushy slopes, one plant W1229.

Sida filicaulis Torrey & Gray — Common on bajadas and flats. Basin: Puerto San Marcos P5288; 8.5 km NW of P. Los Fresnos P5703; N end of SSM P10397; ca. 3 km NE of CC P10526.

Sida longipes Gray — CC: 3 km SW, flat gypseous bajada, rare MCJ7617.

Sida neomexicana Gray — SM: C. Charretera, along road, open main canyon IMJ 9162.

Sida physocalyx Gray — Basin: Puerto Salado P5874.

Sphaeralcea angustifolia (Cav.) D. Don var. *angustifolia* — Basin: Puerto San Marcos P5304A; Puerto Salado P5867C; W side of CC P5368.

Sphaeralcea endlichii Ulbride — Uncommon on bajadas and lower slopes. SSM: above P. Los Fresnos P5990; N end P5903, 10509.

STERCULIACEAE

Ayenia nicrophylla Gray — SSM: bajadas opposite L. Grande P5201, N end P5139, 10433.

TAMARICACEAE

*Tamarix aphylla** Karst. — Cultivated tree. Basin: P. Los Fresnos P5629; P. Tío Candido P4109; 19.3 km E of CC H14300.

FOUQUIERIACEAE

Fouquieria splendens Engelm. in Wisliz. ssp. *splendens* Locally common on bajadas and stabilized dunes. Basin: 11.7 km S of Puerto Salado P5641; 5 km NW of P. Los Fresnos P5649; dunes about L. Grande P5278; N end of SSM P5836; 8.4 km SW of CC H14315.

KOEBERLINIACEAE

Koeberlinia spinosa Zucc. — Basin: 7.1 km S of Puerto Salado P5586; Río Cañón P3914, 5928 (atypical).

VIOLACEAE

Hybanthus verticillatus (Ort.) Baill. Var. *verticillatus* — Uncommon on bajadas.

Basin: 11.7 km NW of P. Los Fresnos P4311; 1.8 km N of L. Churince P5236; 4 km S of P. Becerra P5951.

Viola lovelliana Brainerd — SM: C. Hacienda, disturbed area, pine-oak zone, occasional H11962, 12002 (atypical, with mostly very broad undivided leaves), W1171.

PASSIFLORACEAE

Passiflora tenuiloba Engelm. — Locally common on bajadas. SSM: N end MCJ 10916, P4224, 4247, 5114, 5148, 13120. SM: C. Barrica W1232.

LOASACEAE

Cevallia sinuata Lag. — Bajadas, flats and dunes, common. Basin: C. Espantosa, W slope of SSV Schroeder 153 (GH); San Marcos Mesa P3688; dunes W of L. Grande P3805; N end of SSM Lewis s.n., P5901; E of gypsum plant P5046; Mt. Anteojo P4010; Río Cañón P5910.

Eucnide bartonioides Zucc. — CC: Marsh 2069.

Eucnide floribunda Wats. — Lower slopes and canyons, common. SSV: C. Espantosa Schroeder 138, 149 (both GH). SSM: San Marcos Mesa P3691; N end Lewis s.n., P4259, 5128; 16 km SW of CC H7971 (not seen; Thompson, pers. comm.); near P. Becerra P13118. SM: W of CC, 8 km MCJ12071 (not seen; Thompson, pers. comm.), 6.4 km IMJ7158 (GH); 6-8 km W of Socorro Sta. IMJ8839 (GH); Río Cañón P5360, 5927.

Eucnide xylinea C. H. Muller — Vertical or overhanging cliffs, uncommon. SM: C. Charretera IMJ9003 (GH); C. Barrica W1219.

Mentzelia mexicana Thompson & Zavortink — Bajadas and stabilized gypsum dunes, common. Basin: N end of SSM P5152; dunes about L. Grande P3809, 5274, 5961; P. Becerra P3769, 2.9 km SW P5214; headwaters of El Chiqueros P3952; Río Cañón P5457, 5909; near Divisadera IMJ8863 (GH).

Mentzelia pachyrhiza I. M. Johnston — Uncommon on bajadas. Basin: 8.4 km NW of P. Los Fresnos P5682; N end of SSM P4225; Río Cañón P4165A; 4.8 km E of CC IMJ7112 (GH).

Petalonyx crenatus Gray — Common on gypsum dunes. Basin: origin or Río Puente Chiquito P4345; P. Escobeda P4097; near L. Grande P5261; point of dunes Minckley, s.n.; N end of SSM Lewis s.n.; headwaters of El Chiqueros P3944; 3.4 km W of CC P5541; dunes, Río Mesquites P5029.