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XIV

STUDIES IN THE FLORA OF LOWER CALIFORNIA AND ADJACENT ISLANDS

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INTRODUCTION

In the spring of 1925, the California Academy of Sciences sent an expedition to the Revillagigedo Islands off the Pacific coast of Mexico. The U. S. Navy Department detailed the U. S. mine-sweeper Ortolan for the use of the Academy. Mr. H. L. Mason accompanied the expedition as botanist. On the way to the islands a short stop was made at Guadalupe Island and a small collection of plants was secured. Clarion Island was reached April 26, and from then until May 11, Clarion, Socorro and San Benedicto islands were explored. On the return trip, the vessel stopped at the Tres Marias Islands, May 14-24, and collections were made on Maria Madre, Maria Magdalena and Isabella islands. From there the vessel sailed north along the west coast of Lower California and made landings at Cape San Lucas, Magdalena Bay, Turtle Bay, Cedros Island, San Quintin Bay, and San Martin Island. Mr. Mason is preparing the report on the Botany of the Revillagigedo Islands, but it is not yet ready. The present writer has worked up all the other collections except that from the Tres Marias Islands. The collection on these islands was made at the end of the dry season and the specimens were very poor. Duplicates were sent to Paul C. Standley, an authority

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on Mexican plants at the National Herbarium, and were named by him.

The reports on Guadalupe Island, Cedros Island and Tres Marias Islands include all the species that have been reported from those islands, with the names of the collectors and references to the publications. This assembling of all the known species that have been published from those islands will be a great help to future explorers.

Many species were originally described from certain of the localities where landings were made by the Ortolan Expedition and topotypes were collected whenever possible. Lists of the topotypes have been added, supplementing those represented in the collections.

LIST OF THE PLANTS RECORDED FROM GUADALUPE ISLAND, MEXICO

Guadalupe Island lies 135 miles from the coast of Lower California and 250 miles south of the border of the United States. It is about 20 miles long from north to south and 3 to 7 miles wide. From a narrow beach the island rises abruptly to a sort of plateau indented by precipitous cañons and at the top traversed by ridges, the highest rising on Mount Augusta to an elevation of about 4000 feet. The northern part of the island is less arid than the southern, due to the heavy fogs which are so dense that the moisture condensing on the trees forms small streams from which some of the springs are supposed to be fed. Groves of pines and cypresses are on the uplands and on the sides of some of the cañons at the northern end evergreen oaks are found. Palms grow in warm cañons that are sheltered from the winds.

This island has been known to navigators since early times and was noted by Vancouver, though he did not stop there. Goats were introduced long ago to furnish fresh meat to passing vessels. Later the island was purchased by a Californian company and was stocked with angora goats. These have multiplied excessively and have almost completely destroyed the vegetation so that today but little remains of one of the most remarkable floras on the Pacific coast.

The first knowledge of this flora came from the collection of Dr. Edward Palmer, who spent from February to May,

1874, exploring and collecting. The results were published by Sereno Watson, who wrote the first account of the island, including a list of the collection with Dr. Palmer's notes, in the eleventh volume of the Proceedings of the American Academy, pages 105-121. One hundred and nineteen species were listed, representing 99 phanerogams, 6 ferns, 11 mosses and 4 hepatics, of which 42 phanerogams and 1 hepatic have been described as new.

Dr. Edward Palmer brought back seeds of the cypress and palm. Today fine trees of the cypress are to be found in various parts of California, notably a row along the State Capitol building at Sacramento and others in Golden Gate Park. The palms are found in various parts of the state.

Dr. Edward L. Greene spent a week on the island, late in April, 1885, and collected 120 species, adding 15, of which 10 were described as new, the other 5 being introduced species of wide distribution. The results of his trip were published in the Bulletin of the California Academy of Sciences, volume 1: 214-228. Besides an interesting account of the island, he published the new species and the list in the same volume.

Dr. Palmer made a second trip, from March 27 to April 3, 1889, and collected 72 species, adding 14, of which 4 were new. This list was published by Dr. George Vasey and Dr. J. N. Rose in their first volume of the Contributions of the U. S. National Herbarium, pages 21-27, 1890.

Dr. F. Franceschi¹ spent the latter part of December, 1892, and the early part of January, 1893, on the island. Besides an account of the island, which was published together with the list of species in the fourth volume of Zoe, pages 130-139, 1893, he wrote articles for several garden magazines. The phanerogams were named by Mrs. Katherine Brandegee and the lichens by Dr. E. L. Greene. Among his collections were 11 endemic species and one which Dr. Greene described as a new genus founded on a specimen in the Herbarium of the California Academy of Sciences, which he named *Petromecon frutescens* Pitt., 5: 294, 1905. The other species, *Petromecon palmeri*, l.c., 296, was originally described as *Eschscholtzia palmeri* Rose, Contr. U. S. Nat. Herb., 1: 23. 1890.

¹This was the name under which he published. His true name is Dr. Emanuele Orazio Fenzi.

In the fifth volume of *Zoe* is an account of the Voyage of the *Wahlberg*, a vessel owned and used by A. W. Anthony in exploring the islands and coast of Lower California. Mr. T. S. Brandegee accompanied the expedition as far south as San Jose del Cabo, and among the places visited in the early spring of 1897 was Guadalupe Island. No full list of species was published, but 10 species were added, all from the mainland of California. In June of the same year an expedition consisting of Messrs. Rufus L. Green, Charles B. Wing and Wilbur W. Thoburn visited the island to make certain fur-seal investigations. They collected some plants, a list of which was published by Dr. William Russel Dudley in "The Fur-Seals and Fur-Seal Islands of the North Pacific Ocean," part III: 280-283, 1899. Thirty-seven species were collected, one a new species of *Calandrinia*, and 2 species were added.

Dr. G. Dallas Hanna and J. R. Slevin, in July, 1923, visited the island in the interest of the California Academy of Sciences, and made a small collection and photographed the pines and cypresses.

The last collection was that of H. L. Mason while botanical collector for the expedition of the California Academy of Sciences to the Revillagigedo Islands in 1925. Mr. Mason was on the island only two days (April 19-20), and in stormy weather, so that a small collection of only 43 species was made. Two weeds not before reported and nine topotypes were collected.

In the present list of species the collector's name is given after each species with the exception of that made by Green, Wing and Thoburn. This is indicated as Dudley's list. Three lists have been made to show the relationship of the flora. The list of species first described from Guadalupe Island numbers 51, the list from the mainland or islands off the coast of California numbers 74, while that of widely distributed species numbers 35. It will be seen from these lists, as well as from the general list, that the flora is related more to that of the mainland of California than to that of the peninsula of Lower California or the islands adjacent. It suggests a former connection with the mainland and is perhaps the remnant of another peninsula extending south and paralleling that of Lower California.

LIST OF SPECIES

ORIGINALLY DESCRIBED FROM GUADALUPE ISLAND, MEXICO

(Stars indicate types and daggers indicate topotypes in the Herbarium of the California Academy of Sciences.)

- | | |
|---|---|
| † <i>Cupressus guadalupensis</i> Watson | <i>Gilia pygmæa</i> Brand |
| † <i>Pinus radiata binata</i> Lemmon | <i>Phacelia phyllomanica</i> Gray |
| <i>Erythea edulis</i> Watson | <i>Phacelia floribunda</i> Greene |
| <i>Brodiaëa insularis</i> Greene | † <i>Cryptanthe maritima</i> Greene |
| † <i>Quercus tomentella</i> Engelm. | <i>Cryptanthe foliosa</i> Greene |
| <i>Phoradendron guadalupensis</i> | <i>Harpagonella palmeri</i> Gray |
| Trelease | <i>Pogogyne tenuiflora</i> Gray |
| † <i>Atriplex palmeri</i> Watson | <i>Calamintha palmeri</i> Gray |
| <i>Hesperonia heimerlii</i> Standley | <i>Nicotiana petunæfolia</i> Greene |
| <i>Talinum guadalupense</i> Dudley | <i>Solanum calzum</i> Bitter |
| † <i>Eschscholtzia elegans</i> Greene | <i>Solanum profundeincisum</i> Bitter |
| † <i>Eschscholtzia ramosa</i> Greene | <i>Castilleja guadalupensis</i> Brandegee |
| † <i>Petromecon palmeri</i> Greene | <i>Mimulus latifolius</i> Gray |
| * <i>Petromecon frutescens</i> Greene | <i>Marah guadalupensis</i> Greene |
| <i>Thysanocarpus erectus</i> Watson | <i>Galium angulosum</i> Gray |
| <i>Trifolium palmeri</i> Watson | <i>Stephanomeria guadalupensis</i> |
| * <i>Hosackia ornithopus</i> Greene | Brandegee |
| <i>Lupinus niveus</i> Watson | † <i>Corethrogyne cana</i> Greene |
| * <i>Lupinus guadalupensis</i> Greene | † <i>Franseria camphorata</i> Greene |
| † <i>Sphæralcea sulphurea</i> Watson | <i>Hemizonia frutescens</i> Gray |
| <i>Sphæralcea palmeri</i> Rose | <i>Hemizonia palmeri</i> Gray |
| † <i>Lavatera occidentalis</i> Watson | † <i>Hemizonia greeniana</i> Rose |
| <i>Mentzelia dispersa</i> Watson | † <i>Perityle incana</i> Gray |
| <i>Oenothera guadalupensis</i> Watson | † <i>Perityle grayi</i> Rose |
| <i>Hesperalæa occidentalis</i> Watson | <i>Baeria palmeri</i> Gray |
| <i>Convolvulus macrostegius</i> Greene | <i>Senecio palmeri</i> Gray |
| <i>Gilia guadalupensis</i> Brand | |

LIST OF SPECIES CHIEFLY CALIFORNIAN

- | | |
|--|--|
| <i>Notholæna newberryi</i> D. C. Eaton | <i>Suaeda californica</i> Watson |
| <i>Polypodium californicum</i> Kaulf. | <i>Aphanisma blitoides</i> Nutt. |
| <i>Polypodium scouleri</i> H. & G. | <i>Montia perfoliata</i> Howell |
| <i>Pityrogramma triangularis</i> Maxon | <i>Calandrinia menziesii</i> T. & G. |
| <i>Pellæa mucronata</i> D. C. Eaton | <i>Calandrinia maritima</i> Nutt. |
| <i>Polystichum munitum</i> Presl. | <i>Stellaria nitens</i> Nutt. |
| <i>Juniperus californica</i> Carr. | <i>Tissa macrotheca</i> Britt. |
| <i>Phyllospadix torreyi</i> Watson | <i>Tissa pallida</i> Greene |
| <i>Dissanthelium californicum</i> Benth. | <i>Ranunculus hebecarpus</i> H. & A. |
| <i>Brodiaëa lugens</i> Greene | <i>Lepidium lasiocarpum</i> Nutt. |
| <i>Hesperocnide tenella</i> Torr. | <i>Thelypodium lasiophyllum</i> Greene |
| <i>Pterostegia drymarioides</i> F. & M. | <i>Tillæa erecta</i> H. & A. |

- Ribes sanguineum* Pursh.
Heuchera?
Alchemilla cuneifolia Nutt.
Rhus laurina Nutt.
Ceanothus cuneatus Nutt.
Ceanothus crassifolius Torr.
Rhamnus crocea Nutt.
Trifolium amplexans T. & G.
Trifolium microcephalum Pursh.
Hosackia grandiflora Benth.
Vicia exigua Nutt.
Crossosoma californicum Nutt.
Frankenia grandifolia Ch. & Schl.
Sanicula menziesii H. & A.
Mentzelia micrantha T. & G.
Opuntia prolifera Engelm.
Epilobium minutum Lindl.
Arctostaphylos, sp.
Dodecatheon clevelandi Gray
Gilia nevinii Gray
Collomia gilioides glutinosa Gray
Nemophila racemosa Nutt.
Ellisia chrysanthemifolia Benth.
Emmenanthe penduliflora Benth.
Pectocarya penicillata DC.
- Amsinckia vernicosa* H. & A.
Amsinckia intermedia F. & M.
Lycium californicum Nutt.
Solanum wallacei Parish.
Castilleja foliolosa H. & A.
Antirrhinum speciosum Gray
Antirrhinum nuttallianum Benth.
Orthocarpus purpurascens Benth.
Specularia biflora Gray
Githopsis specularioides Nutt.
Microseris linearifolia Gray
Microseris lindleyi Gray
Malacothrix clevelandi Gray
Agoseris heterophylla Greene
Micropus californicus F. & M.
Filago arizonica Gray
Filago californica Nutt.
Gnaphalium sprengelii H. & A.
Leptosyne gigantea Kell.
Baeria coronaria Gray
Baeria gracilis Gray
Eriophyllum caespitosum Dougl.
Amblyopappus pusillus H. & A.
Matricaria discoidea DC.
Artemisia californica Less.

LIST OF SPECIES WIDELY DISTRIBUTED, PROBABLY INTRODUCED

- Aristida adscensionis* L.
Muhlenbergia microsperma Kunth.
Polypogon monspeliensis Desv.
Phalaris intermedia Bosc.
Avena fatua L.
Bromus sterilis L.
Bromus trinii Desv.
Hordeum murinum L.
Juncus bufonius L.
Parietaria floridana Nutt.
Chenopodium album L.
Chenopodium murale L.
Mesembryanthemum crystallinum L.
Silene antirrhina L.
Silene gallica L.
Myosurus minimus L.
Lepidium bipinnatifidum Desv.
Sisymbrium canescens Nutt.
- Brassica nigra* Koch
Brassica campestris L.
Oligomeris glaucescens Camb.
Erodium moschatum L'Her.
Erodium cicutarium L'Her.
Melilotus indica All.
Malva borealis Wallm.
Daucus pusillus Mx.
Anagallis arvensis L.
Solanum nigrum L.
Linaria canadensis L.
Plantago patagonica Jacq.
Galium aparine L.
Sonchus oleraceus L.
Sonchus tenerrimus L.
Hypochaeris glabra L.
Centaurea melitensis L.

POLYPODIACEÆ; Fern Family

1. *Notholæna newberryi* D. C. Eaton, Bull. Torr. Bot. Club iv: 12. 1885. *Type locality*, San Diego. "Throughout the island," Palmer. Greene. Franceschi. Hanna & Slevin. Mason 1532.

2. *Polypodium californicum* Kaulf., Enum. Fil. 102. 1824. *Type locality*, California. "Abundant at north end," Palmer. Greene. Franceschi. Mason 1533.

3. *Polypodium scouleri* Hook. & Greville, Icon. Fil. 1: pl. 56. 1828. *Type locality*, Columbia River region. "Encircling the trunk of a single tree," Palmer. Hanna & Slevin, "On oak trees."

4. *Pityrogramma triangularis* Kaulf., Maxon, Contr. U. S. Nat. Herb. 17: 173. 1913. This was reported as *Gymnogramme triangularis* Kaulf. *Type locality*, San Francisco. "In crevices of the highest cliffs in the middle and south end of the island," Palmer. Franceschi. Mason 1514.

5. *Pellæa mucronata* D. C. Eaton, U. S. & Torr. Mex. Bound. Surv. Bot. 233. 1859. This was reported as *P. ornithopus* Hook. *Type locality*, hills near San Francisco Bay. "Rare in crevices of highest cliffs," Palmer. Franceschi.

6. *Polystichum munitum* Kaulf., Presl., Tent. Pter. 83. 1836. This was reported as *Aspidium munitum* Kaulf. *Type locality*, California. "Only two clumps seen at the northern end in a rocky place inaccessible to goats," Palmer.

CONIFERÆ; Pine Family

7. *Juniperus californica* Carr., Rev. Hortic. Ser. IV, iii: 352. 1854. *Type locality*, California. "Over the middle of the island and occasionally at the south end in low valleys and ravines, forming groves about fifteen feet high," Palmer. "Now upon the verge of extinction," Greene. Not since collected.

8. *Cupressus guadalupensis* S. Watson, Proc. Am. Acad. 14: 300. 1879. *Type locality*, Guadalupe Island. "In irregular clusters in the middle of the island," Palmer. "A fine grove near the springs," Greene. "On plateau at the top of the island opposite northeast anchorage," Hanna & Slevin.

Dudley's list. Hanna & Slevin collected cones from two different trees, one having the large cone characteristic of the type and the other with cones as small and globular as those of *Cupressus goveniana* Gord.

9. *Pinus radiata binata* (Engelm.), Lemmon, West Am. Cone-Bearers 42. 1895. *Type locality*, Guadalupe Island. This pine differs from typical *Pinus radiata* in having two needles in a sheath instead of three, and much shorter leaves. The cones are much smaller, but are without prickles and are of the same shape as those of the type; otherwise it might be referred to *Pinus muricata* D. Don. Perhaps it should be regarded as a distinct species. "High elevations at the north end, the largest seven and a half feet in circumference and averaging seventy feet high; at the extreme northern end and facing the bay the trees assume a hedge-like form," Palmer. Greene. Franceschi. Hanna & Slevin. Dudley's list.

ZOSTERACEÆ; Eel-grass Family

10. *Phyllospadix torreyi* S. Watson, Proc. Am. Acad. 14: 303. 1879. *Type locality*, Santa Barbara. Dudley's list.

POACEÆ; Grass Family

11. *Aristida adscensionis* L., Sp. Pl. 82. *Type locality*, Ascension Island. This was reported in Dr. Palmer's second collection as *Aristida bromoides* H. B. K. "In deep cañons," Palmer. Rose (see Contr. U. S. Nat. Herb. 22: 544). Mason 1540.

12. *Muhlenbergia microsperma* (DC.), Kunth., Rev. Gram., i: 64. 1829. *Type locality*, Mexico. This was reported as *M. debilis* Trin. "Growing in abundance on warm slopes in the middle of the island," Palmer. Greene. Franceschi. Mason 1541.

13. *Polypogon monspeliensis* (L.), Desf., Fl. Atlant., i: 66. *Type locality*, Europe. "Common about springs," Green. Franceschi. Dudley's list.

14. *Phalaris caroliniana* Walt., Fl. Carol. 74. *Type locality*, Carolina. Voyage of the Wahlberg, T. S. Brandegee, (Zoe 5: 22).

15. *Avena fatua* L., Sp. Pl. 80. *Type locality*, Europe. "Several small patches in open places on the best soil," Palmer. "Very little seen," Greene. "Very common," Mason 1542.

16. *Bromus sterilis* L., Sp. Pl. 77. *Type locality*, Europe. "On warm hillsides sometimes in large patches as if sown, at the south and middle of the island," Palmer. Mason 1843.

17. *Bromus trinii* Desv., in C. Gay, Fl. Chil. 6:441. 1853. Reported as *Trisetum barbatum* Steud. *Type locality*, Chile. "Abundant at southern end due to wet season," Palmer.

18. *Hordeum murinum* L., Sp. Pl. 85. *Type locality*, Europe. "Only a few tufts seen near the cabins on the plateau," Greene. "Very common," Mason 1544. Dudley's list.

19. *Dissanthelium californicum* Benth., in Hook., Icon. Pl. t. 1375. 1881. *Type locality*, Catalina Island. (Reported as *Stenochloe californica* Nutt).

PHOENICACEÆ; Palm Family

20. *Erythea adulis* (Wendl.), S. Watson, Bot. Cal. 2:212. 1880. *Type locality*, Guadalupe Island. "Frequent in deep, warm ravines from the northern end to Jacks Bay; the only thing on the island having a tropical look. It attains a height of about forty feet, averaging about fifteen inches in diameter. Each tree bears one to four clusters of fruit four feet in length and each weighing 40 to 50 pounds. The fruit is eaten by man, goats, birds and mice. In flower near the end of March," Palmer. Greene. "Northwestern part of the island, the principal grove not less than one mile and a half long by half to a mile in breadth. There and in a few other parts where palms are still growing in small numbers their range in altitude appears to be between 300 to 1000 feet. A few expanded flowers were to be found already at the beginning of December, but the general blossoming takes place in January and the fruits are said to ripen in April," Franceschi Dudley's list.

JUNCACEÆ; Rush Family

21. *Juncus bufonius* L., Sp. Pl. 328. *Type locality*, Europe. "From the middle to the north end of the island growing abundantly in very springy places," Palmer. Greene.

LILIACEÆ; Lily Family

22. *Brodiaea insularis* Greene, Bull. Cal. Acad. Sci. 2:134. 1886. *Type locality*, Guadalupe Island. Greene listed this as *B. capitata* Benth. Palmer collected it on his second trip. Greene describes it with leaves an inch broad and scape often more than four feet high. It was exceedingly common on the plateau all about the spring.

23. *Brodiaea lugens* Greene, Bull. Cal. Acad. Sci. 2:142. 1886. This was identified by T. S. Brandege, one of the additions collected on the Voyage of the Wahlberg as common on the slopes of Sparrmann's Cañon. The *type locality* of this species, which Greene later transferred to *Calliprora*, is mountain summits back of Vacaville, California. It seems improbable that this rare species of which Greene claims to have been the only collector can be the same as the Guadalupe Island species.

CUPULIFERÆ; Oak Family

24. *Quercus tomentella* Engelm., Trans. Acad. Sci. St. Louis 3:393. 1877. *Type locality*, Guadalupe Island. This was first considered identical with *Q. chrysolepis* Liebm. "Frequent at the north end and occasionally found in the cañons on both sides of the island, often large specimens 40 feet high and widespreading; timber good and durable though knotty," Palmer. Greene. Franceschi. Hanna & Slevin. Mason 1537.

URTICACEÆ; Nettle Family

25. *Hesperocnide tenella* Torr., in Pacif. Rail. Rep. 4:139. 1857. *Type locality*, Napa Valley. "In damp, shady places among high rocks in the middle of the island," Palmer. Greene. Franceschi.

26. *Parietaria floridana* Nutt., Gen. Am. 2:208. 1818. *Type locality*, "Near St. Mary's, West Florida." "Abundant in situations similar to the preceding," Palmer. Greene. Hanna & Slevin. Mason 1509, 1510.

LORANTHACEÆ; Mistletoe Family

27. *Phoradendron guadalupense* Trelease, Univ. Ill. Bull. 13:29. 1916. *Type locality*, Guadalupe Island. This was reported in Watson's list as *P. bolleanum* Eichler. "Near the north end on *Juniperus* and *Cupressus*, more frequently the former," Palmer. This has not since been collected.

POLYGONACEÆ; Buckwheat Family

28. *Pterostegia drymarioides* Fisch. & Meyer, Ind. Sem. Hort. Petrop, 2:48. 1835. *Type locality*, Bodega Point, California. "In the shade of rocks in the middle, and more rarely at the south end," Palmer. Greene. Mason 1526.

CHENOPODIACEÆ; Salt Bush Family

29. *Chenopodium album* L., Sp. Pl. 219. *Type locality*, Europe. "Only one plant near the sea on the east side," Palmer. Greene. Hanna & Slevin.

30. *Chenopodium murale* L., Sp. Pl. 219. *Type locality*, Europe. "A few plants near the landing, evidently a new-comer," Greene. Franceschi. Dudley's list. Mason 1520.

31. *Atriplex palmeri* S. Watson, Proc. Am. Acad. 11:146. 1876. *Type locality*, Guadalupe Island. "Only at the south end in rounded bushes about 1½ feet high," Palmer. Greene. Hanna & Slevin. Dudley's list. Mason 1538.

32. *Atriplex rosei* Standl., N. Am. Fl. 21:60. 1916. *Type locality*, Guadalupe Island. Rose 15022 in part.

These two species of *Atriplex* are considered subspecies of *A. barclayana* (Benth.), Dietr. The first, *A. barclayana palmeri*, and the second, *A. barclayana dilatata* (Greene), Hall & Clements, Phylogenetic Method in Taxonomy, 315.

33. *Suaeda californica* S. Watson, Proc. Am. Acad. 9:89. 1874. *Type locality*, Salt marshes of San Francisco Bay. Mason 1539.

34. *Aphanisma blitoides* (Nutt.), ex Moq. in DC. Prod. 13: 54. 1849. *Type locality*, San Diego, California. Brandegee, Voyage of the Wahlberg, Zoe, 5: 22.

ALLIONACEÆ; Four O'Clock Family

35. *Hesperonia heimerlii* Standl., Contr. U. S. Nat. Herb. 13. 412. 1911. *Type locality*, Guadalupe Island. This was reported as *Mirabilis californica* Gray. "Of compact branching habit in crevices in the walls of cañons on the east side," Palmer. This was also collected at the south end on Palmer's second trip. Greene. Rose. Franceschi. Dudley's list.

FICOIDACEÆ; Fig Marigold Family

36. *Mesembryanthemum crystallinum* L., Sp. Pl. 480. *Type locality*, Cape of Good Hope. "On beach at landing," Greene. Dudley's list.

PORTULACACEÆ; Portulaca Family

37. *Montia perfoliata* Howell, in Eryth. I: 38. 1893. Reported as *Claytonia perfoliata* Don. North America. "All over the island," Palmer. "Corolla small and more purple," Greene. Franceschi.

38. *Calandrinia menziesii* (Hook.), T. & G. Fl. N. Am. I: 197. *Type locality*, south of the mouth of the Columbia. "All over the island in masses," Palmer. "Smaller than in California, white flowers very frequent," Greene. Mason 1507.

39. *Calandrinia maritima* Nutt., in T. & G. Fl. N. Am. I: 197. *Type locality*, San Diego. Collected by Brandegee on the Voyage of the Wahlberg, Zoe, 5: 22.

40. *Talinum guadalupense* Dudley, Report Fur-Seal Investigations, part 3 (1896-97), p. 282. Leaves thick and fleshy oblanceolate, 2-5 cm. long, all radical. Root fusiform fleshy, broadening at top into a short rhizoma extending laterally. Flowering panicles 3-5 dm. in height, ascending, naked except for the deltoid acuminate scarious bracts at the bases of the divaricate, scattered branches which occupy the

upper half. Flowers in terminal close clusters. Sepals 2, roundish, persistent. Petals rose-colored, broadly obovate, nearly 1 cm. long. Stamens numerous. Slender exserted style with 2-3-lobed stigmas. Capsule broadly ovoid acute. Walls 3-valved, splitting from above. Placenta basal. Seeds disk-shaped, numerous.

CARYOPHYLLACEÆ; Pink Family

41. *Stellaria nitens* Nutt., in T. & G., Fl. N. Am. I: 185. *Type locality*, "Plains of the Columbia." "At middle and north end under rocks," Palmer.

42. *Silene antirrhina* L., Sp. Pl. 419. Europe. "Only in cañons on east side near beach," Palmer.

43. *Silene gallica* L., Sp. Pl. 417. Europe. "Sparingly in middle of island," Palmer. "Very common in lower cypress groves," Greene. Dudley's list.

44. *Tissa macrotheca* (Hornem), Britt. in Bull. Torr. Bot. Club 16: 129. 1889. California. "Common on exposed sides of hills, in arroyos and sides of cañons," (Palmer on second trip). Franceschi. Dudley's list.

45. *Tissa pallida* Greene, ex Britton, l. c. *Type locality*, San Francisco. "Collected with the preceding but not so common," (Palmer on second trip).

RANUNCULACEÆ; Buttercup Family

46. *Ranunculus hebecarpus* Hook & Arn., Bot. Beech. Voy. 316. 1844. California. "Abundant on warm slopes in the middle of the island," Palmer. "Only in the shade of *Quercus tomentella*," Greene.

47. *Myosurus minimus* L., Sp. Pl. 284. Europe. "In the middle of the island and at the north, near springs," Greene.

PAPAVERACEÆ; Poppy Family

48. *Eschscholtzia elegans* Greene, Bull. Cal. Acad. Sci., 1: 182. 1885. *Type locality*, Guadalupe Island. Small annual with delicate dissected foliage and rotate flowers not

an inch wide. On summit of Guadalupe. Palmer. Greene. Mason.

49. *Eschscholtzia ramosa* Greene, Bull. Torrey Bot. Club, 13:217. 1886. *Type locality*, Guadalupe Island. Annual, dendroid, in habit. Pods $3\frac{1}{2}$ in long. Palmer. Greene. Dudley's list. Mason 1500.

50. *Petromecon palmeri* Pitt., 5:293. 1905. *Type locality*, Guadalupe Island. This is the same as *E. palmeri* Rose. Palmer.

51. *Petromecon frutescens* Greene, l. c., 294. *Type locality*, Guadalupe Island. Larger than the preceding and less succulent, stigmas 4. Type in Herb. Cal. Acad. Sci. Franceschi.

CRUCIFERÆ; Mustard Family

52. *Thysanocarpus erectus* S. Watson, Proc. Am. Acad. II:124. 1876. *Type locality*, Guadalupe Island. "In clear, level spots only between Jacks Bay on west side and Mt. Augusta," Palmer. It has never been found again.

53. *Lepidium lasiocarpum* Nutt., in T. & G. Fl. N. Am. I:115. *Type locality*, Santa Barbara. "In ravines in the middle of the island, rarely at south end," Palmer. Greene. Mason 1516.

54. *Lepidium bipinnatifidum* Desv., Journ. Bot. 3:165. 1814. Reported by Watson as *L. menziesii* DC. "Generally abundant," Palmer. Mason 1524.

55. *Thelypodium lasiophyllum* (H. & A.), Greene in Bull. Torr. Bot. Club 13:142. 1886. California. This was reported in Watson's list as *Sisymbrium reflexum* Nutt. "Abundant in the middle and at the south end," Palmer. Greene.

56. *Sisymbrium canescens* Nutt., Gen. Am. 2:68. Virginia to Georgia. "In great abundance," Palmer. Greene.

57. *Brassica nigra* Koch., in Roehl., Deutschl. Fl., ed. 3, 4:713. Europe. "In considerable quantity in the middle of the island," Palmer.

58. *Brassica campestris* L., Sp. Pl. 666. Europe. "A few plants near the cabins," Greene.

RESEDACEÆ; Mignonette Family

59. *Oligomeris glaucescens* Camb., in Jacquem. Voy. Bot., 4: 24. t. 25. Europe. Reported as *O. subulata* Boiss. "In deep, warm cañons, middle of island, occasionally south," Palmer. Greene. Franceschi. Dudley's list. Mason 1522.

CRASSULACEÆ; Stonecrop Family

60. *Tillæa erecta* Hook. & Arn., Bot. Beech. Voy. 24. 1884. California. "In large patches among rocks and sagebrush," Palmer. Besides the typical form, a variety was also collected which was doubtfully referred to *T. leptopetala* Benth. Greene also collected it.

SAXIFRAGACEÆ; Saxifrage Family

61. *Ribes sanguineum* Pursh., Fl. Am. Sept. 1: 164. "Only two plants in shade of cliffs at north end," Palmer. This is probably some other species, as the *type locality* of the true *R. sanguineum* Pursh., is Vancouver Island, and it has been found in California only at the extreme north.

62. *Heuchera* ? "A single plant in a rock crevice, not in bloom," Palmer. Franceschi.

ROSACEÆ; Rose Family

63. *Alchemilla cuneifolia* Nutt., in T. & G. Fl. N. Am. 1: 432. *Type locality*, Santa Barbara. "Among rocks and sagebrush at north end, also around a spring where it was much larger," Palmer. Greene. This was identified as *A. occidentalis* Nutt., but that is a northern species, while *A. cuneifolia* was described from specimens collected at Santa Barbara. Both may be too near *A. arvensis* Scop.

GERANIACEÆ; Geranium Family

64. *Erodium moschatum* L'Her., Ait. Hort., Kew ed. 1, 2: 404. Europe. "Middle of the island," Palmer. Greene saw very little of this. Franceschi. Dudley's list. Mason 1517.

65. *Erodium cicutarium* L'Her, l. c. 414. Europe. "Abundant all over the island," Palmer. Greene. Franceschi. Dudley's list.

ANACARDIACEÆ; Sumach Family

66. *Rhus laurina* Nutt., in T. & G. Fl. N. Am. 1:219. *Type locality*, Santa Barbara. "Four found in crevices of high rocks," Palmer. Greene. Franceschi. Dudley's list.

RHAMNACEÆ; Buckthorn Family

67. *Ceanothus cuneatus* Nutt., in T. & G. Fl. N. Am. 1:267. *Type locality*, "gravelly islands and bars of the Wahlamet above the dry falls." "Middle of island, three small shrubs seen, not in flower," Palmer.

68. *Ceanothus crassifolius* Torr., Pac. Rail. Rep. 4:75. 1857. *Type locality*, Cajon Pass. "Only three alive at base of Mt. Augusta," Palmer. "A small seedling plant near cabins," Greene. Franceschi.

69. *Rhamnus crocea* Nutt., in T. & G. Fl. N. Am. I:261. *Type locality*, Monterey. "Six found in crevices of high cliffs in the middle of the island," Palmer. This is exceedingly variable in the size and shape of the leaves. The specimen collected by Mason is a mere scrap. However, Dr. Hanna and Mr. Slevin collected fine specimens from an arborescent shrub with leaves from elliptical to almost orbicular, 4.5 cm. long to 3.5 cm. wide, obtuse at apex and base with margin finely serrulate. It comes nearest to *R. pirifolia* Greene, Pitt., 3:15, described from specimens collected on Santa Cruz Island. The leaves of specimens in Herb. Cal. Acad. Sci. of *R. pirifolia* from the type island have leaves relatively much longer than wide, while those of *R. insularis* Kellogg from Cedros have much smaller leaves more like those of typical *R. crocea* Nutt. Hanna & Slevin. Mason 1528.

LEGUMINOSÆ; Pea Family

70. *Trifolium amplexens*, T. & G., Fl. N. Am. 1:319. California. "Rare, only on beach at east side of island," Palmer. Franceschi. Mason 1511.

71. *Trifolium microcephalum* Pursh., Fl. Am. Sept. 2:478. *Type locality*, "On the banks of Clarck's River." "Very abundant at middle and north end of island," Palmer. Greene. Dudley's list. Mason 1512.

72. *Trifolium palmeri* S. Watson, Proc. Am. Acad. 11:132. 1876. *Type locality*, Guadalupe Island. "Rather abundant in the middle of the island and around a spring," Palmer. Franceschi. Mason 1513.

73. *Lupinus niveus* S. Watson, l. c. 126. *Type locality*, Guadalupe Island. "Only in the middle of the island on high cliffs," Palmer. Greene saw one flowering specimen and what appeared to be numerous seedlings. Franceschi.

74. *Lupinus guadalupensis* Greene, Bull. Cal. Acad. Sci., 1:184. 1885. *Type locality*, Guadalupe Island. "On high plateau," Greene. Type in Herb. Cal. Acad. Sci.

75. *Hosackia ornithopus* Greene, Bull. Cal. Acad. Sci. 1:185. 1885. Type from Guadalupe Island in Herb. Cal. Acad. Sci. "Frequent in the middle of Guadalupe Island," Franceschi. Dudley's list. Palmer collected the same, reported as *H. argophylla* Gray.

76. *Hosackia grandiflora* Benth., Trans. Linn. Soc. 17:365. 1837. California. "Among trees in the middle of the island," Palmer. Greene.

77. *Melilotus indica* All., Fl. Pedem. 1:308. India. "Common along the beach, ascending into shady cañons," Palmer. This was collected by Dr. Palmer on his second visit and was probably introduced by the goats.

78. *Vicia exigua* Nutt., in T. & G. Fl. N. Am. 1:272. *Type locality*, plains of Oregon and upper California. "Among rocks, center of island, only one seen," Palmer. Greene reported it as not uncommon and Palmer reported it on his second visit as common in shady sides of ravines at the north end.

MALVACEÆ; Mallow Family

79. *Sphæralcea sulphurea* S. Watson, Proc. Am. Acad. 11:125. 1876. *Type locality*, Guadalupe Island. "In large bunches three feet high in crevices of highest rocks from middle to the southern end where most abundant," Palmer. Franceschi. Greene. One plant seen by Mason 1506.

80. *Sphæralcea palmeri* Rose, Contr. U. S. Nat. Herb. 1:23. 1890. *Type locality*, Guadalupe Island. This was collected by Dr. Palmer on his second trip. "On all exposed places on the south end of the island." According to Dr. Rose, the carpels are narrower and longer than in the preceding, but it must be closely related.

81. *Lavatera occidentalis* S. Watson, l. c. 125. *Type locality*, Guadalupe Island. "Conspicuous plant on cliffs in the middle of the island," Palmer. Greene describes the largest shrubs as 10 feet high. Franceschi. Hanna & Slevin.

82. *Malva borealis* Wallm., in Liljebl., Svensk. Fl., ed. 3:374 Europe. "Very common on eastward slope," Palmer. Greene. Franceschi. Dudley's list. Mason 1530.

DILLENiaceæ

83. *Crossosoma californicum* Nutt., Journ. Acad. Phila., N. S. 1:150. t. 22. 1847. *Type locality*, Catalina Island. "In crevices of cliffs overhanging a cañon in the middle of the island," Palmer. "Only nine bushes found, accessible only by the aid of a rope," Greene. Franceschi. Hanna & Slevin (specimens shot down).

FRANKENIACEæ; Salt-weed Family

84. *Frankenia grandifolia* Ch. & Schl., Linnæa 1:35. 1826. *Type locality*, near San Francisco. On the side of the bank near the northeast anchorage. Dudley's list.

UMBELLIFERæ; Parsley Family

85. *Daucus pusillus* Mx., Fl. Bor. Am. 1:164. Carolina. "Abundant through the middle of the island," Palmer. Greene.

86. *Sanicula menziesii* Hook. & Arn., Bot. Beech. Voy., 142. 1844. California. "Two plants only, without flowers or fruit, in rock crevices, middle of the island," Palmer.

LOASACEæ; Blazing Star Family

87. *Mentzelia dispersa* S. Watson, Proc. Am. Acad. 11:115 & 137. 1876. *Type locality*, Guadalupe Island. "In ravines at the middle and south end," Palmer.

88. *Mentzelia micrantha* (H. & A.), in T. & G. Fl. N. Am. 1:535. California. "Only on beach near landing," Greene.

CACTACEÆ; Cactus Family

89. *Opuntia prolifera* Engelm., in Am. Journ. Sci. II. 14:338. 1852. *Type locality*, San Diego, California. Greene. Franceschi. Dudley's list. Mason 1547, not collected. Common throughout the island.

90. *Neomammillaria goodridgii* (Scheer), Britt. & Rose, Cactaceæ, 4:158. *Type locality*, Cedros Island. Greene. Dudley's list.

ONAGRACEÆ; Evening Primrose Family

91. *Epilobium minutum* Lindl., in Hook. Fl. Bor. Am. 1:207. Northwest coast of America. "Only at north end among rocks and sagebrush," Palmer. "Two or three plants only seen," Greene.

92. *Oenothera (Sphærostigma) guadalupensis* S. Watson, Proc. Am. Acad., 11:115 & 137. 1876. *Type locality*, Guadalupe Island. "Only two plants in a ravine on east side near beach," Palmer.

ERICACEÆ; Heather Family

93. *Arctostaphylos* sp. Greene found a single seedling plant not more than two or three years old under a cypress.

PRIMULACEÆ; Primrose Family

94. *Dodecatheon clevelandi* Greene, Pitt. 1:213. 1888. *Type locality*, San Diego. This is the species reported by Palmer, Greene, and Franceschi, and collected in flower by Anthony. A specimen of Anthony's collection in the Herbarium of the California Academy of Sciences indicates this species.

95. *Anagallis arvensis* L., Sp. Pl. 148. Europe. "Only one plant found near beach," Palmer. "Only one plant on top of island," Greene.

OLEACEÆ; Olive Family

96. *Hesperalæa palmeri* Gray, Proc. Am. Acad. 11:83. 1876. *Type locality*, Guadalupe Island. This was described as a new genus from Guadalupe Island. Dr. Palmer reported it as a tree with sulphur-colored flowers in a terminal panicle. Three live trees only were seen in a cañon on the east side; no young trees seen, but many dead ones. As this has never been found again, the species is probably extinct.

CONVOLVULACEÆ; Morning Glory Family

97. *Convolvulus macrostegius* Greene, Bull. Cal. Acad. Sci. 1:208. 1885. *Type locality*, Guadalupe Island. This was reported by Watson as *C. occidentalis* Gray. "In crevices of high rocks hanging down six feet or more," Palmer. "A thousand flowers on one plant," Greene. Franceschi.

POLEMONIACEÆ; Phlox Family

98. *Gilia guadalupensis* Brand., Das Pflanzenreich, 4:134. 1907. *Type locality*, Guadalupe Island. This was described together with the next from specimens collected by Dr. Palmer on his first visit, and both listed in Watson's report under *Gilia pusilla californica* Gray. "Abundant under brush and in protected places in the middle of the island," Palmer.

99. *Gilia pygmæa* Brand., l. c.

100. *Gilia nevinii* Gray, Syn. Fl., 1. Suppl. 411. *Type locality*, San Clemente Island. This was reported by Watson as *Gilia multicaulis millefoliata*. "Localities similar to the preceding, flowers blue and showy or cream-colored with a violet base," Palmer. Franceschi. Dudley's list. Mason 1905.

101. *Collomia gilioides glutinosa* (Benth.), Gray, Proc. Am. Acad. 8:260. 1870. *Type locality*, California. "Abundant in similar localities to the preceding," Palmer. Greene lists this as *Gilia divaricata* Nutt. The species described in this aggregate are very closely related.

HYDROPHYLLACEÆ; Waterleaf Family

102. *Nemophila racemosa* (Nutt.), Gray in Proc. Am. Acad. 10: 315. (1875.) *Type locality*, San Diego, California. This was reported in Watson's list as *N. aurita* Lindl. "On warm slopes middle of the island; rarely at south end," Palmer. Since Greene and Dr. Franceschi found only *N. racemosa* at the same place, probably Watson was mistaken, owing to poor specimens.

103. *Ellisia chrysanthemifolia* Benth., Trans. Linn. Soc. 17: 274 (1837.) California. "Abundant under sagebrush, throughout the island," Palmer. Greene reported it as *Eucrypta*. Franceschi. Mason 1525.

104. *Emmenanthe penduliflora* Benth., Trans. Linn. Soc. 17: 281. 1837. California. "Rocky ravines in the middle of the island," Palmer. Greene. Franceschi. Mason 1515.

105. *Phacelia phyllomanica* Gray, Proc. Am. Acad. 11: 87. (1876.) *Type locality*, Guadalupe Island. "Rare in crevices of high rocks in the middle of the island," Palmer. Greene reports it as often more than six feet high. Franceschi.

106. *Phacelia floribunda* Greene, Bull. Cal. Acad. Sci. 1: 200. (1885.) *Type locality*, Guadalupe Island. It was reported by Watson as *P. phyllomanica interrupta* Gray. "Frequent in rocky ravines at middle and south end," Palmer. Greene reports it as an annual from lower parts of the island. Dudley's list.

BORAGINACEÆ; Borage Family

107. *Harpagonella palmeri* Gray, Proc. Am. Acad. 11: 88. (1876.) *Type locality*, Guadalupe Island. "Only at the south end," Palmer. Greene.

108. *Pectocarya penicillata* A. DC., Prodr. 10: 120. *Type locality*, California. "With the above," Palmer.

109. *Amsinckia vernicosa* H. & A., Bot. Beech. Voy. 370. *Type locality*, California. "Very abundant at south end," Palmer.

110. *Amsinckia intermedia* F. & M., Ind. Sem. Petrop. 1: 26. *Type locality*, Bodega Head. This was reported among the additions collected on the voyage of the Wahlberg. Zoe 5: 22.

111. *Cryptanthe maritima* Greene, Pitt. 1:117. (1887.) *Type locality*, Guadalupe Island. This was described as *Krynitzkia maritima* by Greene, and listed in Watson's report on Palmer's collection as *Eritrichium angustifolium* Torr. "At south end and near beach," Palmer. Greene. Franceschi. Dudley's list. Mason 1501.

112. *Cryptanthe foliosa* Greene, Pitt. 1:113. (1887.) *Type locality*, Guadalupe Island. This was described as *Krynitzkia foliosa* Greene. It was reported by Watson as *Eritrichium utriculatum* Torr. "Cañons in the middle of the island," Palmer. Greene reports this as the same as *E. ramossissima* Gray. Franceschi.

LABIATÆ; Mint Family

113. *Pogogyne tenuiflora* Gray, Proc. Am. Acad. 11:100. (1876.) *Type locality*, Guadalupe Island. "Very rare among sagebrush on the eastern side," Palmer. This has never been collected again and is probably extinct.

114. *Calamintha palmeri* Gray, Proc. Am. Acad. 11:100. (1876.) *Type locality*, Guadalupe Island. "Abundant among trees and sagebrush in the middle of the island, strong-scented and not eaten by goats," Palmer. Greene.

SOLANACEÆ; Nightshade Family

115. *Nicotiana petunæflora* Greene, Bull. Cal. Acad. Sci. I:209. (1885.) *Type locality*, Guadalupe Island. This was reported by Watson as *N. bigelovii* Watson. "Only in a few places in the center of the island, in open spots and good soil; flowers greenish yellow, bronzy below. The leaves stick to the goats' hair," Palmer. Greene.

116. *Lycium californicum* Nutt., ex Gray in Bot. Cal. 1:542. *Type locality*, San Diego, California. "Extreme south end on rocky bluffs, not abundant," Palmer. Mason 1540.

117. *Solanum wallacei* (Gray), Parish in Proc. Cal. Acad. Sci., Ser. 3:2:166. 1901. This was reported as *S. xanti* Gray, and has been named *S. xanti wallacei* by the same author. *Type locality*, Catalina Island. "Only in the middle

of the island in large bunches about two feet high, in the crevices of the rocks, blooming all the year," Palmer. Greene. Franceschi.

118. *Solanum (Morella) profundeincisum* Bitter, in Fedde, Repert. 12:80 (1913.) *Type locality*, Guadalupe Island. This is Palmer's No. 61, and 60 in part, reported as *Solanum nigrum douglasii* Gray. "Only two plants on the beach on the east side; flowers white, small," Palmer.

119. *Solanum (Morella) calvum* Bitter, l. c. 81. *Type locality*, Guadalupe Island. This was reported as *S. nigrum* var. under Palmer's No. 60 in part. "Rare in the middle of the island and in a cañon near the beach on the east side, in rich level spots; flowers purple or white; fruit black," Palmer. Greene also reported a *Solanum* related to *S. nigrum*. Bitter's type is white-flowered.

SCROPHULARIACEÆ; Figwort Family

120. *Castilleja foliolosa* H. & A., Bot. Beech. Voy. 154. California. "Rare, only middle of the island," Palmer.

121. *Castilleja guadalupensis* Brandegee, Zoe 5:166. (1903.) *Type locality*, Guadalupe Island. Brandegee collected this in an almost inaccessible spot on the western cliff.

122. *Mimulus latifolius* Gray, Proc. Am. Acad. 11:95 1876. *Type locality*, Guadalupe Island. "Only in the middle of the island, scattered in warm, moist spots," Palmer. Greene.

123. *Antirrhinum speciosum* (Nutt.), Gray, Proc. Am. Acad. 7:376. 1868. *Type locality*, Catalina Island. *Galvesia speciosa* Nutt. Pl. Gamb. 149. t. 22. "Frequent in crevices of high rocks in the middle of the island," Palmer. Greene.

124. *Antirrhinum nuttallianum* Benth., in DC. Prod. 11:592. *Type locality*, San Diego, California. "Rather rare in deep, warm cañons in the middle of the island," Palmer. Greene. Mason 1523.

125. *Linaria canadensis* (L.), Dumont, Bot. Cult. 2:96. North and South America. "Rare on sides of cañons in the middle of the island," Palmer.

126. *Orthocarpus purpurascens* Benth., Scroph. Index, 13. California. Brandegee in Voy. Wahl., Zoe 5:22.

PLANTAGINACEÆ; Plantain Family

127. *Plantago patagonica* Jacq., Ic. Rar. t. 306. South America. "South end of island," Palmer. Collected on both trips. Greene.

CUCURBITACEÆ; Gourd Family

128. *Marah guadalupensis* (S. Watson), Greene, Leaflet 2:36. (1910.) This was reported as *Megarrhiza guadalupensis* Watson. *Type locality*, Guadalupe Island. "In crevices of high rocks in the middle of the island; flowers white; fruit green," Palmer. "Fruit conspicuously flattened laterally," Greene. Franceschi.

RUBIACEÆ; Madder Family

129. *Galium angulosum* Gray, Proc. Am. Acad. 11:74. (1876.) *Type locality*, Guadalupe Island. "A single small shrubby plant in a crevice of a high cliff in the middle of the island; flowers greenish white," Palmer.

130. *Galium aparine* L., Sp. Pl. 108. Europe. "Common on warm, shady hillsides in the middle and more rarely at the south end," Palmer. Greene. Dr. Franceschi saw two specimens but collected none.

CAMPANULACEÆ; Harebell Family

131. *Specularia biflora* (R. & P.), Gray, Proc. Am. Acad. 11:82. (1876.) *Type locality*, Chile. "Rare in the shade of rocks and sagebrush on hillsides in the middle of the island," Palmer.

132. *Githopsis specularioides* Nutt., Trans. Am. Phil. Soc., N. S. 8:258. (1843.) *Type locality*, plains of the Oregon near the outlet of the Wahlamet [Willamette]. "Abundant at the middle and north end under sagebrush and dead branches; flowers white, turning to blue after gathering," Palmer.

CICHORIACEÆ; Chicory Family

133. *Sonchus oleraceus* L., Sp. Pl. 794. Europe. "Very rare on warm slopes in the middle of the island," Palmer. "Very common on the eastward slope of the island," Greene. Franceschi. Hanna & Slevin. Dudley's list. Mason 1531.

134. *Sonchus tenerrimus* L., l. c. Europe. This was found only by Palmer on his second trip, who reported it as a very slender form 2-8 inches high in shady cañons at the south end.

135. *Microseris linearifolia* (DC.), Gray, Proc. Am. Acad. 9: 209. (1874.) California. "Only in the middle of the island on stony ridges, eaten closely by goats," Palmer. "Abundant and very rank about the springs and the cypress groves where the goats do not now range," Greene. Franceschi.

136. *Microseris lindleyi* (DC.), Gray, l. c. 210. Western shores of North America. This has been collected by Brandegee, Voyage of the Wahlberg, Zoe 5: 22.

137. *Malacothrix clevelandi* Gray, Bot. Cal. 1: 433. *Type locality*, San Diego. "Abundant among rocks and trees in the middle of the island," Palmer. Greene.

138. *Stephanomeria guadalupensis* Brandegee, Zoe 5: 104. *Type locality*, Guadalupe Island. Collected by Brandegee in Sparrman's Cañon. The clumps of white leaves growing on the nearly perpendicular, dark-colored cliffs are very conspicuous.

139. *Agoseris heterophylla* (Nutt.), Greene, Pitt. 2: 178. (1891.) California. "About the springs in grassy ground, fine large specimens," Greene.

140. *Hypochæris glabra* L., Sp. Pl. 810. Europe. A single plant, not before reported. Mason 1529.

COMPOSITÆ; Sunflower Family

141. *Corethrogyne cana* (Gray), Greene, Bull. Cal. Acad. Sci. 1: 223. (1885.) *Type locality*, Guadalupe Island. This was reported by Watson as *Diplostephium canum* Gray. "Large shrub, about four feet high, of loose habit, found only in the crevices of high, rocky cliffs; flowers yellow," Palmer.

Greene saw but one plant. It was six feet high, but not in flower. Franceschi.

142. *Micropus californicus* Fisch. & Meyer, Ind. Sem. Hort. Petrop. 2:42. *Type locality*, Bodega Head, California. "On dry, gravelly slopes in the middle of the island," Palmer. No other collector has found this species, which is so common on the mainland.

143. *Filago arizonica* Gray, Proc. Am. Acad. 8:652. 1873. *Type locality*, Verde Mesa, Arizona. "On level ground at south end," Palmer. Greene. Mason 1527.

144. *Filago californica* Nutt., in Trans. Am. Phil. Soc. N. S. 7:405. 1841. *Type locality*, Santa Barbara. "A fine growth about the springs north of the middle portion of the island," Greene. Franceschi. Dudley's list. Mason 1527a.

145. *Gnaphalium sprengelii* Hook. & Arn., Bot. Beech. Voy. 150. California. "Only in the middle of the island on stony ridges," Palmer. Greene saw only one plant and the species has not since been collected on the island.

146. *Franseria camphorata* Greene, in Bull. Cal. Acad. Sci. 1:192. 1885. *Type locality*, Guadalupe Island. This was reported by Watson as *Franseria bipinnatifida* Nutt. "One of the most conspicuous plants at the south end, growing in thick, roundish clumps, giving the country a greenish-white appearance, flower buds red, bloom straw-color," Palmer. Greene in his description alludes to the strong camphor odor for which it is named. "Not common," Dudley's list. Mason 1518.

147. *Leptosyne gigantea* Kellogg, in Proc. Cal. Acad. Sci. 4:198. (1870.) *Type locality*, San Miguel Island. "Only two plants found in the crevices of high rocks, five feet high and branching near the top," Palmer. This has not since been collected.

148. *Hemizonia frutescens* Gray, Proc. Am. Acad. 11:79. (1876.) *Type locality*, Guadalupe Island. "In compact bunches in the crevices of high rocks, a few small plants among bushes," Palmer. Greene. Dudley's list.

149. *Hemizonia palmeri* Rose, Contr. U. S. Nat. Herb. 1:24. (1890.) *Type locality*, Guadalupe Island. This was collected by Dr. Palmer on his second visit, and was reported

as common on the south end of the island in all exposed places.

150. *Hemizonia greeneana* Rose, l. c. *Type locality*, Guadalupe Island. Dr. Palmer reports this as common at the south end in all the arroyos and cañons along the beach. It is a very homely plant, growing in great clumps in barren places. Hanna & Slevin.

151. *Perityle incana* Gray, Proc. Am. Acad. 11:78. (1876.) *Type locality*, Guadalupe Island. "Very common in the middle of the island in the crevices of high rocks hanging in massive bunches of yellow bloom," Palmer. Greene. Franceschi. Dudley's list. Mason 1519.

152. *Perityle grayi* Rose, in Coult. Bot. Gaz. 15:118. (1890.) *Type locality*, Guadalupe Island. This was reported by Watson as *P. emoryi* Torr., and is probably the plant that Greene reported as *P. californica* Benth. "Scattered through some of the cañons on the east side, flowers white, showy," Palmer. Franceschi. "Abundant," Dudley's list. Mason 1502.

153. *Baeria palmeri* Gray, Bot. Cal. 1:376. *Type locality*, Guadalupe Island. "Abundant in warm, low spots in the middle and at the south end, flowers showy," Palmer. Greene.

154. *Baeria coronaria* (Nutt), Gray, Proc. Am. Acad. 19:23. (1883.) *Type locality*, San Diego, California. Collected only on the Voyage of the Wahlberg, Zoe 4:130.

155. *Baeria gracilis* (DC.), Gray, Proc. Am. Acad. 9:196. (1874.) California. Collected only on the Voyage of the Wahlberg, Zoe 5:22.

156. *Bahia lanata* DC., Prod. 5:657. "A single plant on a rocky, open spot in the middle of the island," Palmer. It has not been found since. Franceschi reported an *Eriophyllum* which may be the same.

157. *Amblyopappus pusillus* Hook. & Arn., in Hook. Journ. Bot. 3:321. (1841.) Chile. "In low ground at the southern end," Palmer. Greene. "Common on south facing slope," Mason 1508.

158. *Matricaria discoidea* DC., Prod. 6:50. California. "Around springs in the middle of the island," Palmer. Greene. Franceschi.

159. *Artemisia californica* Less., in Linnæa 6: 523. (1831.) California. "Common," Palmer. Greene. Franceschi.

160. *Senecio palmeri* Gray, Proc. Am. Acad. 11: 89. (1876.) *Type locality*, Guadalupe Island. "'White sage,' very abundant on warm slopes, about three feet high, a free and showy bloomer," Palmer. Greene. Franceschi.

161. *Centaurea melitensis* L., Sp. Pl. 917. *Type locality*, Malta. Dudley's list. Mason 1521.

LIST OF PLANTS RECORDED FROM CEDROS ISLAND, MEXICO

Cedros Island, the largest of the islands along the coast of Lower California, lies about 40 miles distant from the shore and midway of the peninsula. From the northern extremity it widens to about 9 miles at the south and is about 20 miles long. It is of volcanic origin and mountainous, with many peaks, the highest of which is less than 4000 feet elevation.

Several collections of plants have been made on the island. In the present list the names of the collectors will be given in chronological order with each species. There have been three published lists and the species not on those lists have been taken from the scattered descriptions of Dr. Kellogg in the publications of the California Academy of Sciences and in revisions and monographs. There may be some that have been overlooked, as it is scarcely possible to be certain that every reference has been found.

The first collection was made by Dr. Veatch, who visited the island in 1859 to investigate the reports of its mineral wealth. He brought back a small collection which he gave to the recently-founded California Academy of Natural Sciences, and the specimens were named by Dr. Albert Kellogg. Some of them were beautifully figured in colors in the *Hesperian*, later described in the publications of the California Academy of Natural Sciences, and all were new to science. Dr. Streets visited the island in 1876, collecting a few specimens, but no list was published. Mr. Lyman Belding made a small collection in April, 1882, there being a few references to his specimens. The first important collection following that of Dr. Veatch was made by Dr. E. L. Greene in 1885. He spent three days in April and published a delightful description of

the island and the trip in Pittonia 1:194-208. Eighty-two species were collected, 19 being new. In 1889, Lieut. Charles F. Pond of the U. S. Ship Ranger, while surveying the Lower Californian shores and islands, made a small collection on Cedros Island, which was listed by Dr. Greene in Pitt. 1:266-268. Of nine species listed five were described as new. The next important collection was made by Dr. Edward Palmer, who spent five days on the island in March, 1889. The list of his collection was published by Dr. George Vasey and Dr. J. N. Rose in Contr. U. S. Nat. Herb. 1:13-20. He collected 97 species, six of which were new, and 44 were added to the known flora of the island. In 1897, T. S. Brandegee visited this island on the voyage of the Wahlberg and the list of his additions was published in Zoe 5:23. There were 31 species added, one new, namely *Gilia uncialis* Brandegee, a scrap of which is in the herbarium of the California Academy of Sciences. On the 1905-1906 expedition of the California Academy of Sciences to the Galapagos Islands a short stop was made on the island and a few plants collected by Alban W. Stewart. Dr. G. Dallas Hanna made a small collection when he visited the island in 1922. Dr. J. N. Rose and others have made some collections, but no lists of their plants have been published, their collections being occasionally noted in revisions and monographs. The last collection is that of H. L. Mason, the botanical collector on the expedition of the California Academy of Sciences to the Revillagigedo Islands in the spring of 1925. He collected 53 species from June 3-6, adding *Asclepias subulata* Dcne., *Dudleya candida* Britton, *Dudleya* sp., *Polypogon monspeliensis* Desv., *Carex spissa* Bailey, *Eleocharis caribæa* Blake, *Acalypha californica* Benth.

In the present paper four lists have been made, the first being the 55 species which were first described from Cedros Island. Those in this list marked with a star are the types in the herbarium of the California Academy of Sciences, those marked with a dagger are topotypes in our herbarium. The second list consists of 33 species first described from Lower California or the mainland of Mexico. The third is a list of 64 species which were originally described from the mainland of California or Arizona. The fourth is a list of widely-distributed species consisting of 23, generally known as weeds.

LIST OF SPECIES FIRST DESCRIBED FROM CEDROS ISLAND

(Stars indicate types and daggers indicate topotypes in the Herbarium of the California Academy of Sciences.)

- | | |
|---------------------------------------|--|
| † <i>Juniperus cerrosianus</i> Kell. | * <i>Ænothera cedrosensis</i> Greene |
| * <i>Agave sebastiana</i> Greene | * <i>Garrya veatchii</i> Kell. |
| † <i>Eriogonum molle</i> Greene | * <i>Arctostaphylos veatchii</i> Kell. |
| † <i>Eriogonum pondii</i> Greene | <i>Gilia veatchii</i> Parry |
| <i>Eriogonum taxifolium</i> Greene | <i>Gilia uncialis</i> Brandegee |
| † <i>Harfordia fruticosa</i> Greene | * <i>Phacelia ixodes</i> Kell. |
| <i>Hesperonia cedrosensis</i> Standl. | <i>Phacelia cedrosensis</i> Rose |
| <i>Thysanocarpus palmeri</i> | † <i>Cryptanthus cedrosensis</i> Greene |
| Vasey & Rose | † <i>Verbena lilacina</i> Greene |
| † <i>Hosackia nudata</i> Greene | * <i>Salvia cedrosensis</i> Greene |
| * <i>Hosackia flexuosa</i> Greene | <i>Teucrium glandulosum</i> Kell. |
| <i>Lotus cedrosensis</i> Greene | * <i>Monardella thymifolia</i> Greene |
| * <i>Astragalus fastidiosus</i> Kell. | † <i>Lycium cedrosense</i> Greene |
| * <i>Astragalus insularis</i> Kell. | † <i>Physalis greenei</i> Vasey & Rose |
| <i>Astragalus cedrosensis</i> | <i>Nicotiana greeneana</i> Rose |
| Vasey & Rose | <i>Diplacus stellatus</i> Kell. |
| <i>Viscainoa geniculata</i> Greene | * <i>Pentstemon cedrosensis</i> Kell. |
| † <i>Veatchia cedrosensis</i> Gray | * <i>Galium stellatum</i> Kell. |
| * <i>Rhus lentii</i> Kell. | * <i>Trixis californica</i> Kell. |
| † <i>Rhamnus insularis</i> Kell. | † <i>Brickellia cedrosensis</i> Greene |
| † <i>Sphæralcea fulva</i> Greene | † <i>Aplopappus tridentatus</i> Blake |
| <i>Abutilon lemmoni</i> Watson | <i>Franseria lancifolia</i> Rydb. |
| † <i>Eucnide cordata</i> Curran | * <i>Viguiera lanata</i> Kell. |
| * <i>Petalonyx linearis</i> Greene | * <i>Encelia stenophylla</i> Greene |
| <i>Cochemica pondii</i> Walton | † <i>Encelia californica asperifolia</i> |
| <i>Neomamillaria goodridgei</i> | Blake |
| Britt. & Rose | <i>Verbesina hastata</i> Kell. |
| <i>Ferocactus chrysacanthus</i> | <i>Porophyllum cedrense</i> |
| Britt. & Rose | Rose & Standl. |
| * <i>Xylonagra arborea</i> | * <i>Senecio cedrosensis</i> Greene |
| Donn. Sm. & Rose | <i>Eriophyllum crucigerum</i> Rydb. |

LIST OF SPECIES

FIRST DESCRIBED FROM MEXICO OR LOWER CALIFORNIA

- | | |
|--|------------------------------------|
| <i>Notholæna candida</i> Hook. | <i>Tillæa connata</i> R. & P. |
| <i>Cheilanthes brandegei</i> D. C. Eaton | <i>Dudleya candida</i> Britton |
| <i>Ephedra peninsularis</i> Johnston | <i>Ribes viburnifolium</i> Gray |
| <i>Muhlenbergia microsperma</i> Kunth. | <i>Ribes tortuosum</i> Benth. |
| <i>Eriogonum intricatum</i> Benth. | <i>Lupinus pondii</i> Greene |
| <i>Atriplex barclayana</i> Benth. | <i>Phaseolus filiformis</i> Benth. |
| <i>Draba sonora</i> Greene | <i>Parosela benthami</i> Standl. |
| <i>Arabis pectinata</i> Greene | <i>Parosela megacarpa</i> Standl. |

<i>Acalypha californica</i> Benth.	<i>Datura discolor</i> Bernh.
<i>Euphorbia polycarpa</i> Benth.	<i>Antirrhinum junceum</i> Gray
<i>Zizyphus parryi</i> Torr.	<i>Antirrhinum watsoni</i> Vasey & Rose
<i>Frankenia palmeri</i> Wats.	<i>Echinopepon minima</i> Watson
<i>Mentzelia adhærens</i> Benth.	<i>Bebbia juncea</i> Greene
<i>Echinocereus maritimus</i> Schum.	<i>Franseria chenopodifolia</i> Benth.
<i>Machærocereus gummosus</i> Britt. & Rose	<i>Franseria camphorata leptophylla</i> Gray
<i>Asclepias subulata</i> Dcne.	<i>Perityle grayi</i> Rose
<i>Cryptanthus maritima</i> Greene	

LIST OF SPECIES FOUND ALSO ON THE MAINLAND

<i>Pellaea andromedæfolia</i> Fée	<i>Echinocereus engelmanni</i> Parry
<i>Pityrogramma triangularis</i> Maxon	<i>Opuntia</i> sp.
<i>Pinus muricata</i> Don	<i>Apiastrum angustifolium</i> Nutt.
<i>Melica imperfecta</i> Trin.	<i>Bowlesia septentrionalis</i> C. & R.
<i>Stipa lepida</i> Hitchc.	<i>Gilia gracilis</i> Hook.
<i>Carex spissa</i> Bailey	<i>Ellisia chrysanthemifolia</i> Benth.
<i>Carex angustata</i> Boot	<i>Nemophila aurita</i> Lindl.
<i>Brodiaea capitata</i> Benth.	<i>Plagiobothrys cooperi</i> Gray
<i>Celtis douglasii</i> Planch.	<i>Pectocarya linearis</i> DC.
<i>Eriogonum fasciculatum</i> Benth.	<i>Amsinckia intermedia</i> Fisch & Meyer
<i>Pterostegia drymarioides</i> Fisch. & Meyer	<i>Salvia columbariæ</i> Benth.
<i>Aphanisma blitoides</i> Moq.	<i>Mimulus cardinalis</i> Dougl.
<i>Atriplex microcarpa</i> Dietr.	<i>Antirrhinum subsessile</i> Gray
<i>Atriplex californica</i> Moq.	<i>Galium angustifolium</i> Nutt.
<i>Calandrinia maritima</i> Nutt.	<i>Lonicera subspicata</i> H. & A.
<i>Polycarpum depressum</i> Nutt.	<i>Marah macrocarpa</i> Greene
<i>Clematis pauciflora</i> Nutt.	<i>Rafinesquia californica</i> Nutt.
<i>Delphinium cardinale</i> Hook.	<i>Microseris linearifolia</i> Gray
<i>Lepidium menziesii</i> DC.	<i>Malacothrix clevelandi</i> Gray
<i>Thysanocarpus laciniatus</i> Nutt.	<i>Aplopappus venetus</i> Blake
<i>Athysanus pusillus</i> Greene	<i>Baccharis sarothroides</i> Gray
<i>Isomeris arborea</i> Nutt.	<i>Filago arizonica</i> Gray
<i>Heteromeles arbutifolia</i> Roem.	<i>Gnaphalium sprengelii</i> H. & A.
<i>Hosackia maritima</i> Nutt.	<i>Iva hayesiana</i> Gray
<i>Euphorbia misera</i> Benth.	<i>Hemizonia fasciculata</i> T. & G.
<i>Euphorbia albomarginata</i> T. & G.	<i>Perityle greenei</i> Rose
<i>Ditaxis californica</i> Heller	<i>Baeria gracilis</i> Gray
<i>Simmondsia californica</i> Nutt.	<i>Amblyopappus pusillus</i> H. & A.
<i>Mentzelia involucrata</i> Watson	<i>Porophyllum gracile</i> Benth.
<i>Rhus laurina</i> Nutt.	<i>Artemisia californica</i> Less.
<i>Rhus integrifolia</i> Nutt.	<i>Gutierrezia sarothræ</i> Britt. & Rose
<i>Bergerocactus emoryi</i> Britt. & Rose	

LIST OF SPECIES WIDELY DISTRIBUTED

<i>Adiantum capillus-veneris</i> L.	<i>Mesembryanthemum crystallinum</i> L.
<i>Typha</i> , sp.	<i>Silene gallica</i> L.
<i>Polypogon monspeliensis</i> Desv.	<i>Sisymbrium canescens</i> Nutt.
<i>Agrostis verticillata</i> Vill.	<i>Capsella bursa-pastoris</i> Medic.
<i>Bromus trinii</i> Desv.	<i>Oligomeris glaucescens</i> Camb.
<i>Festuca octoflora</i> Walt.	<i>Erodium cicutarium</i> L'Her.
<i>Eleocharis caribæa</i> Blake	<i>Malva borealis</i> Wallm.
<i>Scirpus riparius</i> Spreng.	<i>Heliotropium curassavicum</i> L.
<i>Juncus acutus</i> L.	<i>Galium aparine</i> L.
<i>Parietaria floridana</i> Nutt.	<i>Sonchus tenerrimus</i> L.
<i>Chenopodium album</i> L.	<i>Sonchus oleraceus</i> L.
<i>Chenopodium murale</i> L.	<i>Senecio sylvaticus</i> L.

POLYPODIACEÆ; Fern Family

1. *Adiantum capillus-veneris* L., Sp. Pl. 1096. Europe. This is the widely distributed maiden-hair fern. Greene. Mason 2002.

2. *Pellæa andromedæfolia* (Klf.), Fée, Gen. 129. 1850-52. California. Greene collected this under pines at the summit of the island. Palmer.

3. *Notholæna sulphurea* (Cav.), J. Sm., Bot. Voy. Herald 1:233. 1854. *Pteris sulphurea* Cav., Descr. 269. 1802. California & Chile. Mexico. A small fern with white, powdery coating. Greene collected this on dry hillsides and reported it as *Notholæna candida* Hook. Palmer. Mason 2001.

4. *Cheilanthes brandegei* D. C. Eaton, Bull. Torr. Club 17:215, t. 104. 1890. *Type locality*, Magdalena Island. Palmer.

5. *Pityrogramma triangularis* (Kaulf.), Maxon, Contr. U. S. Nat. Herb. 17:173. (1913). *Gymnogramma triangularis* Kaulf. Enum. Fil. 73. 1824. *Type locality*, San Francisco, California. Brandegee.

PINACEÆ; Pine Family

6. *Juniperus cerrosianus* Kell., Proc. Cal. Acad. Sci. 2:97. 1861. *Type locality*, Cedros Island. A low shrub up to 5 feet, fruit large and very blue. Veatch. Greene. Palmer. Hanna. Mason 1991.

7. *Pinus muricata* D. Don, Trans. Linn. Soc. 17:441. 1837. *Type locality*, near San Luis Obispo, California. This pine grows on the summit of the ridges. The trees have slender trunks and some attain a height of 70 feet. Greene. Palmer. Hanna. Mason 2021.

GNETACEÆ; Joint-Fir Family

8. *Ephedra peninsularis* Johnston, Univ. Cal. Pub. Bot. 7:431. 1922. *Type locality*, Magdalena Island. This grew at the north end of the island. Palmer. Mason 2021.

TYPHACEÆ; Bulrush Family

9. *Typha angustifolia* L., Sp. Pl. 971. Europe. This is the common cat-tail or bulrush. The specimen consists of leaves only, but they are narrow as in this species and 6 feet long. Mason 2010. It may be the same as the *Typha* reported in Anthony's collection as *T. latifolia* L.

POACEÆ; Grass Family

10. *Polypogon monspeliensis* (L.), Desv., Fl. Atlant. 8:67. 1797. *Alopecurus monspeliensis* L., Sp. Pl. 61. Europe. A common weed. Mason 2016.

11. *Agrostis verticillata* Vill., Prosp. Pl. Dauph. 16. 1779. Europe. Palmer found a small plot near the spring. Mason 1995.

12. *Melica imperfecta* Trin., Mem. Acad. St. Petersburg. VI. Sci. Nat. 2:59. 1836. California. Palmer.

13. *Muhlenbergia microsperma* (DC.), Kunth., Rev. Gram. 1:64. 1829. Mexico. This was reported in Palmer's collection as *M. debilis* Willd.

14. *Bromus trinii* Desv., in Gay Fl. Chile 6:441. 1853. Chile. This was reported in Palmer's list as *Trisetum barbatum* Steud.

15. *Festuca octoflora* Walt., Fl. Carol. 81. 1788. South Carolina. This was reported in Palmer's list as *F. tenella* Willd.

16. *Stipa lepida* Hitch., Am. Journ. Bot. 2:303. 1915. *Type locality*, Santa Inez Forest Reserve, California. Palmer.

CYPERACEÆ; Sedge Family

17. *Carex spissa* L. H. Bailey, in Hemsl. Biol. Centr. Amer. 4:94. 1886. *Type locality*, San Diego. A stout sedge with glaucous leaves, brownish at base. Mason 1997.

18. *Carex angustata* Boot., in Hook. Fl. Am. Bor. 2:218. Columbia River. This was collected by Greene in the deepest cañon, in wet ground. This may have been the preceding, as he was uncertain about the species.

19. *Eleocharis caribæa* (Rottb.), Blake in Rhodora 20:24. 1918. *Scirpus caribæus* Rottb., Descr. Pl. Rar. Progr. 24. 1772. *Type locality*, St. Croix, Caribæa Island. Mason 2011.

20. *Scirpus riparius* J. & C. Presl., Rel. Haenk. 1:193. South America. Greene reported this as frequent in moist saline soil.

JUNCACEÆ; Rush Family

21. *Juncus acutus* L., Sp. Pl. 325. Europe. This was reported by Greene as *J. robustus* S. Watson, now regarded as a synonym. It grew at the spring near the seashore and is a stout rush with a rank growth. Palmer. Mason 1936.

AMARYLLIDACEÆ; Century Plant Family

22. *Agave sebastiana* Greene, Bull. Cal. Acad. Sci. 1:214. 1885. *Type locality*, Cedros Island. Greene. Mason collected this in flower and fruit. It grew to a height of 8 feet. Mason 1936.

LILIACEÆ; Lily Family

23. *Brodiaea capitata* Benth., Pl. Hartw. 339. *Type locality*, Monterey. Brandegee.

URTICACEÆ; Nettle Family

24. *Parietaria floridana* Nutt., Am. Gen. 2:208. *Type locality*, near St. Mary's, West Florida. Palmer collected this amid rocks and bushes in cañons.

25. *Celtis douglasii* Planchon, in Ann. Sci. Nat. Ser. III, 10:29. *Type locality*, arid region along the Columbia River. The authority for this is C. S. Sargent's Manual of the Trees of North America, page 322. Collector not stated.

POLYGONACEÆ; Buckwheat Family

26. *Eriogonum fasciculatum* Benth., in Trans. Linn. Soc. 17:411. 1837. Nevada and Arizona. Greene. Palmer. Mason. 1987. 2028.

27. *Eriogonum molle* Greene, Pitt. 1:207. 1888. *Type locality*, Cedros Island. Greene. Hanna.

28. *Eriogonum pondii* Greene, Pitt. 1:267. 1889. *Type locality*, Cedros Island. Greene. Pond. Palmer. Stewart. Mason 2026. 2018.

29. *Eriogonum taxifolium* Greene, Pitt. 1:267. 1889. *Type locality*, Cedros Island. Greene.

30. *Eriogonum intricatum* Benth., Bot. Voy. Sulph. 46, t. 22. 1844. *Type locality*, San Bartolome Bay. This grew on the summit of the ridge. Brandegee. Mason 2037.

31. *Harfordia fruticosa* Greene, in Parry Davenp. Acad. Sci. 5:28. 1886. *Type locality*, Cedros Island. Greene reports this as the commonest shrub at all lower and middle elevations. It grows to a height of 3 feet. Veatch. Greene. Pond. Palmer. Stewart.

32. *Pterostegia drymarioides* Fisch. & Meyer, Ind. Sem. Hort. Petrop. 2:48. *Type locality*, Bodega Bay. Palmer collected this in the shade of bushes and rocks.

CHENOPODIACEÆ; Salt-bush Family

33. *Chenopodium album* L., Sp. Pl. 219. Europe. Brandegee.

34. *Chenopodium murale* L., Sp. Pl. 219. Europe. Greene. Palmer.

35. *Aphanisma blitoides* Nutt., Moq. in DC. Prodr. 132:54. 1849. *Type locality*, San Diego, California. Palmer.

36. *Atriplex microcarpa* (Benth.), Dietr. Syn. Pl. 5: 536. *Obione microcarpa* Benth., Bot. Voy. Sulph. 48. 1844. *Type locality*, San Diego. Palmer.

37. *Atriplex californica* Moq., in DC. Prodr. 132: 98. 1849. California. Greene reported this as frequent near the seashore.

38. *Atriplex barclayana* (Benth.), Dietr. Syn. Pl. 537. *Obione barclayana* Benth., Bot. Voy. Sulph. 48. 1844. *Type locality*, Magdalena Bay. This grew in abundance near the beach. Palmer.

ALLIONACEÆ; Four O'clock Family

39. *Hesperonia cedrosensis* Standley, in Contr. U. S. Natl. Herb. 12: 362. 1909. *Type locality*, Cedros Island. Streets. Greene. Palmer. Brandegee. This was reported as *Mirabilis californica* Gray.

FICOIDACEÆ; Fig Marigold Family

40. *Mesembryanthemum crystallinum* L., Sp. Pl. 480. Cape of Good Hope. Brandegee.

PORTULACACEÆ; Portulaca Family

41. *Calandrinia maritima* Nutt., in Torr. & Gray Fl. N. Am. 1: 19. *Type locality*, San Diego. Brandegee.

CARYOPHYLLACEÆ; Pink Family

42. *Polycarpum depressum* Nutt., in Torr. & Gray Fl. N. Am. 1: 17. *Type locality*, San Diego. Palmer found this at the highest point of the north end under pines.

43. *Silene gallica* L., Sp. Pl. 417. Europe. Brandegee.

RANUNCULACEÆ; Buttercup Family

44. *Clematis pauciflora* Nutt., in Torr. & Gray Fl. N. Am. 1: 65. *Type locality*, San Diego. Greene found two or three plants in one of the principal cañons.

45. *Delphinium cardinale* Hook., Bot. Mag. t. 4887. 1855. This was described from the collections of Wm. Lobb introduced into cultivation. Brandegee.

CRUCIFERÆ; Mustard Family

46. *Draba sonora* Greene, in Bull. Cal. Acad. Sci. 2: 59. 1886. *Type locality*, northwestern Sonora. Palmer found only one plant on the side of a cañon.

47. *Sisymbrium canescens* Nutt., Am. Gen. 2: 68. Virginia to Georgia. Greene. Palmer.

48. *Lepidium menziesii* DC., Syst. 2: 539. Northwest coast, collected by Menzies. Palmer collected this in exposed places.

49. *Arabis pectinata* Greene, Pitt. 1: 287. 1889. *Type locality*, San Bartolome Bay. Palmer reported this as rather common but scattering.

50. *Thysanocarpus palmeri* Vasey & Rose, Contr. U. S. Natl. Herb. 1: 14. 1890. *Type locality*, Cedros Island. This is described as having purple flowers and pods. According to S. Watson it is closely related to *T. erectus* S. Wats., and according to Greene to *T. emarginatus* Greene. Palmer found only a few plants in a level place.

51. *Thysanocarpus laciniatus* Nutt., in Torr. & Gray Fl. N. Am. 1: 118. *Type locality*, Santa Barbara. Brandegee.

52. *Athysanus pusillus* (Hook.), Greene, Bull. Cal. Acad. Sci. 1: 72. 1885. *Type locality*, Monterey. Brandegee.

53. *Capsella bursa-pastoris* (L.), Medic. Pfl. Gatt. 1: 85. *Thlaspi bursa-pastoris* L., Sp. Pl. 647.

CAPPARIDACEÆ; Caper Family

54. *Isomeris arborea* Nutt., in Torr. & Gray Fl. N. Am. 1: 124. *Type locality*, San Diego. Greene. Palmer. Mason 1999.

RESEDACEÆ; Mignonette Family

55. *Oligomeris glaucescens* Camb., in Jacq. Voy. Bot. 24, t. 25. Mediterranean region. Greene. Palmer.

CRASSULACEÆ; Stonecrop Family

56. *Tillæa connata* R. & P., Fl. Peru 1:70. Ecuador to Peru. This was reported in the list of Palmer's collection as *T. leptopetala* Benth.

57. *Dudleya candida* Britton, in Bull. N. Y. Bot. Gard. 2:18. 1903. *Type locality*, Coronado Islands, Lower California. This is much shorter than the type as described but otherwise seems to agree. The sepals and petals are farinose, the latter pale yellow tinged with pink. Mason 2003a.

58. *Dudleya* sp. This is without basal leaves. The cauline leaves are reflexed and the pink flowers densely clustered at the summit of the red stems; in fruit, the branches elongate and the arrangement of the pods is strongly secund. Mason 2038.

SAXIFRAGACEÆ; Saxifrage Family

59. *Ribes viburnifolium* Gray, in Proc. Am. Acad. 17:202. 1881-82. *Type locality*, near All Saints Bay, Lower California. Brandegee.

60. *Ribes tortuosum* Benth., in Bot. Voy. Sulph. 17. 1844. *Type locality*, San Quintin, Lower California. Brandegee.

ROSACEÆ; Rose Family

61. *Heteromeles arbutifolia* (Ait. f.), M. Roem. Syn. Rosifl. 105. 1847. California. Greene collected this in bud, on the summit of the ridge. Mason 2029.

LEGUMINOSÆ; Pea Family

62. *Hosackia nudata* Vasey & Rose, in Contr. U. S. Nat. Herb. 1:14. 1890. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Mason 1990. This is a sparsely leaved, divaricately branching plant with subsessile flowers changing from yellow to orange.

63. *Hosackia flexuosa* Greene, Bull. Cal. Acad. Sci. 1:82. 1885. *Type locality*, Cedros Island.

64. *Hosackia maritima* Nutt., in Torr. & Gray Fl. N. Am. 1:327. *Type locality*, Santa Barbara. Palmer.

65. *Lupinus pondii* Greene, Pitt. 1: 288. 1889. *Type locality*, San Bartolome Bay, Lower California. Palmer. Mason 2040. This is annual and related to *L. arizonicus* S. Watson.

66. *Astragalus fastidiosus* (Kell.), Greene in Bull. Cal. Acad. Sci. 1: 186. 1885. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Mason 2033. Flowers white, pods inflated.

67. *Astragalus insularis* Kell., in Bull. Cal. Acad. Sci. 1: 6. 1884. *Type locality*, Cedros Island. Veatch. Palmer. Mason 1994. Prostrate, with smaller inflated pods than the preceding.

68. *Astragalus cedrocensis* Vasey & Rose, in Contr. U. S. Nat. Herb. 1: 15. 1890. This is annual and related to *A. nuttallianus* DC. Palmer.

69. *Phaseolus filiformis* Benth., in Bot. Voy. Sulph. 13. 1844. *Type locality*, Magdalena Bay. Streets. Pond. Palmer. Mason 1988. A slender vine with pink flowers and 3-lobed leaves.

70. *Parosela benthami* (Brandegge), Standl., Contr. U. S. Nat. Herb. 23: 460. 1922. *Dalea benthami* Brandegge, Proc. Cal. Acad. Sci. II. 2: 148. 1889. *Type locality*, Santa Margarita Island, Lower California. Pond. Palmer.

71. *Parosela megacarpa* (S. Wats.), Standl., Contr. U. S. Nat. Herb. 23: 460. *Dalea megacarpa* S. Watson, Proc. Am. Acad. 20: 359. 1885. *Type locality*, Sonora, Mexico. Greene.

GERANIACEÆ; Geranium Family

72. *Erodium cicutarium* L'Her., in Hort. Kew, ed. 2: 404. Europe. Brandegge.

ZYGOPHYLLACEÆ; Lignum Vitæ Family

73. *Viscainoa geniculata* (Kell.), Greene, Pitt. 1: 163. 1888. *Staphylea geniculata* Kellogg, Proc. Cal. Acad. Sci. 2: 22. 1859. *Type locality*, San Sabastian Bay. This shrub has large, yellowish white flowers and a strongly 4-lobed inflated pod which reminded Kellogg of the pod of *Staphylea*. Veatch. Greene.

EUPHORBIACEÆ; Spurge Family

74. *Acalypha californica* Benth., Bot. Voy. Sulph. 51. *Type locality*, Magdalena Bay. Mason 2021.

75. *Euphorbia misera* Benth., Bot. Voy. Sulph. 51. *Type locality*, San Diego. Mason (without number). Mason's specimen is very poor and the determination uncertain.

76. *Euphorbia albomarginata* Torr. & Gray, in Pac. Rail. R. Report 2: 174. *Type locality*, headwaters of the Colorado. Greene.

77. *Euphorbia polycarpa* Benth., Bot. Voy. Sulph. 50. *Type locality*, Magdalena Bay. Brandegee.

78. *Ditaxis californica* (Brandegee), Heller, Muhl. 8: 60. 1912. *Argythamnia californica* Brandegee, Zoe 5: 230. 1906. *Type locality*, Marshall Cañon, 7 miles west of Coachella, Riverside County, California. Brandegee.

BUXACEÆ; Box Family

79. *Simmondsia californica* Nutt., in Hook. Lond. Journ. Bot. 3: 400. 1844. t. 16. *Type locality*, San Diego. Veatch. Palmer. Veatch's specimen was described by Kellogg as *Galphimia pabulosa* and figured in the Hesperian.

ANACARDIACEÆ; Sumac Family

80. *Veatchia cedrosensis* (Kell.), Gray in Bull. Cal. Acad. Sci. 1: 4. *Rhus veatchiana* Kellogg, Proc. Cal. Acad. Sci. 2: 24. 1859. 1884. *Type locality*, Cedros Island. This is the peculiar elephant tree. Veatch. Greene. Palmer. Stewart. Hanna. Mason 1905.

81. *Rhus lentii* Kell., in Proc. Cal. Acad. Sci. 2: 16. 1859. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Stewart. Hanna. Mason 1905. The fruit is a berry as large as a small cherry.

82. *Rhus integrifolia* (Nutt.), Benth. & Hook., ex S. Watson in Wheeler's Report Bot. 84. *Styphonia integrifolia*, Nutt., in Torr. & Gray Fl. N. Am. 1: 220. *Type localities*, San Diego and Santa Barbara. Greene. Palmer. Mason

2039, leaves entire. 2034, most of the leaves entire but some are 2-3 divided.

83. *Rhus laurina* Nutt., in Torr. & Gray Fl. N. Am. 1:219. *Type locality*, Santa Barbara. Greene. Mason 1981.

RHAMNACEÆ; Buckthorn Family

84. *Rhamnus insularis* (Kell.), Greene, Bull. Cal. Acad. Sci. 2:302. 1887. *Type locality*, Cedros Island. It was published as *R. insulus* Kell., Proc. Cal. Acad. Sci. 2:20. 1859. Veatch. Greene. Palmer. Hanna.

85. *Zizyphus parryi* Torr., in Bot. Mex. Bound Surv. 46. 1859. *Type locality*, San Felipe, California. Palmer's specimens were so named by Dr. William Trelease. It was collected in cañons and on mountain sides.

MALVACEÆ; Mallow Family

86. *Sphæralcea fulva* Greene, Pitt. 1:201. 1888. *Type locality*, Cedros Island. Streets. Greene. Palmer. Mason 2031. The entire plant is yellowish tomentose and the flowers red.

87. *Abutilon lemmoni* S. Watson, in Proc. Am. Acad. 20:357. 1885. *Type locality*, near Santa Cruz, Sonora. Streets.

88. *Malva borealis* Wallm., in Liljebl. Svensk. Fl. ed. 3:574. Europe. Brandegee.

FRANKENIACEÆ; Salt-weed Family

89. *Frankenia palmeri* S. Watson, in Proc. Am. Acad. 11:124. 1876. Lower California on the gulf side. Greene. Palmer.

LOASACEÆ; Blazing Star Family

90. *Eucnide cordata* (Kell.), in Curran, Bull. Cal. Acad. Sci. 1:137. 1885. *Mentzelia cordata* Kellogg, Proc. Cal. Acad. Sci. 2:33. 1859. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Mason 1902. Flowers white with numerous stamens, leaves cordate irregularly crenate.

91. *Petalonyx linearis* Greene, in Bull. Cal. Acad. Sci. 1:188. 1885. *Type locality*, Cedros Island. Greene. Palmer. Mason 2019.
92. *Mentzelia adhærens* Benth., Bot. Voy. Sulph. 15. *Type locality*, Magdalena Bay. Streets. Palmer.
93. *Mentzelia involucrata* S. Watson, in Proc. Am. Acad. 20:367. 1885. San Bernardino County. Brandegee.

CACTACEÆ; Cactus Family

94. *Opuntia* sp. This was listed by Greene as *Opuntia engelmanni*, which at that time was an aggregate. The species may be *O. occidentalis* Engelm. & Bigelow, which is distributed from southwestern California to northern Lower California and adjacent islands. Britt. & Rose Cactaceæ 1:146.
95. *Echinocereus engelmanni* (Parry), Rümpler in Förster Hadb. Cact. ed. 2:805. 1885. *Cereus engelmanni* Parry in Engelm. Am. Journ. Sci. II. 14:338. 1852. *Type locality*, mountains about San Felipe, San Diego County, California. Greene.
96. *Echinocereus maritimus* (Jones), Schuman, Gesam. Kakteen 27. 1898. *Cereus maritimus* Jones, Am. Nat. 17:973. 1883. *Type locality*, Ensenada, Lower California. Brandegee.
97. *Machærocereus gummosus* (Engelm.), Britt. & Rose, Cactaceæ 2:116. 1920. *Cereus gummosus* Engelm., in Brandegee, Proc. Cal. Acad. Sci. 2:162. 1889. Lower California and adjacent islands. Brandegee.
98. *Bergerocactus emoryi* (Engelm.), Britt. & Rose, Contr. U. S. Nat. Herb. 12:474. 1909. *Cereus emoryi* Engelm., Am. Journ. Sci. II. 14:338. 1852. Boundary between Lower California and California. Greene.
99. *Ferocactus chrysacanthus* (Orcutt.), Britt. & Rose, Cactaceæ 3:127. *Echinocactus chrysacanthus* Orcutt., Rev. Cact. 1:56. 1890. *Type locality*, Cedros Island. This is probably *Echinocactus emoryi* reported by Greene.
100. *Neomammillaria goodridgei* (Scheer), Britt. & Rose, Cactaceæ 4:158. 1925. *Mammillaria goodridgei* Scheer,

Salm- Dyck. Cact. Hort. Dyck. 1849. 91. 1850. *Type locality*, Cedros Island. Greene.

101. *Cochemia pondii* (Greene), Walton, Cact. Journ. 2: 51. 1894. *Mammillaria pondii* Greene, Pitt. 1: 268. 1889. *Type locality*, Cedros Island.

ONAGRACEÆ; Evening Primrose Family

102. *Xylonagra arborea* Donn. Sm. & Rose, Contr. U. S. Nat. Herb. 16: 294. 1913. *Oenothera arborea* Kellogg, Proc. Cal. Acad. Sci. 2: 32. 1859. *Type locality*, Cedros Island. Veatch. Greene. Mason 2023. A shrub with bright red fuchsia like flowers in racemes, growing in thickets.

103. *Oenothera cedrosensis* Greene, Bull. Cal. Acad. Sci. 1: 187. 1885. *Type locality*, Cedros Island. Veatch. Greene. Mason 2085.

UMBELLIFERÆ; Parsley Family

104. *Apiastrum angustifolium* Nutt., in Torr. & Gray Fl. N. Am. 1: 644. *Type locality*, San Diego, California. Palmer.

105. *Bowlesia septentrionalis* C. & R., Contr. U. S. Natl. Herb. 7: 31. 1900. *Type locality*, near Tucson, Arizona. Brandegee.

GARRYACEÆ; Fringe-bush Family

106. *Garrya veatchii*. Kell., Proc. Cal. Acad. Sci. 1: 40. 1873. *Type locality*, Cedros Island. Veatch. Greene.

ERICACEÆ; Manzanita Family

107. *Arctostaphylos veatchii* Kell., Proc. Cal. Acad. Sci. 2: 19. 1863. *Type locality*, Cedros Island. Veatch. Greene. This was collected by Greene in the region of the pines near the summit. He reported it as *A. bicolor* Gray.

ASCLEPIADACEÆ; Silkweed Family

108. *Asclepias subulata* Dcne., in DC. Prodr. 8: 571. "Nova Hispania." One of the leafless species. Stewart. Mason 2020.

POLOMONIACEÆ; Phlox Family

109. *Gilia veatchii* Parry ex Greene, in Bull. Cal. Acad. Sci. 1:198. 1885. *Type locality*, Cedros Island. Veatch. Greene. Palmer. A shrub with evergreen leaves resembling a juniper, viscid and fragrant; flowers ochroleucus tinged on the outside with bronze-purple.

110. *Gilia uncialis* Brandegee, in Zoe 5:107. 1901. *Type locality*, Cedros Island. This was collected by Brandegee near the summit of the highest mountains on the sides of gulches and under the shade of bushes. It is related to *G. dianthoides* Nutt.

111. *Gilia gracilis* Hook., Bot. Mag. t. 2924. California. Brandegee.

HYDROPHYLLACEÆ; Waterleaf Family

112. *Phacelia ixodes* Kell., Bull. Cal. Acad. Sci. 1:6. 1884. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Stewart. Hanna. Mason 2000. Flowers bluish white in scorpioid spikes, elongating in fruit; entire plant glandular hairy.

113. *Phacelia cedrosensis* Rose, Contr. U. S. Nat. Herb. 1:18. 1890. *Type locality*, Cedros Island. This species is very hispid with slender bristles. Palmer collected it in the shade of bushes in cañons.

114. *Ellisia chrysanthemifolia* Benth., in Trans. Linn. Soc. 17:274. 1837. California. Palmer.

115. *Nemophila aurita* Lindl., Bot. Reg. t. 1601. California. Pond.

BORAGINACEÆ; Borage Family

116. *Cryptanthe cedrosensis* Greene, Pitt. 1:117. 1887. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Mason 2035.

117. *Cryptanthe maritima* Greene, Pitt. 1:117. 1887. *Type locality*, Guadalupe Island. Palmer.

118. *Pectocarya linearis* DC., Prodr. 10:120. Chile. Palmer.

119. *Heliotropium curassavicum* L., Sp. Pl. 130. Cosmopolitan. Pond.

120. *Plagiobothrys cooperi* Gray, Proc. Am. Acad. 20:285. 1885. *Type locality*, San Diego. Palmer.

121. *Amsinckia intermedia* F. & M., Ind. Sem. Hort. Petrop. 2:26. 1836. *Type locality*, Bodega Head, Sonoma County, Calif. Brandegee.

VERBENACEÆ; Verbena Family

122. *Verbena lilacina* Greene, in Bull. Cal. Acad. Sci. 1:210. 1885. *Type locality*, Cedros Island. Greene. Palmer. Mason without a number. A tall shrubby species with fragrant lilac flowers in terminal heads.

LABIATÆ; Mint Family

123. *Salvia cedrosensis* Greene, Bull. Cal. Acad. Sci. 1:212. 1885. *Type locality*, Cedros Island. Greene. Palmer. Mason 2027. A shrub with blue flowers, growing along talus slopes.

124. *Salvia columbariæ* Benth., Lab. Gen. et Sp. 302. California. Brandegee.

125. *Teucrium glandulosum* Kell., Proc. Cal. Acad. Sci. 2:23. 1863. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Flowers white with pink shading.

126. *Monardella thymifolia* Greene, Bull. Cal. Acad. Sci. 1:211. 1886. *Type locality*, Cedros Island. Greene. Mason 2022. Low shrub, the flowers pink to purple.

SOLANACEÆ; Nightshade Family

127. *Lycium cedrosense* Greene, Pitt. 1:268. 1889. *Type locality*, Cedros Island. A glandular pubescent spinescent shrub with small, red berries. Pond. Palmer. Mason 2014.

128. *Physalis greeniei* Vasey & Rose, Contr. U. S. Nat. Herb. 1:18. 1890. *Type locality*, Cedros Island. Streets. Ponds. Palmer. Stewart.

129. *Nicotiana greeneana* Rose, Contr. U. S. Nat. Herb. 1:18. 1890. *Type locality*, Cedros Island. Palmer.

130. *Datura discolor* Bernh., in Linnæa in Litt. 8:138. 1833. West Indies. Brandegee.

SCROPHULARIACEÆ; Figwort Family

131. *Mimulus cardinalis* Dougl. ex. Benth., Scroph. Ind. 28. California. Greene. Palmer. Mason 1993, flowers red; 2017, flower yellow.

132. *Diplacus stellatus* Kell., Proc. Cal. Acad. Sci. 2:19. 1863. *Type locality*, Cedros Island. Veatch. Greene. Palmer.

133. *Pentstemon cerrosensis* Kell., Proc. Cal. Acad. Sci. 2:19. 1863. *Type locality*, Cedros Island. Veatch. Greene. Belding. Palmer. Mason 2024. A showy species with red flowers.

134. *Antirrhinum junceum* (Benth.), Gray, Proc. Am. Acad. 7:377. 1868. *Maurandia juncea* Benth., Bot. Voy. Sulph. 41. 1844. From San Diego to the Bay of Magdalena. Veatch. Streets. Greene. Pond. Palmer. Mason 1984. This was described and figured by Kellogg as *Saccularia veatchii*, Proc. Cal. Acad. Sci. 2:174. 1863.

135. *Antirrhinum subsessile* Gray, in Coult. Bot. Gaz. 9:55. 1884. *Type locality*, San Diego. Palmer.

136. *Antirrhinum watsoni* Vasey & Rose, Proc. U. S. Nat. Mus. 11:533. 1888. *Type locality*, San Quentin. Palmer.

RUBIACEÆ; Madder Family

137. *Galium angustifolium* Nutt., in Torr. & Gray Fl. N. Am. 2:22. *Type locality*, San Diego. Greene.

138. *Galium aparine* L., Sp. Pl. 108. Europe. Brandegee.

139. *Galium stellatum* Kell., Proc. Cal. Acad. Sci. 2:97. 1863. *Type locality*, Cedros Island. Veatch.

CAPRIFOLIACEÆ; Honeysuckle Family

140. *Lonicera subspicata* Hook. & Arn., Bot. Beech Voy. 349. California. Brandegee.

CUCURBITACEÆ; Gourd Family

141. *Echinopepon minima* (Kell.), S. Watson, Proc. Am. Acad. 24:52. 1889. *Marah minima* Kellogg, Proc. Cal. Acad. Sci. 2:18. Type locality, Cedros Island. Veatch. Street. Palmer.
142. *Marah macrocarpa* Greene, Leaf. Bot. Obs. 2:36. 1910. From Santa Barbara to Cedros Island. Greene.

CICHORIACEÆ; Chicory Family

143. *Rafinesquia californica* Nutt., in Trans. Am. Phil. Soc. N. S. 7:429. 1841. Type locality, San Diego. Palmer.
144. *Microseris linearifolia* (DC.), Gray, Proc. Am. Acad. 9:207. 1874. *Calais linearifolia* DC., Prodr., 7:85. 1838. California. Palmer.
145. *Malacothrix clevelandi* Gray, Bot. Cal. 1:433. Type locality, San Diego. Greene. Palmer.
146. *Sonchus tenerrimus* L., Sp. Pl. 794. Mediterranean region. Palmer, more common than the next.
147. *Sonchus oleraceus* L., Sp. Pl. 794. Cosmopolitan. Palmer.

MUTISIACEÆ; Mutisia Family

148. *Trixis californica* Kell., Proc. Cal. Acad. Sci. 2:182, 53. 1862. Type locality, Cedros Island. Veatch. Greene. Palmer. Mason 2004.

COMPOSITÆ; Sunflower Family

149. *Brickellia cedrosensis* Greene, Bull. Torr. Bot. Club 10:86. 1883. Type locality, Cedros Island. Veatch. Greene. Palmer. Mason 2004.
150. *Gutierrezia sarothræ* (Pursh), Britt. & Rusby in Trans. N. Y. Acad. Sci. 7:10. 1887. *Solidago sarothræ* Pursh, Fl. Am. Sept. 540. 1814. On the plains of the Missouri. Greene. Mason 1992.

151. *Aplopappus tridentatus* (Greene), Blake, Contr. U. S. Nat. Herb. 23. 1493. 1926. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Mason 1998.

152. *Aplopappus venetus* (H. B. K.), Blake, Contr. U. S. Natl. Herb. 23. 1492. 1926. *Baccharis veneta* H. B. K., Nov. Gen. & Sp. 4: 68. 1820. *Type locality*, Cuernavaca, Mexico. Greene. Palmer.

153. *Bebbia juncea* (Benth.), Greene, Bull. Cal. Acad. Sci. 1:179. 1885. *Carphephorus junceus* Benth., Bot. Voy. Sulph. 21. 1844. *Type locality*, Magdalena Bay. Greene. Palmer.

154. *Baccharis sarothroides* Gray, Proc. Am. Acad. 17:211. 1881. San Diego County, California. Greene. Mason 2009.

155. *Filago arizonica* Gray, Proc. Am. Acad. 8:652. 1873. *Type locality*, Verde Mesa, Arizona. Palmer.

156. *Gnaphalium sprengelii* H. A., Bot. Beech. Voy. 150. California. Palmer.

157. *Franseria chenopodifolia* Benth., Bot. Sulph. 20. *Type locality*, Magdalena Bay. Greene. Palmer. Mason 2012.

158. *Franseria lancifolia* Rydb., N. Am. Fl. 33:36. 1922. *Type locality*, Cedros Island. Brandege. According to Dr. Standley, this is a form of the preceding with less pubescent fruit.

159. *Franseria camphorata* Greene, Bull. Cal. Acad. Sci. 1:192. 1885. *Type locality*, Guadalupe Island. Greene. Palmer.

160. *Franseria camphorata leptophylla* Gray, Proc. Am. Acad. 22:309. 1887. *Type locality*, San Fernando, Lower California. Greene.

161. *Iva hayesiana* Gray, Proc. Am. Acad. 11:78. 1876. San Diego County, California. Greene.

162. *Viguiera lanata* (Kell.), Gray, Proc. Am. Acad. 17:218. 1881-82. *Bahiopsis lanata* Kellogg, Proc. Cal. Acad. 2:35. 1859. *Type locality*, Cedros Island. Veatch. Greene. Streets. Belding. Pond. Palmer. Mason 2036.

163. *Encelia stenophylla* Greene, Bull. Torr. Club. 10: 41. 1883. *Type locality*, Cedros Island. Veatch. Greene. Palmer. Mason 1989.
164. *Encelia californica asperifolia* Blake, Proc. Am. Acad. 49: 368. 1914. *Type locality*, Cedros Island. Streets. Pond. Palmer. Mason 2015.
165. *Verbesina hastata* Kell. ex Curran, in Bull. Cal. Acad. Sci. 1: 140. 1885. *Type locality*, Cedros Island. Veatch. Greene. Palmer. This was reported as *Encelia cedrosensis* Rose, in Palmer's list.
166. *Hemizonia fasciculata* (DC.), Torr. & Gray, Fl. N. Am. 2: 397. California. Greene. *Hartmannia fasciculata* DC., Prodr. 5: 693. 1836.
167. *Perityle greenei* Rose, in Coult. Bot. Gaz. 15: 117. 1890. *Type locality*, Santa Cruz Island, California. Veatch. Streets. Greene. Palmer.
168. *Perityle grayi* Rose, l. c. *Type locality*, Guadalupe Island. Palmer.
169. *Eriophyllum crucigerum* Rydb., N. Am. Fl. 34: 96. 1915. *Type locality*, Cedros Island. Greene. Palmer. This was reported as *E. confertiflorum* (DC). Gray.
170. *Baeria gracilis* (DC.), Gray, Proc. Am. Acad. 9: 196. 1874. California. *Burrielia gracilis* DC., Prodr. 5: 664. 1836.
171. *Amblyopappus pusillus* Hook. & Arn., in Journ. Bot. 3: 321. 1841. Chile. Palmer.
172. *Porophyllum gracile* Benth., in Bot. Voy. Sulph. 29. 1844. *Type locality*, Magdalena Bay. Greene. Pond. Palmer.
173. *Porophyllum cedrense* Rose & Standl. ex Rydb., Fl. N. Am. 34: 189. 1916. *Type locality*, Cedros Island. Rose.
174. *Artemisia californica* Less., in Linnæa 6: 525. 1831. California. Greene.
175. *Senecio cedrosensis* Greene, Bull. Cal. Acad. Sci. 1: 194. 1885. *Type locality*, Cedros Island. Greene. Palmer.
176. *Senecio sylvaticus* L., Sp. Pl. 868. Europe. Palmer.

A LIST OF PLANTS

RECORDED FROM THE TRES MARIAS ISLANDS, MEXICO

The first list of plants from the Tres Marias Islands was published by Dr. J. N. Rose in N. Am. Fauna, U. S. Dept. Agr., No. 11, pages 77-91. It was based on a collection made the last of May at the close of the dry season in 1897 by E. W. Nelson and E. A. Goldman. One hundred and twelve species were recorded from Maria Madre, Maria Magdalena and Maria Cleofa islands, of which 11 were described as new. The next collection was that of H. L. Mason when on the expedition of the California Academy of Sciences to the Revilagigedo Islands in 1925. Collections were made on Maria Madre, Maria Magdalena and Isabella islands from May 16-24 at the end of the dry season and about 120 species were collected. Owing to the incomplete condition of most of the specimens, a duplicate set was sent to the United States National Herbarium for the authoritative determinations of Mr. Paul C. Standley, an authority on Mexican plants. In October, 1925, Mrs. Roxana S. Ferris made a much better collection, owing to the more favorable time of the year. She collected only on Maria Madre from October 21-27 and found 64 species, 10 being new, published with 4 plates in Contr. Dudley Herb. 1:65-81, the title of her paper being: Preliminary Report on the Flora of the Tres Marias Islands.

The greater number of the species listed are of wide distribution in the tropics, a few are peculiar to the adjacent mainland, and 21 have been described as new species, two of which are now considered synonyms. More extended and thorough exploration of these islands will undoubtedly discover many more species. It is with the desire to help future explorers that these lists have been brought together.

LIST OF SPECIES

FIRST DESCRIBED FROM THE TRES MARIAS ISLANDS

(Stars indicate types and daggers indicate topotypes in the Herbarium of the California Academy of Sciences.)

†*Aristolochia tresmariae* Ferris
 †*Forchammeria sessilifolia* Standl.
Acaciella ferrisæ Britt. & Rose
Mimosa ferrisæ Britt. & Rose

†*Cracca arcuata* Rydb.
 †*Atelia insularis* Standl.
Zanthoxylon insularis Rose
Zanthoxylon nelsoni Rose

<i>Zanthoxylon ferrisæ</i> Standl.	† <i>Buxus pubescens</i> Greenm.
<i>Pilocarpus insularis</i> Rose	<i>Matayba spondioides</i> Standl.
<i>Esenbeckia nesiotica</i> Standl.	<i>Ternstroemia maltbya</i> Rose
<i>Gymnanthes insoluta</i> Ferris	<i>Begonia californica brevibracteata</i>
<i>Acalypha verbenacea</i> Standl.	Ferris
<i>Astrocasia peltata</i> Standl.	* <i>Salvia aliena</i> Greene
<i>Euphorbia tresmariae</i> Standl.	<i>Beloperone nelsoni</i> Greene

POLYPODIACEÆ

1. *Adiantum trapezoides* Fée, Gen. 117. 1850-52. Brazil, Jamaica, Mexico. Mason 1822, Maria Magdalena. Ferris 5704.
2. *Adiantum concinnum* H. B. Willd., Sp. 5:451. 1810. Tropical America. Nelson 4273, Maria Madre.
3. *Adiantum tenerum* Swartz, Prod. 135. 1788. Mexico. Nelson 4281, Maria Madre.
4. *Adiantum poiretii* Wikstr., Vet. Acad., Hdl. 1825, 443. 1826. Tropical Africa, East Indies, Mexico. Ferris 5632.
5. *Ceropteris calomenalos* (L.), Under., Bull. Torr. Club 29:632. 1902. *Gymnogramma calomenalos* Kaulf. Tropical America, Natal, Africa. Nelson 4333, Maria Madre.
6. *Dryopteris patens* (SW.), O. Kuntze, Rev. Gen. Pl. 2:813. 1891. *Aspidium patens* Swartz. Cosmopolitan. Nelson 4316, Maria Madre.
7. *Dryopteris karwinskyana* (Mett.), O. Kuntze, Rev. Gen. Pl. 2:813. 1891. Mexico, Guatemala. Ferris 5711.
8. *Aspidium trifoliatum* (L.), Swartz, Schrad. Journ. 1800², 30. Tropical America. Nelson 4280, Maria Madre.
9. *Pteris longifolia* L., Sp. Pl. 2:1074. Cosmopolitan. Nelson 4201, Maria Madre.
10. *Coniogramme americana* Maxon, Contr. U. S. Nat. Herb. 17:607. 1916. Mexico. Ferris 5712.
11. *Pellaea seemanni* Hook., Sp. Fl. 2:141, t. 107b. 1858. Mexico. Ferris 5706.

CYCADACEÆ

12. *Zamia loddigesii* Miq. Hœv. & De Vriese, Tijdschr. 10:72. Mexico. Nelson 4329, Maria Cleofa.

POACEÆ

13. *Syntherisma sanguinalis* (L.), Dulsc, Fl. Hautes-Pyr.
77. *Digitaria sanguinalis* (L.), Scop. Cosmopolitan. Mason 1844, Maria Madre. Ferris 5642.
14. *Panicum fasciculatum* Swartz, Prodr. Veg. Ind. 22. Jamaica. Ferris 5675a.
15. *Panicum ramosum* L., Mant. 8:29. Asia. Ferris 5675.
16. *Panicum trichoides* Swartz, Prodr. Veg. Occ. 24. Jamaica. Ferris 5701, 5605.
17. *Lasiacis ruscifolia* (H. B. K.), Hitch., Contr. U. S. Nat. Herb. 15:16. Mexico. Mason 1818, Maria Magdalena.
18. *Lasiacis divaricata* (L.), Hitch., Contr. U. S. Nat. Herb. 15:16. Jamaica. Ferris 5656.
19. *Oplismenus burmanni* (Retz.), Beauv., Ess. Agrost. 54. Tropics. Ferris 5674.
20. *Chætochloa grisebachii* (Fourn.), Scribn., U. S. Dept. Agr. Div. Agrost. Bull. 4:39. Mexico. Ferris 5574.
21. *Chætochloa macrostachya* (H. B. K.), Scrib. & Merr., U. S. Dept. Agr. Div. Agrost. Bull. 21:29, Fig. 16. Mexico. Ferris 5755.
22. *Cenchrus echinatus* L., Sp. Pl. 1050. Jamaica. Mason 1848, Santa Isabella Island. Ferris 5725.
23. *Aristida ternipes* Cav., Icon. 5:46. Panama. Ferris 5724.
24. *Sporobolus argutus* (Nees), Kunth., Enum. Pl. 1:215. Brazil. Ferris 6615.
25. *Pappophorum alopecuroides* Vahl., Symp. Bot. 3:10. t. 51. Tropical America. Ferris 5616.
26. *Bouteloua aristidoides* (H. B. K.), Griseb., Fl. Brit. W. Ind. 537, in obs. Mexico. Ferris 5753.
27. *Eragrostis ciliaris* (L.), Link., Hort. Berol. 1:192. Jamaica. Ferris 5641.
28. *Jouvea pilosa* (Presl.), Scrib., Bull. Torr. Bot. Club 25:143. 1896. Acapulco, Mexico. Ferris 5587.

29. *Gouinia* N. Sp., fide Hitchcock. Mason 1845, Santa Isabella.

30. *Panicum trichoides* Swartz, Prodr. Veg. Ind. Occ. 24. 1788. Jamaica. Nelson 4257 as *P. brevifolium* L., Maria Madre.

31. *Eleusine indica* Gaertn., Fruct. 1:8. India, Jamaica. Nelson 4305, Maria Madre.

32. *Dactyloctenium ægyptiacum* Willd., Enum. Hort. Berol. 1029. 1809. Africa, Asia, America. Nelson 4317, Maria Magdalena.

33. *Arundo donax* L., Sp. Pl. 81. Europe. Nelson 4332. Maria Cleofa.

CYPERACEÆ

34. *Cyperus incompletus* Link., Hort. Berol. 1:319. West Indies. Nelson 4259, Maria Madre.

35. *Cyperus ligularia* L., Amœn. Acad. 5:81. West Indies. Nelson 4330. Maria Cleofa.

36. *Cyperus compressus* L., Sp. Pl. 46. Cosmopolitan. Ferris 5650.

37. *Cyperus tenerrimus* J. & C. Presl., Rel. Haenk. i:166. Mexico. Ferris 5718.

38. *Cyperus cayennensis* (Lam.). Britt., Bull. Dept. Agr. Jamaica 5: Suppl. 1:8. West Indies. Ferris 5567 and 5564.

39. *Cyperus brunneus* Swartz, Fl. Ind. Occ. i:116. West Indies. Ferris 5678.

40. *Cyperus Ottonis* Boeck., in Linnæa 36:350. 1861-62. West Indies. Ferris 5737.

ARACEÆ

41. ? *Philodendron polytomum* Schott., in Bonplandia 7:164. 1859. Central America, Mexico. Ferris 6249.

42. ? *Philodendron anistomum* Schott., in Œstr. Bot. Zeitschr. 8:179. 1858. Central America, Mexico. Ferris 6258.

BROMELIACEÆ

43. *Tillandsia circinnata* Schl., in Linnæa 18: 430. 1844. Central America, Mexico. Mason 1742, 1719, 1765, Maria Madre.

44. *Tillandsia juncea* Le Conte, Ann. Lyc. N. York 2: 130. 1828. Southern United States, Mexico, South America. Mason 1723, Maria Madre.

45. *Tillandsia balbisiana* Schult. f. Syst. 7: 11. 1212. Florida, Mexico, West Indies. Mason 1722, Maria Madre.

46. *Tillandsia fasciculata* Swartz, Prod. Veg. Ind. Occ. 56. Florida, Mexico, West Indies. Mason 1764, Maria Madre. Ferris 3635.

47. *Hechtia* sp. A specimen with leaves only. Mason 1755.

COMMELINACEÆ

48. *Commelina virginica* L., Sp. Pl. ed. II: 61. Eastern United States, Tropical America, South America to Patagonia. Ferris 5685.

49. *Tinantia modesta* Brandegees, Proc. Cal. Acad. Sci., 11. 3: 175. 1889. *Type locality*, Miraflores, Mexico. Ferris 5703.

AMARYLLIDACEÆ

50. *Agave pacifica* Trelease, Contr. U. S. Nat. Herb. 23: 118. 1920. *Type locality*, Creston Island, Mazatlan. Mason 1756, Maria Madre.

DIOSCORIACEÆ

51. *Dioscorea* sp. Ferris 6264.

MARANTACEÆ

52. ? *Calathea cyclophora* Baker, Kew Bull. 1895: 17. British Guiana. Ferris 6263.

ORCHIDACEÆ

53. *Oncidium* sp. Mason 1823, Maria Magdalena.

PIPERACEÆ

54. *Peperomia pellucida* (L.), H. B. & K., Nov. Gen. & Sp. 1:64. American & African tropics. Ferris 5707.

55. *Piper aduncum* L., Sp. Pl. 29. Tropical America. Nelson 4283, Maria Madre.

MORACEÆ

56. *Ficus cotinifolia* H. B. & K., Nov. Gen. et Sp. 2:49. Mexico, Central America. Mason 1739 and 1763, Maria Madre. Ferris 5677.

57. *Ficus mexicana* Miquel., Ann. Mus. Bot. Lugd. Bat. 3:300. Mexico, Central America. Ferris 5681.

58. *Ficus petiolaris* H. B. & K., Nov. Gen. et Sp. 2:49. Type from near Mazatlan, Mexico. Ferris 5653.

59. *Ficus involuta* (Liebm.), Miq., Ann. Mus. Bot. Lugd. Bat. 3:298. Central America and Mexico. Nelson 4182, Maria Madre.

60. *Ficus padifolia* H. B. & K., Nov. Gen. et Sp. 2:47. Central America, Mexico. This was reported as *Ficus radulina* Watson. Type locality, near Batopilas, Chihuahua. Nelson 4261, Maria Madre.

URTICACEÆ

61. *Myriocarpa longipes* Liebm., in Vidensk. Selsk. Skr. 5:ii:307. 1851. Central America and Mexico. Nelson 4275, Maria Madre.

62. *Celtis monoica* Hemsley, Biol. Centr. Am. Bot. 3:139. Type locality, Vera Cruz. Nelson 4236, Maria Madre.

LORANTHACEÆ

63. *Phoradendron townsendi* Trelease, Gen. Phorad. 112. t. 163. 1916. Type locality, Socorro Island. Mason 1733, Maria Madre.

OLACACEÆ

64. *Ximenia americana* L., Sp. Pl. 1193. Cosmopolitan tropics. Mason 1705 and 1830, Maria Madre.

65. *Agonandra racemosa* (DC), Standl., Journ. Wash. Acad. Sci., 10: 506. 1920. Mexico. Mason 1786 and 1777, Maria Madre.

ARISTOLOCHIACEÆ

66. *Aristolochia taliscana* H. & A., Bot. Beech. Voy. 309. *Type locality*, Jalisco, Mexico. Mason 1697 and 1778, Maria Madre. Ferris 5685.

67. *Aristolochia tresmariae* Ferris, Contr. Dudley Herb. 1: 68. 1927. *Type locality*, Maria Madre. Mason 1788, Maria Madre. Ferris 5689.

68. *Aristolochia pardina* Duch., Ann. Sc. Nat. IV. 2: 47. 1854. *Type locality*, Colima, Mexico. Nelson 4304, Maria Madre.

POLYGONACEÆ

69. *Antigonon leptopus* H. & A., Bot. Beech. Voy. 308. t. 69. Common in Mexico, type from West coast. Mason 1698, Maria Madre.

70. *Coccoloba schiedeana* Lindau., in Engler., Bot. Jahrb. 13: 187. 1890. Central America and Mexico. Mason 1806, Maria Magdalena.

71. *Coccoloba leptostachya* Benth., Bot. Voy. Sulph. 159. It came from Columbia and is not given as Mexican by Standley. Nelson 4315, Maria Magdalena. It is probably the preceding species.

AMARANTHACEÆ

72. *Iresine interrupta* Benth., Bot. Voy. Sulph. 156. *Type locality*, Tepic, Mexico, Central America. Nelson 4234, Maria Madre. Mason 1812, Maria Magdalena.

73. *Achyranthes aspera* L., Sp. Pl. 204. Cosmopolitan tropics. Mason 1814, Maria Magdalena.

74. *Celosia nitida* Vahl., Symb. Bot. iii:44. Tropical America. Ferris 5648.

75. *Gomphrena sonora* Torr., in Bot. Mex. Bound. 181. Type locality, mountains near Santa Cruz, Sonora. Ferris 5606.

76. *Amaranthus brandegei* Standl., N. Am. Fl. 21:109 1917. Type locality, Cofradia near Culiacan, Sinaloa. Ferris 5649.

77. *Amaranthus* sp. Ferris 5620.

ALLIONACEÆ

78. *Commicarpus scandens* (L.), Standl., Contr. U. S. Nat. Herb. 12:373. 1909. West Indies. Mason 1703, Maria Madre. Ferris 5581.

79. *Bærrhaavia caribæa* Jacq., Obs. Bot. 4:5. West Indies. Mason 1714, Maria Madre. Ferris 5607.

80. *Bærrhaavia erecta* L., Sp. Pl. 3. Mexico. Ferris 5604 and 5719.

81. *Abronia maritima* Nutt. ex S. Watson, Bot. Cal. 2:4. Type locality, San Pedro, California. Mason 1795, Maria Magdalena.

PHYTOLACCACEÆ

82. *Phaulothamnus spinescens* Gray, Proc. Am. Acad. 20:294. 1885. Sonora, Sinaloa, Lower California. Mason 1741, Maria Madre. Ferris 5564.

83. *Stegnosperma halimifolium* Benth., Bot. Voy. Sulph. 17. t. 12. Type locality, Cape San Lucas. Nelson 4184, Maria Madre. Mason 1702, Maria Madre.

84. *Phytolacca octandra* L., Sp. Pl. 11:631. Tropical America. Nelson 4293, Maria Madre.

AIZOACEÆ

85. *Trianthema portulacastrum* L., Sp. Pl. 223. Cosmopolitan. Ferris 5734.

86. *Sesuvium portulacastrum* L., Syst. ed. 10:1058. Cosmopolitan. Mason 1847, Santa Isabella.

MENISPERNACEÆ

87. *Cissampelos pareira* L., Sp. Pl. 1031. Cosmopolitan in tropics. Nelson 4233 and 4262, Maria Madre. Mason 1704 and 1775, Maria Madre.

PORTULACACEÆ

88. *Portulaca oleracea* L., Sp. Pl. 445. Cosmopolitan. Ferris 5754.

89. *Talinum paniculatum* (Jacq.), Gaertn., Fruct. 2: 219. t. 128. Tropical America. Ferris 5628.

HERNANDIACEÆ

90. *Hernandia guianensis* Anbl., Pl. Guian. 2: 848. West Indies and South America. Ferris.

PAPAVERACEÆ

91. *Argemone mexicana* L., Sp. Pl. 508. Cosmopolitan. Flowers yellow. Mason 1716, Maria Madre.

92. *Argemone ochroleuca* Sweet., Brit. Fl. Gard. 3. t. 242. Cosmopolitan. Nelson 4318, Maria Magdalena. This is the same as *Argemone mexicana ochroleuca* Prain. Flowers white. Mason 1713, Maria Madre.

CAPPARIDACEÆ

93. *Cratæva tapia* L., Sp. Pl. 444. Tropical America. Mason 1750, Maria Madre; and 1850, Santa Isabella. Nelson 4274, Maria Madre.

94. *Capparis indica* (L.), Fawc. & Rendle in Journ. Bot. Brit. & For. 52: 144. West Indies and South America. Mason 1759, Maria Madre. This was reported as *C. breynia* L., Nelson 4219, Maria Madre.

95. *Capparis cynophallophora* L., Sp. Pl. 534. West Indies, Central America, South America. Nelson 4302, Maria Madre.

96. *Forchammeria sessilifolia* Standl., Journ. Wash. Acad. Sci. 14:212. 1924. *Type locality*, Maria Madre. Nelson 4239, type. Mason 1734 and 1735, Maria Madre. Ferris.

MIMOSACEÆ

97. *Entada polystachya* (L.), DC., Mem. Legum. 12. Tropical America. Ferris.

98. *Prosopis chilensis* (Mol.), Stuntz, U. S. Dept. Agr. Bur. Pl. Ind. Inv. Seeds 31:85. Cosmopolitan. Mason 1725, Maria Madre. Ferris 5580.

99. *Mimosa ferrisæ* Britt. & Rose, Contr. Dudley Herb. 1:70. 1927. *Type locality*, Maria Madre Island. Ferris 5563, type.

100. *Acacia cymbaspina* Sprague & Riley, Kew Bull. 1923:394. *Type locality*, Guaymas, Mexico. Ferris 5646.

101. *Acaciella ferrisiæ* Britt. & Rose, N. Am. Fl. 23:101. 1928. *Type locality*, Maria Madre. Ferris 5679 and 5610, type.

102. *Acacia pennatula* (S. & G.), Benth. in Hook. Lond. Journ. Bot. 1:390. 1842. Mexico and Central America. Mason 1840, Maria Madre.

103. *Albizzia occidentalis* Brandegees, in Proc. Cal. Acad. Sci. 11. 3:222. *Type locality*, San Jose del Cabo, Lower California. Nelson 4252 and 5592, Maria Madre. Mason 1757, Maria Madre. Ferris 5727.

104. *Pithecolobium dulce* Benth., in Lond. Journ. Bot. 3:190. 1844. Cosmopolitan tropics. Nelson 4285, Maria Madre.

105. *Pithecolobium lanceolatum* (H. & B.), Bth. in Lond. Journ. Bot. 5:105. 1846. Tropical America. Ferris 6255.

106. *Pithecolobium tortum* Mart., in Flora 20:11. 1837. Tropical America. Ferris 5625.

107. *Lysiloma microphylla* Bth., in Lond. Journ. Bot. 3:83. 1844. *Type locality*, Leon, Guanajuato. Ferris 5728 and 5659.

CÆSALPINIACEÆ

108. *Cassia occidentalis* L., Sp. Pl. 377. West Indies. Mason 1718, Maria Madre.

109. *Cassia emarginata* L., Sp. Pl. 376. Tropical America. Nelson 4192 and 4297, Maria Madre. Mason 1738, Maria Madre.

110. *Cassia atomaria* L., Mant. Pl. 68. Tropical America. Nelson 4321, Maria Magdalena. Mason 1831, Maria Madre. Ferris 5566.

111. *Cassia biflora* L., Sp. Pl. 378. Tropical America. Nelson 4194 and 4196, Maria Madre. Mason 1762, Maria Madre. Ferris 5568 and 5666.

112. *Cassia tora* L., Sp. Pl. 376. Cosmopolitan tropics. Ferris 5631.

113. *Cæsalpinia crista* L., Sp. Pl. 380. Cosmopolitan tropics. Mason 1802, Maria Magdalena.

FABACEÆ

114. *Ateleia insularis* Standley, Contr. U. S. Nat. Herb. 20:175. 1919. *Type locality*, Maria Madre Island. Nelson 4186, Maria Madre. Mason 1843, Maria Madre. Ferris 5573 and 5742.

115. *Galactia striata* (Jacq.), Urb., Symb. Antill. 2:320. Tropical America. Mason 1820, Maria Magdalena.

116. *Canavalia maritima* (Aubl.), Thou. in Journ. de Bot. Desv. 1:80. 1813. Cosmopolitan tropics. Mason 1794, Maria Magdalena. Ferris 5735.

117. *Canavalia mexicana* Piper, Contr. U. S. Nat. Herb. 20:569. 1925. *Type region*, Sinaloa, Mexico. Nelson 4190, Maria Madre. Ferris 5579. This was reported in Nelson's list as *Canavalia gladiata* DC.

118. *Crotalaria pumila* Orteg., Hort. Matr. 23. West Indies. Nelson 4248, Maria Madre. Ferris 5668. This is probably the same as *Crotalaria lupulina* H.B.K.

119. *Indigofera salmoniflora* Rose, Contr. U. S. Nat. Herb. 5:140. 1897. *Type locality*, Imala, Sinaloa, Mexico. Ferris 5654.

120. *Meibomia procumbens* (Mill), Britt., Sci. Surv. Porto Rico and Virgin Islands 5:404. 1924. West Indies. Ferris 5603. This is probably Nelson's 4287 reported as *Desmodium* sp., Maria Madre.

121. *Erythrina occidentalis* Standl., Contr. U. S. Nat. Herb. 20:180. 1919. *Type locality*, Mazatlan, Mexico. Nelson 4303, Maria Madre. Mason 1787, Maria Madre. Ferris 6252. This is the same as *Erythrina lanata* Rose.

122. *Cracca arcuata* Rydb., N. Am. Fl. 24:166. 1923. *Type locality*, Maria Madre Island. Ferris . Nelson's 4193 as *Tephrosia*, Maria Madre.

123. *Lonchocarpus sericeus* (Poir), H. B. K., Nov. Gen. et Sp. 6:283. West Africa, American tropics. Nelson 4310, Maria Madre.

124. *Nissolia nelsoni* Rose, Contr. U. S. Nat. Herb. 5:162. fig. 26. 1899. *Type locality*, Oaxaca Valley of Mexico. Ferris.

125. *Bauhinia* sp. Nelson 4300, Maria Madre.

126. *Phaseolus* sp. Nelson 4319, Maria Magdalena.

127. *Rhynchosia pyramidalis* (Lam.), Urb., Fedde Rep. 15:318. West Indies. Mason 1819, Maria Magdalena.

128. *Rhynchosia minima* DC., Prodr. 2:385. Cosmopolitan tropics. Nelson 4206, Maria Madre. Reported as *Dolicholus minimus* (L.), Medic.

129. *Rhynchosia precatoria* (H. B. K.), DC., Prodr. 2:385. Cosmopolitan tropics. Nelson 4179, Maria Madre. Reported as *Dolicholus phaseoloides* (Swartz), Kuntze.

OXALIDACEÆ

130. *Oxalis* sp. Ferris 6818 and 6819.

ERYTHROXYLACEÆ

131. *Erythroxylon mexicanum* H. B. K., Nov. Gen. et Sp. 5:178. *Type locality*, Chilpancingo, Guerrero. Ferris 5732.

ZYGOPHYLLACEÆ

132. *Guaiacum coulteri* Gray, Mem. Am. Acad. N. S. 5:312. 1855. Type from Sonora. Nelson 4180, Maria Madre. Mason 1760, Maria Madre. Ferris 5632.
133. *Kallistræmia parviflora* Norton, Rep. Mo. Bot. Gard. 9:153. 1898. Type locality, Agricultural College, Mississippi. Ferris.

RUTACEÆ

134. *Zanthoxylon insularis* Rose, U. S. Dept. Agr. N. Am. Fauna No. 14:79. 1899. Type locality, Maria Madre Island, also Socorro Island. Nelson 4278, Maria Madre.
135. *Zanthoxylon nelsoni* Rose, U. S. Dept. Agr. N. Am. Fauna No. 14:79. 1899. Type locality, Maria Madre Island. Nelson 4279, Maria Madre.
136. *Zanthoxylon ferrisiae* Standl., Contr. Dudley Herb. 1:72. t. 2. f. 3. 1927. Type locality, Maria Madre Island. Ferris 5690.
137. *Pilocarpus racemosus* Vahl., Eclog. 1:29. t. 10. West Indies. Mason 1837, Maria Madre.
138. *Pilocarpus insularis* Rose, U. S. Dept. Agr. N. Am. Fauna No. 14:80. 1899. Type locality, Maria Madre Island. Nelson 4307, Maria Madre.
139. *Amyris balsamifera* L., Syst. ed. X:1000. West Indies. Mason 1824, Maria Magdalena.
140. *Esenbeckia nesiotica* Standl., Contr. Dudley Herb. 1:73. 1927. Type locality, Maria Madre Island. Nelson 4237. Ferris 5699.

SIMAROUBACEÆ

141. *Picramnia* sp. Nelson 4276, Maria Madre.

BURSERACEÆ

142. *Bursera simaruba* (L.), Sargent, Garden & Forest 3:260. 1890. Tropical America. Mason 1767, Maria Madre.

143. *Bursera gummifera* L., Sp. Pl. ed. II:471. Nelson 4227, Maria Madre. This is probably the same as the preceding.

MELIACEÆ

144. *Trichilia hirta* L., Syst. Nat. ed. X:1020. Tropical America. Nelson 4214 and 4309, Maria Madre. Mason 1700 and 1737, Maria Madre. Ferris 5662.

MALPIGHIACEÆ

145. *Bunchosia palmeri* S. Wats., Proc. Am. Acad. 22:401. *Type locality*, Tequila, Jalisco, Mexico. Ferris 5565.

146. *Bunchosia* sp. Mason 1707, Maria Madre.

147. *Heteropterys floribunda* H. B. K., Nov. Gen. et Sp. 5:166. Tropical America. Nelson 4323, Maria Magdalena. Synonym of *Banisteria laurifolia* L., Sp. Pl. ed. II:611.

EUPHORBIACEÆ

148. *Celænodendron mexicanum* Standl., Contr. Dudley Herb. 1:76. 1927. *Type locality*, Mazatlan, Mexico. Mason 1850, Santa Isabella Island. Ferris 6261.

149. *Sapium pedicellatum* Huber, Bull. Herb. Boiss. Ser. 11. 6:352. 1906. Mexico. Ferris 5663.

150. *Gymnanthes insolita* Ferris, Contr. Dudley Herb. 1:75. 1927. *Type locality*, Maria Madre Island. Ferris 5695.

151. *Manihot carthaginensis* (Jacq.), Müell. Arg. in DC. Prod. 15²:1073. Tropical America. Ferris 5745.

152. *Jatropha* sp. Ferris 5710.

153. *Bernardia mexicana* (H. & A.), Müell. Arg. in Linnaea 34:172 1865-66. Central America, South America and Mexico. Ferris 5627.

154. *Acalypha verbenacea* Standl., Contr. Dudley Herb. 1:75. 1927. *Type locality*, Maria Madre Island. Probably Nelson 4260, Maria Madre. Ferris 5669.

155. *Acalypha setosa* A. Rich., Fl. Cub. Fanerog. 2:204. West Indies, Mexico. Ferris 5653.

156. *Tragia volubilis* L., Sp. Pl. 980. Cosmopolitan tropics. Ferris 5655.
157. *Croton fragilis* H. B. K., Nov. Gen. et Sp. 2:75. North, Central and South America. Ferris 5601.
158. *Croton ciliato-glandulosus* Ort., Hort. Matr. 51. Central America, West Indies, Mexico. Nelson 4218. Maria Madre.
159. *Astrocasia peltata* Standl., Contr. Dudley Herb. 1:74. 1927. *Type locality*, Maria Madre Island. Ferris 5571.
160. *Phyllanthus micrandrus* Müell. Arg., in Linnæa 32:27. 1863. North, Central and South America, Mexico. Ferris 5647 and 5569.
161. *Phyllanthus adenodiscus* Müell. Arg., in Linnæa 32:23. 1863. *Type locality*, Papantla, Vera Cruz. Mason 1706, Maria Madre. Ferris 5697 and 5575.
162. *Pedilanthus* sp. Ferris 5700.
163. *Ditaxis lanceolata* (Benth.), Pax. & Hoffm., in Engler Pflanzeureich 4. 147c:71. 1912. *Type locality*, Magdalena Bay. Mason 1790, Maria Madre.
164. *Euphorbia schlechtendalii* Boiss., Cent. Euphorb.: 18. Central America and Mexico. Nelson 4294, Maria Madre. Mason 1849, Santa Isabella Island. Ferris 5609.
165. *Euphorbia plicata* S. Watson, in Proc. Am. Acad. 21:438. 1886. *Type locality*, Hacienda San Miguel, southwestern Chihuahua. Mason 1724, Maria Madre, and 1808, Maria Magdalena.
166. *Euphorbia incerta* Brandegees, in Proc. Calif. Acad. Sci. Ser. II. 3:171. 1891. *Type locality*, El Mogote opposite La Paz. Mason 1800, Maria Magdalena.
167. *Euphorbia* (no leaves). Mason 1840, Maria Madre.
168. *Euphorbia graminea* Jacq., Select. Am. 151. West Indies, Central America, Mexico. Ferris 5702.
169. *Euphorbia adenoptera* Bertol, Misc. Bot. 3:20. t. 23. Tropical America. Ferris 5651.
170. *Euphorbia hirta* L., Sp. Pl. 454. Cosmopolitan Tropics. Ferris 5626.
171. *Euphorbia* sp. Ferris 5640.

172. *Euphorbia nelsonii* Millsp., Bot. Gaz. 26: 268. 1898. Nelson 4294, Maria Madre. = *Euphorbia schlechtendalii*.

173. *Euphorbia subcærulea tresmariae* Millsp., U. S. Dept. Agr. N. Am. Fauna No. 14: 88. 1899. Type locality, Maria Madre Island. Nelson 4298 and 4202, Maria Madre. = *Euphorbia tresmariae* Standley.

174. *Euphorbia* sp. Nelson 4268, Maria Madre.

175. *Garcia nutans* Rohr., Skrivt., Nat. Hist. Selsk. Kjobenh. ii: 217. t. 9. 1792. West Indies, South America, Mexico. Nelson 4228, Maria Madre.

BUXACEÆ

176. *Buxus pubescens* Greenmann, Proc. Am. Acad. 33: 481. 1898. Type locality, Maria Madre Island. Nelson 4221, Mason 1836, Maria Madre. Ferris 5676.

HIPPOCRATEACEÆ

177. *Hippocratea* sp., Nelson 4226, Maria Madre, and 4320, Maria Magdalena.

SAPINDACEÆ

178. *Paullinia sessiliflora* Radlk., Contr. U. S. Nat. Herb. 1: 317. 1891. Type locality, Colima, Mexico. Nelson 4210, Maria Madre. Mason 1730, Maria Madre.

179. *Thouinidium decandrum* (H. & B.) Radl., Sitzb. Math.-Phys. Akad. Munchen 8: 284. Central America and Mexico. Mason 1832, Maria Madre. Ferris 5743.

180. *Serjania mexicana* (L.) Willd., Sp. Pl. 2: 465. Tropical America. Nelson 4231, Maria Madre. Mason 1809, Maria Magdalena.

181. *Thouinia paucidentata* Radlk., Field Mus., Bot., i: 403. 1898. Yucatan and Campeche. Ferris 5617.

182. *Matayba spondioides* Standl., Contr. Dudley Herb. 1: 77. 1927. Type locality, Maria Madre. Ferris 5721.

183. *Urvillea ulmacea* H. B. K., Nov. Gen. & Sp. 5: 105. t. 440. Tropical America. Nelson 4210, Maria Madre.

184. *Cardiospermum corindum* L., Sp. Pl. 366. Tropical America. Nelson 4328, Maria Magdalena. = *Cardiospermum halicacabum* L.

RHAMNACEÆ

185. *Karwinskya latifolia* Standl., Contr. U. S. Nat. Herb. 23:716. 1923. *Type locality*, Tepic, Mexico. Mason 1833, Maria Madre.

186. *Karwinskya humboldtiana* (Roem. & Schult.) Zucc. Nov. Stirp. i:351. Central America, Mexico and Texas. Ferris 5618.

187. *Zizyphus sonorensis* S. Watson, Proc. Am. Acad. 24:44. 1889. *Type locality*, Guaymas, Mexico. Mason 1830 and 1766, Maria Madre. Ferris 5585.

188. *Colubrina arborea* Brandegee, Zoe 4:401. 1894. *Type locality*, Zacatecas, Mexico. Nelson 4213, Maria Madre. = *Colubrina glomerata* (Benth.) Hemsl., Biol. Centr.-Amer. Bot.

VITACEÆ

189. *Cissus sicyoides* L., Syst. Nat., ed. X. 2:897. Tropical America. Nelson 4198, Maria Madre.

MALVACEÆ

190. *Abutilon dugesii* S. Watson, Proc. Am. Acad. 21:447. 1886. *Type locality*, Guanajuato, Mexico. Mason 1771. Maria Madre.

191. *Abutilon* sp. Mason 1810, Maria Magdalena.

192. *Abutilon reventum* S. Watson, Proc. Am. Acad., 21:418. 1886. *Type locality*, Hacienda San Jose, Chihuahua. Nelson 4242, Maria Madre.

193. *Abutilon lignosum* (Cav.) Don., Hist. Dichl. Pl. i:501. 1831. West Indies, Mexico, Central America, South Florida, Texas. Ferris 5583.

194. *Abutilon* sp. Ferris 5615.

195. *Sida acuta* Burm., Fl. Ind. 147. 1768. Cosmopolitan, tropical, and subtropical. Ferris 5749.

196. *Sida angustifolia* Lam., Encycl. i:4. 1785. Cosmopolitan tropics. Ferris 5608.

197. *Malvastrum coromandelianum* (L.) Garcke, Bonplandia 5:295. 1857. Cosmopolitan, tropical and subtropical. Mason 1828, Maria Madre.

198. *Hibiscus tiliaceus* L., Sp. Pl. 694. Cosmopolitan tropics. Nelson 4328, Maria Magdalena.

199. *Wissadula hirsutiflora* (Presl.) Rose, Contr. U. S. Nat. Herb. i:306. 1895. *Type locality*, Acapulco, Guerrero, Mexico. Nelson 4250, Maria Madre.

BOMBACACEÆ

200. *Ceiba æsculifolia* (H. B. K.) Britt. & Baker, Journ. Bot. Brit. & For. 54:175. 1896. *Type locality*, Campeche, Guatemala. Mason 1768, Maria Madre. Ferris 6260.

STERCULIACEÆ

201. *Melochia tomentosa* L., Syst. ed. X:114. Tropical America. Nelson 4205, Maria Madre. Mason 1696, Maria Madre. Ferris 5595.

202. *Guazuma ulmifolia* Lam., Encycl. 3:52. 1789. Tropical America. Nelson 4325, Maria Magdalena.

203. *Helicteres baruensis* Jacq., Enum. Pl. Carib., 30. 1760. Tropical America. Ferris 5693.

OCHNACEÆ

204. *Ochna* sp. Nelson 4238, Maria Madre.

THEACEÆ

205. *Taonabo maltbyana* (Rose) Rose, Contr. U. S. Nat. Herb. 8:322. 1905. *Type locality*, Maria Madre. T. S. Maltby 105. Nelson 4242, Maria Madre.

VIOLACEÆ

206. *Hybanthus riparius* (H. B. K.) Standl. in litt. Ferris 5715 and 5718.

FLACOURTIACEÆ

207. *Prockia crucis* L., Syst. Nat., ed. X: 1074. Tropical America. Ferris 5694.

208. *Myroxylon flexuosum* (H. B. K.) Kuntze, Rev. Gen. Pl., i: 44. 1891. Central America and Mexico. Ferris 6262.

209. *Casearia obovata* Schlecht, in Linnæa 13: 434. 1830. Mexico. Ferris 6256.

210. *Casearia dolichophylla* Standley, Contr. U. S. Nat. Herb. 23: 846. 1923. *Type locality*, Picacho, Oaxaca. Ferris 5590.

211. *Casearia nitida* (L.) Jacq., Enum. Pl. Carib. 21. 1760. Tropical America. Nelson 4270 and 4308, Maria Madre.

212. *Casearia sylvestris* Swartz, Fl. Ind., Occ. 2: 752. 1800. Tropical America. Nelson 4341, Maria Madre.

213. *Casearia* sp. Nelson 4326, Maria Magdalena.

PASSIFLORACEÆ

214. *Passiflora suberosa* L., Sp. Pl. 958. Tropical America. Mason 1772, Maria Madre. Ferris 5098.

215. *Passiflora holosericea* L., Sp. Pl. 516. *Type locality*, Vera Cruz, Mexico. Mason 1711, Maria Madre. Ferris 5586 and 5739.

216. *Passiflora* sp. Nelson 4249, Maria Madre.

LOASACEÆ

217. *Mentzelia aspera* L., Sp. Pl. 516. West Indies. Ferris 5660.

BEGONIACEÆ

218. *Begonia californica brevibracteata* Ferris, Contr. Dudley Herb. 1: 79. 1927. *Type locality*, Maria Madre. Ferris 5708.

CACTACEÆ

219. *Opuntia* sp. Ferris 5576.
 220. *Pachycereus pecten-aboriginum* (Engelm.) Britt. & Rose, Contr. U. S. Nat. Herb. 12:422. 1909. *Type locality*, Hacienda San Miguel, Chihuahua. Ferris 5744.
 221. *Selenicereus vagans* (K. Brandg.) B. & R., Cactaceæ 2:205. 1920. *Type locality*, Mazatlan. Ferris 6251.
 222. *Neomamillaria* sp. Ferris 5748.
 223. *Lemairocereus* sp. Ferris 6267.
 224. *Cephalocereus purpusi* Britt. & Rose, Cactaceæ 2:56. 1920. *Type locality*, Mazatlan. Ferris 6266.

RHIZOPHORACEÆ

225. *Rhizophora mangle* L., Sp. Pl. 443. Tropical America. Mason 1799, Maria Magdalena.

COMBRETACEÆ

226. *Conocarpus erectus* L., Sp. Pl. 176. Tropical America and Western Africa. Mason 1785, Maria Madre.

MYRTACEÆ

227. *Psidium* sp. Nelson 4306, Maria Madre.

ARALIACEÆ

228. *Gilibertia insularis* Rose, U. S. Dept. Agr. N. Am. Fauna No. 14:83. 1899. Tropical America. Nelson 4282, Maria Madre. = *Gilibertia arborea* (L.) Marchal.

THEOPHRASTACEÆ

229. *Jacquinia aurantiaca* Ait., Hort. Kew, ed. II:2:6. 1811. Tropical America. Mason 1690 and 1784, Maria Madre.
 230. *Jacquinia macrocarpa* Cav., Ic. 5:55. t. 483. Tropical America. Nelson 4208, Maria Madre. Ferris 5698.

PLUMBAGINACEÆ

231. *Plumbago scandens* L., Sp. Pl. ed. II: 205. Tropical America. Ferris 5661.

LOGANIACEÆ

232. *Buddleia sessiliflora* H. B. K., Nov. Gen. & Sp. 2: 345. t. 183. 1817. *Type locality*, City of Mexico. Nelson 4183, Maria Madre. Mason 1780, Maria Madre. Reported in Nelson's list as *Buddleia verticillata* (HBK.).

APOCYNACEÆ

233. *Plumeria acutifolia* Poir., Encycl. Suppl. 2: 667. 1811. Mexico. Ferris 5633.

234. *Thevetia ovata* (Cav.) A. DC., in DC. Prod. 8: 344. Central America and Mexico. Ferris 5684.

235. *Rauwolfia canescens* L., Sp. Pl. ed. II, 303. Tropical America. Mason 1839, Maria Madre.

ASCLEPIADACEÆ

236. *Macroscepis obovata* H. B. K., Nov. Gen. & Sp. 3: 201. t. 133. 1819. *Type locality*, Campeche. Ferris 5577.

237. *Marsdenia macrophylla* (H. & B.) Fourn., in Mart. Fl. Bras. 6⁴: 321. 1885. American tropics. Mason 1701 and 1841, Maria Madre.

238. *Marsdenia edulis* S. Watson, Proc. Am. Acad. 24: 61. 1889. *Type locality*, Guaymas, Mexico. Mason 1792, Maria Madre.

239. *Vincetoxicum* probably; fruit only. Mason 1710, Maria Madre.

240. *Gonolobus* sp. Fruit only. Nelson 4313a, Maria Madre.

CONVOLVULACEÆ

241. *Jacquemontia pentantha* (Jacq.) Don., Hist. Dichl. Pl., 4: 283. 1838. Tropical America. Nelson 4251, Maria

Madre. Ferris 5671. This was reported in Nelson's list as *Jacquemontia violacea* Choisy.

242. *Operculina alatis* (Hook.) House, Bull. Torr. Bot. Club 33: 499. 1906. Tropical America. Ferris 5657.

243. *Quamoclit coccinea* (L.) Moench., Meth. 453. 1794. Cosmopolitan tropics. Ferris 5658.

244. *Quamoclit pinnata* (Desv.) Boj., Hort. Maurit. 224. *Type locality*, Island of Mauritius. Cosmopolitan tropics. Ferris 6250.

245. *Ipomæa pedicellaris* Benth., Bot. Voy. Sulph. 135. *Type locality*, Acapulco, Mexico. Ferris 5572.

246. *Ipomæa triloba* L., Sp. Pl. 161. Tropical America. Ferris 5597.

247. *Ipomæa hederacea* (L.) Jacq., Collect. i: 124. Cosmopolitan tropics. Ferris 5644.

248. *Ipomæa minutiflora* (Mart. & Gal.) House., in Ann. N. Y. Acad. Sci. 18: 239. 1908. Ferris 5639.

249. *Ipomæa pes-capræ* (L.) Roth., Nov. Sp. Pl. 109. Cosmopolitan tropics. Ferris 5746.

250. *Ipomæa bona-nox* L., Sp. Pl. ed. II: 228. Cosmopolitan. Nelson 4269, Maria Madre. = *Calonyction aculeatum* (L.) House.

251. *Ipomæa peduncularis* Bertol, Fl. Guatim. 8. t. 2. Mexico and Central America. Nelson 4235, Maria Madre.

252. *Cuscuta* sp. Mason 1721, Maria Madre. Common on several species.

BORAGINACEÆ

253. *Cordia tinifolia* Willd., in Roem. & Schult., Syst. Veg. 4: 800. 1819. *Type locality*, Acapulco, Mexico. Mason 1740, Maria Madre.

254. *Cordia cana* M. & G., Bull. Acad. Brux. 11²: 331. 1844. *Type locality*, Oaxaca, Mexico. Nelson 4296, Maria Madre. Mason 1779, Maria Madre. Ferris 5629.

255. *Cordia sonoræ* Rose, Contr. U. S. Nat. Herb. 1: 106. t. 9. 1891. *Type locality*, Alamos, Sonora. Nelson 4207, Maria Madre.

256. *Heliotropium indicum* L., Sp. Pl. 130. Cosmopolitan Tropics. Nelson 4253, Maria Madre. Mason 1715, Maria Madre.

257. *Heliotropium parviflorum* L., Mant. Pl. 2:201. Tropical America. Mason 1717, Maria Madre.

258. *Heliotropium curassavicum* L., Sp. Pl. 130. Cosmopolitan tropics. Nelson 4313, Maria Madre.

259. *Heliotropium phyllostachyum* Torr., Bot. Mex. Bound. 137. *Type region*, western Texas and Mexico. Ferris 5750.

260. *Tournefortia volubilis* L., Sp. Pl. 140. Tropical America. Nelson 4209, 4217 and 4229. Mason 1712, Maria Madre.

261. *Tournefortia glabra* L., Sp. Pl. 141. Tropical America. Nelson 4189, Maria Madre. Mason 1729, Maria Madre.

262. *Tournefortia hirsutissima* L., Sp. Pl. 140. Tropical America. Mason 1781, Maria Madre.

VERBENACEÆ

263. *Avicennia nitida* Jacq., Enum. Pl. Carib., 25. 1760. Tropical America. Mason 1793, Maria Magdalena.

264. *Priva echinata* Juss., Ann. Mus. Par. 7:69. Tropical America. Ferris 5643.

265. *Lantana horrida* H. B. K. Nov. Gen. & Sp. 2:261. 1817. Tropical America. Nelson 4187, Maria Madre. = *Lantana camara* L.

266. *Citharexylum affine* Don., Edinburgh New Phil. Journ. 11:238. 1831. *Type locality*, Chalco, Mexico. Nelson 4311, Maria Madre.

267. *Ægiphila pacifica* Greenm., Proc. Am. Acad. 33:435. 1898. *Type locality*, Estero, Mexico. Nelson 4245 and 4254, Maria Madre. = *Ægiphila deppeana* Steud. Nom. Bot. ed. II. 1:29.

LABIATÆ

268. *Hyptis emoryi* Torr., Ives, Rep. Colo. Riv. 20. southern Arizona and Lower California. Nelson 4223, Maria Madre. Mason 1736, Maria Madre.

269. ? *Salvia mazatlanensis* Fernald., Proc. Am. Acad. 35: 515. *Type locality*, Mazatlan, Mexico. Ferris 5636.

270. *Salvia hyptoides* Mart. & Gal., Bull. Acad. Sci. Brux. 11²: 74. Central America and Mexico. Ferris 5705.

271. *Salvia aliena* Greene, Pitt. 1: 157. *Type locality*, Maria Madre. Collected by W. J. Fisher. Type in Herb. Cal. Acad. Sci. Nelson 4247, Maria Madre.

272. *Stachys coccinea* Jacq., Hort. Schoenb. 3: 18. t. 284. Mexico and Texas. Nelson 4265, Maria Madre.

SOLANACEÆ

273. *Nicotiana trigonophylla* Dunal., DC. Prod. 13¹: 562. Mexico. Nelson 4212, Maria Madre. Mason 1694, Maria Madre.

274. *Solanum refractum* H. & A., Bot. Beech. Voy. 304. *Type locality*, Tepic, Mexico. Mason 1732, Maria Madre.

275. *Solanum*, perhaps new sp. Mason 1816, Maria Magdalena.

276. *Solanum deflexum* Greenm., Proc. Am. Acad. 32: 301. *Type locality*, Cuicatlan, Mexico. Ferris 5670.

277. *Solanum torvum* Swartz, Prod. Veg. Ind. Occ. 47. Cosmopolitan tropics. Nelson 4185, Maria Madre, Mason (a leaf only).

278. *Solanum bicolor* Willd. Roem. & Schult, Syst. Veg. 41: 661. Tropical America. Nelson 4322, Maria Magdalena, as *S. callicarpæfolium*.

279. *Solanum lanceæfolium* Jacq., Coll. Bot. 2: 286. Tropical America. Nelson 4240, Maria Madre.

280. *Solanum nigrum* L., Sp. Pl. 186. Cosmopolitan. Nelson 4200, Maria Madre.

281. *Solanum verbascifolium* L., Sp. Pl. 184. Cosmopolitan tropics. Nelson 4216, Maria Madre.

282. *Physalis crassifolia* Benth. var., Bot. Sulph. 40. *Type locality*, Magdalena Bay. Mason 1791.

283. *Physalis pubescens* L., Sp. Pl. 183. Probably the preceding. Nelson 4255, Maria Madre.

284. *Physalis nicandroides* Schlecht, Linnæa 19:311. Mexico. Ferris 5582.

285. ? *Physalis lagascæ* Roem. & Schlecht, Syst. 4:679. Cosmopolitan tropics. Ferris 5717.

286. *Datura discolor* Bernh., in Tromms., N. Journ. Pharmac. 26:149. West Indies. Nelson 4197, Maria Madre.

287. *Bassovia stramonifolia* (H. B. K.) Standl., Contr. U. S. Nat. Herb. 23:1303. Central America and Mexico. Nelson 4232, Maria Madre. Reported as *Bassovia donnell-smithii* Coulter.

SCROPHULARIACEÆ

288. *Russelia sarmentosa* Jacq., Nelson 4289, Maria Madre. This is probably the same as the following.

289. *Russelia verticillata* H. B. K., Nov. Gen. & Sp. 2:360. Central America and Mexico. Ferris 5614.

290. *Stemodia pusilla* Benth., Bot. Sulph. 114. *Type locality*, Tepic, Mexico. Ferris 5688.

291. *Capraria biflora* L., Sp. Pl. 628. Tropical America. Nelson 4195, Maria Madre. Mason 1695, Maria Madre.

BIGNONIACEÆ

292. *Cydista* sp. Mason 1770, Maria Madre.

293. *Bignonia æquinoctialis* L., Sp. Pl. 623. Tropical America. Nelson 4324, Maria Magdalena. (*Cydista*).

ACANTHACEÆ

294. *Beloperone nelsoni* Greenman, Proc. Am. Acad. 33:488. *Type locality*, Maria Madre. Nelson, Maria Madre.

295. *Elytraria squamosa* (Jacq.) Lindau, Anal. Inst. Fis. Geogr. Costa Rica, 8:299. *Type region*, Guadalajara, Mexico. Mason, no number. Ferris 5645.

296. *Dicliptera resupinata* Juss. Ann. du Mus. 9:263. Mason 1798, Maria Magdalena.

297. *Justicia* sp. Ferris 5692.

RUBIACEÆ

298. *Coutarea pterosperma* (Watson) Standley, N. Am. Fl. 32:127. Type locality, Guaymas, Mexico. Nelson 4211. Mason 1726, Maria Madre. Ferris 5602.

299. *Randia thurberi* Watson, Proc. Am. Acad. 24:53. Type locality, between Rayon and Ures, Sonora. Ferris 5726.

300. *Hamelia versicolor* Gray, Proc. Am. Acad. 21:416. Type locality, Barranca near Guadalajara, Mexico. Ferris 5578.

301. *Guettarda elliptica* Swartz, Prod. Veg. Ind. Occ. 59. West Indies and Mexico. Ferris 5723.

302. *Chiococca alba* (L.) Hitchc., Rep. Mo. Bot. Gard. 4:44. Tropical America. Ferris 5636 and 5722.

303. *Borreria asperifolia* (Mart. & Gal.) Robinson, Proc. Am. Acad. 45:409. Mexico. Ferris 5673.

CUCURBITACEÆ

304. *Corallocarpus emetocatharticus* Cogn., Bull. Soc. Bot. Belg. 30:279. 1891. Tropical America. Mason 1709, Maria Madre. Ferris 5621.

305. *Momordica charantia* L., Sp. Pl., 109. Cosmopolitan tropics. Mason 1699. Maria Madre.

COMPOSITAÆ

306. *Eupatorium* sp. Mason 1728, Maria Madre.

307. *Eupatorium* sp. Nelson 4225, Maria Madre.

308. *Eupatorium* sp. Nelson 4244, Maria Madre.

309. *Eupatorium collinum* DC. Prod., 5:164. Mexico. Nelson 4199, Maria Madre.

310. *Eupatorium quadrangulare* DC., Prod. 5:150. Central America and Mexico. Ferris 5696.

311. *Vernonia canescens* H. B. K., Nov. Gen. & Sp. 4: 35. pl. 317. 1820. Tropical America. Ferris 5713.
312. *Decachæta hænkeana* DC., Prod. 5: 133. Mexico. Ferris 5716.
313. *Mikania cordifolia* Willd., Sp. Pl. 3: 1746. Tropical America. Nelson 4299, Maria Madre.
314. *Conyza lyrata* H. B. K., Nov. Gen. & Sp. 4: 70. Ecuador. Nelson 4290 and 4312, Maria Madre.
315. *Baccharis glutinosa* Pers., Syn. Pl. 2: 425. South America, Mexico, Colorado and Texas. Nelson 4291, Maria Madre.
316. *Pluchea odorata* (L.) Cass., Dict. Sci. Nat. 42: 3. 1826. Tropical America. Nelson 4181, Maria Madre. Mason 1693 and 1773, Maria Madre.
317. *Melampodium flaccidum* Benth., Vidensk. Meddel. 86. Central America. Ferris 5638.
318. *Pectis arenaria* Benth., Bot. Sulph. 110. 1844. *Type locality*, Acapulco, Mexico. Ferris 5741.
319. *Pectis linifolia* L., Syst. Nat. ed. X: 1221. West Indies. Ferris 5634.
320. *Perityle microglossa* Benth., Bot. Sulph. 119. 1844. *Type locality*, Realejo, Mexico. Nelson 4266, Maria Madre.
321. *Parthenium hysterophorus* L., Sp. Pl. 988. Tropical America. Nelson 4267, Maria Madre.
322. *Porophyllum punctatum* (Mill) Blake, Contr. Gray Herb. n. ser. 52: 58. 1917. Central America and Mexico. Nelson 4292, Maria Madre. Mason 1797, Maria Magdalena.
323. *Trixis californica* Kellogg, Proc. Cal. Acad. Sci., 2: 182. f. 53. 1863. *Type locality*, Cedros Island. Mason 1758, Maria Madre.
324. *Trixis wrightii* Rob. & Greenm., Proc. Am. Acad. 40: 14. 1904. *Type locality*, near Mazatlan. Ferris 5593. This was reported in Nelson's list as *Trixis frutescens* R. Br. Maria Cleofa.

SPECIES COLLECTED AT CAPE SAN LUCAS, LOWER CALIF.,
May 28, 1925

1. *Phoradendron californicum* Nutt., Journ. Acad. Philad. II. 1:185. 1884. California. This leafless parasite was collected on *Pithecolobium confine* Standl. It is partial to the *Leguminosæ*. 1868.
2. *Phoradendron peninsulare* Trelease, Univ. Ill. Bull. 18:50. 1916. *Type locality*, Cape San Lucas. This was collected on *Jatropha*. 1873.
3. *Antigonon leptotes* H. & A., Bot. Beech. Voy. 308. t. 69. 1840. *Type locality*, Tepic, Mexico. This beautiful vine with rosy flowers is common in cultivation and is known under many names in different parts of Mexico. 1861.
4. *Batis maritima* L., Syst. Nat. ed. X. 1289. Cosmopolitan. A common plant in saline soil, widely distributed. 1860.
5. *Esenbeckia flava* Brandegees, Zoe 1; 378. t. 12. 1891. *Type locality*, San José del Cabo, Lower California. A small tree with oblong, pale, downy leaves and woody seed-pods splitting into 5 parts, very rough warty on the outside. 1675.
6. *Pithecolobium confine* Standl., Contr. U. S. Nat. Herb. 20:11 191. 1919. *Type locality*, Cape San Lucas. Spiny shrub with long cream-color stamens and large woody pods. 1869.
7. *Cæsalpinia californica* (Gray) Standl., Contr. U. S. Nat. Herb. 23:426. 1923. *Cæsalpinia mexicana californica* Gray, Proc. Am. Acad. 5:157. 1862. Lower California. Flowers yellow, pods velvety. 1868.
8. *Jatropha cercidiphylla* Standl., Contr. U. S. Nat. Herb. 23:639. 1923. *Type locality*, between San Luis Potosi and Tampico, Mexico. 1872.
9. *Jatropha multifida* L., Sp. Pl. 1006. Tropical America. A plant with stinging hairs and a large root. The leaves are palmately lobed, the divisions ending in long hairs. 1867.
10. *Cyrtocarpa edulis* (Brandegee), Standl., Contr. U. S. Nat. Herb. 23:659. 1923. *Tapiria edulis* Brandegees, Zoe

5:78. 1900. *Type locality*, San José del Cabo, Lower California. 1862.

11. *Bumelia occidentalis* Hemsley, Biol. Centr. Amer. Bot. 2:298. 1881. *Type locality*, Sonora Alta. Coarse shrub with spreading branches and small flowers clustered in the axils of the alternate leaves. 1866.

12. *Asclepias subulata* Decaisne, DC., Prodr. 8:571. 1844. *Type locality*, Nova Hispania. Sandy ridges on the beach. 1863.

13. *Cynanchum palmeri* (S. Watson) Blake, Contr. Gray Herb. II. 52:83. 1917. *Pattalias palmeri* S. Watson, Proc. Am. Acad. 24:60. 1889. *Type locality*, Muleje, Lower California. 1870.

14. *Ipomæa pes-capræ* (L.) Roth., Nov. Sp. Pl. 109. 1821. *Convolvulus pes-capræ* L., Sp. Pl. 159. The beach morning glory, common on tropical beaches. 1876.

15. *Beloperone californica* Benth., Bot. Voy. Sulph. 38. 1844. *Type locality*, Cape San Lucas. Shrub with red bilabiate flowers and small 2-valved seed pods on thick stems. 1871.

16. *Bebbia atriplicifolia* (Gray) Greene, Bull. Cal. Acad. Sci. 1:181. 1885. *Carphephorus atriplicifolia* Gray, Proc. Am. Acad. 5:159. 1861. *Type locality*, Cape San Lucas.

SPECIES FIRST DESCRIBED FROM CAPE SAN LUCAS BY BENTHAM
IN THE BOTANY OF THE VOYAGE OF THE SULPHUR, 1844;

Not collected by Mason.

Ionidium fruticosum

Galphimia angustifolia

Drymaria holosteoides

Drymaria crassifolia

Stegnosperma halimifolia

Hedyotis asperuloides

Mitracarpium lineare

Pectis multiseta

Aplopappus arenarius

Acoma dissecta

Physalis glabra

Hyptis laniflora

Euphorbia leucophylla

SPECIES FIRST DESCRIBED BY ASA GRAY FROM XANTUS'
COLLECTION, AT OR NEAR CAPE SAN LUCAS;

Not collected by Mason.

(Proc. Am. Acad. 5:153-173. 1861.)

<i>Polygala xanti</i>	<i>Viguiera tomentosa</i>
<i>Hibiscus ribifolius</i>	<i>Coreocarpus heterocarpus</i>
<i>Bursera microphylla</i>	<i>Heterospermum xanti</i>
<i>Dalea chrysorrhiza</i>	<i>Macreightia intricata</i>
<i>Coursetia glandulosa</i>	<i>Hyptis tephrodes</i>
<i>Cæsalpinia mexicana</i>	<i>Buddleia crotonoides</i>
<i>Mimosa xanti</i>	<i>Celosia floribunda</i>
<i>Pluchea subdecurrens parvifolia</i>	<i>Euphorbia gymnoclada</i> Engelm.
<i>Viguiera deltoidea</i>	

SPECIES FIRST DESCRIBED BY OTHER AUTHORS

Not collected by Mason.

- Bartschella schumannii* (Hildmann) B. & R. Cactaceæ 4: 58.
Bærhaavia xanti Watson. Proc. Am. Acad. 24: 69.
Elaphrium epinnatum Rose. Fl. N. Am. 25: 243.
Pectis bennetti Klatt. Leopoldina 25: 108. From N. Am.
Dudleya xanti Rose Bull. N. Y. Bot. Gard. 3: 23.

SPECIES COLLECTED AT MAGDALENA BAY,
LOWER CALIFORNIA, MAY 29-30, 1925.

1. *Agave margaritæ* T. S. Brandege, Proc. Cal. Acad. Sci. II. 2:206. 1889. *Type locality*, Margarita Island. Lower California. This differs from the type in shorter stamens. The flowers are yellow, the leaves short and almost orbicular up to where they narrow to the horny point, stems about 6 feet high. 1892.

2. *Phoradendron dieguetii* Van Tiegh, Bull. Mus. Hist. Nat. Paris 1:31. 1895. *Type region*, Lower California. The host of the type was *Quercus*. Brandege collected it on *Veatchia* and Mason on *Bursera*. 1941.

3. *Atriplex barclayana* (Benth.) Dietr., Syn. Pl. 5: 537. 1852. *Obione barclayana* Benth. Bot. Voy. Sulph. 48. 1844. *Type locality*, Magdalena Bay. A common prostrate white-leaved species. 1912.

4. *Allenrolfea occidentalis* (S. Watson) Kuntze, Rev. Gen. 346. 1891. *Halostachys occidentalis* S. Watson, Bot. King Exped. 293. 1891. *Type region*, Great Basin. This grew along the beach. In California it is found in the most alkaline soil. 1917.

5. *Suaeda ramosissima* (Standl.) Johnston, Proc. Cal. Acad. Sci. IV. 12:1017. 1924. *Dondia ramosissima* Standl. N. Am. Fl. 21:91. 1916. *Type locality*, Lees Ferry, Arizona, 1910.

6. *Hesperonia laevis* (Benth.) Standl., Contr. U. S. Natl. Herb. 12:363. 1909. *Oxybaphus laevis* Benth. l. c. 44. *Type locality*, Magdalena Bay. With smooth wiry branches, succulent leaves and purple flowers. 1944.

7. *Abronia maritima* Nutt., in Wats. Bot. Cal. 2:4. 1880. *Type locality*, San Pedro, California. Prostrate with thick leaves and dark purple flowers in umbels. 1951.

8. *Batis maritima* L., Syst. Nat. ed. X. 1289. 1750. A cosmopolitan plant found in saline soil. 1901.

9. *Sesuvium sessile* Pers., Synop. 2:39. 1807. A cosmopolitan plant in saline soil. 1291.

10. *Drymaria holosteoides* Benth., l. c. *Type locality*, Cape San Lucas, Lower California. A spreading plant with slender stems; flowers small, white and together with the small leaves fascicled where the stems branch. 1908.

11. *Oligomeris glaucescens* Camb., Jacq. Voy. Bot. 24. t. 25. *Type region*, around the Mediterranean. A spreading herb on salt flats with terete leaves and small flowers in spikes. 1913.

12. *Dudleya albiflora* Rose, Bull. N. Y. Bot. Gard. 3:13. 1903. *Type locality*, Magdalena Bay. The leaves are in dense rosettes, broad at base, apex acuminate. The flowers are white and the base of the rosette is densely clothed with dead leaves. 1898.

13. *Calliandra californica* Benth., l. c. 14. t. 11. *Type locality*, Magdalena Bay. A very poor specimen of this beautiful plant. 1945.

14. *Phaseolus filiformis* Benth., l. c. 13. *Type locality*, Magdalena Bay. A slender vine with trifoliate leaves, leaflets 3-lobed; flowers rose purple, solitary or in pairs. 1930.

15. *Hosackia bryanti* T. S. Brandege, Proc. Cal. Acad. Sci. II. 2:144. 1889. *Type locality*, Magdalena Bay. Flowers almost sessile, tinged with pink, in umbels. The specimen is almost leafless. 1931.

16. *Parosela brandegei* Rose, Contr. U. S. Nat. Herb. 10:106. 1905. *Dalea ramosissima* Benth., l. c. 11. t. 10. *Type locality*, Magdalena Bay. The flowers are in spikes, corolla rose color and calyx clothed with white hairs. The leaflets are minute and thickly covered with glands. 1896.

17. *Parosela divaricata* (Benth.) Rose, Contr. U. S. Natl. Herb. 8:305. 1905. *Dalea divaricata* Benth. l. c. 12. *Type locality*, Magdalena Bay. Flowers small, blue and white. 1888.

18. *Phaca candidissima* Benth., l. c. 13. *Type locality*, Magdalena Bay. Foliage white-tomentose, flowers purplish, pods inflated. 1954.

19. *Krameria parvifolia* Benth., l. c. 6. t. 1. *Type locality*, Magdalena Bay. Shrubby. The specimen very poor. 1953.

20. *Bursera microphylla* Gray, Proc. Am. Acad. 5:155. 1861. *Type locality*, Sierras Tule, Sonora, Mexico. A low shrub with stout spreading branches. 1922.

21. *Bursera rhoifolia* (Benth.) Johnston, Proc. Cal. Acad. Sci. IV. 12:1058. 1924. *Elaphrium rhoifolium* Benth., l. c. 11. t. 7. *Type locality*, Magdalena Bay. The simple-leaved one was named by Bentham *E. hindsianum* and the trifoliate *E. rhoifolium* l. c. 10. t. 7. Brandege claims that this is a variable character and the two should be considered a single species. 1901.

22. *Acalypha californica* Benth., l. c. 51. *Type locality*, Magdalena Bay. Low shrub with the leaves dark green, crenately margined, ovate and often cordate; flowers in small dense purplish spikes. 1906.

23. *Croton punctatus* Jacq., Coll. 1:166. *Type locality*, Carolina. Leaves silvery white, oblong to elliptical. 1949.

24. *Croton magdalenæ*. Millsp., Proc. Cal. Acad. Sci. II. 2:220. 1889. *Type locality*, Magdalena Bay. Leaves almost orbicular, densely white-tomentose. 1932.

25. *Pedilanthus macrocarpus* Benth., l. c. 40. t. 23a. *Type locality*, Magdalena Bay. Stems, erect, leafless, fruits red, drooping. Native name, "Gallito." 1891.

26. *Ditaxis serrata magdalenæ* (Millsp.) Eastwood n. comb. *Argythamnia serrata magdalenæ* Millsp., Proc. Cal. Acad. Sci. II. 2:221. 1889. *Type locality*, Magdalena Bay. The specimens are poor but show the characteristic farinose seeds. The leaves of the variety are quite unlike the typical form being suborbicular to obovate and generally obtuse. The whole plant is clothed with spreading as well as appressed hairs. 1950.

27. *Euphorbia polycarpa* Benth., l. c. 50. *Type locality*, Magdalena Bay. Without a number, accidentally collected on another specimen.

28. *Simmondsia californica* Nutt., in Lond. Journ. Bot. 3:400. t. 15. 1844. *Type locality*, San Diego, California. A common spreading shrub with opposite pale leaves and dioecious flowers in capitate axillary clusters. 1902.

29. *Veatchia discolor* (Benth.) T. S. Brandege, Proc. Cal. Acad. Sci. II. 2:140. 1889. *Schinus bicolor* Benth., l. c. 11. t. 9. *Type locality*, Magdalena Bay. This is the remarkable tree commonly known as "elephant tree." 1934, flowers white. 1935, flowers pink.

30. *Maytenus phyllanthoides* Benth., l. c. 54. *Type locality*, Magdalena Bay. Dioecious shrub with pale stems and leaves, fruit 3-sided. Male 1916, female 1915.

31. *Cardiospermum tortuosum* Benth., l. c. 8. t. 6. *Type locality*, Magdalena Bay. Tortuous spreading shrub with small white flowers and twice compound leaves, the ultimate divisions often 3-lobed. 1942.

32. *Abutilon californicum* Benth., l. c. 8. *Type locality*, Magdalena Bay. Flowers orange an inch in diameter, leaves cordate, white-tomentose. 1911.

33. *Hibiscus denudatus* Benth., l. c. 7. t. 3. *Type locality*, Magdalena Bay. Flowers rose-purple, more than an inch in diameter; leaves white-tomentose but yellowish when dried. 1884.

34. *Gossypium davidsoni* Kellogg, Proc. Cal. Acad. Sci. 5:82. 1873. *Type locality*, San Jose del Cabo, Lower Cali-

fornia. Leaves cordate, entire; flowers large, yellow. 1936. 1937 similar but flowers smaller.

35. *Melochia tomentosa* L., Syst. Nat. ed. X, 1247. *Type locality*, Jamaica. Leaves white-downy on short petioles, ovate to lanceolate-oblong, crenate, flowers rose-purple. 1894.

36. *Fouquiera splendens* Engelm., Wislez. Mem. North Mex. 98. 1848. *Type locality*, Jornada del Muerto, New Mexico. This is commonly known as *Ocotilla* and is one of the most characteristic plants of the Colorado desert. When in bloom it is a wonderful sight, the tall thorny stems crowned with clusters of brilliant red flowers. 1886.

37. *Passiflora fruticosa* Killip., Journ. Wash. Acad. Sci. 12:256. 1922. *Type locality*, Santa Maria Bay, Lower California. This is a shrubby passion flower. 1919.

38. *Rhizophora mangle* L., Sp. Pl. 443. *Type locality*, Caribbean Sea. This is commonly known as the mangrove and is common along tropical shores. The specimens seen did not grow over ten feet in height. Common in saline flats. 1914.

39.¹ *Borragia fruticulosa* (Benth.) Donn. Smith & Rose, Contr. U. S. Nat. Herb. 16:298. 1913. *Gaura fruticulosa* Benth., l. c. 75. *Gongylocarpus fruticulosa* T. S. Brandege, Proc. Cal. Acad. Sci. II. 2:158. 1889. *Type locality*, Magdalena Bay. This is a shrub with pink flowers; the seed-pods become imbedded in the woody stem. 1885.

40. *Metastelma californica* Benth., l. c. 33. t. 18. *Type locality*, Magdalena Bay. A slender-stemmed vine with small leaves and tiny flowers on filiform pedicels at the leaf axils. 1939.

41. *Sarcostemma arenarium* Benth., l. c. 34. *Type locality*, Magdalena Bay. 1929.

42. *Asclepias albicans* S. Watson, Proc. Am. Acad. 24:59. 1889. *Type locality*, near Los Angeles Bay, Lower California. A leafless species. 1883.

43. *Jacquemontia abutiloides* Benth., l. c. 34. *Type locality*, Magdalena Bay. A shrub with white-tomentose cordate, almost sessile leaves and blue flowers. 1893.

¹ *Borragia frutescens* (Curran) Donn., Smith & Rose, Contr. U. S. Nat. Herb. 16:298. 1913. *Gongylocarpus frutescens* Curran, Proc., Cal. Acad. Sci. II. 1:231. 1889. The type is in the Herbarium of the California Academy of Sciences.

44. *Cordia palmeri* S. Watson, Proc. Am. Acad. 24: 62. 1889. *Type locality*, in ravines in the high mountains above Guaymas, Mexico. According to Dr. Palmer the native name is Yerba del pasmo. The shrub is aromatic with white flowers. 1906.
45. *Cryptantha grayi* (Vasey & Rose) Macbride, Contr. Gray Herb., II. 48: 43. 1916. *Krynitzkia grayi* Vasey & Rose, Proc. U. S. Nat. Mus. 11: 536. 1888. *Type locality*, Lagoon Head. Along sea cliffs. 1297.
46. *Avicennia nitida* Jacq. Enum., Fl. Carib. 25. 1760. *Type locality*, Isle of Martinique. A low spreading shrub with cream-yellow flowers; leaves opposite with the upper surface darker than the lower. It grows at the edge of mangrove swamps. 1909.
47. *Hyptis emoryi* Gray in Torr. Ives Rep. Colo. Riv. 20. 1860. *Type locality*, Upper Colorado River, Arizona. Aromatic shrub with opposite leaves, the upper surface darker than the lower. Flowers small, in densely-flowered paniced spikes. The calyx is densely white-wooly and the corolla violet. 1946.
48. *Lycium brevipes* Benth., l. c. 40. *Type locality*, Magdalena Bay. A stiff spreading shrub with small purple flowers and red berries. 1918.
49. *Physalis crassifolia* Benth., l. c. 40. *Type locality*, Magdalena Bay. A spreading herb with yellow flowers and fruit a berry in an inflated calyx. 1900 and 1952.
50. *Solanum hindsianum* Benth., l. c. 30. *Type locality*, Magdalena Bay. A white-tomentose shrub growing in creek bottoms with rotate flowers and fruit a berry. 1903.
51. *Antirrhinum cyathiferum* Benth., l. c. 40. t. 19. *Type locality*, Magdalena Bay. A perennial herb with small purple flowers and the seeds like tiny shallow cups. 1953.
52. *Houstonia mucronata* (Benth.) Robinson, Proc. Am. Acad. 45: 401. *Hedyotis mucronata* Benth., l. c. 19. *Type locality*, Magdalena Bay. A low, much branched shrub with opposite or fascicled, short, linear leaves and salverform, pink flowers in terminal clusters. 1947.
53. *Hofmeisteria fasciculata* (Benth.) Walp., Report. Bot. 6: 106. 1847. *Helogyne fasciculata* Benth. l. c. 20. t. 14.

Type locality, Magdalena Bay. An herbaceous composite without rays, the heads on long peduncles. 1897.

54. *Ericameria diffusa* Benth., l. c. 23. *Type locality*, Magdalena Bay. Shrubby with small rayless heads in panicles and terete spreading leaves. 1938.

55. *Bebbia juncea* (Benth.) Greene, Bull. Cal. Acad. Sci. 1:180. 1885. *Carphephorus junceus* Benth. l. c. 21. *Type locality*, Magdalena Bay. Almost leafless shrub with flowers in rayless heads in open few-flowered panicles. 1895.

56. *Perityle emoryi* Torr., in Emory Notes Mil. Recon. 142. *Type locality*, Carrizo Creek, San Diego County, California. This and the following are poor specimens with the leaves shrivelled, but the general shape, the small heads with white rays and the character of the akenes seem to indicate this polymorphic species. 1890.

57. *Perityle* sp. The akenes of this differ from the preceding, the leaves are less dissected and the heads smaller. *P. californica* Benth. collected by Hinds at Magdalena Bay is quite different having yellow rays and different leaves.

58. *Franseria magdalenæ* T. S. Brandege, Proc. Cal. Acad. Sci. II. 2:170. 1889. *Type locality*, Magdalena Island. The burs of this species have hooked spines. 1889.

59. *Franseria chenopodiifolia* Benth., l. c. 26. *Type locality*, Magdalena Bay. The leaves of this species are not dissected as in the preceding but are ovate, much paler on the lower than the upper surface and the spines on the burs are straight. 1887.

60. *Encelia conspersa* Benth., l. c. 26. *Type locality*, Magdalena Bay. Shrubby, the flowers on long branching peduncles, disk purplish-brown, rays yellow. 1948.

61. *Viguiera subincisa* Benth., l. c. 27. *Type locality*, Magdalena Bay. Shrubby; leaves rather thin, green, irregularly and deeply toothed, acuminate; peduncles long, branching at summit, the medium heads on slender pedicels, disk and rays yellow. 1933.

62. *Viguiera deltoidea chenopodina* (Greene) Blake, Contr. U. S. Nat. Herb. 54:91. 1918. *Viguiera chenopodina* Greene, Leaflets 2:154. 1911. *Type locality*, between Santo

Domingo and Mantancita, Lower California. Shrubby with opposite entire canescent leaves. 1904.

63. *Coreocarpus dissectus* (Benth.) Blake, Proc. Am. Acad. 49: 344. 1913. *Acoma dissecta* Benth., l. c. 29 t. 17. *Type locality*, Magdalena Bay. Shrubby, 2-3 feet high; leaves dissected with the ultimate divisions narrowly linear; peduncles surpassing the leaves and terminated by a few-flowered panicle of small heads, the disk and ray flowers yellow. 1899.

64. *Porophyllum gracile* Benth., l. c. 29. *Type locality*, Magdalena Bay. An aromatic shrub growing on rocky slopes; stems wiry with few, almost filiform leaves, heads rayless, the involucre of 5 bracts each having 2 rows of linear glands, pappus tawny. 1920.

65. *Porophyllum tridentatum* Benth., l. c. 30. An aromatic shrub common on the beach; leaves with 3-5 sharp teeth. heads rayless on short peduncles, the 5 bracts of the involucre with glands at the top. 1968.

LIST OF SPECIES FIRST DESCRIBED BY BENTHAM
IN THE BOTANY OF THE SULPHUR; NOT COLLECTED BY MASON

<i>Janusia californica</i>	<i>Martynia althæifolia</i>
² <i>Fagonia californica barclayana</i>	<i>Maurandia juncea</i>
<i>Fagonia californica</i>	<i>Abronia gracilis</i>
³ <i>Dalea canescens</i>	<i>Allionia malacoides</i>
<i>Phaca vestita</i>	<i>Pterostegia macroptera</i>
<i>Mentzelia adhærens</i>	<i>Euphorbia californica</i>
<i>Perityle californica</i>	<i>Euphorbia eriantha</i>
<i>Franseria hispida</i>	<i>Serophyton lanceolatum</i> (Ditaxis)
<i>Coreocarpus parthenioides</i>	<i>Panicum californicum</i>
<i>Dysodia anthemidifolia</i>	<i>Spartina leiantha</i>
<i>Cuscuta patens</i>	<i>Chondrosium polystachyum</i>

SPECIES COLLECTED AT TURTLE BAY JUNE 1-2, 1925

1. *Ephedra peninsularis* Johnston, Univ. Calif. Pub. Bot. 7: 437. 1922. *Type locality*, Magdalena Island. The scales at the joints are 2-cleft. Male 1977, female 1976.

² *Fagonia barclayana* (Benth) Ryd., Fl. N. Am. 25: 104.

³ *Parosela peninsularis* Rose, Contr. U. S. Nat. Herb. 8: 304. *Dalea canescens* Benth.

2. *Eriogonum pondii* Greene, Pitt. 1: 267. 1889. *Type locality*, Cedros Island, Lower California. 1960.
3. *Atriplex julacea* S. Watson, Proc. Am. Acad. 20: 370. 1885. *Type locality*, Todos Santos Bay, Lower California. 1963.
4. *Atriplex linearis* S. Watson, Proc. Am. Acad. 24: 72. 1889. *Type locality*, Guaymas, Mexico. 1964.
5. *Suæda brevifolia* (Standl.) n. comb. *Dondia brevifolia* Standl. N. Am. Fl. 21: 92. 1916. *Type locality*, Newport, California.
6. *Phaca candidissima* Benth., Bot. Voy. Sulph. 13. 1844. *Type locality*, Magdalena Bay. 1967.
7. *Euphorbia misera* Benth. Bot. Voy. Sulph. 51. 1844. *Type locality*, San Diego, California. 1963.
8. *Simmondsia californica* Nutt., Lond. Journ. Bot. 3: 401. 1844. *Type locality*, San Diego, California. 1961.
9. *Veatchia cedrosensis* (Kellogg) Gray, Bull. Cal. Acad. Sci. 1: 4. 1884. *Rhus veatchiana* Kellogg, Proc. Cal. Acad. Sci. 2: 24. 1859. *Type locality*, Cedros Island, Lower California. 1969.
10. *Rhus lentii* Kellogg, Proc. Cal. Acad. Sci. 2: 16. 1859. *Type locality*, Cedros Island. 1970.
11. *Sphæralcea fulva* Greene, Pitt. 1: 201. 1888. *Type locality*, Cedros Island. 1968.
12. *Frankenia grandifolia* Ch. & Schl., Linnaea 1: 35. *Type locality*, San Francisco Bay, California. 1956.
13. *Frankenia palmeri* S. Watson, Proc. Am. Acad. 11: 124. 1876. *Type locality*, gulf shore of Lower California. 1950.
14. *Fouquiera peninsularis* Nash, Bull. Torr. Bot. Club 30: 455. 1903. *Type locality*, La Paz, Lower California. 1957.
15. *Petalonyx linearis* Greene, Bull. Cal. Acad. Sci. 1: 188. 1885. *Type locality*, Cedros Island, Lower California. 1958.
16. *Asclepias subulata* Decaisne, in DC. Prodr. 8: 571. 1844. 1973.

17. *Sarcostemma arenarium* Benth., Bot. Voy. Sulph. 34. 1844. *Type locality*, Magdalena Bay. 1974.
18. *Hofmeisteria pluriseta* Gray, Pac. R. R. Rep. 4:95. t. 9. 1857. *Type locality*, Cañon of the Williams River, Arizona. 1975.
19. *Trixis californica* Kellogg, Proc. Cal. Acad. 2:353. 1882. *Type locality*, Cedros Island. 1962.
20. *Aplopappus spinulosus scabrellus* (Greene) Blake, Contr. U. S. Nat. Herb. 52:24. 1917. *Eriocarpum scabrellum* Greene, Erythea 2:108. 1894. *Type locality*, Los Angeles Bay, Lower California.
21. *Gutierrezia sarothræ pauciflora* Eastwood, n. var. This differs from typical forms in having few flowers, often solitary heads terminating slender bracteate branchlets. The entire plant is intricately branched. It comes nearest to *G. divergens* Greene but has smaller heads and fewer flowers in each head. 1971.
22. *Franseria camphorata* Greene, Bull. Cal. Acad. Sci. 1:192. 1885. *Type locality*, Guadalupe Island. 1972.

SPECIES COLLECTED AT SAN QUINTIN, LOWER CALIFORNIA,
JUNE 7, 1925

1. *Ephedra californica* S. Watson, Proc. Am. Acad. 14:300. 1879. *Type locality*, San Diego. 2058 and 2059.
2. *Atriplex julacea* S. Watson, Proc. Am. Acad. 20:370. 1885. *Type locality*, Todos Santos Bay, Lower California. 2046.
3. *Suaeda ramosissima* (Standley) Johnston, Proc. Cal. Acad. Sci. Ser. 4. 12:1017. 1924. *Dondia ramosissima* Standley, N. Am. Fl. 21:91. 1916. *Type locality*, Lees Ferry, Arizona. 2047.
4. *Abronia gracilis* Benth, Bot. Sulph. 44. 1844. *Type locality*, Magdalena Bay. Our material consists of two small annual plants whose identification is uncertain as the specimens are not fruiting. 2061.

5. *Mesembryanthemum crystallinum* L., Sp. Pl. 480. *Type locality*, Cape region, South Africa. The common ice plant which is on all the beaches from Santa Barbara County south. 2045.
6. *Isomeris arborea* Nutt., in Torr. & Gray. Fl. N. Am. 1:124. *Type locality*, San Diego. This is the shrub so common along the coast with yellow flowers in racemes and drooping inflated pods. The leaves are trifoliate. 2052.
7. *Dudleya cultrata* Rose, Bull. N. Y. Bot. Gard. 3:16. 1903. *Type locality*, San Quintin Bay. This does not agree in all respects but is probably this species. 2057.
8. *Simmondsia californica* Nutt., in Hook. Lond. Journ. Bot. 3:400. t. 16. 1844. *Type locality*, San Diego, California. 2060.
9. *Æsculus parryi* Gray, Proc. Am. Acad. 17:200. 1881-82. *Type locality*, northern part of Lower California. This is the shrubby buckeye of the region. 2051.
10. *Sphæralcea* sp. A shrub 2-4 feet high, with flowers white and pink tinged. This seems near *S. fulva* Greene. 2053.
11. *Frankenia grandifolia* Ch. & Schl., in Linnæa 1:35. 1826. *Type locality*, San Francisco Bay. Common in salt marshes. The common name is Yerbe del Rheuma. 2047a.
12. *Cuscuta californica graciliflora* Engelm., Trans. Acad. Sci. St. Louis 1:499. 1859. *Type locality*, Nova California. The common dodder, on a composite. 2055.
13. *Lycium richii* Gray, Proc. Am. Acad. 6:46. 1862. *Type locality*, La Paz, Lower California. A thorny shrub with spreading branches, small fleshy, obovate leaves, small, salverform, purplish flowers and red berries. It was common along the beach. 2048.
14. *Stephanomeria exigua* Nutt., Trans. Am. Phil. Soc. N. Ser. 7:428. 1841. *Type locality*, plains of the Rocky Mountains. This is not typical but is probably a form of this variable species. It comes near to one described as *Ptiloria exigua deani* Macbr. from Sweetwater Valley, San Diego County. 2062a.

15. *Gutierrezia sarothræ* (Pursh) Britt. & Rusby., Trans. N. Y. Acad. 7:10. 1887. *Type locality*, plains of the Missouri. 2062. This may be the host of the *Cuscuta*.

16. *Aplopappus fasciculatus* Vasey & Rose, Proc. U. S. Nat. Mus. 11:530. 1889. *Type locality*, San Quintin Bay. 2050 and 2056.

17. *Amblyopappus pusillus* H. & A. Hook. Journ. Bot. 3:321. 1841. *Type locality*, Chile. 2054.

SPECIES FIRST DESCRIBED FROM SAN QUINTIN Not collected by Mason.

From Dr. Edward Palmer's collection, described by Vasey & Rose,
Proc. U. S. Nat. Mus. 11:527 to 536.

Hosackia watsoni

Hosackia palmeri

Ribes palmeri

Senecio peninsularis

Gilia laxa

Phacelia palmeri

Solanum palmeri

Antirrhinum watsoni

Krynitzkia grayi

SPECIES FIRST DESCRIBED BY OTHER AUTHORS Not collected by Mason.

Agave orcuttiana Trelease, Rep. Mo. Bot. Gard. 22:47.

Ribes tortuosum Benth, Bot. Sulph. 17.

Astragalus anemophilus Greene, Bull. Cal. Acad. Sci. 1:186. t. 213.

Hosackia disticha Greene, Bull. Cal. Acad. Sci. 1:186.

Oenothera crassifolia Greene, Bull. Cal. Acad. Sci. 1:188.

Senecio ammophilus Greene, Bull. Cal. Acad. Sci. 1:193.

Pholisma depressum Greene, Bull. Cal. Acad. Sci. 1:198.

Physalis muriculata Greene, Bull. Cal. Acad. Sci. 1:209.

Pterostegia galioides Greene, Bull. Cal. Acad. Sci. 1:213.

Stylophyllum attenuatum (Watson) B. & R., Bull. N. Y. Bot. Gard. 3:36.

SPECIES COLLECTED AT SAN MARTIN ISLAND JUNE 9, 1925

1. *Atriplex decumbens* S. Watson, Proc. Am. Acad. 12:275. 1877. *Type locality*, near San Diego. A low prostrate perennial on the sand dunes. 2070.

2. *Atriplex leucophylla* Dietr., Syn. Pl. 5:536. California. 2070. This differs from the preceding in leaves dif-

ferently shaped and alternate instead of opposite. Both are prostrate and equally white and were included under the same number.

3. *Abronia maritima* Nutt., ex S. Watson in Bot. Calif. 2: 4. *Type locality*, San Pedro, California. 2072.

4. *Dudleya anthonyi* Rose, Bull. N. Y. Bot. Gard. 3: 13. 1903. *Type locality*, San Martin Island. The leaves of this beautiful species are densely white-farinose in a cluster almost a foot across. The flowers become dark rose on pedicels almost an inch long and in widely spreading panicles terminating the leafy stems. 2068.

5. *Dudleya cultrata* Rose, Bull. N. Y. Bot. Gard. 3: 15. 1903. *Type locality*, San Quintin Bay, Lower California. The clusters of leaves at the base are much shorter than the preceding and not farinose. The flowers are in more densely flowered panicles on pedicels shorter than the corolla. Like many in this genus the corolla is yellow turning red in fading. 2076.

6. *Hosackia watsoni* Vasey & Rose, Proc. U. S. Nat. Mus. 11: 528. 1888. *Type locality*, San Quintin Bay. Stems slender, much branched; small leaves trifoliate; umbels 2-flowered on very short peduncles. 2078.

7. *Phacelia ixodes plumosa* (Kellogg) Brand, Pflanzenreich 4: 112. 1913. *Phacelia plumosa* Kellogg. Mss. in Herb. Univ. Cal. *Type locality*, San Martin Island. 2080.

8. *Nicotiana clevelandi* Gray, Syn. Fl. N. Am. II. 1: 242. *Type locality*, Chollas Valley, near San Diego, California. 2069.

9. *Cryptanth intermedia* (Gray) Greene, Pitt. I: 114. 1887. *Eritrichium intermedium* Gray, Proc. Am. Acad. 17: 225. 1881-82. Type from southern part of California. 2077.

10. *Lycium richii* Gray, Proc. Am. Acad. 6: 46. 1862. *Type locality*, La Paz, Lower California. 2073.

11. *Encelia californica* Nutt., Trans. Am. Phil. Soc. N. S. 7: 357. 1841. *Type locality*, San Diego or Santa Barbara, California. 2074.

12. *Franseria camphorata* Greene, Bull. Cal. Acad. Sci. 1:192. 1885. Type locality, Guadalupe Island. 2071.

13. *Perityle rotundifolia* (Benth.) Brandege, Zoe 4:210. 1893. *Amauria rotundifolia* Benth., Bot. Voy. Sulph. 31. Type locality, San Quintin, Lower California. 2079.

14. *Senecio lyoni* Gray, ex Lyon in Coult. Bot. Gaz. 11:335. 1886. Type locality, Catalina Island, California. 2076.

15. *Dudleya columnata* Rose, Bull. N. Y. Bot. Gard. 3:15. 1903. Type locality, San Quintin Bay, Lower California.

The clusters of leaves at the base are much shorter than the preceding and not fan-shaped. The flowers are in more densely flowered panicles on pedicels shorter than the corolla. Like many in this genus the corolla is yellow turning red in fading.

16. *Hosackia nutans* Vasey & Rose, Proc. U. S. Nat. Mus. 11:528. 1888. Type locality, San Quintin Bay. Stems slender, much branched; small leaves trifoliate; umbels 2-flowered on very short peduncles. 2078.

17. *Phacelia linearis* (Kellogg) Brand, Flan. zentral 4:112. 1913. *Phacelia linearis* Kellogg, Mas. in Herb. Univ. Cal. Type locality, San Martin Island. 2080.

18. *Nicotiana glauca* Gray, Syn. Fl. N. Am. II. 1:242. Type locality, Cholla Valley, near San Diego, California. 2069.

19. *Cryptantha intermedia* (Gray) Greene, Fl. 1:114. 1887. *Erichium intermedium* Gray, Proc. Am. Acad. 17:225. 1881-82. Type from southern part of California. 2077.

20. *Lycium villosum* Gray, Proc. Am. Acad. 6:46. 1862. Type locality, La Paz, Lower California. 2073.

21. *Ercodia californica* Nutt., Trans. Am. Phil. Soc. N. S. 7:357. 1841. Type locality, San Diego or Santa Barbara, California. 2074.



Eastwood, Alice. 1929. "Studies in the flora of Lower California and adjacent islands." *Proceedings of the California Academy of Sciences, 4th series* 18, 393–484.

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