LIST OF PLANTS COLLECTED BY DR. EDWARD PALMER IN 1890 ON CARMEN ISLAND.¹

By J. N. Rose.

This island is situated in the lower part of the Gulf of California, two-thirds of the way down the Lower California coast, almost in sight of land. It is 120 miles south of Guaymas. It is made up mostly of low mountains, or hills, which in the north are only about 200 feet high, but in the south rise from 800 to 1,000 feet, and are cut by many deep canons. The surface is rocky, with very poor or no soil. No trees are found here; a few shrubs, sometimes 15 feet high, give the prominent floral features to the island. On the west side is a great salt bed covering about 640 acres to a depth of 12 feet, estimated to contain about 13,000,000 tons of a very fine quality of salt. This island is owned and controlled by a gentleman at La Paz, and a large quantity of the salt is shipped both to Guaymas and San Francisco, and, when the salt is ground, sells as the very best quality for table use. The source² of this vast salt deposit is said to come from the surrounding hills and mountains. All the creeks and canons open into this lake and, from experiments made, their waters are found to be charged with chloride of sodium. After the rains have ceased, in about fifteen days, the water evaporates and the work of excavation can go on. The only botanist or collector, so far as I know, who has visited this island is Dr. Edward Palmer. He has made two visits and has very thoroughly collected the plants of the island. His first visit was January 1 and 2, 1870. I have not been able to learn the number of species collected, yet it was not large. No report was published on the plants, although most of them were then new species. One or more of them have been identified from time to time as belonging to new species and published as part of the type. Most of the others have been collected elsewhere by Mr. Brandegee or by Dr. Palmer himself, and published as new, without having seen the Carmen Island forms. Dr. Palmer made a second visit last November and remained a week (No-

¹ Read before Section F. of the A. A. A. S. August 22, 1891.
² In Bulletin No. 84 of the U. S. Hydrographic Office (p. 28) it is stated, however, that although the lake is separated from the ocean by a strip of beach a quarter of a mile wide, over which the sea never flows, yet the water rises and falls with the tide. [September 20, 1892.]
November 1–7, 1890). He visited all parts of the island and brought back a small but interesting collection. The flora is almost identical with that of the peninsula. Of this collection 49 species are known to be common to the peninsula and island; others will doubtless be found; 29 species are also common to Mexico, and 25 to the United States; of the latter, 9 are grasses; 19 of the species were collected by Dr. Palmer at La Paz in 1890; 7 species are, so far as known, local, 5 of which are here for the first time described. The island was so thoroughly explored that probably very few species will be added to the list, and a few details will not be out of place. The number of genera represented on the island is 60, and of species, 68. Of the species 21 are Polypetalae, 24 Gamopetalae, 10 Apetalae, and 13 Monocotyledons. Of these, more than one-half (37) belong to 4 families, viz: Leguminosae 7; Compositae 12; Euphorbiaceae 6; and Gramineae 12; one family belongs to each of the four groups mentioned above; and over one-third (24) belong to two families, viz: Compositae and Gramineae. Orchidaceae and Filices, the third and fourth largest families of Mexico, are not represented on the island.

<table>
<thead>
<tr>
<th></th>
<th>Polyptaleae</th>
<th>Leguminosae</th>
<th>Gamopetaleae</th>
<th>Compositae</th>
<th>Apetalae</th>
<th>Euphorbiaceae</th>
<th>Endocarps</th>
<th>Gramineae</th>
<th>Total.</th>
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<tbody>
<tr>
<td>Number of species</td>
<td>21</td>
<td>7</td>
<td>24</td>
<td>12</td>
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<td>Number of genera</td>
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<td>8</td>
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<td>Indigenous species</td>
<td>21</td>
<td>7</td>
<td>21</td>
<td>10</td>
<td>8</td>
<td>4</td>
<td>10</td>
<td>9</td>
<td>60</td>
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<tr>
<td>New species</td>
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<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Common to Mexico</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
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<td>7</td>
</tr>
<tr>
<td>Common to Lower California</td>
<td>311</td>
<td>71</td>
<td>211</td>
<td>101</td>
<td>81</td>
<td>41</td>
<td>101</td>
<td>91</td>
<td>681</td>
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<tr>
<td>Collected by Palmer at La Paz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

**Drymaria diffusa** Rose, n. sp. Stems slender, much branched from a perennial base, somewhat glandular-pubescent throughout: leaves thin, broadly ovate to deltoid, 2 to 4 inches long (on petioles somewhat longer), truncate at base, acute or slightly acuminate at apex; inflorescence few-flowered cymes; pedicels filiform, 5 to 8 lines long; sepals equal, 1 to 1.5 lines long, thin, oblong, acutish, delicately 1-nerved, scarious margin; petals twice as long as the sepals, 2-parted to the middle into oblong or spatulate segments; stamens 5, unequal, shorter than the petals; capsule globose, 1.5 lines long, short stipitate, about 10-ovuled, 3-seeded.—Grows on the shady side of a cation in roselind bunches. No. 819.

This is *D. glandulosa* Watson, Proc. Amer. Acad. xviii. 328, in part. Our plant differs from this species in its leaves not being so broad, and in having long petals; lower stipules wanting or deciduous, not lacerate; sepals smaller and not so strongly nerved.

Collected by Palmer in 1870 (No. 4) and distributed as *D. racemosa*.

**Abutilon Dugesi** Watson. Only a few plants seen in a cation, and in poor condition. No. 840. Nearest the above species, but not very satisfactorily placed there.

**Hibiscus demudatus** Benth. A very poor specimen obtained, badly infested by an insect (Eriscocenusa sp.). Also obtained in 1870 (No. 15). No. 826.
DESMANTHUS FRUTICOSUS n. sp.

Collected by Mr. T. S. Brandergee on Santa Margarita Island, and by Dr. Palmer from this island in 1870 (No. 3): the latter distributed as G. Barbadeuse.

Melochia tomentosa L. In canons, few plants seen. No. 823.


Dalea Parryi Gray. Not very common. No. 824.


Phaseolus filiformis Benth. Few specimens found. Obtained in 1870 (No. 5.). No. 876.


Desamathus fruticosus Rose, n. sp. Shrub 5 to 6 feet high or small tree 10 to 12 feet, glabrous with reddish branches: leaves large: rachis 1½ to 3 inches long; stipules spinescent; pinna 3 to 4 pairs, 1 to 3 inches long with a concave gland between the lowest pair and often one or more of the upper pairs; leaflets 12 to 20 pairs, oblong, 3 to 5 lines long, 1½ to 2 lines broad, with somewhat eccentric mildrib: flowers numerous; calyx 2 lines long; petals slender, one line longer than calyx: stamens 10: pods 2½ to 3½ inches long, 3 lines wide, many seeded: seeds flattened, 2 lines in diameter, the semicircular mark on the side very small.—In bottom of canons. No. 820.


This species differs from D. virgatus in its shrubby habit, lower leaves, larger and more numerous pods, etc. The marking on the side of the seed referred to by Mr. Brandergee in his notes of this species seems to be a generic character, and as it also varies in shape and size in different species it may be of some use in identification. In D. virgatus, although the seed is not half as large as in the above species, the marking is much larger.

Explanation of Plate XIII. A fruiting branch is shown natural size: a, flower with calyx split and petals shown; b, a flower; c, a seed; d, the same much enlarged.


Eucnide cordata Kell. On the beach, but not common. No. 867.

Mentzelia adherens Kell. Common at the mouth of canons. No. 831.

Passiflora Palmeri Rose, n. sp. Trailing or low-climbing plant, thickly pilose, interspersed with club-shaped glandular hairs throughout: leaves small, about 1 inch long, with 3 obtuse lobes; stipules small, lacerate: tendrils simple, longer than the leaves, pilose: peduncle slender, erect, reflexed in fruit, 1-flowered: involucre bracts 3, small, becoming in fruit a little longer than the stipe, pinnately dissected; segments sessaceous, excurrent into a gland: sepals white, 5, broadly linear, 1½ inches long, 3-nerved, the central nerve thickened above, separating below and extending beyond the tip of the sepal: petals 5, 1-nerved, about the length of the sepals: crown in 3 series: outer of short filiform segments a little longer than the tube of the calyx; inner one entire, cup-shaped: staminal tube 8 to 9 lines long, glabrous; free part of filament ribbon-shaped, 5 lines long: ovary very hairy: styles and stigmas 3, glabrous: fruit 1½ inches in diameter, pilose.—Very plentiful on the beach among the loose coral, but rare in the canons. No. 868.
The plant is called “Sandia de la Passion.” The flowers bloom early in the morning and last but a part of the day; the ripe fruit, which has a sweetish taste, is much relished by the children of the island.

This species seems nearest P. 'fatida, some forms of which have very similar foliage, but differs in its larger flowers, smaller crown, longer staminal tube, and the peculiar tip of the sepal.

EXPLANATION OF PLATE XIV.—A branch with flowers and fruit shown; natural size.


**Cereus gamosus** Engelm. Stem 6 feet high, erect; ribs 8 or 9; spines straight and stout; branches numerous, often prostrate upon the ground; mature fruit large, dull red without, bright red within. Not in flower. No. 883.

The fruit is edible; it is used for preserves, jams, etc. It is called “Pitahaya acer.”

**Vaseyanthus Rosei** Cogn. Zoé, i. 368. Grows in canyons in shady places and along the beach. No. 837.

This was first collected at La Paz and is No. 102 of Dr. Palmer’s collection referred to *Marinoceria* on p. 70.

**Macrospinima Berlandieri** Gray. About 3 feet high with few branches; only found in fruit. In canyons. No. 841.


**Houstonia (Ereicotis) fruticosa** Rose, n. sp. Upright-growing shrub, 1 to 2 feet high, much-branched, glabrous throughout; leaves linear, 3 to 7 lines long, much fascicled, and with minute stipules; flowers cymose on short pedicels or sessile: corolla 4 to 5 lines long, salver form, the tube much longer than the lobes, "white;" the fruiting calyx 1 line long, with lobes of equal length: capsule a little over 1 line long, free from the calyx at the tip only: seeds oblong.—One of the commonest plants along the beach. No. 885.

Near *H. fasciculata*, but with larger flowers and leaves, and somewhat different in habit.


**Hofmeisteria pubescens** Watson. About a foot high with flaky leaves and pinkish flowers. A compact plant, the numerous branches intergrading form an impene- trable mass. Found on the beach and in the canyons. No. 875.

This plant has somewhat less dissected leaves than the type and approaches near *H. fasciculata*, from which it seems to differ only in being pubescent and in having the leaves more dissected.

**Brickellia brachiata** Gray, var. *glabra* Rose, n. var. Glabrous throughout, but in other respects similar to the type. This is the glabrous form referred to on page 83, from Santa Rosalia. The flowering of this glabrous form a second time indicates that it may be a common form along the Gulf, and being so much out of the range of the type we have thought best to give it a varietal name.—On side of rocky canyons. No. 849.

**Aplolepsus spinulosus** DC. Only a single specimen seen. No. 818.

**Bebbia juncea** Greene. About 3 feet high. Found on the beach and canyons. No. 841.


Recently found by Mr. Brandegec at two stations not far away on the mainland.
Leptosyne dissecta Gray. A compact bushy plant 1 to 2 feet high; leaves more dissected than in the type. Only seen in one cañon. No. 877.

Perityle Emaryi Torr. form. About 2 feet high; leaves very much dissected, rather thick; heads somewhat larger than in type; style-branches with acute tips. Common along the beach and in the cañons. No. 866.

This form was collected on the island by Dr. Palmer in 1880, and made the subject of a short note in Bot. Cal. I. 1897, by Dr. Gray. This was also obtained by him last year at La Paz, and by Mr. Brandegee at the same place and time.


It was first collected on this island. It was distributed as "P. tridentatum Bentham." and is in Palmer's collection of 1870 (No. 9).


It is called "Yerba del Venado" and is much used as a tea. This plant was collected in 1870 (No. 16).


Heliotropium Curassavicum L. Very common. No. 899.

Physalis crassifolia Bentham. Probably this species, but only a single poor specimen was found. No. 871.

Datura alba Nees. Established in all parts of the island except in the higher parts of the mountains. No. 872.

This seems to be the same as Palmer's Chihuahua plant, referred doubtfully to this species.

Nicotiana trigonophylla Dunal. Only a few plants seen in cañons. No. 873.


This plant is not so tall, and the calyx and corolla are not so large as in the type, but otherwise they seem to agree. This species was also collected by Dr. Palmer on this island in 1870 (No. 8). The specimens undetermined in Gray Herbarium.


This was made the type of a new species in Dr. Palmer's collection of 1870 (No. 7); not since collected until now.

Boerhaavia Wrightii Gray. In very poor condition, but probably this species. No. 845.


Stignosperma halimifolia Bentham. About 4 feet high. Only a few plants seen. No. 870.

Phoradendron sp. No. 882.


Euphorbia Carmenensis Rose, n. sp. A low, compact plant, woody at base, a span high, with many slender interlacing branches, glabrous throughout: leaves opposite, small, 1 to 2 lines long; involucres very small, ½ line long, axillary, subsessile: glands 5, naked: seeds reddish, smooth, ½ line long.—In cañons and on mountain sides. No. 842.

A peculiar species. Our plant is abundantly covered with small oblong bodies, appearing like capsules, which are the result of insect work.
Simmondsia Californica Nutt. In canons, but not common. No. 817.
Called “Jojo berry.”

Sporobolus argutus Kunth. No. 856.
Panicum lachnanthum Vasey and Scribn. No. 855.
Panicum fasciculatum Vasey and Scribn. No. 854.
Muhlenbergia debilis Trin. No. 853.
Setaria setosa Beauv. No. 857.
Aristida dipersa Trin. No. 858.
Bouteloua aristidoides Thurb. No. 850.
Bouteloua racemosa Lag. No. 881.
Heteropogon contortus R. and S. No. 860.
Diplachne Brandegei Vasey. No. 862.
Cenchrus Palmeri Vasey. No. 865.
Cyperus. Too young for determination. No. 863.
—- Indeterminable shrub. A shrub 3 feet high, 4 inches in diameter, with numerous horizontal branches; leaves fascicled. Neither in fruit nor flower. Common near the beach. No. 881. It may be Jatropha spatulata Muhl. A Phoradendron is parasitic upon it.
—- A long, slender, cactus-like plant. No. 794.