The Flora of Mona and Monito Islands, Puerto Rico (West Indies)

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INTRODUCTION

As stated in our first paper relative to the investigations on the flora of the smaller islands and keys adjacent to Puerto Rico, published in October 1971, which comprised a study of the vegetation of Desecheo Island (31), this bulletin reports further botanical investigations in those islands. Now, it corresponds to Mona and Monito Island, areas which have been explored from several scientific points of view particularly during the last 4 to 6 years. The different papers listed in the Literature Cited at the end of this paper provide detailed information on geology, physiography, and other features of Mona and Monito. Nevertheless, the authors are including herewith a brief summary of some of the latest findings about these interesting islands. Information on the vegetation of the small island of Monito is hereby published for the first time, something which will be of further value to those interested in floral investigations.

GEOGRAPHIC DESCRIPTION

Mona Island, politically a part of Puerto Rico, is located in the Mona Passage of the Caribbean Sea, between Puerto Rico and the Dominican Republic, in latitude 18°3'-8° N and longitude 67°51'-57° W. This is about 42 mi S 73° W of its nearest point to Puerto Rico (Punta Jigüero), 45 mi S 79° W from Mayagüez, and 37 mi S 60° E from Punta Espada, in the Dominican Republic. Its area is 13,693 acres, equivalent to 14,043 cuerdas.³ The island has the shape of a lima bean with its concavity toward the north. Its largest dimension (east-west) is 6.8 miles and its greatest width 4.3 miles, having a total shore line of approximately 20 mi in length.

Monito Island lies in latitude 18°10' N and longitude 67°57' W; that is, 3.1 mi N 21° W from Cabo Barrio Nuevo, its nearest point to Mona. It has an approximate area of 40 acres. The island is more or less rectangular in shape, its greatest length (east-west) is about 1,600 ft and its greatest width 1,200 ft, with less than a mile of shore line (fig. 1).

CLIMATE

Although Mona Island lies in the tropical maritime belt of the easterly trade winds, its climate is semiarid. The average annual rainfall of 31.85 in does not meet the water needs of growing vegetation and the year round moisture amounts to 30.02 in of water deficiency. These figures are based on a 30-year record ending in the last decade as a worldwide standard base set by the World Meteorological Organization for determining climatological normals. Strong tropical storms and hurricanes did not affect the island during this period thus resulting in a somewhat lower mean annual rainfall than cited in previous studies. However, this should not be considered as an indication of significant climatic change towards a drier regime. Rainfall, temperature and resulting vegetative growth are similar to the south coast of Puerto Rico around the Guánica area. Extremes of temperature are tempered by the surrounding ocean, although the islands are more subject than Puerto Rico to cooler air outbreaks during the winter months. For additional information on the climate of Mona, see Calvesbert (7).

GEOLOGY AND PHYSIOGRAPHY

Aaron in 1973 (1) gives interesting information on the geology and mineral resources of Mona and Monito Islands, areas which are composed almost entirely of carbonate rocks, stratified limestone and dolomite, reef rock and boulder rubble, that range in age from the Lower or Middle Eocene (about 18 to 25 million years old) to Holocene (Recent). The bulk of the islands is composed of two generally flat-lying rock units, the Isla de Mona dolomite and the Lirio limestone.

Both islands are very flat, the upland surface ranging in elevation in Mona from more than 90 m near Cabo Noroeste to about 30 m near Playa de Pájaros (fig. 2). The upland surface or

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³ A “cuerda” is a land measurement used in Puerto Rico equivalent to 0.9712 acre.
plateau undulates very gently and slopes less than one degree generally southward. In spite of the apparent overall flatness of the plateau, the ground surface is very rough, thus making it very difficult to travel on foot.

The plateau is bounded almost completely by steep vertical escarpments or cliffs. These cliffs drop to the sea, except where the plateau is bounded by a narrow coastal lowland or coastal plain along the western, southwestern and southeastern sides of the island. This is the area generally known as Sardirina and Uvero.

The coastal plain comprises about 931 cuerdas (900 acres) and it is the zone where the vegetation is more luxuriant than that of the plateau forest. In the Sardirina area there is a small patch, about one acre in size, under brackish water, with a thick growth of mangrove trees. The area is inhabited by birds and crabs.

The peculiarities of the soils of Mona were briefly discussed by Rivera (25).

**EARLY BOTANICAL INVESTIGATIONS**

Previous to the first botanical explorations in Mona, scientists interested in other subjects had visited the island. According to Santana (6) the first record of a scientist exploring in Mona is by the Puerto Rican chronicler, Don José Julián Acevedo y Calbo, who in 1588 unsuccessfully searched for traces of the early Indian populations. The earliest published records of insects in Mona, according to Ramos (34) appear to be those of the elaterid beetle, *Adelocera rubida* Schwarz and the phasmid, *Lamponius bokki* Bruner & Rodenbacher, described from the island in 1902 and 1908, respectively. These insects were undoubtedly collected by some member of the German personnel working at that time in the bat guano enterprise established there. In December 1913, E. G. Smyth and R. H. Van Zwahlenburg, both entomologists, visited the island and collected insects there.

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**Fig. 2 — Shore line of the southeast end of Mona Island from Punta Los Ingleses to Punta Este.**

The cliffs or escarpments along the coast, the dock at Playa de Pájaros, and the concrete road from the dock to the lighthouse at the extreme right hand corner near Punta Este are plainly visible.
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May 1913, by F. L. Stevens and W. E. Hess, who obtained about 150 different species of flowering plants and various species of parasitic fungi. Their trip was followed almost immediately by that of a group of scientists including entomologists, zoologists, and botanists, directed by N. L. Britton of the New York Botanical Garden, J. F. Cowell, Director of the Bush Garden, Frank E. Lutz, Assistant Curator of Invertebrates, American Museum of Natural History in New York and W. E. Hess, Plant Propagator of the Puerto Rico Agricultural Experiment Station in Mayaguez. The group explored the island from February 20 to 26, 1914. A year later, in May 1915, N. L. Britton published the results of his botanical investigations in "The Vegetation of Mona Island" (3).

Since then, 25 years elapsed and nobody else visited Mona for plant collection. In October 28, 1940 and December 20 of the same year, L. E. Gregory and P. J. Reena, both of the U.S. Forest Service, visited Mona and collected plants there.

During March 1 to 11, 1944, Carlos E. Char- dón and José I. Otero, at the time Director of the Institute of Tropical Agriculture and Librarian of the same institution, respectively, collected plants intensively in the island. On April 1 through 7, 1944, a group composed of Charles G. Britton, L. E. Martorell, George N. Wycoff and José A. Ramos (entomology), Jorge J. Serrallés (archaeology) and Victor A. Barnes (ornithology) collected in Mona. Further plant collections were made by Chardón and Otero, at times accompanied by Barnes, on April 5 and 20, 1944. During May of that year (1 to 5; 15 to 18, and 23 to 26) Chardón and Otero once more collected plant specimens, accompanied by A. González-Más, botanist of the College of Agriculture and Mechanic Arts, at Mayaguez, who at the time had particular interest in collecting seed samples (Cyperaceae). In July 19 to 24, 1944, Chardón, Otero and Gregory visited Mona again, and in August 18 through 20 of the same year, collected with Harry E. Larrony, an entomologist from St. Croix (U.S. Virgin Islands).

During September 1944, Frank H. Wads- worth, A. González-Más, and G. Gómez, Forester of the Tropical Forest Experiment Station and Planting Specialist of the Insular Forest Station, respectively, both of Rio Piedras, Puerto Rico, surveyed the island to determine the forest potentialities of the area. Soon afterwards they published a report including in their report a list of 24 common tree species of Mona, although three of them, namely Guanacou of ficinale L., Guazuma ulmifolia (L.) Dockrill and Copparipa indica (L.) Pfeue. & Rendle, are not known to occur there. In May 15 to 18, 1947, Chardón, Otero and González-Más returned once more to Mona to continue their plant collecting. In July 31, 1947 and 1948, U.S. Forest Service collectors spent the day collecting there.

Almost 5 years later E. L. Little Jr., dendrologist of the U.S. Forest Service at Washington, D.C. and F. H. Wadsworth, returned for additional plant collecting along Mona during August 28 to 28, 1947. Seven months later, Little, accompanied by Capt. Merle L. Kuna, of the U.S. Air Force, collected trees and shrubs at El Corral and other areas in the plateau, at Playa de Pajares, and along the coastal lowland. In June 1955, Little published his Trees of Mona (5).

RECENT BOTANICAL EXPLORATIONS

On April 15 through 17, 1962 the senior author visited Mona with F. H. Wadsworth and a group of boy scouts. During that period he had the opportunity to make an annotated list of trees, shrubs and other plants occurring in the island, but did not collect plants. Almost 5 years later the island was once more botanically explored by Woodbury, Martorell and García, when a large number of plant species were collected in different areas of the plateau and in the coastal plain from Sardinera to Uvero. Woodbury, accompanied by Wadsworth, Whitmore and P. Weaver (the last two U.S. Forest Service) visited Mona on October 22 to 24, 1968. Woodbury once more made plant annotations.

Woodbury, Martorell and García, collected again on December 11 to 13, 1971, after spending one day in the smaller island of Desecho observing the nesting activities of arbo- real ternaries. During this short period they collected numerous plant specimens in Mona.

The last plant collections in Mona were made by Woodbury in June 1 through 5, 1972, when he accompanied members of the Puerto Rico Natural History Society; in June 1 through 4, 1974 accompanied by Lee Rogers and Bárbara Cintón of the Office of Natural Resources; on March 23 through 26, 1975, again with another larger group of the Puerto Rico Natural History Society.

Mona Island was visited by Cameron Kepler on June 8, 1969, when he was accompanied by other scientists to make bird observations there. He collected 16 plant specimens which he later sent to Woodbury. On June 19 and 20, 1973, the senior author accompanied by Kepler, Noel Snyder and Herbert Raffel went to the island once more to continue bird observations. Further plant specimens were collected, 86 different plant species in all, including 5 cacti species noted, but not collected.

It is very unfortunate that Chardón and Otero never published the results of their plant collections in Mona Island. However, their plant species are preserved in the Agricultural Experiment Station's Herbarium. Gonzá- lez-Más published the results of his collections in his 1964 doctoral thesis (13).

With few exceptions, the plant records listed in this paper are represented by collections made by Britton, Cowell, Hess, Stevens, Char- dón, Otero, Rames, González-Más, Little, Woodbury, Martorell, García, and others cited in the text. The authors had the opportunity of studying many of the plant specimens collected by Little, Gregory and Reena, some of which are deposited in the U.S. Forest Service Herbarium, at Rio Piedras.

THE VEGETATION OF MONA

During the Taino period, that is, at the beginning of the Spanish colonization, the Taino indians living in the island cultivated cassava as their staple food. Later, the Spaniards intro- duced melons which were of excellent quality in 1524 alone. 85 tons of cassava were shipped to San Juan, capital of Puerto Rico. During this period, corn, beans, peppers, cotton shirts and hammocks were also sent (28). Wadsworth and Gómez (29) include among other crops squash, pigeon peas, beans, sweet potatoes, peanuts, tobacco, cotton, sugar cane and even elephant grass, as being successfully grown on the coastal plain.

The above information refers to the intro- duced and cultivated plants grown in Mona during its early period. The natural vegetation of the island, of course, is totally different. In spite of Mona's small size and its distance from large land masses, its lack of deep, fertile soil and its low rainfall, it supports a known flora of 417 vascular plant species, in- cluding the unpublished collections of Stevens and others. In 1555, Little published on the trees and shrubs of Mona (16) listing 100 spe- cies, out of which many were already recorded by Britton in his original paper on the vegeta- tion of Mona (9). Little added 33 new plant records thus bringing it to a total of 329 plant species. Recent collections have added 155 more, bringing the total of known plant species to 417. Further detailed study at different sea- sons will undoubtedly increase the number of species.

Mona's flora for the most part is similar to that of the Guánica Forest in southwest Puerto Rico, plus a touch of southeastern Dominican Republic. The distribution pattern shows that 40 species are unique. Five are found only in Mona; 27 have migrated west to Mona but not beyond. At least 13 species have migrated east to Mona but not beyond. The following list shows the species involved:

MONA AND EAST

1. Atriplex acutata
2. Argythamnus fasciculata
3. Caesalpinia melanocarpa
4. Cassia granulata
5. Chamaesyce coccifera
6. Chamaesyce turpini
7. Comolaclia dodonaea
8. Cyanchum linare
9. Ficus stahlii
10. Forsteria egerissiana
11. Galearia dubia
12. Haritisa portoricensis
13. Jacquinia eyasi
14. Jacquinia arborea

MONA AND WEST

1. Caesalpinia monensis
2. Domingo haematochila
3. Guapira longiflora
4. Ipomea microacladyla
5. Malpighia eotosa

MONA ONLY

1. Epidendrum brittonianum
2. Chamaesyce monensis
3. Chamaesyce sp. (new)
The above distribution pattern shows that most of Mosa species have a wide range, but some have a very narrow and peculiar distribution, such as Harrisia which was described from Ponce (southern Puerto Rico) and has not been observed since, thus occurring only in Mona and Monito. Another cactus, Mamillaria nixoa has a peculiar distribution pattern, from Mona east to Descheo and south, but skipping the larger island of Puerto Rico (30).

Mona Island vegetative cover can be divided in the following types:

**Acreage**

1. **Coastal**
   a. Sandy beach 50
   b. Rocky beach 40
   c. Cliffs 10
   d. Beach strand (evergreen littoral) 100

2. **Coastal plain**
   a. Plantations 320
   b. Coastal plain forest 300
   c. Grassy to Lantana 100
   d. Croton shrub 50
   e. Pond area 1

3. **Plateau**
   a. Rock plate 200
   b. Coastal shrub 940
   c. Cactus shrub 300
   d. Deciduous forest 10,000
   e. Depression Mesic forest 300
   f. Grassy to Croton-Lantana 180

**Roads, buildings, etc.** 13,363

**Total** 13,638

### I. COASTAL VEGETATION

The coastal unstable formation contains the least number of species of any habitat on Mona because of the drastic environmental impact by waves, sea blast, turtles and man. This area of shifting sands is dominated by Sporobolus virginicus, Sesuvium portulacatum, Centhara spp., Chamaesyce baxfilar, Ipomoea pes-caprae and Carnegiea maritima.

The rocky beach as commonly seen to the east and west of Uvero is composed of the following species: Sporobolus virginicus, Fonnumbrilis cymosa, Surtana maritima, Conocarpus erectus, Coccoloba ussifera, C. kruki x Thistern, Eriothalia fruticosa, Jacquinia arborea, Dodonaea viscosa and Drummond maritima.

Where cliffs are close to the sea on the protected south coast of Mona, one finds large trees of Hippomane marnicki, Ficus citrifolia, Conocarpus erectus and possibly the introduced Coccos nucifera and Terminalia catappa. Small trees or vines often seen are Capparis flexaus, Turbinifolia brachyphylla, Macarangia cates, Eriothalia fruticosa and Stiphomyphon periplocefolium.

Just behind this zone there is a semi-stable shrub zone dominated by Coccoloba ussifera, Conocarpus erectus, Turbinifolia brachyphylla, Surtana maritima, Eriothalia fruticosa, and Eriothalia fruticosa. This develops on sand into a beach strand or dry evergreen littoral woodland or forest with a well defined tree zone to 10 m (33 ft) or more and diameters of 30 cm (1 ft) or more. The dominant trees of this type are Bumelia obserata, Pithecoblum ungaic-cata, Eugenia foetida, E. rhomboea, Eriothalia fruticosa, Amyris elemifera, Coccoloba diversifolia, Conocarpus erectus, Tabebuia heterophylla, Canella witensor, Jacquinia arborea, Bourraria suffulenta, Gymnema latifolia, Cossadopetalum rhacem, Guarea sanctum, Plumeria obtusa and Capparis cymophylla.

The shrub layer is dominated by Croton lucida, C. betuloides and Lantana innocuaer in the open areas and Caesalpinia divenera, Ernodactylalatilis, Corchorus hirsutus, Randia aculeata, Phyllanthus epiphyllanthus, Rivina humilis and Argynanthus candidans. The violets are few in number but rather common.

The most abundant is Stiphomyphon periplocefolium and scattered plants of Melica maritima, Caesalpinia bondoc, Capparis flexaus (a vine-like shrub to a small tree). The herbaceous layer which is greatly altered by goats has small infrequent groups of Papalum laza and Setaria udekemiana. The Epilobium are rather sparse, but one can frequently see the beautiful flowering endemic Epilobium brittanum and the very large form of Tylindaea uriculata.

### II. COASTAL PLAIN

The coastal plain forest is well developed along the south coast between Sardineria and beyond Uvero. It is an area of much disturbance in the past. A larger part of it has been under cultivation and the western end was cleared and put into plantations of Cassoria quiescifolia and Swietietenia mahagoni. The Cassuzina or Australian pine is an open forest with trees 30 m or more in height and 0.5 cm or more in trunk diameter. It has been invaded by many of the coastal plain species and in time will probably revert back to the original vegetation.

Just east of this plantations is another planting of mahogany, Swietietenia mahagoni with many trees reaching 10 m high or more and with trunk diameters between 15 and 30 cm. This area is also being heavily invaded by natural plant species as well as many young mahogany plants.

The normal or native vegetation is occupied by the epiphytes, Tillandra uriculata, T. recurvata and the two orchids, Epidendrum britteniannum and Domagia hue. At the east of the area the airstrip is different in that it has many of the fan-leaved palm, Thrinax morrisii and the shrub, Phyllanthus epiphyllanthus. The tallest indigenous species, near Bucida buceras, is found only in small patches within this type. This forest type is only 10 m or less tall except for a few individual trees which may reach 15 m or more. Most of these trees have trunk diameters of less than 20 cm, but few reach diameters of 1 m or more.

In some areas of this forest and in others where the density of trees is high, the goats have completely denuded the plants of the herbaceous layer. The shrubs are few in number but rather common. In some areas of this forest and in others where the density of trees is high, the goats have completely denuded the plants of the herbaceous layer. The shrubs are few in number but rather common. In some areas of this forest and in others where the density of trees is high, the goats have completely denuded the plants of the herbaceous layer. The shrubs are few in number but rather common.

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Two other trees, Ficus citrifolia and Clusia rosea, when growing on the walls of deep holes also reach larger sizes. Of the many species making up the shrubby tree growth, Coccocoba microstachys is by far the dominant species.

An outstanding feature of the plateau is the sinks or "baigues" where due to the red, deep soil, and the higher moisture content, the trees reach their largest sizes. Many species are more than 15 m high and over 1 m in diameter. The size of each depression governs the number, density and deciduousness of its species. Small depressions with little to no soil, for example, may be dominated by the very large-trunked trees, Pisonia albida. On the other hand, a rather small depression less than one acre, could be dominated by the more mesic species, Diphola salicifolia, Masticodendron feodissimum and Coccocoba diversifolia. The larger depressions such as La Bajura de los Coreos, with its deep soil and high moisture level develops a mesic forest with 30 or more tree species some with trunk diameters of 1.5 m or more and about 14 m in height. One buttressed, Diphola salicifolia measured 2 m in diameter and 15 m high.

The following species were found only in sinks or cliff bases: Cordia colloca, Diphola salicifolia, Psychotria natans, Jatropha multifida, Masticodendron feodissimum, Calyptranthes pallens, Guapira longifolia, Sampsia dedaandra, Clusia ovata, Antirrhinum lucida, Opuntia antillana, Vanilla barberiata (actually between two sinks), Chichicapa alba, Trichostigma octandrum, Callisia repens, T. landaisia polyatricha, T. setacea, Rauwolfa nitsa, and Morisoria americana. The moist crotone between the sinks and the plateau is much more characteristic of the plateau, but much denser and with more epiphytes. Also the dense shrub layer of Phyllanthus spathyanthus, which is literally covered by the epiphytic bromeliad, Tillandsia recurvata. Here, the rare orchid, Vanilla barberiata, was found.

RARE INDIGENOUS PLANTS OF MONA

Abutilon americanum  
Acrostichum aureum  
Adiantum fragile  
Argyranthemum fasciculatum  
Bauco monnier  
Buduia buceras  
Caesalpinia melanosperma  
Calyptranthes pallens  
Cordiapermum balearicum var. microcarpum  
Cassia aescynomeone  
Cassia graminica  
Catopsis melanocarpa  
Celtis trierivis  
Chamaesyce couvelis  
Chamaesyce monensis  
Chamaesyce turpinii  
Chlorophora tinctoria  
Chrysophyllum oliviforme  
Clerodendrum aculeatum  
Cocosbaa brugii  
Cocosbaa brugii x nifera  
Cocosbaa vena  
Cordiaella elliptica  
Cordia collinica  
Cordia globosa  
Cordia stenophylla  
Croton humilia  
Crueta americana  
Cuayala umbellata  
Cyclopeltis semicordata  
Cyananchum anagosteum  
Cyananchum monense

Cytophleia humifusa  
Desmodium procumbens  
Diphola salicifolia  
Domingo haematochila  
Duranta repens  
Erythroxylon rotundifolium  
Eugenia monticola  
Eupatorium ateri  
Evolvulus convoluloides  
Evolvulus nummularius  
Exostea paniculata  
Ficus stahlii  
Forestiera eggersiana  
Forestiera rhamnifolia  
Forestiera segregata  
Furcraea tuberosa  
Guapira discolor  
Guapira longifolia  
Gutierrezia elliptica  
Gutierrezia brugii  
Hylocomia rigens  
Ipomoea microstachys  
Ipomoea solanifolia  
Jacquemontia cognata  
Justicia pericocceda  
Krameria laxa  
Laguncularia racemosa  
Lantana urticifolia  
Lanocarpus domingensis  
Malpighia cocigera  
Masticodendron feodissimum  
Morisoria americana  
Nephelepa esculata

Opuntia antillana  
Pantheria declinatum  
Pavonia spinifex  
Pectis carthiassianum  
Peperomia humila  
Phyllanthus pentaphyllus ssp. polyclusis  
Pilea margaretae  
Pilea tenerrima  
Pluchea carolinensis  
Pluchea odorata  
Portulaca oleracea  
Pseudophoenix sargentii ssp. soonea  
Psychotria micrion  
Psychotria nerosa  
Psychotria natans  
Pityrogramma colomelanos  
Rhzophora mangle  
Rhuschiosa reticulata  
Ryosmania borinquena  
Sampsia dedaandra  
Scutellaria hasanensis  
Solanum eliathum  
Solanum persicifolium  
Spiranthus lucyana  
Tillandsia polyatricha  
Tillandsia setacea  
Tillandsia valensulana  
Tillandsia sanoedes  
Vernonia texana  
Wedelia lanceolata  
Zanthoxylum puncutum

THE VEGETATION OF MONITO ISLAND

Monito is a limestone island undercut by strong currents and swells, surrounded by cliffs, its highest area being on the eastern and northern sides, tapering south and west (fig. 9). At the base of the cliff on the northeastern side there are few trees of Ficus citrifolia which are the largest on the island, from 1 to 5 m in height. The second largest tree species in Guapia discolor, from 2 to 4 m in height. The rocky, creviced or flowered areas are covered by the spiny Pitscellodium anguis-cati and Copparia flexuosa. The upper rocky ridges are dominated by the also spiny, Lycium tedueanum var. chrysocarpum. Just below this, on the eastern side there is a large open area in which species of Croton, Bispotamal, Tournefortia and Melochia abound. The endemic cactus Harrias portoricensis is more common on the east side. The most abundant plant of Monito is Capparos flexuosa, which is usually found in dense tangles 0.5 to 1.2 m high, often growing to over 2 m on the south and western parts of the island.

The grassy areas are mostly composed of Paspalum laxum, Sesaria setosa and Trichobacia insularia.

Considering the very small size of Monito Island, it has two plant species which occur there and are not present in Mona itself: Plumbago scandens and Lycium tedueanum var. chrysocarpum. This last one does not even occur in Puerto Rico nor in any of its nearby islands. It is a species present in six islands of the Bahama group and Asegada.
PLANTS OF MONA AND MONITO ISLANDS

PHYLUM – SPERMATOPHYTA

Class Monocotyledones

Subclass Calyciflorae

COMMELINIDAE

Cattlia repens (Jacq.) L.
Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." On the plateau, March 1944, Chardon and Otte 846; Los Cerezos, April 1942, Woodbury M-203. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, throughout the West Indies from Cuba to Trinidad and continental tropical America.

* Commelina diffusa Burn.f.

C. longicaulis Jacq. – Noted by the authors as a weed on the coastal plain, from Sardina to Uvero, April 1962 and February 1968. RANGE: Puerto Rico, Vieques, the U.S. Virgin Islands; West Indies, Bermuda, Florida, continental tropical America and Old World tropics.

** Commelina elegans Kunth


BRONMELIAE

* Tillandsia fasciculata Sw.
Noted by Woodbury at Sardina and Los Cerezos, April 1962; again at Sardina, February 1968. RANGE: Puerto Rico, Vieques, St. Thomas, St. John; Florida, West Indies and continental tropical America.

* Tillandsia polystachya (L.) L.
Noted by Woodbury at Sardina and Los Cerezos, April 1962; at Sardina, on the coastal plain, February 1968, Woodbury.

* Tillandsia recurvata (L.) L.
Listed by Britton in 1915 (3) as "commen on trees and shrubs." On the limestone plateau, Cerezo trail, March 1944, Chardon and Otte 842. Noted by Woodbury at Los Cerezos and on the Uvero trail on the coastal plain, common on trees. April 1962, at Sardina, February 1968. Woodbury, Martorell and Garcia M-140. RANGE: Puerto Rico, Descheese, U.S. Virgin Islands; West Indies south to Martinique, southern United States, from Mexico south to Chile and Argentina.

* Tillandsia setacea Sw.
Tillandsia tenella of authors, not of Linnaeus. Noted by Woodbury at Sardina and Los Cerezos, April 1962; collected at Los Cerezos on the plateau, Woodbury M-392, June 1-4, 1972; also noted by Woodbury, Martorell and Garcia at Sardina, February 1968. RANGE: Puerto Rico, greater Antilles, Florida, Mexico to El Salvador, Venezuela and northern Brazil.

* Tillandsia usneoides (L.) L.
Dendrophyllus usneoides (L.) Raf. – Noted by Woodbury at Sardina and Los Cerezos, April 1962, rare, local. RANGE: Puerto Rico, U.S. Virgin Islands; Greater Antilles; Lesser Antilles from St. Martin, Antigua, south to Trinidad, Florida, from Virginia to Texas; south to Chile and Argentina.

* Tillandsia utriculata L.
Listed by Britton in 1915 (3) as "commen on trees and rocks." On limestone plateau, trail to Gato Cave, July 1944, Chardon and Otte 843. Noted by Woodbury at Sardina as common on trees and all over the plateau and coastal cliffs, April 1962; at the limestone area, February 1968. Woodbury, Martorell and Garcia M-141. RANGE: Puerto Rico, Descheese, St. Thomas, St. Croix; the West In-

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dies, southeastern United States, Mexico, British Honduras and Venezuela.

* Tillandsia valenzuelana A. Rich.
Tillandsia subflora Baker – Noted by Woodbury at Los Cerezos, April 1962, on plateau depressions, rare, very local. RANGE: Puerto Rico, Vieques; Greater Antilles, Florida, southern Mexico to northern South America.

Subclass Corolliflorae

LILIACEAE

* Aloe vera (L.) Burm.f.

PALMACEAE

Cocos nucifera L.
Listed by Little in 1955 (16) saying that probably this species, but all in Puerto Rico, was introduced into Mona before 1900. The coconut palm was introduced into Puerto Rico in 1549 from Cuba Verde, Africa, by a prebendary named Don Diego Lorenzo (9). Many palms noted by the authors at Sardina, Uvero and the lighthouse area. February 1968. RANGE: Native of the Old World tropics, introduced into the New World and now occurring in all tropical terrestrial regions.

Phoenix dactylifera L.
Listed by Little in 1955 (16) as few date palms introduced and cultivated at Sardina, but not spreading. Noted by Woodbury, Martorell and Garcia at Sardina, near La Cueva del Portugués, February 1968. RANGE: Native of Africa, introduced into the New World for its valued fruit, occasionally planted in Puerto Rico, the U.S. Virgin Islands and in other tropical and subtropical areas of continental and insular America.

Pseudophoenix sargentii H. Wendl. sp. saennae (Cook) P. sargentii H. Wendl. – Listed by Little et al. in 1974 (18) as "a lone palm of this species was seen on the coastal plain forest near sea level at the west end of Mona. Except for a record from Dominica, this is the eastern limits of range, an observation about 40 mi from Saona Island at the southeast coast of the Dominican Republic." Two more palms were found by Woodbury, Martorell and Garcia in February 1968, but in Woodbury's last trip to Mona, on March 1974, all three palms were dead, two of which their tops were apparently destroyed by man. This palm species is not present in Puerto Rico nor the U.S. Virgin Islands. RANGE: Bahamas, Cuba, Hispaniola, Mona and Dominica (7) according to Glassman (12).

Roystonea borinquena O. F. Cook
Listed by Little in 1955 and 1964 (16, 17) as introduced into Mona, but not increasing in numbers. Noted by Woodbury, April 1962, several palms near cliffs at Sardina. RANGE: Native to Puerto Rico and the U.S. Virgin Islands; Introduced elsewhere as an ornamental.

Salab caesiarum (O. F. Cook) Becaria
Listed by Little in 1955 (16): grove of fan palms on the coastal plain northwest of Uvero, perhaps planted before 1900. The largest are over 25 ft high and are reproducing. RANGE: This palm species is endemic to Puerto Rico.

Thrinax morrisii H. Wendland
Listed by Britton in 1915 (3) as "apparently this species, but all in Puerto Rico, was introduced into Mona only. Rare in thickets on the coastal plain, and not found elsewhere in flower nor in fruit." At the coastal plain near Uvero, May 24, 1944, Chardon and Otte 841. Listed by Little in 1955 (16). Noted by Woodbury, Martorell and Garcia, April 15-17, 1962 and February 22-24, 1968, at Sardina. This palm has been confused in the past with other related species, namely: T. pygmaea Sarg., Symaricus microcarpus (Sarg.) O. F. Cook, T. heyneana Sarg., T. ponceana O. F. Cook, T. pruceo O. F. Cook, T. bahamensis O. F. Cook, T. punctulata Becaria and T. eburne Burdet. R. W. Read's monograph on the genus Thrinax (34) clarifies the nomenclatural status of this species: RANGE: Puerto Rico, Vieques; Lesser Antilles, Turks and Caicos (Bahama Islands), Haiti, Cuba and Florida.

AMARYLLIDACEAE

* Crinium zeylanicum (L.) L.
Cultivated at the lighthouse area in Mona as an ornamental, noted by Woodbury, February 1968. RANGE: Puerto Rico, St. Croix, St. Thomas. Native of tropical Asia, introduced and widely naturalized in Africa and America.

Pancratium declinatum Jacq.
Hymenocallis declinata (Jacq.) M. Roem.,

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1 The names of plants collected followed by the collection number are printed in italics; when annotations or observations occur, the names are in roman.

2 Plant names preceded by an asterisk (*) indicate new plant records for Mona Island.

3 Plant names in italics are those used by Britton, Britton and Wilson, or by other authors, which are now in synonymy. Plant names in boldface roman are those used in this work and accepted by the authors.

4 Plant names preceded by a dagger (†) indicate that the species occurs on Mona Island. All records from this locality identified by the letters Mt. followed by a collection number are new records, since this is the first time they are listed in botanical literature.
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H. exponus Herb. – Listed by Britton in 1915 (3) as "frequent on coastal sands." On plateau, trail to Los Cerezos, August 1944, Chardon, Otero and Bertray 882. Noted by Woodbury also on plateau and beach near Uvero, rare and local, April 1962. RANGE: Puerto Rico, U.S. Virgin Islands, from St. Kitts to Montserrat; Bermuda and Bahamas.

AGAVACEAE

* Agave sisalana Pott. – On plateau, trail to Gato Cave, March 1944, Chardon and Otero 847. Noted by Woodbury at Sardineria and on the cliffs at Uvero beach; also common at the lighthouse area, April 1962. RANGE: Native of Yucatán (Mexico), naturalized in the West Indies and Florida, introduced into Puerto Rico by the Mayagües Experiment Station in 1902, later into Mona, but without exact date.

Pursera tuberosa (Mill.) Ait. – Listed by Britton in 1915 (3) as "in the coastal plain between Sardineria and Uvero, probably introduced from Puerto Rico." Noted by Woodbury at Los Cerezos area, April 1962. Adams (3) records this species as Pursera hemionotus (Jacq.) Urban, but further studies are made the former name of P. tuberosa should be kept. RANGE: Puerto Rico, Culebra, Vieques, St. Thomas, St. Croix; Tortola, Anegada, Hispaniola to Grenada; Jamaica.

ORNITHODRACAE

Domínguez haemorrhoba (Bebb.) Carrión Domínguez hemnodos (Bebb.) Schltr. – Listed by Britton in 1915 (3) on small trees between Sardineria and Uvero, collected by N. L. Britton, F. Cowell and W. E. Hess, February 20–26, 1914; Los Cerezos, March 3, 1944, Chardon and Otero 849; again at the same locality, Chardon, Otero, and Gregory 1877. Noted by Woodbury on trees at Uvero trail, April 1962; at Sardineria, Fereguez, Woodbury, Martorell and García M-46. RANGE: Mona, Hispaniola and Cuba.


* Vanilla barbellata Reich.f. – Noted by Woodbury on plateau and at Los Cerezos, rare, local, June 1974. RANGE: Puerto Rico, Bahamas, Cuba, Florida and other places in the West Indies.

CYPERACEAE

Cyperus elegans L. – Listed by Britton in 1915 (3) as "in border of marsh in coastal plain." In lighthouse area, February 22–24, 1968, Woodbury, Martorell and García M-41. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies south to St. Lucia; Florida and continental tropical America.

Cyperus liguilaris L. – Listed by Britton in 1915 (3) as "on marsh at Sardineria," and "on coast May 23 and July 20, 1944, Chardon and Otero 858, 887. Also listed by González-Más (13) in 1964 from material collected in March 1964 from material collected by Britton, Cowell and Hess at Sardineria, February 21–26, 1914. RANGE: Puerto Rico, 8 U.S. Virgin Islands; Vieques, St. Thomas, St. Croix; Hispaniola, Bahamas and Cuba.

* Fimbriatyllestis costanza (Michx.) Vahl – F. spadicea (L.) Vahl. – On margin of mangrove pool at Sardineria, Feb. 22–24, 1968, Woodbury, Martorell and García M-45. RANGE: Puerto Rico, St. Thomas, St. Croix; Guanica, Martínique, Grenada, Trinidad; Greater Antilles and continental tropical America.

Fimbriatyllestis cymosa R. Br. – F. spathacea Roth. – Listed by Britton in 1915 (3) as "on the coastal plain." On the coastal plain, Sardineria, March 5, 1944, Chardon and Otero 840. Listed by González-Más (13) in 1964 from material collected in Mona by Stevens in 1944 and by Chardon and Otero in 1944. On margin of mangrove pool at Sardineria, February 22–24, 1968, Woodbury, Martorell and García M-64. RANGE: Puerto Rico, Greater Antilles; St. Kitts, Antigua, Guanica, Bahamas; continental tropical America and Old World tropics.


Scleria lithosperma (L.) Sw. – Listed by Britton in 1915 (3) as "frequent on the coastal plain and plateau." Noted by Woodbury at Los Cerezos, April 1962. Recorded by González-Más (13) at Mona, but not giving any other details. RANGE: Puerto Rico, Puerto Rico, U.S. Virgin Islands, Vieques, St. Thomas, St. Croix; Virgin Gorda, West Indies, Florida, continental tropical America and Old World tropics.

GRAMINEAE (POACEAE)

Aristida adscensionis L. A. bromoides Kunth.– Listed by Britton in 1915 (3) as "common on the coastal plain." Recorded by Hitchcock (14) at Mona Island, Hes 452. On the plateau, trail to Gato Cave and on trail to Cerecos, March 3 and July 20, 1944, Chardon and Otero 818, 819; on plateau east of Uvero, February 1968, Woodbury, Martorell and García M-10. The grass is common at Sardineria, along the Uvero trail; on the plateau and at the west end of the island. RANGE: Puerto Rico, Culebra, U.S. Virgin Islands; Antigua, Montserrat, Guadeloupe, Martinique, Senauro, Curacoa, Ascension; Hispaniola, Jamaica, Bahamas, southern United States, Mexico and continental tropical America.

Cenchrus echinatus L. – Listed by Britton in 1915 (3) as "common on the coastal plain and sand dunes." At Playa de Pajaros, March, the coastal plain, sandy area, May 23 and July 20, 1944, Chardon and Otero 858, 887. Noted by Woodbury, Martorell and García at Sardineria, rare, February 1968. RANGE: Puerto Rico, Culebra, Culebra, U.S. Virgin Islands, Culebra, Vieques, U.S. Virgin Islands; Borinquen, Puerto Rico, U.S. Virgin Islands, Cuba, southern United States, West Indies, Bermuda, continental tropical America and Old World tropics.


Cenchrus myurosoides Kunth. – Listed by Britton in 1915 (3) as "frequent in cultivated grounds at the coastal plain." Recorded by Hitchcock (14) at Mona Island, Hes 441. At Playa de Pajaros, March 4, 1944, Chardon and Otero 831; at Sardineria, May 15, 1947, Chardon, Otero and González-Más 1904; at the lighthouse area, February 22–24, 1968, Woodbury, Martorell and García M-
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* **Leptochloa virgata (Poir.) Yates** Uniola virgata (Poir.) Griebe. – Noted by Woodbury at Sardinera, April 1962; on the plateau, February 22–24, 1968, Woodbury, Martorell and Garcia M-225. RANGE: Puerto Rico, Descheo, Vieques, St. Thomas, Little St. James Island; Saba, Bahamas and continental tropical America.

* **Oplismenus hirtellus (L.) Beauv.** At Leo Cervos, June 1–4, 1972, local, rare, Woodbury, Martorell and Garcia M-257. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies, southern United States, Bermuda, from Mexico to Argentina, warm parts of Africa.


* **Paspalum setaceum Willd.** P. barbicornum Trin. – Listed by Britton in 1915 (5) as "in the most moist coastal plain, local, April 1962. RANGE: Puerto Rico, Culebra, Vieques, St. Croix, Tortola, West Indies, Bermuda, southern United States and continental tropical America. A native of South America.


* **Paspalum baltidgalli Champ.** P. simpsonii Nash – Listed by Britton in 1915 (5) as "collected from Uvero to find it near by." At Sardinera, March 1, 1944, Charond and Otero 855, 860; noted by Woodbury in the plateau, local, April 1962. RANGE: Puerto Rico, Greater Antilles, Florida, Bahamas, Mexico and Honduras.

* **Paspalum capessipes Fluegge** Noted by Woodbury at Sardinera, April 15–17, 1962; in same general area, December 11–16, 1971. Woodbury, Martorell and Garcia M-103, M-247. RANGE: Puerto Rico, St. Thomas (ex Krebe); Bahamas, Greater Antilles, southern Florida.


* **Paspalum molle Poir.** P. portiiierei Nash – At Sardinera, May 17, 1944, Charond, Otero and Gonzalez-Mas 1925. Noted by the authors at Sardinera and plateau; also in transect from Uvero to light house, February 22–24, 1968. RANGE: Puerto Rico, Bahamas (Crooked Island). This
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last record according to Hitchcock, in Britton and Millspaugh (4).

**Papazum rupestris** Trin.


**Papazum saugueti** Chase

*P. poeiri* R. & S.—On the plateau, rare, December 11-12, 1972, Woodbury M-240. RANG: Puerto Rico, St. Thomas (ex Krebe), Bahamas and Greater Antilles.

**Papazum vaginatum** Sw.

Listed by Britton in 1933 (5). Recorded by Hitchcock from Mona Island in 1936 (14) Hess 439. At Sardineria, February 22-24, 1968. Woodbury, Marterell and Garcia M-193. This species is consided by Adams (2) as a synonym of P. distichum L., but according to Hitchcock 1935 (10) both species are different. In P. distichum the second glume is pubescent and the spikelets are relatively turgid, while in P. vaginatum the second glume and the sterile lemma are glabrous and the spikelets are flattened. RANG: Puerto Rico, Vie- quèse, Culebra, Tortola, Virgin Islands, and Southern United States and continental tropical America.

**Pennisetum ciliare** (L.) Link


**Rhynchosylrnum repens** (Willd.) C. E. Hubbard

-Tricholaena repens* Nees—Sardineria, near airfield, July 20, 1944, Charónd and Otero 824; noted by Woodbury, April 15-17, 1965; at the lighthouse area, February 22-24, 1968. Woodbury, Marterell and Garcia M-148. RANG: Introd. by the Insular Experiment Station at Rio Piedras in 1922, now naturalized in many areas of Puerto Rico and nearby islands including Deschee. Native to tropical Africa. This grass has been confused at times with its allied species Rhyncho- sylrnum ruseum (Nees) Starp. and Hubbard, also native of Africa.

**Setaria geniculata** (Lam.) Beauv.

-Chochoetah geniculata (Lam.) Miles & Chase. Sardineria, March 5, 1944, Charónd and Otero 824; noted by Woodbury, April 15-17, 1965; at the lighthouse area, February 22-24, 1968. Woodbury, Marterell and Garcia M-148. RANG: Introduced by the Insular Experiment Station at Rio Piedras in 1922, now naturalized in many areas of Puerto Rico and nearby islands including Deschee. Native to tropical Africa. This grass has been confused at times with its allied species Rhynchosylrnum ruseum (Nees) Starp. and Hubbard, also native of Africa.

**Sporobolus domingensis** (Trin.) Kunth


**Sporobolus pyramidatus** (Lam.) Hitchc.

*Sp. circa* (Lam.) Hitchc. & Chase—Coastal plain, Sardineria, March 5, 1944, Charónd and Otero 821; noted by Woodbury at Sardineria and along the Uvero trail, April 16, 1962; Sardineria, February 22-24, 1968. Woodbury, Mar- terell and Garcia M-131. RANG: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, West Indies, southeast United States south through Mexico and Paraguay. After scrutinizing Dr. Alain H. Loger on the synonymy of this species he said: “Further studies and publications indicate that S. indicae includes S. poeiri and S. bertonovus. However, S. jaacjuemontii Kunth is the new name for Sporobolus indicae of Hitchcock and other authors, not of indica (L.) R. Br.”

**Sporobolus pyramidatus** (Lam.) Hitchc.


**Sporobolus virginicus** (L.) Kunth

Listed by Britton in 1915 (3) as “common in coastal sands and on the coastal plain,” although with incorrect botanical citation, as: S. sigvins (L.) Beauv, Sardineria, May 25 and July 19, 1944, Charónd and Otero 821, 822; February 22-24, 1968. Woodbury, Mar- terell and Garcia M-132. RANG: Puerto Rico, Descheo, Vieques, U.S. Virgin Islands; all tropical shores, saline soils along the coast, eastern and southern United States, West Indies, Bermuda and continental tropical America.

**Trichchene insularis** (L.) Nuss

-Volux insularis (L.) Chase, Digitaria insularis (L.) Mez ex Ekman—Listed by Britton in 1915 (3) as “common on the coastal plain and on the plateau.” Los Cerezos, March 5, 1944, Charónd and Otero 821; uncommon in the coastal plain from Sardineria to Uvero, February 22-24, 1968 as observed by the authors. **Olm: I guana Island, June 19-20, 1973, frequent, Woodbury M-36. RANG: Puerto Rico, Descheo, Vieques, U.S. Virgin Islands; Tortola, West Indies, Bermuda, continental tropical America; introduced into the Pacific islands.

**Class Dicotyledones**

Subclass Polypeetales

**Casuarinaceae**

Casuarina equisetifolia L.

Listed by Little in 1965 (16) saying: “The plantation of this species totaling 200 acres made by the Civilian Conservations Corps between 1937 and 1939 now contain the tallest trees on the island, up to 95 feet high and 16 inches in diameter. Not spreading from cultivation. (Introduced).” Noted in all the trips made by the authors to Mona since 1962 up to 1974. RANG: Native of tropical Asia and Australia, naturalized in the West Indes and elsewhere.

**Pipecaceae**

Peperomia humilis (Vahl) A. Diet.


**Ulmaceae**

Celtis trinervia Lam.


**Moraceae**

Artocarps altillis (Parkinson) Fosberg

A commanis Forst.—Listed by Little in 1955 (18) as “three planted trees noted at Sardiri- nera. (Introduced).” Also noted by Woodbury at base of cliffs, Sardineria, April 1962. RANG: Native to the South Pacific islands, introduced into Jamaica in 1790, and from there spread through the Antilles and other places in tropical America.

Chlorophora tinctoria Gaud.

Sardineria, March 7 and May 24, 1944, Char-
Plea margarettae Britton
Listed by Britton and Wilson in January 1924 (5) as a new species from Mona Island. At foot of limestone plateau, Sardinera, March 3, 1944, Chardon and Otero 865; by Woodbury, Cartegena and Garcia M-24; at base of cliffs, Chardon and Otero 865. Also noted by Woodbury at Los Cerros in April 1924. Listed by Little in 1925 (18). Some of the specimens show about 60 feet high and 14 inches in trunk diameter as noted by Woodbury in 1974. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; throughout the Lesser Antilles to Barbados and Trinidad, Bonaire and Curacao; from Mexico to southern Brazil, Bolivia, Peru and Argentina.

Pleia cistifolia F. Mill.

Pleia stebelii Wurb.
Pleia trigona L., F. crassimorpha Desf.—These two names have been used by other authors to synonymize F. stebelii but stebelii is a valid species by itself. Listed by Britton in 1915 (3) as "frequent along the bases of cliffs, eastern edge of the coastal plain. Trees up to 12 meters high. Determined from foliage only." At Sardinera, coastal plain, July 19, 1944 and March 2, 1944, Chardon and Otero 852. Listed by Little in 1955 (16) as frequent at base of cliffs in Sardinera. In the coastal plain, February 22-24, 1968 and June 1-4, 1973 Woodbury, Cartegena and Garcia M-62, M-189, M-298. Common at base of cliffs, large tree, in 1974 about 20 meters high. RANGE: Endemic, only known from Puerto Rico and Mona Island.

UTTICACEAE

* Plea hermannoioides (Sw.) Lindl.
In the Baja de los Cerezos, June 1-4, 1972, rare, Puerta de Tyuste: Puerto Rico, St. Croix; Virgin Gorda, Guadeloupe, Martinique, Greater Antilles and Costa Rica.

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Pleia microphylla (L.) Liebm.
Pleia microphylla (L.) Liebm. P. triaenomphides (L.) Lindl.—Listed by Britton in 1915 (3) as "frequent on coastal plain; occasional on the plateau." At Playa de Pajaro, March 4, 1944, Chardon and Otero 861; limestone plateau, from Uvero to Los Cerros, Chardon and Otero 860; July 21, 1944; at the lighthouse area, February 22-24, 1968, Woodbury, Cartegena and Garcia M-111. RANGE: Eastern Puerto Rico, Mona Island and tropical America. Until further studies are made on this genus, the authors are maintaining the original names listed by Britton and Wilson (5).

* Pleia tenermera Miquel
Common on the plateau near Uvero area as noted by Woodbury in April 1942; later collected in the same locality, February 22-24, 1968, Woodbury, Cartegena and Garcia M-112.

POLYGONACEAE

Cocosoloba diversifolia Jacq.

Cocosoloba krujii Lindau
Listed by Little in 1893 (18) from Mona as rare. RANGE: Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix, Little St. James Island, St. John; Anegada, St. Martin, Barbuda; Bahamas, Jamaica and Hispaniola. A hybrid of this species designated as C. krujii x uvifera is mentioned by Little 1974 (18).

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Cocosoloba microstachya Willd.
C. obtusifolia Jacq.—This last name is not a true Cocosolaba microstachya, but a misnomer, since C. obtusifolia occurs in Colombia and Venezuela and is not present in Puerto Rico. Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Los Cereos, March 3, 1944, Chardon and Otero 865. Recorded by Little in 1955 (16) also as C. obtusifolia. Noted by Woodbury on plateau, April 1962. RANGE: Puerto Rico, Muertos Island, Palomino, Vieques, Culebra, U.S. Virgin Islands; Jost Van Dyke, Tortola, Virgin Gorda, Anguilla and Hispaniola.

Cocosoloba uvifera (L.) L.
Cocosoloba uvifera (L.) Jacq.—Listed by Britton in 1915 (3) as "common on coastal sands and along beach." At Uvero, March 2, 1944, Chardon and Otero 867. Recorded by Little in 1955 (16) at sandy beaches, Playa de Pajaro and somewhere coastal plain. Noted by the authors as very common along the coast from Sardinera to Uvero and at Playa de Pajaro, April 1962 and February 22-24, 1968. RANGE: Puerto Rico, Deschesse, Icaos, Palomino, Culebra, Vieques, U.S. Virgin Islands; Jost Van Dyke, Virgin Gorda, Anegada; from southern Florida and Bermuda through the West Indies from Cuba, Bahamas south to Trinidad, Tobago, Curacao and Aruba; from northern Mexico to Colombia, Venezuela and the Guianas.

Cocosoloba venosa L.
Cocosoloba venosa L.—Listed by Britton in 1915 (3) as "at base of cliff, Sardinera." In coastal plain at foot of plateau, March 1, 1944, Chardon and Otero 862; by Woodbury, Cartegena and Garcia M-29; common on the coastal plain, plateau and trail to Bajaja de los Ceros. RANGE: Puerto Rico, Vieques, St. Croix, Lesser Antilles, Greater Antilles, Bahamas and Florida.

Cocosoloba krujii Lindau
Listed by Little in 1893 (18) from Mona as rare. RANGE: Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix, Little St. James Island, St. John; Anegada, St. Martin, Barbuda; Bahamas, Jamaica and Hispaniola. A hybrid of this species designated as C. krujii x uvifera is mentioned by Little 1974 (18).
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Florida, from Texas to Argentina; naturalized in tropical Asia.

Trichostigma octandrum (L.) J. Walter

Listed by Britton in 1915 (3) as "in the light house area, February 22-24, 1968, Woodbury, Martorell and Garcia M-225, uncommon. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola; from Cuba to Trinidad; South America. Native of tropical Asia.

Portulaca rubricaulis Kunth

Portulaca phaeophorae Urban—Listed by Britton in 1915 (3) "most soil, coastal plain and plateau." Sardineria, March 11, 1944, Chardon and Otero 889; noted by Woodbury in light house area and plateau, April 1965. RANGE: Puerto Rico, St. Thomas, St. Croix; Virgin Gorda, Greater Antilles, Curaçao, Bahamas and Florida.

Portulaca teretifolia Kunth


Talinum paniculatum (Jacq.) Gaertn.

Listed by Britton in 1915 (3) in the "coastal plain, Sardineria." At Sardineria and Uvero, May 2 and July 12, 1944. RANGE: Puerto Rico, Uvero; noted by Woodbury on the plateau, rare, April 15-17, 1962. MONITO ISLAND: June 6, 1969, frequent, Kepler Mt. 11: June 19-20, 1973, Woodbury et al. Mt.16. RANGE: Puerto Rico, Descheo, Vieques, U.S. Virgin Islands; Virgin Gorda, Tortola, West Indies (Cuba to Margarita); southern United States and continental tropical America.

Adoceae

Cypselia humifusa Turp.

In depressions at Los Cerezos, very rare, June 1-4, 1972. Woodbury M-321, RANGE: St. Thomas, Water Island; Anegada, Guadeloupe, Margarita, Hispaniola, Cuba, southern Florida and California.

Seavium portulacastum L.


Trianthema portulacastum

Noted by Woodbury in lighthouse area, April 1962; Sardineria and lighthouse area, rare, Weedy, February 22-24, 1968. RANGE: Puerto Rico, St. Thomas, St. Croix; through the Antillean chain from Cuba to Trinidad, southeastern United States, Mexico to South America.
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Thomas, St. Croix; Tortola, Jamaica; from Cuba to Trinidad, Margarita, Bonaire, Curaçao and Aruba, continental tropical America and Old World tropics.

CACTACEAE

† Harrisia portoricensis Britton
Cereus portoricensis (Britton) Urban—Listed by Britton in 1915 (3)。“common on the talus and on the plateau.” Listed by Little in 1925 (16) at the eastern part of plateau and Playa de Pájaros, becoming 35 feet high; noted by the authors on the plateau, April 1962 and February 22–24, 1968. MONITO ISLAND: noted by Woodbury et al., June 19–20, 1973, common in this locality. RANGE: Puerto Rico (although not collected by modern botanists) and Mona; endemic.

† Hylocereus trigonus (Haw.) Safford
Noted by the authors at Sardineras and on the cliffs, uncommon, April 1962 and February 22–24, 1968. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Florida, Virgin Gorda, St. Martin, Saba, St. Eustatius, Hispaniola.

† Mammillaria nivosa Link
Coryphantha nivosa (Link) Britton, Neo-mammillaria nivosa (Link) Britton & Rose—Listed by Britton in 1915 (3) as “very abundant on the plateau.” Common along the lighthouse trail from Uvero east, April 1962 and February 1968 as noted by the authors. MONITO ISLAND: noted by Woodbury June 19–20, 1973, local. RANGE: Culebra, Buck Island and Flat Cay, St. Thomas, St. John, Little St. James Island, Tortola, Bahamas and Antigua. Not known from Puerto Rico.

Melocactus intortus (Mill.) Urban
Cactus intortus Mill.—Listed by Britton in 1915 (3) as “locally common on the plateau.” Scattered along the lighthouse trail area to Playa de Pájaros as noted by the authors, April 1962 and February 1968. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, from St. Martin to Antigua Islands.

† Opuntia antillana Britton & Rose
Noted by Woodbury in sinks at the plateau and at the coastal plain, very rare, June 1–4, 1972. RANGE: Puerto Rico, St. Thomas, St. Croix, St. Kitts, Hispaniola.

† Opuntia dillenii (Ker-Gawl.) Haw.
Listed by Britton in 1915 (3) as “common on the coastal plain and on the plateau.” Noted at Sardineras and plateau, very common, plants attacked by the cactus moth, Cactoblastis cactorum (Berg), April 1962 and February 22–24, 1968. MONITO ISLAND, common, noted by Woodbury, June 19–20, 1973. RANGE: Puerto Rico, Deschee, Icacos, Vieques, U.S. Virgin Islands; West Indies, Bermuda, Florida; eastern coasts of Mexico and northern South America.

Opuntia moniliformis (L.) Haw.

† Opuntia repens Bell
Incorrectly listed by Britton in 1915 (3) as O. taylori Britton, which is a Dominican Republic species not present within the limits of our flora. The correct citation of the name was given later by Britton and Wilson in 1924 (5). On plateau, trail to Gato Cave, July 20, 1944. Chardón and Otero 1902: common on plateau; abundant along lighthouse trail from Uvero east, as noted by the authors, April 1962 and February 22–24, 1968. MONITO ISLAND: noted by Woodbury, common, June 19–20, 1973. RANGE: Puerto Rico, Deschee, Muertos Island, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda. An endemic species to this particular area.

† Opuntia rubescens Salm-Dyck
O. cactantha Link & Otto, Cocoles rubescens (Salm-Dyck) Lemaire—On plateau, trail to Los Cerezos, March 3, 1944. Chardón and Otero 1903: Recorded by Little at Mona (7) in 1965 and 1964 (16, 17) saying: “Though referred by Britton to this species, the plants at Mona resemble O. moniliformis (L.) Haw. [Cocoles moniliformis (L.) Britton], a closely related species of Hispaniola and Deschee, which has numerous areoles on the joints.” Common everywhere on the plateau and at Sardineras as noted by the authors in April 1962 and February 22–24, 1968. RANGE: Puerto Rico, Icacos, Vieques, Culebra, U.S. Virgin Islands; Tortola, from St. Martin to Guadeloupe. MONITO ISLAND, common, as noted by Woodbury, June 19–20, 1973.

Pilosocereus royanii (L.) Byles & Rowley
Cephalocereus royanii (L.) Britton & Rose—Listed by Britton in 1915 (3) as “common on the plateau.” On trail to Gato Cave, May 25, 1944. Chardón and Otero 1901: Listed by Little in 1955 (16) as common at east end of plateau, columnar cactus trees becoming 5 m high. Noted by the authors mostly around the lighthouse area and cliffs on the plateau, April 1962 and February 1968 (Fig. 4). RANGE: Puerto Rico, Deschee, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, St. John, Van Dyke, St. Kitts and Antigua.

Stenocereus hystrix (Haw.) Buxb.
Lemansocereus hystrix (Haw.) Britton & Rose, Cereus hystrix Haw.—Listed at Mona by Little in 1965 (16) and noted by Woodbury at Sardineras, April 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, southern Florida, south to the Bahamas, the Greater Antilles to Grenada and Tobago; Mexico (Yucatán), British Honduras and Guatemala.

ANNONACEAE

† Annona reticulata L.
Trees planted at Sardineras, cultivated, introduced, noted by Woodbury, June 1–4, 1972.

RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies, widely cultivated for its fruit in the tropics.

LAURACEAE

Nectandra coriacea (Sw.) Griseb.
Listed by Britton in 1915 (3) in the “base of limestone cliff, Sardineras.” On coastal plain at foot of cliff, July 19, 1944, Chardón and Otero 891. Listed by Little in 1965 (16) and noted by Woodbury at Sardineras, April 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, southern Florida, south to the Bahamas, the Greater Antilles to Grenada and Tobago; Mexico (Yucatán), British Honduras and Guatemala.

Cassuya filiformis L.
Cassuya americana Nees—Listed by Britton in 1915 (3) as “frequent on coastal plain.” At Playa de Pájaros, March 4, 1944, Chardón and Otero 892. Abundant, noted by Woodbury along lighthouse trail, April 1962.

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Fig. 4.—Patches of columnar cacti, Pilosocereus royanii are a very common sight on the plateau in Mona Island.
RANGE: Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix; cosmopolitan in the tropics.

CANELLACEAE


GUTTIFERAE


PAPAVERACEAE

Argemone mexicana L. At Sardineria, April 5, 1944, J. A. Ramos 503. Noted by Woodbury at Sardineria, April 15–17, 1962. RANGE: Puerto Rico, Icacos, Vieques; Virgin Gorda, West Indies, Bermuda, southern United States and continental tropical America; naturalized in the Old World tropics.

CAPRIFOLIACEAE


† Capparis flexuosa (L.) L. Listed by Britton in 1915 (3) as "common on the coastal plain." At foot of limestone plateau, Sardineria, March 2, 1944, Chardon and Otero 896. Recorded by Little in 1956 (16). Noted by Woodbury at Sardineria, widespread, fairly common, April 1962. MONITO ISLAND, June 6, 1969, Kepler Mt. 3; recorded by Woodbury et al. Mt. 19–39, as abundant, June 19–20, 1975. RANGE: Puerto Rico. Descheo, Puerto Rico; Icacos, Vieques, U.S. Virgin Islands; Tortola, West Indies, continental North America; from where it is native.

CRASSULACEAE

† Bryophyllum pinnatum (Lam.) Oken Above Gato Cave on the plateau, March 9, 1944, Otero 909. An introduced species, noted at Sardineria, around homes, common April 1962; not collected. RANGE: Native to Madagascar, now naturalized in many areas of the world: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Anegada, the West Indies, Bahamas, Florida, continental tropical America and Old World tropics.

LEGUMINOSAE-CASCAVILACEAE

Caesalpinia bondole (L.) Roth. Guadalina cristata (L.) Small; Casapia cristata L. — Listed by Britton in 1915 (3) as "occasional on coastal thicket." Sardineria, May 17, 1944, Chardon and Otero 1009. Noted by Woodbury at Sardineria and along the light house trail from Playa de Pajaros, April 1962. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies, Bermuda, Florida, continental tropical America and Old World tropics.


Caesalpinia monensis Britton Tentatively listed by Britton in 1915 (3) as "domingenera Urban, but later described by him as the new species, C. monensis." At Sardineria on the coastal plain at foot of cliffs, March 7 and May 26, 1944, Chardon and Otero 908, 909; on trail to Gato Cave on the plateau, July 30, 1944, Chardon and Otero 907. Noted by Woodbury on plateau, April 1962; on the central sinks reaching tree size of 3 inches trunk diameter and 15 feet in height. RANGE: Found only in Mona and the Bahamas.


Cassia diffusa DC. Chamaerota diffusa DC., Chamaerota (L.) Britton — Listed by Britton in 1915 (3) as "collected by Prof. Stevens, not found by us." Noted at Sardineria by Woodbury, April 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies south to Grenada, Margarita and Curaçao.

Cassia graminica Spreng. Chamaerota graminica (Spreng.) Pollard — Listed at Sardineria by Woodbury, April 1962. RANGE: Puerto Rico, Vieques, Little St. James Island (St. Thomas); Cuba and Hispaniola.


Cassia obtusifolia (L.) Epling Emelisseta toru (L.) Britton & Rose — Noted by Woodbury at Sardineria and Uvero, weedy, rare, April 1962. RANGE: Puerto Rico, Vieques, St. Thomas, St. Croix; Tortola, West Indies, southeastern United States, continental tropical America and Old World tropics.

† Delonix regia (Boj. ex Hook.f.) Britton At Uvero, May 24, 1944, Chardon and Otero 906. Listed by Little in 1956 (16) as "four trees planted beside old house at Uvero 20 feet high at 6–10 inches d.b.h., and no seedlings." Noted by Woodbury in April 1962 and later by the writers, February 22–24, 1968 at Uvero.
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LEPIOLUMINACEAE


Desmodium procumbens (Mill.) DC. *Desmodium procumbens* (Miller) Britton. - On the Uvero area, February 22-24, 1947, Woodbury, Martorell and Garcia M-417; again on June 1-4, 1972, Woodbury, Puerto Rico. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; from Cuba and Jamaica to Martinique, Trini-
dad, Carúpano, continental tropical America and Old World tropics.

*Desmodium triflorum* (L.) DC. *Sagittaria triflora* (L.) Schult. & W. - *Nymphoides* species at Uvero. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; from Cuba and Jamaica to Martinique, Trinidad, Carúpano, continental tropical America and Old World tropics.


* *
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Greater Antilles, Martinique, Tobago, Trinidad and northern South America.

Indigofera suffruticosa Mill.
Listed by Britton in 1915 (3) as "cultivated ground, coastal plain." Uvero, March 2, 1944, Chardon and Otero 915. Noted at Sardinera on the coastal plain, February 22-24, 1968, Woodbury, Martorell and Garcia M-338. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguilla, the West Indies south to Barbados and Grenada; Florida and from Guatemala to Colombia.

* Tephrosia cuneifolia (L.) DC. var. globosa Benth. – Listed by Britton in 1896 (10) as "cultivated ground, Uvero." Commonly 1-2 ft. tall, with thick leaves, strongly veined; not found either in Puerto Rico or in Florida, the determination therefore uncertain." Later in 1924 (5) the specimens were finally determined as Dolicholobium minima and recorded from Mona and other localities in Puerto Rico. At Sardinera, in and out of the fields, near the village, on the coast, December 12-13, 1971, Woodbury M-248. MONITO ISLAND, rare, June 19-20, 1973, Woodbury et al. M-230. RANGE: Puerto Rico, Deserche, Muertos Island, Isocas, Vieques, U.S. Virgin Islands; West Indies and continental tropical America.

* Tephrosia senna Kunth
Crucaceae senna (Sessé & Moc.) Britton & Millsp. – Noted by Woodbury, April 10-17, 1968; also by the writers, at Sardinera, local, uncommon. Puerto Rico, 1943-44, Chardon and Otero 927. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguilla, the West Indies south to Barbados and Tortola Jamaica.

* Vigna luteola (Jacq.) Benth.

Stylosanthes hamata (L.) Tautier
Listed by Britton in 1915 (3) as "frequent on the coastal plain." On hill along the road from Playa de Pájaros, March 1-3, 1944, Chardon and Otero 917. Very common everywhere in Mona Island, along the lighthouse trail from Uvero, February 22-24, 1968, Woodbury, Martorell and Garcia M-335; on plateau, December 11-12, 1971, same collectors M-250. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguilla, the West Indies south to Barbados and Grenada; Florida and from Guatemala to Colombia.

* Erthyroxylum rubrifolium Lamarck
E. brevipes DC. – Noted by Woodbury on plateau, April 1962; after long trail from the lighthouse to Uvero by the writers, February 22-24, 1968. RANGE: Puerto Rico, Deserche, Muertos Island, Piñeros, Vieques, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda, the West Indies and continental tropical America.

* Guacium saundersii Mill
Guaciacum saundersii (L.) Benth. – Noted by Woodbury, April 1962; also by the writers, at Sardinera, local, uncommon. Puerto Rico, 1943-44, Chardon and Otero 927. Listed by the writers, February 22-24, 1968. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguilla, the West Indies south to Barbados and Tortola Jamaica.

* Callstroemia pubescens (G. Don) Dandy
K. caribaea Rydberg – On lighthouse area, but also present on Uvero beach on the coastal plain, February 22-24, 1968, Woodbury, Martorell and Garcia M-130, RANGE: Puerto Rico, Culebra, U.S. Virgin Islands; West Indies, Bermuda, southern United States, continental tropical America and Old World tropics and subtropics.

* Tribulus cistoides L.
Noted by Woodbury in Sardinera and Uvero areas, April 1962; from the lighthouse area, February 22-24, 1968, Woodbury, Martorell and Garcia M-144, M-228. A rare species in all localities where collections were made; again from lighthouse area, June 1-4, 1972, Woodbury M-240. RANGE: Naturalized on banks at San Juan, Puerto Rico and vicinity.

* Krameriaceae
Krameria ixica L.

* Erythroxylum aeratolom L.
Along trail to Gato Cave on plateau, July 20, 1961, Woodbury, April 1962; from the lighthouse area, April 1962; on same general area and by same collectors, May 24, 1944, 948. Listed by Little in 1965 (16). At Sardinera and on the plateau, February 22-24, 1968, Woodbury, Martorell, and Garcia M-55, M-199. RANGE: Puerto Rico, St. Thomas (7); Greater Antilles, Bahamas, southern Mexico, Guatemala, El Salvador, British Honduras; recorded from northern South America, probably an error.

* Erythroxylum rotundifolium Linn
E. brevipes DC. – Noted by Woodbury on plateau, April 1962; later along trail from the lighthouse to Uvero by the writers, February 22-24, 1968. RANGE: Puerto Rico, Deserche, Muertos Island, Piñeros, Vieques, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda, the West Indies and continental tropical America.

* Satureja pumilis (Mill.) Benth.

* Cupressus sempervirens (Mill.) Benth.
C. atlantica (Dandy) Britton – Noted by Woodbury, April 1962; also by the writers, February 22-24, 1968. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguilla, the West Indies and continental tropical America.

* Citrus aurantiifolia (L.) Swingle
Swingle – Noted by Woodbury in Sardinera, plated and introduced into Mona Island, February 22-24, 1968. RANGE: Native of southeastern Asia. Widely planted and naturalized in tropical and subtropical regions of the world including Bermuda, Bahamas, the West Indies, southeastern United States and from Mexico to Argentina.

* Cuscuta sinensis Osbeck
Osbeck – Noted by Britton in 1915 (3) at Sardinera, introduced. Noted by the writers at the Forest Ranger's house, February 22-24, 1968. RANGE: Native of China, introduced and planted for its valuable fruit in the tropics and subtropics.

Triphasia trifolia (Burm.f.) P. Wilson
At Sardinera, March 9, 1944, Chardon and Otero 953. Listed by Little in 1965 (16) as "a shrub 10 feet tall." At RANGE: Naturalized on banks at San Juan, Puerto Rico and vicinity.

* Quinca, St. Thomas, St. Croix; Tortola, Virgin Gorda, southeastern United States, West Indies south to Martinique, continental tropical America, southwest Pacific; introduced into Africa and Asia.

* Rutaceae
Amys elegemira L.

* Rutaceae
Gracina, St. Thomas, St. Croix; Tortola, Virgin Gorda, southeastern United States, West Indies south to Martinique, continental tropical America, southwest Pacific; introduced into Africa and Asia.
1962, collected specimens from several trees at the base of cliffs at Sardinera, February 22-24, 1968, Woodbury, Martorell and Garcia M-146. RANGE: Native of the East Indies. Common after cultivation in Puerto Rico and the Virgin Islands, Vieques; Tortola, southern United States; widely naturalized in Central and South America; cultivated as an ornamental and hedge plant.

Zanthoxylum punicatum Vahl
Fagara trifoliata Sw. - Listed by Britton in 1915 (3) on the "coastal plain between Sardi-
nera and Uvero." Along trail from Uvero to Los Cerezos, July 21, 1944, Chardón, Otero and Gregory 990. Noted by the writers on the coastal plain and on the plateau, raw, February 22-24, 1968. RANGE: Puerto Rico, St. Croix; Jamaica, Hispaniola; Lesser Antilles; from St. Martin to Barbados, Trinidad and Venezuela.

SIMAROUBACEAE
Suriana maritima L.

BURESEACEAE
Bursera simaruba (L.) Sarg.
Elathrum simaruba (L.) Row. - Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Los Cabeos on the coastal plain, March 2, 1944, Chardón and Otero 929 and Sardinera, May 22, 1944, Chardón and Otero 935. Listed by Little in 1955 (18) as one of the dominant trees of the plateau and also the coastal plain. Noted by the writers as a very common tree on the island, April 1962 and February 1968. RANGE: Puerto Rico, Mona, Descheo, Puerto Rico, Icacos, Palmolino, Culebra, Vieques, U.S. Virgin Islands; Tortola, Jost Van Dyke, Virgin Gorda, the West Indies south to Trinidad, Tobago, Aruba; Florida; from Mexico to Colombia, Venezuela and the Guianas.

MILLACEAE
Swietenia mahagoni Jacq.
Listed by Wadsworth and Gilmore in 1945 (29) as "three small plots of S. mahagoni,

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Stigmaphylion tomentosum (Desf.) C. B. Clarke
Listed by Woodbury, April 1962 and by Wood-
bury, Martorell and Garcia, February 22-24, 1968 at Sardinera. A similar species is listed by Adams (2), p. 292 as Euphorbia me-
sembravithemifolia Jacq.

Chamaesyce cowellii Millsp.

Chamaesyce hirta L.
At the lighthouse area and on the west coast of Mona Island, February 22-24, 1968, Wood-
bury, Martorell and Garcia M-56. RANGE: Puerto Rico, Descheo, Icacos, Munos Island, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, Tortola, West Indies; Florida, Bermuda, continental tropical America north to Mexico.

Chamaesyce hypericifolia (L.) Millsp.
Listed by Britton in 1915 (3) as "common in cultivated ground on the coastal plain." At Sardinera, May 22, 1944, Chardón and Otero 952; in some general area, March 4, 1944, Chardón and Otero 955. Noted by Woodbury in lighthouse area and Sardinera, April 1962. RANGE: Puerto Rico, Culebra, U.S. Virgin Islands; Tortola, Florida, Bermuda, the West Indies and continental tropical America north to Mexico. This species is listed by Adams (2), p. 430 as Euphorbia glomeri-
fera (Millsp.) L. C. Wheeler.

Chamaesyce hyssopifolia (L.) Small
On the coastal plain near airfield, July 20, 1944, Chardón and Otero 947; on plateau along the lighthouse area, February 22-24, 1968, Woodbury, Martorell and Garcia M-57. RANGE: Puerto Rico, Icacos, Vieques, St. Thomas, St. Croix; the West Indies south to Martinique, Guadeloupe and Grenada; continental tropi-
cal America; naturalized in southern Europe.

Chamaesyce monensis Millsp.
Listed by Britton in 1915 (3) on the "limestone plateaus, Uvero, endemic." Common along the lighthouse trail and in caves north and south of the lighthouse, February 22-24, 1968, Woodbury, Martorell and Garcia M-217; and on June 1-4, 1972, Woodbury M-239. RANGE: Although listed as an endemic spe-
cies by Britton, after further studies the plant has, with reservation, been recorded by

"Malpighiaceae"

Byronima lucida (Sw.) DC.
"Byronima caucana (C. F. van Someren) Wilson. - Listed by Britton in 1915 (3) as "occasional on the coastal plain." In Sardinera, March 3, 1944, Chardón and Otero 929. Listed by Lit-
ques, St. Thomas (according to Candolle), listed by Kreb), Anegada, from Barbuda to Barbados, Florida, Bahamas, Cuba and His-
paniola. Introduced into Jamaica as an ornamental.

Malpighieae
cocciger L.
On the plateau, June 1-4, 1972, uncommon, Woodbury M-256. RANGE: Puerto Rico, St. Thomas; Martinique, St. Lucia; Cuba and Hispaniola; introduced into Jamaica as an ornamental.

Malpighia setosa Spreng.

Malpighia punicea L.
Planted at Sardinera as noted by Woodbury in 1974. RANGE: West Indian Islands and northern South America.

Stigmaphylion periplomelophium (Desf.) Juss. S. loutanum (Poir.) Small - Listed by Brit-
ton in 1915 (3) as "common or the coastal plain and on the plateau." On the plateau, trail to Los Cerezos, March 3, 1944, Chardón and Otero 955. Common all over Sardinera as noted by Woodbury, April 1962. At Sardi-
nera, February 22-24, 1968, Woodbury, Mar-
torell and Garcia M-133. MONITO ISLAND:
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Chamiseya serpens (Kunth) Small

Listed by Britton in 1915 (3): in "moist soil, coastal plain and plateaux." On coastal plain near airfield, July 20, 1944, Chardon, Otero and Gregory 960. Noted by Woodbury on plateau, common, April 1942. On trail to light house in soil among rocks. February 22-24, 1968, Woodbury, Martorell and Garcia M-60. RANGE: Puerto Rico, Iscaos, St. Thomas, St. Croix; Antigua, Guadeloupe, Martinique, Grenada, Barbados, Jamaica, Hispaniola; widely distributed in continental tropical America; also at Sierra Leone, southern Eu-

Chamiseya sp.


Chamiseya turpini (Bois.) Millsp.


Croton betulinus Vahl

Listed by Britton in 1915 (3) as "common on plateau and on the plateau." At Sardineria, July 19, 1944, Chardon, Otero and Gregory 1674. Noted by Woodbury at Sardineria, late March, very common, April 1942; on the plateau south of the lighthouse, February 22-24, 1968, Woodbury, Martorell and Garcia M-135. RANGE: Puerto Rico, Descheo, Muertos Island, Iscaos, Culebra, Vieques, U.S. Virgin Islands; Virgin Gorda, Anegada; from Anguilla to Martinique, and continental tropical America.

Croton discolor Wild.

Listed by Britton in 1915 (3) as "common on the plateau." On the plateau above Uvero, 1968, Woodbury, Martorell and Garcia M-58. RANGE: Puerto Rico, Virgin Islands; Jamaica, the Bahamas, Hispaniola, Guadeloupe, Martinique and Margarita (Venezuela).

Hippomane mancinella L.


Jatropha curcas L.

Curcas curcas (L.) Britton & Millsp. — At Uvero area, May 24, 1944, Chardon and Otero 946. Listed by Little in 1955 (16) as an introduced species planted at Uvero and not reproducing. Noted by the writers at Sardineria and La Bajura de los Cocos, in both areas planted and not reproducing, April 1962 and February 1968. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies, Bermuda and continental tropical America.

Jatropha gossypifoila L.


Jatropha multifida L.

Adenopodium multifidum (L.) Pohl — At Bajura de los Cocos, August 17, 1944, Chardon, Otero and Beaty 1881. Listed by Little in 1960 (19) as Corral de los Indios and Bajura de los Cocos, adding that "a few plants apparently native were found in relatively moist sites in depressions at these two localities in the interior of the plateau, both far from human settlement." Noted by the writers at Bajura de los Cocos, April 1962 and February 1965. Collected by Woodbury M-314, at Los Cocos, June 1-4, 1972. RANGE: Puerto Rico, St. Thomas, St. Croix; West Indies and continental tropical America. Introduced into the Old World.

Pedilanthus tithymaloides var. parasiticus (L.) Dressler

P. latifolia Millsp. & Britton — Originally described from plant specimens collected in Bermuda, Jamaica, Cuba, Dominican Republic and Mona Island, as P. latifolia in 1915 (3), noting: " indigenous to the Santo Domingo locality cited [Sánchez, Santo Domingo, "Rose, Pitch & Russell (1947); at all the others an evident escape from cultivation or in gardens." At the foot of the cliffs, Sardineria, May 17, 1944, Chardon, Otero and Gonzales-Má 190. Noted by the writers at Sardineria, under cultivation, April 1962 and February 1968. RANGE: Puerto Rico, U.S. Virgin Islands; Greater Antilles, Bermuda, Mexico and British Honduras.

Phyllanthus acidus (L.) Skeels

Cissus daigdiana L. — Cultivated at Sardineria in the backyard of houses as noted by the writers, February 22-24, 1968 (Introduced). RANGE: Native of tropical Asia and perhaps also East Indies but extensively introduced and spontaneous naturalized in tropical regions: throughout the West Indies from Bahamas and Cuba to Trinidad, southern Florida, Mexico, Central and South America.

Phyllanthus amarus Schurmann & Thou. — Phyllanthus niruri at Sardineria, not Linnaeus — Listed by Britton in 1915 (3) on "cultivated ground, coastal plain." At Sardineria, May 17, 1947, Chardon, Otero and Gonzales-Má 1918. In the lighthouse area, February 22-24, 1968, Woodbury, Martorell and Garcia M-108; also noted at sardiners, uncommon. RANGE: Puerto Rico, St. Thomas, St. Croix; Tortola, West Indies, Bermuda, continental tropical America and Old World tropics.

Phyllanthus epiphyllanthus L.

Xylopia epiphyllanthus (L.) Britton — Listed by Britton in 1915 (3) as "common on the coastal plain." At Sardineria, March 1, 1944, Chardon and Otero 937. Noted by Woodbury in 1962, along the Uvero trail, on plateau, even on bare rocks on the cliffs, all over Mona. At Sardineria, February 23-24, 1968, Woodbury, Martorell and Garcia M-108. RANGE: Puerto Rico, St. Thomas; Virgin Gorda, West Indies (according to Britton). Not listed from Jamaica by Adams (1912).

Phyllanthus niruri L.

At Sardineria, February 22-24, 1968, Wood-

burry, Martorell and Garcia M-108; in same area, June 1-4, 1972. Woodbury M-295. RANGE: Puerto Rico, St. Thomas, St. Croix;
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Tortola, West Indies, Bermuda, Florida, continental tropical America and Old World tropics.

Phyllanthus pentaphyllus W. ex Griseb. ssp. polycephalus (Urban) Webster
Phyllanthus polycephalus Urban—On the plateau, local, rare, June 1-4, 1972, Woodbury M-965; in same area, July 21, 1944, Oreo Iland, Icosos, Anegada, Cuba and Hispaniola.

Ricinus communis L.
Listed by Britton in 1915 (3) on "waste grounds at Uvero." At Sardinera, March 5, 1944, Chardin and Otero 945. Listed by Little in 1955 (16) "at Sardinera and Uvero, introduced around buildings." Noted by the writers at Sardinera April 1962 and February 1966, uncommon. RANGE: Puerto Rico, Icosos, U.S. Virgin Islands; Tortola, West Indies, Bermuda, southeastern United States, continental tropical Americas and Old World tropics.

Anacardiaceae

Comocladia dodonaeus (L.) Urban
Listed by Britton in 1915 (3) as "frequent on the plateau." On trail to Playa de Pajaros on the plateau, May 4, 1944, West Indies (ex Otero 900; on trail to Gato Cave, May 25, 1944, Chardin and Otero 969. Listed by Little in 1955 (16) (contact) that the nily sap of this tree is poisonous and causes inflammation of the skin upon contact. Noted by the writers at Sardinera and on the plateau, very common, April 1962 and February 1966. RANGE: Puerto Rico, Muertos Island, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda; from Anguilla to St. Vincent and Hispaniola.

Magnifera indica L.
Listed by Britton in 1955 (16) as "a planted tree at Sardinera, rare. [Introduced.]" Noted at Sardinera by the writers in April 1962 and February 1966. RANGE: Native of South Asia, now widely distributed in the tropics and subtropics of both hemispheres; Puerto Rico, U.S. Virgin Islands; West Indies, Florida, continental tropical America and Old World tropics.

Metopium toxiferum (L.) K. & Urban M. ittiang Engl.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Sardinera, October 25, 1940, L. E. Gregory 411; March 2, 1944, Chardin and Otero 901. Listed by Little in 1955 (16) saying that "the poisonous sap is irritating to the skin." Noted by Woodbury in April 1962 as the largest tree of the pla-

tea, common everywhere, even at times may be found on the coastal lowland. RANGE: Puerto Rico, Anguilla (Lesser Antilles), Florida, Bahamas, Cuba and Hispaniola.

Sapindaceae

Cardiopodium cordatum L.
Listed by Britton & Wilson in 1924 (5) from Mona Island although not mentioned in Britton's 1915 guide. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies, Cuba and Hispaniola.

C. microcarpa Kunth—Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." On plateau, near Uvero, March 2, 1944, Chardin and Otero 967. At Sardinera, February 22, 1966, Woodbury, Martorell and Garcia M-19; M-129; at Uvero, June 1-4, 1972, Woodbury M-291. RANGE: Puerto Rico, Vieques, Icosos, St. Thomas (ex Kreea), St. Croix; the West Indies (except Bahamas), continental tropical America and Old World tropics.

Dodonaea viscosa (L.) Jacq. var. arborescens (Hook f.) Sherff
D. ehrenbergii Schil.; D. viscosa var. spathulata (Smith) Benth.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Uvero, October 28, 1940, L. E. Gregory 410; at Rancho Grande, December 30, 1940, F. J. Roque 9. At Sardinera, March 1, 1944, Chardin and Otero 968. Listed by Little in 1955 (16) as "common in Mona." This variety only from Mona and Anguilla. The species viscosa is found in Bermuda, West Indies, southern Florida, southern Arizona, Mexico and south; continental tropical America and the Old World. Noted at Sardinera on the Uvero trail, April 15-17, 1967 by Woodbury; later collected on the same general area but on the plateau, June 1-4, 1972, Woodbury 217. RANGE: The variety arborescens is typical to Mona and Anguilla. The species viscosa proper has a wider range as stated above.

Exothea paniculata (June.) Radlk.

Hypeplayera nitida (L.) L.
Listed by Britton in 1915 (3) as "at the coastal plain near Sardiniera." On the plateau, trail to Los Cerezos, March 5, 1944, Chardin and Otero 970. In same area, July 21, 1944, Greg- ory 969. Listed by Little in 1956 (16) on the coastal plain and at El Corral de los Indios. On trail to El Cerro, February 22-24, 1966, Woodbury, Martorell and Garcia M-79. RANGE: Puerto Rico, Icosos, St. Martin and Anguilla; Greater Antilles, Bahamas, Cayman Islands and southern Florida.

Melicoccus bijugatus Jacq.

Celastraceae

Cossypetum rhacoma Cronan
Rhanvox cossypetum L.—Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau." On limestone platea near Uvero, February 20-26, 1914, Brit- ton, Coxe and Hess 1842. Sardinera, March 1, 1944, Chardin and Otero 968; same area, March 5, 1944, Chardin and Otero 962; same area, March 5-6, 1944, Chardin and Otero 966. Listed by Little in 1955 (16) as "incunmum on the plateau and coastal plain." Noted by Woodbury at Sardinera and plateau, widespread, common, April 1962. RANGE: Puerto Rico, Muertos Island, Icosos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguilla; Greater and Lesser Antilles south to St. Vincent, Bahamas, Florida, Mexico, Guatemala and Venezuela.

Krugiodendron ferreum (Vahl) Urban
Listed by Britton in 1915 (3) as "occasional on the coastal plain." On trail to Gato Cave on the plateau, July 20, 1944, L. E. Gregory 985; 965. Listed by Little in 1955 (16). Noted by Woodbury at Sardinera and from Uvero to Playa de Pajaros on the plateau. RANGE: Puerto Rico, Icosos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda; West Indies south to Guiana and Brazil.

Bignoniaceae

Colubrina arborescens (Mill.) Sarg.
C. colubrina (Jacq.) Millsp.—Listed by Brit- ton in 1915 (3) as "occasional along the base of cliffs, coastal plain." At Sardinera, March 1 and May 25, 1944, Chardin and Otero 978; 977. Listed by Little in 1955 (16). Noted by Woodbury at Sardinera, common, April 1962. RANGE: Puerto Rico, Muertos Island, Icosos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguilla; through the West Indies to Antigua and Barbados, southern Florida, Bahamas, southern Mexico, Guatemala, Honduras. Introduced into El Salvador.

* Colubrina elliptica (Sw.) Briz. & Stearn

Reynosia uncinata Urban
Listed by Britton in 1915 (3) as "frequent on the plateau." On trail to Gato Cave on the plateau, February 20-26, 1914, Britton, Couell and
TILIAEAE

Corchorus hirsutus L.  
RANGE: Puerto Rico in 1915 (3) as "common on the coastal plain and on the plateau." Sardineria, March 1, 1944, Chardon and Otero 981; along trail to Bajura de los Cerezos, March 3, 1944, Chardon and Otero 982. Common and widespread at Sardineria, February 22-24, 1968, Woodbury, Martorell and Garcia M-235. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguana, St. Martin, West Indies, Mexico to South America and northeastern tropical Africa.

Corchorus siliquosus L.  

MALVACEAE

Abutilon americana (L.) Sweet  

MALVACEAE

Abutilon umbellatum (L.) Sweet  
RANGE: Puerto Rico, Lesser Antilles, Cuba, Jamaica, Hispaniola and Mexico. Not recorded in Puerto Rico.

Herasanthia crispa (L.) Briz.  
Abutilon crispa (L.) K. Schumacher—St. Mark's Island, April 15-17, 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Anguana, St. Martin, West Indies, Mexico to tropical America. And the Old World tropics.

HIBISCUS TILICACEUS

Parisha tilicasea (L.) H. St. Hill.; Paritius tilicasea (L.) Chinn.—Listed by Britton in 1915 (3) at "the border of a swamp," Sardineria. March 5, 1944, Chardon and Otero 991. RANGE: Puerto Rico, Vieques, St. Thomas, Virgin Gorda, Anguana, Greater Antilles south to Martinique, Grand Cayman, Florida, southern South America and Aruba.

Tilia americana L.  
RANGE: Puerto Rico in 1915 (3) as "common on the coastal plain and on the plateau." Sardi- neria, March 1, 1944, Chardon and Otero 981; along trail to Bajura de los Cerezos, March 3, 1944, Chardon and Otero 982. Common and widespread at Sardineria, February 22-24, 1968, Woodbury, Martorell and Garcia M-235. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguana, St. Martin, West Indies, Mexico to South America and northeastern tropical Africa.

Corchorus hirsutus L.  
This is the typical wild cotton, a short-staple variety found in many of the islands and keys in the Caribbean region. The species is probably G. hirsutum var. mari-galanum a form which occurs in these dry islands adjacent to Puerto Rico, also found in the south coast of the Island (Puerto Rico). Listed by Little in 1955 (15) as Gossypium sp., noting that it is "persistent near Uvero and at Playa de Paja- rea, apparently under cultivation." At airport area in Sardineria, also at lighthouse, common in both areas. February 22-24, 1968, Woodbury, Martorell and Garcia M-69; June 1-4, 1972, Woodbury 286. RANGE: Puerto Rico, Lesser Antilles, Cuba, Jamaica and Hispaniola.

HIBISCUS TILICACEUS

Paritius tilicasea (L.) H. St. Hill.; Paritius tilicasea (L.) Chinn.—Listed by Britton in 1915 (3) at "the border of a swamp," Sardineria. March 5, 1944, Chardon and Otero 991. RANGE: Puerto Rico, Vieques, St. Thomas, Virgin Gorda, Anguana, Greater Antilles south to Martinique, Grand Cayman, Florida, southern South America and Aruba.

HIBISCUS TILICACEUS

Paritius tilicasea (L.) H. St. Hill.; Paritius tilicasea (L.) Chinn.—Listed by Britton in 1915 (3) at "the border of a swamp," Sardineria. March 5, 1944, Chardon and Otero 991. RANGE: Puerto Rico, Vieques, St. Thomas, Virgin Gorda, Anguana, Greater Antilles south to Martinique, Grand Cayman, Florida, southern South America and Aruba.

HIBISCUS TILICACEUS

Paritius tilicasea (L.) H. St. Hill.; Paritius tilicasea (L.) Chinn.—Listed by Britton in 1915 (3) at "the border of a swamp," Sardineria. March 5, 1944, Chardon and Otero 991. RANGE: Puerto Rico, Vieques, St. Thomas, Virgin Gorda, Anguana, Greater Antilles south to Martinique, Grand Cayman, Florida, southern South America and Aruba.
Flora of Mona and Monito Islands

лина to Florida, West Indies and continental tropical America.

† **Sida acuminata DC.**


**Sida acuta** Burm.f. sp. **carpinifolia** (K. Schum.) Borszcz. Waalkes

**Sida carpinifolia** L.f. – At Sardineria, March 5, 1944, *Charidon and Otero* 967, along trail to Uvero, May 24, 1944, *Charidon, Otero and Gregory* 1969; Sardineria, July 19, 1944, *Char-idon, Otero and Gregory* 1766; at Sardineria, August 19, 1944, *Charidon, Otero and Beatty* 1799. In the same area, February 22-24, 1968, Woodbury, Martorell and Garcia M-125. Noted by Woodbury on the trail from Sardineria to Uvero and on the lighthouse area, April 15-17, 1962. RANGE: Puerto Rico, Muertos Island, Icacos, Vieques, U.S. Virgin Islands; West Indies, Bermuda, southeastern United States and continental tropical America.

**Sida glabra Mill.**

Listed by Britton in 1915 (3) as “frequent on the coastal plain.” On the plateau, trail to Gato Cave, July 20, 1944, *Charidon, Otero and Gregory* 1798. Los Cerezos, June 1-4, 1972, *Woodbury M-315*. Previously noted by Woodbury on the plateau and at the lighthouse area, April 15-17, 1962. RANGE: Puerto Rico, Desecheo, Culebra, Vieques, St. Thomas, St. Croix; Tortola, Virgin Gorda, from St. Martin to Martinique, Greater Antilles, Mexico south to Central America and Venezuela.

**Sida proculomus Sw.**


**Sida rhombifolia**

Noted by Woodbury, April 15-17, 1962 and later by Woodbury, Martorell and Garcia, at Sardineria, rare, February 22-24, 1968. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies (except the Bahamas), Bermuda, southeastern United States, continental tropical America and Old World tropics.

**Sida salviifolia** C. Presl.

**Sida sericea** Macf. – Noted by Woodbury, April 16-15, 1962 and by Woodbury and Martorell and Garcia at the Uvero trail and on the plateau near the lighthouse area, February 22-24, 1968. RANGE: Puerto Rico, Muertos Island, Culebra, St. Thomas, St. Croix; Tortola, Virgin Gorda, Jamaica, Venezuela and Colombia.

**Sida spinosa L.**

Listed by Britton in 1915 (3) as “cultivated, ground, coastal plain.” At Sardineria, February 22-24, 1968, Woodbury, Martorell and Garcia M-136. Previously noted by Woodbury at Los Cerezos, April 15-17, 1962. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies south to Grenada, Barbados and Aruba; eastern United States, continental tropical America and Old World tropics.


**Wissadula periplacifolia** (L.) Presl.

Along the trail above Uvero, May 24, 1944, *Charidon and Otero* 984. Not seen by authors. RANGE: Puerto Rico, St. Croix; Grenadines, Trinidad, Martinique, Greater Antilles and northern part of South America.

**Sterculiaceae**

**Avenia insularis** Cristobal A. *puella* L. – Noted by Britton in 1915 (3) as “frequent on the coastal plain.” Noted by the writers, common all over the plateau, Febru- ary 22-24, 1968. RANGE: Puerto Rico, Desecheo, Muertos Island, Vieques, U.S. Virgin Islands; Virgin Gorda, West Indies from Texas and continental tropical America.

**Helicteres jamaicensis** Jacq.

Listed by Britton in 1915 (3) as “frequent on the coastal plain and on the plateau.” At Sardineria, February 20-26, 1914, Britton, *Cowell and Hess* 1771. Along the Gato Cave trail, May 2, 1944, *Charidon and Otero* 1798. Noted by Woodbury at Sardineria and on the plateau, common, April 15-17, 1962. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Virgin Gorda, Greater Antilles, Bahamas, Mexico, Honduras and Brazil.

**Passifloraceae**

**Passiflora foetida L.**

Listed by Britton in 1915 (3) in “sandy beach, Playa de Pajaros.” Not seen by authors in Mona. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, West Indies and continental tropical America.

**Passiflora suberosa L.**


**Cactaceae**

**Carica papaya L.**

Listed by Britton in 1915 (3) as “common on the coastal plain about Sardineria, apparently established after cultivation. A rare with small globose fruits. Original home unknown.” At Sardineria, March 1, 1944, *Charidon and Otero* 1000. Listed by Little in 1955 (16). Noted by Woodbury, April 16, 1962, many plants at Sardineria and in the lighthouse area. In February 1965 still persisting and spreading in different areas of the coastal plain. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Jost Van Dyke. Native to tropical America, its original home unknown; widely cultivated and naturalized in the West Indies, Bermuda, southern Florida; from Mexico to Argentina and Brazil; also in the Old World (introduced).

**Cucurbitaceae**

**Cucumis anguria L.**

Listed by Britton in 1915 (3) on “cultivated ground, Sardineria.” Noted by Woodbury at Sardineria, rare, April 1962. RANGE: Puerto Rico, Culebra, Vieques, U.S. Virgin Islands; Tortola, Anguilla, West Indies (except the Bahamas), Florida, Texas and continental tropical America. Native of Africa.
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Conocarpus erectus L
Listed by Britton in 1915 (3) as "occasional on coastal sands." Sardineria, March 2, 1944, Chardón and Otero 1001; collected in Mona by Little in 1955 (16). Noted by Woodbury, common along the trail from Sardineria to Uvero in April 1963 and February 22-24, 1968. RANGE: Puerto Rico, Viques, St. John, St. Croix, Tortola, St. Martin, St. Kitts, Antigua, Guadeloupe, Guane Island, Dominica, St. Lucia, St. Vincent, Greater Antilles, Bahamas, Bermuda, Florida, Southwestern Mexico and from British Honduras to Nicaragua.

Laguncularia racemosa (L.) Gaertn.

Flora of Mona and Monito Islands

Mycetaceae

Eugenia rhombica (O. Berg) Krug & Urban.
Listed by Britton in 1915 (3) as "coastal plain between Sardineria and Uvero." At Sardineria, July 19, 1944, Chardón and Otero 1010; on plateau along trail to Ojo Cave, May 16, 1947, Chardón, Otero and González M-193. Listed by Little in 1955 (16). Noted by the writers as common in Sardineria and in many places on the plateau, April 1962 and February 1988. RANGE: Puerto Rico, Descheo, Puerto Rico, Vieques, St. Thomas, St. Croix; St. Martin, Saba, St. Eustatius, Antigua, Guadeloupe, Greater Antilles, Florida, Bahamas, Mexico and northern South America.

Mycorrhizal fragrans (Sw.) McVaugh
Anamomia fragrans (Sw.) Griseb.; Eugenia fragrans (Sw.) Wild. Listed by Britton in 1915 (3) as "occurrent on the coastal plain." Listed by Little in 1955 (16) "uncommon on plateau and one of the characteristic tree species at El Coral." On the plateau, trail to

Les Cerros, July 20, 1944, Chardón, Otero and Gregory 1016. Noted by the writers along the trail from Sardineria to Uvero in April 1963 and February 22-24, 1968. RANGE: Puerto Rico, Viques, St. John, St. Croix; Tortola, St. Martin, St. Kitts, Antigua, Guadeloupe, Greater Antilles, Central America, Colombia and Venezuela.

Psidium guajava L.
Sardineria, July 21, 1944, Chardón and Otero 1009. Listed by Little in 1955 (16), as an introduced tree species. Several trees on airport road and near houses at Sardineria as noted by Woodbury, April 1962. Later collected at Sardineria, February 22-24, 1968. Woodbury, Martorell and Garcia M-119. RANGE: Puerto Rico, Viques, U.S. Virgin Islands; Tortola, John J. Van Dyke, St. Thomas; Virgin Gorda; native to tropical America probably from southern Mexico to South America. Introduced into the tropical and subtropical regions of the Old World.

Theophrastaceae

Plumbaginaceae
† Plumbago scandens L.

Sapotaceae
Bumelia obovata (Lem.) A. DC.
Zygadela from St. Martin to St. Lucia, Curacao, Bonaire, Aruba, and northern Venezuela; Jamaica and Hispaniola.

Chrysophyllum oliviforme L.
Sardineria, March 2, 1444, Chardon and Otero 1924. Listed by Little in 1955 (16).
Only Woodbury at Sardineria and on plaster depressions, rare, April 1912. RANGE: Puerto Rico, Greater Antilles, Bahamas, Florida, possibly introduced to Mona Island according to Little (16).

Dipholis salicifolia (L.) A. DC.
* Bumelia salicifolia (L.) Sw. — Listed by Britton in 1913 (5) on the "coastal plain, Sardineria." Britton and Rose (5) in referring to this particular record noted that "a tree found on Mona Island, in foliage only, is, perhaps, of this genus (Bouvier, Cowell and Hess 1909)." At Los Cerezo, July 21, 1944, Chardon, Otero and Gregory 1924. Listed by Little in 1955 (16). In the coastal plain and plateau depressions, rare, June 1-4, 1972, Woodbury M-304. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, West Indies south to Barbados, southern Florida, southern Mexico, Guatemala, and British Honduras.

Manilkara sapota (L.) P. van Royen

Mastichedon fistulosissimum (Jacq.) Cron. Stenocaryon fistulosissimum (Jacq.) Britton. Sardineria, July 14, 1944, Chardon, Otero and Gregory 1924; March 11, 1944, Chardon and Otero 1922. Listed by Little in 1955 (16), as a rare tree about 60 feet high and 24 inches in trunk diameter. Noted by Woodbury in April 1912. On the trunk of about 30 inches in diameter, Sardineria, February 22-24, 1968, Woodbury, Martorell and Garcia M-128; also collected at Los Cerezo, June 1-4, 1972, Woodbury M-312. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, Greater Antilles; from Saba south to Barbados; Bahamas, Florida, Yucatan and British Honduras.

OLACEAE


Forestiera rhamnifolia Griseb.
Noted by Woodbury in 1913 (5) as "a rare shrub 10 feet high and 3 inches d.b.h., on the plateau. Collected in 1916 at bluffs of Salt River, St. Croix but not at St. Croix; Croix." Noted on the plateau, rare, June 1-4, 1972, Woodbury M-387. RANGE: Cuba, Jamaica, Hispaniola (rare), St. Croix; Guadeloupe, Martinique and Grenada, Mexico and British Honduras.

* Forestiera segregata (Jacq.) Krug & Urban
Sardineria, March 6, 1944, Chardon and Otero 1928; along trail to Gato Cave, July 26, 1944, Chardon, Otero and Gregory 1927. Small tree 3' to d.b.h. and 12 feet high, February 22-24, 1968, Woodbury, Martorell and Garcia M-176, on the plateau, rare, June 1-4, 1972, Woodbury M-292. RANGE: Puerto Rico, Deschev, St. Croix; Greater Antilles, Bahamas, Florida and Antigua (Lesser Antilles).

APICOCNACEAE

Plumeria obtusa L.
Plumeria obtusa L.; P. portoricana Urban; P. obtusa Urban — Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Uvero, March 2, 1944, Chardon and Otero 1924; Tortola, U.S. Virgin Islands; Culebra. Now widely cultivated in the American tropics as well as in the Old World.

Cynanchum anegadense (Britton) Alain
Metasatelia anegadensis Britton — Listed by Britton in 1913 (5) as "Metasatelia sp. (undetermined)" in the lighthouse area, February 22-24, 1968, Woodbury, Martorell and Garcia M-115. The generic name of this species has been also known in literature as Anegada and Mona Island. RANGE: Puerto Rico, Greater Antilles, Bahamas, Mexico (a variety) and British Honduras.

Persia nigra L.

Rauwolfia serpentina Benth. & Schult. Rauwolfia lamarkii A. DC. — Listed by Little in 1955 (16). Fairly common on the cliffs at Sardineria and Uvero, collected on the plateau, December 12-13, 1971, Woodbury, Martorell and Garcia M-341. The genus has been also known in botanical literature as Rauvol- fia. RANGE: Puerto Rico, Icacos, Culebra, U.S. Virgin Islands; Tortola, Virgin Gorda and other islands south down to northern South America; Hispaniola. Not recorded from Jamaica or Cuba.

Urechites lutea (L.) Britton
Listed by Britton in 1913 (3) as "occasional on the coastal plain." Sardineria, March 1, 1944, Chardon and Otero 1034; May 23, 1944, Chardon and Otero 1033. In the lighthouse area, February 22-24, 1968, Woodbury, Martorell and Garcia M-149; a widespread species. RANGE: Puerto Rico, Icacos, Vieques, U.S. Virgin Islands; Tortola, Anguilla, south to St. Kitts, St. Vincent, West Indies, Florida and the Bahamas.

CYNANCUSACEAE

Evolutus convolvuloides (Willd.) Stearn
Evolutus globae Sprague. — Listed by Britton in 1913 (5) as "moist soil, coastal plain." Noted at Sardineria by Woodbury, April 1912; later collected in the same area June 1-4, 1972 and March 25, 1975, Woodbury M-264; M-337. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda, Anguilla, West Indies, and northern South America.

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19, 1944, Chardón and Otero 1040. Noted by Woodbury along the coast, rare, April 15-17, 1962. RANGE: Puerto Rico, Descheo, Iacobos, U.S. Virgin Islands, West Indies, Bahamas, Florida, from Mexico to the Guianas; introduced into the Old World tropics, but native in the Pacific.

Ipomoea misradyclathra Griseb. Eosinum misradyclathum (Griseb.) House—Listed by Britton in 1915 (3) as "occasional on the coast. Specimens insufficient for certain determination." Later, in 1925, Britton and Wilson (5) referring to this specimen say that "a vine growing on the living stome plateau of Mona Island, known only to us from incomplete specimens, has been tentatively referred to Eosinum misradyclathum (Griseb.) House, otherwise known from Florida, Cuba and the Bahamas...." On the plateau along Cerroes trail, March 3, 1944. 66Chardon and Otero 1041. On plateau, north of Sardineria towards extreme west of Mona, February 22-24, 1966. Woodbury, Martorell and Garcia M-72. At Sardineria, June 1-4, 1972. Woodbury M-381. RANGE: Puerto Rico, Cuba and the Bahamas, now Mona Island.

Ipomoea pes-capaee (L.) Br. Ip. pes-capsae (L.) Roth. —Listed by Britton in 1915 (3) as "common on the coast."

Playa de Pajos, March 4, 1944, Chardon and Otero 1043. Noted by the writers as common along the coast at Sardineria, Uvero and Playa de Pajos, April 1962 and February 1968. Adams (2) lists this plant as Ipomoea pes-capaee ssp. brasiliensis (L.) Quar.) specifying that the subspecies pes-capaee is restricted to certain Old World localities, the one in the New World being brasiliensis. RANGE: Puerto Rico, Iacoos, VIeques, U.S. Virgin Islands; Tortola, southeastern United States, West Indies, British West Indies, Bahaman tropical America and Old World tropics.

* Ipomoea solanifolia L. Eosinum solanifolium (L.) Britton—At Sardineria, Woodbury M-72. RANGE: Puerto Rico, Vieques, St. Croix, St. Thomas; from St. Barts to St. Thomas.

Ipomoea triloba L. Listed by Britton in 1915 (3) as "frequent in cultivated ground on the coastal plain." On the plateau, trail to Gato Cave, March 9, 1944 and July 20, 1944. Chardon and Otero 1988; 1942. At Sardineria and also in lighthouse area. At Uvero, Woodbury, Martorell and Garcia M-82; M-16. A common species. RANGE: Puerto Rico, Descheo, Iacobos, Vieques, U.S. Virgin Islands; West Indies, Florida and continental tropical America. Naturalized in tropical regions of the Old World.


Jacquemontia havanensis (Jacq.) Urban J. jamaciensis (Jacq.) Hallier f.—Listed by Britton in 1915 (3) as "occasional on coastal sands." Noted by Woodbury along the Uvero trail at Sardineria, April 1962, later collected in the same general area, December 11-12, 1971. Woodbury, Martorell and Garcia M-251. RANGE: Puerto Rico, Vieques, St. Thomas, St. Croix; Tortola Greater Antilles, Bahamas, Florida and Mexico (Yucatan).

Jacquemontia pentanthas (Jacq.) G. Don Listed by Britton in 1915 (3) as "frequent on the coastal plain and on the plateau."

On the plateau along Cerroes trail, March 3, 1944. Chardon and Otero 1039; Sardineria, July 19, 1944, Chardon, Otero and Gregory 1805.


Merremia aegyptia (L.) Urb. Ipomoea aegyptia L.; Operculina aegyptia (L.) Martius—Listed by Britton in 1915 (3) as "cultivated ground, coastal plain."

Noted by Woodbury at Sardineria, April 15-17, 1962. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Virgin Gorda; Greater Antilles, from St. Martin south to Trinidad and Curacao, continental tropical America and Old World.

* Merremia quinquefolia (L.) Hallier f. Ipomoea quinquefolia L.—Noted on the coastal plain—Listed by Britton in 1915 (3) as "cultivated ground, coastal plain."

On the plateau along Cerroes trail, March 3, 1944; December 10-11, 1969. MONITO M-221. RANGE: Puerto Rico, U.S. Virgin Islands; Tortola, Guadeloupe, Martinique, Grenada, Greater Antilles, and from Mexico to Peru. BOUGAINVILLACEAE

Bourreria succulenta Jacq. Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau."


 Cordia globosa (Jacq.) Kunth Cordia globosa Jacq.—Listed by Britton in 1915 (3) as "as "several trees up to 30 feet tall and 12 inches d.b.h. were found at Bajura de los Cerezo's. Doubtless these trees gave their common name "ceroses" to the locality. Noted by the writers at the same locality, April 1962 and February 1968. RANGE: Puerto Rico, Culebra, U.S. Virgin Islands; West Indies (except the Bahamas), Mexico to northern South America.

Cordia globosa (Jacq.) Kunth Varressia globosa Jacq.—Listed by Britton in 1915 (3) as "as "common on the coastal plain."


Tournefortia hirsutissima L. Listed by Britton in 1915 (3) as "at base of limestone cliffs, Sardineria."

On the cliffs, rare, collected at Sardineria, June 1-4, 1972. Woodbury M-574. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, from St. Martin south to Trinidad and Curacao, Greater Antilles, Florida and continental tropical America.

Tournefortia hirsutissima L. Listed by Britton in 1915 (3) as "at base of limestone cliffs, Sardineria."

On the cliffs, rare, collected at Sardineria, June 1-4, 1972. Woodbury M-574. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; Tortola, from St. Martin south to Trinidad and Curacao, Greater Antilles, Florida and continental tropical America.


Heliotropium microphyllum Sw. H. crispiflorum Urban—Listed by Britton in 1915 (3) as "moist soil, coastal plain."


Flora of Mona and Moito Islands

1972, Woodbury M-300. RANGE: Puerto Rico (south coast), West Indies including Grand Cayman.


Stachytarpheta jamaicensis (L.) Vahl Valerianoides jamaicensis (L.) Kunze; V. jamaicensis (L.) Medic.—Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." Sardinares, March 1, 1944, on the plateau above Uvero, March 2, 1944; Chardón y Otero 1057; 1059. Noted by Little in 1955 (18) as "common on the plateau, especially in the dried up thickets of cactus brush, where it is one of the dominant species. Apparently this species along with Croton spp. has increased with overgrazing by goats." At Sardinares, February 22-24, 1968, Woodbury, Martorell and Garcia M-56. RANGE: Puerto Rico, Desche, Muros Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies south to Trinidad and Aruba, Florida, Bermuda and continental tropical America.

Lantana involucrata L. Listed by Britton in 1915 (3) as "common on the coastal plain and on the plateau." At Sardinares, March 1, 1944, on the plateau above Uvero, March 2, 1944; Chardón y Otero 1057; 1059. Noted by Little in 1955 (18) as "on the plateau, especially in the dried up thickets of cactus brush, where it is one of the dominant species. Apparently this species along with Croton spp. has increased with overgrazing by goats." At Sardinares, February 22-24, 1968, Woodbury, Martorell and Garcia M-56. RANGE: Puerto Rico, Desche, Muros Island, Icacos, Culebra, Vieques, U.S. Virgin Islands; Tortola, Virgin Gorda, Anegada, West Indies, Bermuda, Florida, Central America and Galapagos Islands.

* Lantana urticifolia Mill. On the plateau, rare, collected June 1-4, 1972, Woodbury M-300. RANGE: Puerto Rico (south coast), West Indies including Grand Cayman.


* Scutellaria havanaensis Jacq. On the cliffs at Sardinares, rare, June 1-4, 1974, Woodbury 270. RANGE: Puerto Rico, Hispaniola, Cuba, Bahamas and Florida.

Solanaceae


* Nicandra glabracac L. Cultivated at Sardinares, rare, noted by Woodbury, April 15-17, 1962. RANGE: Na-
Flora of Mona and Monito Islands

On the plateau, rare, February 22-24, 1968, Woodbury, Martorell and Garcia M-200. The specific name has been also written as oce- 
moda. RANGE: Puerto Rico, U.S. Virgin Islands, Tortola, West Indies, Bahamas, Florida and continental tropical America.

* Catesbaea melanocarpa (Krug & Urban) S. Sweet. - Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." Sardi- 
niera, March 5, 1944, Chardón and Otero 1908. Noted by Woodbury on the pla- 
tae and the coastal plain, rare, April 15-17, 1968. RANGE: Puerto Rico, St. Croix; Antigua and Guadeloupe.

Chicorea alba (L.) Hitchc. - Listed by Britton in 1915 (3) as "occasional on the coast and on the plateau." Sardi- 
niera, March 5, 1944, Chardón and Otero 1908. Noted by Woodbury on the coastal plain, April 15-17, 1968. RANG: Puerto Rico, Vie- 
quies, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Trinidad, Flor- 
dis and continental tropical America.

Eriothus fruticosus L. - Listed by Britton in 1915 (3) "common on sand dunes, on the coastal plain and occasion- 
al on the plateau." At Sardineria, March 5, 1944, Chardón and Otero 1908. On the plateau near Uvero, February 22-24, 1968, Woodbury, Martorell and Garcia M-198. RANGE: Puerto Rico, Vie- 
quies, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Trinidad, Flor- 
dis and continental tropical America.

ERIOGONACEAE

* Eriogonum litorale (Sw.) Hook.f. - Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." On the plateau, rare, February 22-24, 1968, Woodbury, Martorell and Garcia M-198. RANGE: Puerto Rico, Vie- 
quies, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Trinidad, Flor- 
dis and continental tropical America.

ILEXACEAE

* Ilex suffruticosa (L.) Sarg. - Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." On the plateau near Uvero, February 22-24, 1968, Woodbury, Martorell and Garcia M-198. RANGE: Puerto Rico, Vie- 
quies, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Trinidad, Flor- 
dis and continental tropical America.

GROMOLYRTIACEAE

* Gromolortys litoralis (Sw.) Hook.f. - Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." On the plateau near Uvero, February 22-24, 1968, Woodbury, Martorell and Garcia M-198. RANGE: Puerto Rico, Vie- 
quies, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Trinidad, Flor- 
dis and continental tropical America.

BLECHERIACEAE

* Blechera pyramidalis (Lam.) Urban - Listed by Britton in 1915 (3) as "occasional on the coastal plain and on the plateau." On the plateau, rare, February 22-24, 1968, Woodbury, Martorell and Garcia M-198. RANGE: Puerto Rico, Vie- 
quies, U.S. Virgin Islands; Tortola, Virgin Gorda, West Indies south to Trinidad, Flor- 
dis and continental tropical America.
Randia aculeata L.  

* Bidens pilosa L.  
Bidens pilosa L. on the coastal plain along trail from Sardinera to Uvero, March 11, 1944, Chardón and Otero 1085. Sardinera, uncommon, February 22–24, 1968, Woodbury, Martorell and García M-190; RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; West Indies, southern United States, continental tropical America and Old World tropics.

**Borrichia arborescens (L.) DC.**  
Listed by Britton in 1915 (3) as "occasional on coastal rocks." Sardinera, March 4, 1944, Chardón and Otero 1092. Noted by Woodbury ‘t Playa de Pajaros and Uvero, April 1962, uncommon. RANGE: Puerto Rico, Isla de Mona, Vieques, St. Thomas, St. Croix; Anegada, West Indies; Bermuda, Bahamas; Florida and continental tropical America.

**Conyza bonariensis (L.) Cronquist**  
*Leptilum bonariense* (L.) Small – Listed by Britton in 1915 (3) as "cultivated ground, Sardinera." In coastal plain near airfield, July 21, 1944, Chardón, Otero and Gregory 1680. Noted at Sardinera by Woodbury, seasonal, rare, April 1962. RANGE: Puerto Rico, Vieques, Tortola, Greater Antilles, from Saba to Trinidad in the Lesser Antilles; Florida, continental tropical America; West Africa and Pacific Islands.

**Conyza canadensis (L.) Cronquist**  

**Eleutheranthera ruderalis (Sw.) Sch. Bip.**  
Listed by Britton in 1915 (3) on "cultivated ground, coastal plain." On plateau above Gato Cave, March 9, 1944, Chardón and Otero 1984. Noted by Woodbury at Sardinera and on the plateau, rare, April 1962. RANGE: Puerto Rico, U.S. Virgin Islands; West Indies (except the Bahamas); Central and South America.

**Eupatorium corymbosum Aubl.**  
*Osmia corymbosa* (Aubl.) Britton & Wilson;  

**Eupatorium purpureum L.**  

**Eupatorium obtusifolium Monch.**  
At Sardinera March 1 and on the plateau March 9, 1944, Chardón and Otero 1906, 1965, respectively. At the base of cliffs, rare, Sardinera April 13, 1982, Woodbury M-160. Endemic species to Mona described by Monch at 1934.  

**Melanthera nivea (L.) Small**  
*M. calcituba* Britton; *M. conocens* O. E. Schulz; *M. confusa* Britton, *M. montana* O. E. Schulz; *M. pubescens* Britton, *M. purpurea* Britton by Woodbury at Sardinera and lighthouse area, April 15–17, 1972. RANGE: Puerto Rico, Muertos Island, Culebra, Vieques, St. Thomas, Tortola; from St. Barts to Tobago; Cuba.

**Pectis carthusianorum Less.**  

**Pectis limifolia L.**  
On plateau above Gato Cave, March 9, 1944, Chardón and Otero 1096. Widespread; common, from the lighthouse area, Woodbury, Martorell and García M-355; RANGE: Puerto Rico, Vieques, St. Croix; Tortola, Greater Antilles, Montserrat, Guadeloupe, Grenada, Barbados, Florida, Bahamas, Panama. Native of Old World tropics.

**Sarcococca sevarica L. C. Rich.**  
Noted by Woodbury at Sardinera, rare, April 15–17, 1962. RANGE: Puerto Rico, Vieques, St. Thomas, St. John and Hispaniola.

**Wedelia lanceolata DC.**  
Wedelia parviflora L. C. Rich.
Listed by Britton in 1915 (3) in Mona Island but not recorded from this locality by Britton and Wilson in their 1925 publication (5). The writers were not able to find this plant in Mona during their frequent trips there. It is possible that Britton in 1914 collected W. lanceolata and labeled it erroneously as W. parviflora, however not mentioning his error in the 1925 publication. If W. parviflora is present in Mona no collections have been made of it since 1914. RANGE: Puerto Rico, St. Thomas, St. John; Tortola, Virgin Gorda, Anegada, St. Martin, Antigua, Guadeloupe and Martinique.

PHYLUM — PTERIDOPHYTA
Order Filicales
POLYPODIACEAE
Acrostichum aureum L.

Adiantum fragile Sw.

Cycloptis semicordata (Sw.) J. Smith

*Nephrolepis exaltata (L.) Schott
On the plateau, cliffs and in caves at Playa de Pajaro, rare, June 1-4, 1932. Woodbury M-308. RANGE: Puerto Rico, St. Thomas, St. Croix; Tortola, Bahamas, Greater Antilles, Bermuda, Florida, Mexico; widely dispersed in the Old World tropics.

*Pityrogramma calomelanos (L.) Link
Attached to old stone wall at Sardinera, February 22-24, 1915, rare, Woodbury, Martorell and Garcia M-114, M-179. Also at the base of cliffs M-190. RANGE: Puerto Rico, Vieques, U.S. Virgin Islands; from Saba and St. Eustatius south to Trinidad and Tobago; from Mexico to southern Brazil; tropical Africa.

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