

# THE PLANTS OF 'OCOQUILI' ISLAND, SAN BLAS COAST, PANAMA<sup>1</sup>

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## ABSTRACT

Study of one of the few San Blas Islands (Panama) with intact vegetation indicates that the flora has a greater affinity with distant circum-Caribbean islands than with the nearby mainland.

The San Blas coast of northeastern Panama is fringed by a series of small flat islands, few of them as long as 1 km, and few more than 1 km offshore. Nothing is known about the vegetation of the islands before they were settled by the Kuna Indians in the middle of the last century (Jaén, 1978). Today most of the islands are densely populated without a single trace of original plant life remaining. On 9 October 1978, we hired an outboard motor boat and visited a small island in the group that was uninhabited and appeared to have a large measure of its natural vegetation intact. The 34 species noted during this morning included two new to Panama and an assemblage of species more likely to be found on a flat limestone island in the northern Caribbean hundreds of miles away than on the mainland of Panama less than 1 km away.

The island's location, 9°14'N, 48°01'45"W, is midway between Isla Nustupo and Ailigandí, and it is approximately halfway along the San Blas coast between Porvenir, the district capital, and Puerto Obaldía at the Colombian frontier. It is only a few hundred meters from the mainland. This island is not marked on any maps we consulted, and we refer to it by the name given by our Indian guides, 'Ocoquili,' which refers to the coconut trees on it. Upon leaving the area later in the day, we persuaded our pilot to circle 'Ocoquili' and the photo shown here (Fig. 1) was taken.

Ocoquili Island is about 1 km long and 300–400 m wide, and it is formed of coquina-like limestone. Coconuts grow around most of the edges, and on the western end there is an accumulation of sand. Much of the interior is low and flooded, covered by mangroves. Across the island toward the eastern end is a shallow chan-

nel and holes in the partly emergent limestone, at the edges of this, harbored small plants.

Although no one lived there at the time, our guides reported that boatmen sometimes visited the island for coconuts, fishing, parties, and other reasons but did not stay long at a time. We found no signs of construction and no sign of feral animals.

A total of 37 collections were made, some of them sterile. Determinations of Gramineae and Cyperaceae were made by Gerrit Davidse, of Rubiaceae by John D. Dwyer, and the balance by the senior author. Thirty-three species were represented, and the sight record of *Cocos nucifera* yielded a total of 34 species (Table 1). Although more species may be present, none were apparent at the time of this visit even in sterile condition. Our coverage was nearly complete. All collections are deposited with the Missouri Botanical Garden (MO).

Of the trees, three species are mangroves. Red, white, and black mangroves were all present, but we found only one species of red mangrove, *Rhizophora mangle*. Of the other tree species, *Hippomane mancinella* is neotropical, *Cocos nucifera* is introduced, and *Cordia sebestena*, commonest in the northern Caribbean, has been collected few times in Panama, and then only along this same San Blas coast. All tree species are mainly known from neotropical seacoasts, although some range inland in gallery forests, and all are to be found in proximity in many Caribbean sites (Table 2).

The shrubs have pan-Caribbean distribution, although some also occur elsewhere. *Conocarpus erecta* and *Dalbergia ecastophyllum* are found near many Caribbean coastlines, and they also occur in West Africa. *Suriana maritima*, which

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TABLE 1. List of the 34 species found on 'Ocoquili' Island, San Blas Coast, Panama. Sources: Rubiaceae from Dwyer (1980), Boraginaceae from Miller (in prep.), Amaranthaceae from Mears (1982), and other distributions from Adams (1972).

Species	Family	Habit	Range	Habitat-Ecology
<i>Andropogon bicornis</i> L.	Gramineae	herb	neotropical	weed species
<i>Avicennia germinans</i> (L.) L.	Verbenaceae	tree	neotropical, W Africa	limestone coasts
<i>Blutaparon vermiculare</i> (L.) Mears	Amaranthaceae	herb	neotropical	coastlines
<i>Canavalia maritima</i> (Aubl.) Thou.	Leguminosae	herb	pantropical	coastal strands
<i>Cassine xylocarpa</i> Vent. <sup>a</sup>	Celastraceae	shrub	N Caribbean	dry woodlands
<i>Chamaesyce mesembrianthemifolia</i> Jacq. <sup>b</sup>	Euphorbiaceae	herb	neotropical	calcareous coasts
<i>Chiococca alba</i> (L.) Hitchc.	Rubiaceae	vine	Texas to Ar- gentina	limestone
<i>Cissus sicyoides</i> L.	Vitaceae	vine	neotropical	weed species
<i>Coccoloba uvifera</i> L.	Polygonaceae	tree	Caribbean	seacoasts
<i>Cocos nucifera</i> L.	Palmae	tree	introduced	seacoasts
<i>Conocarpus erecta</i> L.	Combretaceae	shrub	neotropical, W Africa	coastal
<i>Cordia sebestena</i> L. <sup>b</sup>	Boraginaceae	tree	N & W Carib- bean	seacoasts
<i>Crinum erubescens</i> Ait. <sup>c</sup>	Amaryllidaceae	herb	introduced	shorelines
<i>Cuervea kappleriana</i> (Miq.) A.C. Sm.	Hippocrateaceae	vine	neotropical	coastal wood- lands
<i>Dalbergia brownei</i> (Jacq.) Urb.	Leguminosae	shrub	Caribbean to Brazil	coastal wood- lands
<i>Dalbergia ecastophyllum</i> (L.) Taub.	Leguminosae	shrub	neotropical, W Africa	seacoast thickets
<i>Eustachys petrea</i> (Sw.) Desv. <sup>b</sup>	Gramineae	herb	neotropical	limestone & beaches
<i>Fimbristylis cymosa</i> R. Br.	Cyperaceae	herb	pantropical	coastal areas
<i>Hippomane mancinella</i> L.	Euphorbiaceae	tree	neotropical	coastlines
<i>Laguncularia racemosa</i> (L.) Gaertn. f.	Combretaceae	tree	neotropical, W Africa	mangrove
<i>Lantana involucrata</i> L. <sup>b</sup>	Verbenaceae	shrub	Caribbean	limestone & coasts
<i>Melanthera aspera</i> (Jacq.) Benth.	Compositae	herb	Caribbean, Ecuador	seacoasts
<i>Pavonia rhizophorae</i> L. <sup>b,c</sup>	Malvaceae	herb	Panama to Colombia	seacoasts
<i>Pilea microphylla</i> (L.) Liebm.	Urticaceae	herb	pantropical	weed species
<i>Randia aculeata</i> L.	Rubiaceae	shrub	Mexico to Venezuela	dry limestone
<i>Rhizophora mangle</i> L.	Rhizophoraceae	tree	neotropical, W Africa	mangrove
<i>Sesuvium portulacastrum</i> L.	Aizoaceae	herb	pantropical	seashores
<i>Sophora tomentosa</i> L. <sup>b</sup>	Leguminosae	shrub	pantropical	coastal weed
<i>Spartina spartinae</i> (Tru.) Merr. <sup>c</sup>	Gramineae	herb	Texas to Ar- gentina	coasts & marsh- es
<i>Sporobolus virginicus</i> L.	Gramineae	herb	pantropical	shores
<i>Stenotaphrum secundatum</i> (Walt.) Gaertn. f. <sup>b</sup>	Gramineae	herb	pantropical	limestone coasts
<i>Suriana maritima</i> L. <sup>a</sup>	Simaroubaceae	shrub	Caribbean, In- dian & Pa- cific Oceans	seacoasts
<i>Vigna luteola</i> (Jacq.) Benth.	Leguminosae	herb	pantropical	limestone coasts
<i>Wedelia trilobata</i> (L.) Hitchc.	Compositae	herb	neotropical, W Africa	weed species

<sup>a</sup> New report for Panama.

<sup>b</sup> In Panama, found only nearby on this coast.

<sup>c</sup> Not on Jamaica.



FIGURE 1. Aerial view of 'Ocoquili' Island.

is a new record for Panama, is found on seacoasts in the area and also in the Indian Ocean and South Pacific. *Dalbergia brownei* ranges around the Caribbean coast to Brazil where it occurs inland along gallery forests. *Lantana involucrata* is particularly common near shorelines of flat calcareous islands of the eastern Caribbean, but it also occurs inland in some places. *Randia aculeata* is used as a Christmas tree in some Caribbean islands: it occurs inland in Panama as well as along the coasts.

There are only three species of climbing vines; two of them, *Chiococca alba* and *Cissus sicyoides*, are pantropical and also plentiful in the Antilles, and *Cuerva kappleriana* is restricted to

the Caribbean area. Several of the herb or shrub species might also be called vines: *Dalbergia brownei*, which has tendrils, *Vigna luteola*, and *Canavalia maritima*, but these do not usually ascend over other vegetation, and they do not do so on Ocoquili. No epiphytes were found.

Only two species, *Cocos nucifera* and *Crinum erubescens*, are introduced. Two of the species, *Cassine xylocarpa* and *Suriana maritima*, are new reports for Panama, and eight species are known in Panama only from sites along this coast. All but three species, *Crinum erubescens*, *Pavonia rhizophorae*, and *Spartina spartinae*, are known from Jamaica, more than 900 km to the north, and the last of these is widespread on calcareous coasts in the Caribbean area and on alkaline flats in inland continental areas.

While the florula of the tiny Ocoquili Island is but a token representation of the flora that once covered this string of numerous islands, it is sufficient to indicate that there was an important circum-Caribbean coastal element that formed an assemblage of species distinct from the associations now known on the mainland.

TABLE 2. Growth forms on 'Ocoquili' Island.

Trees	7
Shrubs	8
Herbs	16
Climbing vines	3
Total species	34

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