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FLORA OF MAUPITI, SOCIETY ISLANDS

BY

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By

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Maupiti is the westernmost of the high islands of the Society Archipelago, in the south-central pacific (lat. 16° 27′s, long. 152° 15′w). Until the investigation reported here, Maupiti was the least well-known, botanically, of the high Society Islands except tiny Maiao. The only previous botanical visit of any consequence was by the late Dr. Jean Raynal, in 1973. A list of his collections was published by Dr. Marie-Hélène Sachet and Dr. Yves Lemaitre (1983). He found a number of species, particularly in moist habitats at higher elevations, that were not found in 1985. Many other species, especially exotics, were not found by him but were collected or seen in 1985.

This report includes an introductory section on the geography and vegetation, and a main portion listing the species of vascular plants known to occur, or to have occurred, on the island, with detailed descriptions of those of which time permitted a careful study, and brief descriptions of the remaining native species. Those suspected to have been brought by Polynesians in pre-European time are also described and discussed in some detail. Exotic species are either very briefly described or, especially in cases of very familiar weeds and ornamentals, merely listed with remarks on their occurrences and citations of specimens. Collections by Raynal are cited, as are those made on the 1985 expedition, with symbols indicating the herbaria where they are deposited. The Raynal specimens are in the herbarium of the Laboratoire de Phanerogamie Museum d'Histoire Naturelle, Paris (P).

Our visit was made under the auspices of and arranged by the non-profit organization, Have Mule Will Travel. The botanists were Dr. Marie-Hélène Sachet and F. Raymond Fosberg, assisted by a group of volunteers, listed below, and with the excellent cooperation of archaeologists, Eric Komori and Robert Harmon, who were concurrently engaged in an archaeological reconnaissance of the island. The volunteers, whose financial assistance made the investigation possible, were Jeanette T. Gillette, Sandra C. Hoppe, Catherine A. Jordan, Georgeann T. Kirk, Suzanne Kish, David W. Miles, Joe Morris, Mary K. Mount, Joy A. Townsend, and Randy L. Villa. These volunteers helped both the botanists and the archaeologists with the field and clerical work and were also good company.

Mrs. Edna Terai, owner and manager of the Hotel Auira on Aura Motu, and her mother, Madeleine, contributed far beyond the call of duty, to provide for the comfort and well-being of the party, and to make the investigations successful. They have our sincere thanks.

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Vegetation of Maupiti

Maupiti is exceptional among the Society Islands in having no trace of original natural vegetation left. Its two highest peaks are only 380 and 372 m, scarcely enough to induce much orographic rainfall. The land area of the volcanic remnant is only 3–3.5 sq. km. The coastal strip is from very narrow to, in places, completely lacking, the slopes ending at the lagoon shore. The motus (flat coral islets), however, are unusually extensive for the size of the island, 1.5 or more sq. km.

The most conspicuous landscape features are the high north/south ridge formed of erosion remnants of hard rock, lined with great vertical cliffs, and a number of similar but smaller rock remnants radially arranged around the periphery of the convex northern side of the island. These rocks are bare gray to black, vertical-sided, almost bare of vegetation. The central mountain mass is a high east/west ridge with several peaks on it ranging from 220 to 380 m, with sloping sides except for protruding rocky knobs that form the summits.

Before the arrival of the Polynesians, Maupiti was, in all probability, completely forested except for the cliffs and perhaps several of the rocky knobs. The nature of the original forests of the volcanic slopes is uncertain, as no descriptions exist, even of what the island was like when Europeans arrived. Judging by the prevalence of archaeological remains on the slopes, even the lower slopes were to some extent deforested by the aboriginal inhabitants, though doubtless much original forest remained. About all that can be said of this is that it was of a broad-leaf evergreen type, probably for the most part similar to the slope forests of the lowest 500 to 1000 meters on the other volcanic Society Islands. Almost all of this has now been altered beyond recognition, replaced by exotic and a very few persistent native tree species. The alteration on Maupiti has perhaps been more extreme than on the larger high islands.

The present condition, resulting from hundreds of years of severe human exploitation and abuse, may be described, superficially, in rather simple terms, with the understanding that most of the plant species making up the present vegetation are exotics, not present in the original vegetation.

The narrow coastal strip, largely occupied by home-sites and the village, supports a mixed, largely "tree garden" type of vegetation. The trees that dominate the landscape are the breadfruit (Artocarpus altilis), mango (Mangifera indica), purau (Hibiscus tiliaceus), the coconut (Cocos nucifera), mape (Inocarpus fagifer), Java plum (Eugenia cuminii), tamanu (Calophyllum inophyllum), with an under layer of banana (Musa sapientum) and cassava (Manihot esculenta), and an abundant growth of weeds, especially Triumfetta rhomboidea, Elephantopus mollis, Sida rhombifolia, Bidens pilosa and Emilia fosbergii, along with a thick ground cover mat of Vigna marina.

A profusion of ornamentals, mostly the abundant pan-tropical ones, surround the dwellings and other buildings.

On and just back of the beach ridges and rocky shores is a fringe of Hibiscus tiliaceus, Thespesia populnea, Hernandia sonora, Guettarda speciosa, Cordia subcordata, Tournefortia argentea, with shrubs of Scaevola sericea and Suriana maritima, and a dense ground cover of Vigna marina, a vine which also climbs into the trees. On low flats that are occasionally flooded with sea-water, are scattered Hibiscus tiliaceus and dense stands of salt-grass, Paspalum distichum.

Above the coastal flats the lowest slopes are covered by a dense forest of Mangifera and Inocarpus, with some Hibiscus tiliaceus, patches of Coffea arabica, Cordyline fruticosa and scattered coconuts. Above the lowest slopes, Cocos nucifera becomes much more common, giving character to the landscape.

The ravines, up to their heads, are occupied by dense stands of Mangifera with Inocarpus fagifer also common and large, some Hibiscus and occasional tall Erythrina variegata and shrubs of guava

(Psidium guajava). Ferns --Nephrolepis, Polypodium, Davallia and Thelypteris, make much of the ground layer on the slopes and in ravines, along with other abundant weedy herbs. Heavy vines and lianas, such as Canavalia cathartica, Abrus precatorius, Merremia peltata and Derris malabarica form tangles in much of the ravine and slope vegetation.

On the middle and upper slopes and steep ridges the prevailing vegetation type is a tangled scrub or scrub forest of primarily Hibiscus tiliaceus, with locally much Psidium guajava. This, with a ground layer of weeds and Polypodium scolopendria, is the most widespread and prevalent vegetation type on the volcanic mass of the island. It is most difficult and tiring to traverse, even with the aid of a machete. In places in this are small clumps and patches of sword grass, Miscanthus floridulus, possibly relicts of former large stands.

On some more level ridges and saddles is a scrub forest of several broad-leaf shrub and small tree species, Ficus prolixa, Glochidion sp., Colubrina asiatica, Plumbago zeylanica, with the inevitable Hibiscus tiliaceus. On the sides of some of these ridges, Gleichenia linearis forms patches, but is much less common than in the higher, wetter islands.

On high south and southwest slopes and ridges are areas of Miscanthus floridulus grassland, possibly traces of rain-shadow effect. The small amount of this vegetation is one of the curious aspects of Maupiti vegetation. Considering the prevalence of burning of vegetation on this island large areas of Miscanthus savanna would be expected, but this vegetation type is not at all extensive.

Judging by the collections made by Jean Raynal, in June 1973, one would have expected a considerably richer and more hygrophilous vegetation at high elevations than was encountered in 1985. A number of species, including some epiphytes, found by Raynal, could not be located on the 1985 survey. The condition of the vegetation generally, in 1985, suggested that there had been an unusually dry season or seasons previously. This might have resulted in a poor representation of some mesophytic species. However, the scarcity or complete or almost complete absence of a good number of these, may be the result of repeated uncontrolled burning which denuded the upper slopes. Evidences of extreme erosion on some of the ridges and steep slopes strengthens this suggestion, and burning may be responsible for the relative poverty of both flora and vegetation now observable on this island.

The extensive motus have almost no physiographic relief. The principal variations are low beach ridges (on the seaward side of Motu Auira to as much as 6–8 m), and wet marshy depressions, in places to below water-table. These may be remains of old taro-pits, now largely colonized by dense pure stands of saw-grass (Cladium jamaicense) and very locally by Cyperus sp. and even more locally by stands of Typha domingensis.

The original vegetation of the motus was cleared and replaced by coconut plantation. Burning of the herb and shrub regrowth in the plantations is, and probably has been, prevalent, and has encouraged the abundance of a number of species that may withstand at least moderate fire. Such species are Euphorbia aff. atoto, and Timonius polygamus, both slender shrubs with rather thick root crowns from which sprouts issue after burning. Practically all coconut trees seen showed charring around their bases, some being seriously burned. On the lagoon sides the plantation comes to the top of the beach ridge, which is here very low, in places scarcely evident. Such trees as Guettarda, Cordia, and Hernandia are commonly found along the lagoon beaches and beach ridges, more sparingly inland. Suriana maritima and Scaevola sericea are common shrubs at the top of the lagoon beach, in places forming conspicuous fringes.

On the ocean side more diverse woody vegetation persists on the beach ridges where it has not been recently cleared for watermelon cultivation. Here the beach ridges are higher and the beaches broader. Suriana and Guettarda are principal components, with coconuts rather sparse. Lepturus repens is the principal herb component, here, as elsewhere. Euphorbia and Timonius, as well as Suriana, form a notable shrub layer. Cassytha, a leafless orange to green string-like twining parasite,

tangles everything together in places.

The coconut plantation is much more open, or even sparse, on these motus, than is usual on other similar islands in the Societies and elsewhere. The frequency of fallen coconut trunks and of seedling regeneration suggests that this sparseness may be the result of a series of hurricanes several years ago. Some areas are quite open and the vegetation is dominated by Euphorbia, with, in places, Timonius, and often an abundance of Lepturus. In more shaded places the ferns Nephrolepis, Polypodium, and more locally, Davallia, form a large part of the ground layer. Cassytha is very frequent, more so in more open situations. Tacca is locally common, especially toward the lagoon side. On the west and northwest side of Motu Auira, back of the broad beach ridge, there is a broad flat zone quite open and free of coconuts, even of seedlings. Pandanus and Guettarda are scattered sparsely over this. The main cover is a mixture of Euphorbia, Timonius and Suriana, the latter abundant especially toward and on the beach ridge, with Lepturus locally abundant between the shrubs. Cassytha is very common, and Scaevola sericea var. tuamotensis appears abundantly near and on the beach ridge.

Here and there, on the motus, are stands of woody plants - shrubs and trees, not commonly abundant on low coral islands. Such are dense Leucaena leucocephala on Motu Tuanai and patches of forest of Eugenia cuminii on Motu Auira. Ferns are unusually abundant, mostly Nephrolepis rufescens, on the south end of Motu Tuanai. Near Perue on Motu Tuanai, west end, is a shallow desiccating lake or pond called Roto (?), surrounded by dense stands of Pemphis acidula, not seen elsewhere on Maupiti. Near the desiccated part of the pond the Pemphis seems in very poor condition, almost leafless, while on slightly higher ground, back of this, it is flourishing and leafy.

Copra-making does not seem to have been very active recently, judging by the abundance of sprouting nuts generally and the number of ripe, un-cut nuts on the ground almost everywhere in the plantations.

In recent years there has been a surge of watermelon (Citrullus lanatus) cultivation on the motus. Areas of coconuts are cleared. Weeds which then grow in great abundance, are killed by application of herbicides, then burned. Quantities of volcanic soil are brought from the main island, placed in pits where watermelons are then planted. Quantities of phosphate are applied, and water, dipped or pumped from the fresh-water lens a meter or two below ground surface, is poured or sprayed on the plants. Excellent watermelons are produced in some quantities and shipped to Tahiti. The consequences of removal of large amounts of soil from the coastal strip and lower slopes of the island are not fully understood but agriculture on the volcanic slopes can scarcely benefit. The practice of burning results in an even greater lack of organic matter than usual in coral soils.

The abundance of Vigna marina on both the coastal strip and lagoonward parts of the motus may contribute substantially to the nitrogen content of the soil, as may Nostoc and other myxophytes in and on the surface of the coral sand and rock.

The Maupiti Flora

Floristically the island is, at present, impoverished, though this may not always have been the case. The proportion of exotic species is high, and their abundance very great. That they have all replaced indigenous plants is a truism, but suggestive that the native flora must once have greatly exceeded the 237 native species now on record.

The flora of the volcanic parts of the island has probably suffered the greatest loss of both species and numbers of individuals of indigenous kinds. Jean Raynal, who collected here in 1973 is said to have devoted most of his effort to the higher areas. He got a number of species not found in 1985 as well as several more that are now very scarce. Those now missing or scarce are the most mesophytic, reflecting the present denuded condition of the ridges and summits. The slopes and ravines, which once must have had a fairly mesophytic flora, at least on the windward side, are now almost entirely occupied by exotics, both woody and herbaceous. The coastal strip is, except for the strand, covered

by exotic trees and shrubs, mostly either economic or ornamental.

The motus, though they have been completely converted to coconut plantations, have probably retained a greater proportion of their indigenous flora than the high island, though their original total flora may probably have been much smaller. Most of the atoll species are pioneers or salt-tolerant plants and hence, better able to survive clearing and exposure. Even so, a few species that might be expected in large motus such as these were not seen. Pisonia grandis, for example, seems completely lacking. Pemphis acidula is very local and in an unusual habitat, on sand flats and edges of a brackish pond. Neither Hedyotis romanzoffiensis nor Digitaria stenotaphrodes were found.

PTERIDOPHYTA n.v. ferns and fern allies

PSILOTACEAE

Psilotum Sw.

A pantropical genus with two or more, probably four, species, one in Maupiti. Often considered the most primitive living vascular plant.

Psilotum nudum (L.) Beauv.

Tufted, usually erect, leafless bright green plant, 1.5–3.0 dm tall, stems congested, from a usually very short rhizome, stems longitudinally angled, several times dichotomous, without evident nodes, leafless but with scattered small subulate appendages, these paired on ultimate branches bearing 2 large yellow globose sporangia subtended by each pair.

Pantropical species, very rare on wooded slopes on Maupiti, terrestrial, rarely epiphytic.

Fosberg 64897 (US)

SELAGINELLACEAE

Selaginella Beauv.

Herbs with scale-like leaves and spores of 2 sizes, the smaller ones distal in the fruiting spike.

A very large cosmopolitan genus with very diverse habit and adaptations, one species rare in Maupiti.

Selaginella societatis Moore ? n.v. remu tiare

Small delicate herb, branching in one plane, leaves very small, thin, green, scale-like, in 4 ranks, two of them larger and lying in same plane as branching; fruiting spikes terminal on branches, narrower than leafy branch.

Found once in Maupiti but not seen on 1985 survey.

Raynal 17831 (p. 1337)

GLEICHENIACEAE

Gleichenia Sm.

Dicranopteris Bernk.

Ferns with usually pseudo-dichotomously forked fronds, pectinate ultimate segments, and naked sori.

A pan-tropical genus, often divided into 4 genera, but by us these are regarded as sections of Gleichenia. Common on tropical mountains, a few lowland species. One species in Maupiti.

Gleichenia linearis (Burm. f.) C. B. Cl.

Buried elongate hard rhizomes bearing widely spaced fronds, these several to many times pseudo-dichotomously branched, a pair of reflexed pinnae at each forking and a coiled innovation or an elongate segment of rhachis in each forking, elongation indeterminate, producing complex tangles.

In Maupiti seen only very locally on high steep slopes.

Fosberg 64777 (US)

POLYPODIACEAE (sensu lato)

By many botanists divided into a number of smaller families.

Acrostichum L.

Fronds large, leathery, fertile ones with upper part of blade solidly covered by crowded sporangia.

A pantropical genus of several coarse aquatic or semi-aquatic species, one rare in Maupiti.

Acrostichum aureum L.

Rhizomes short, erect, crowded together, producing slender stolons; fronds erect, to 1.5 m tall, base clothed with stiff blackish ovate scales with erose brown margins, closely appressed to base of stipe, frond hard-coriaceous, broadly lanceolate in outline, simply pinnate, pinnae lanceolate, ascending, to 25×5–6 cm, acute, base obtuse, on a short stalk to 1.5 cm, lowest reduced to short point-like rudiments on sides of the stipe, these remote; fertile fronds like sterile, but upper few pairs of pinnae completely covered with sporangia, these pinnae after shedding spores drying and twisting while rest of frond continues green.

A pantropical fern found in both fresh and saline marshes, water seeps, and swamps, especially around edges of mangrove swamps. In Maupiti only small patches of a few sq. m, on N-W coast, in saline flat.

Fosberg 64915 (US)

Adiantum L.

A cosmopolitan genus of many species, with membranous flabellately veined leaflets arranged from simply pinnate to decompound, usually in one plane. One species rare in Maupiti.

Adiantum hispidulum Sw. — n.v. amo'a hu'a

Small tufts of slender long-stipate pinnate fronds, pinnae thin, with sori concealed by turned under flaps of margin of pinna.

Collected once in Maupiti, not seen in 1985.

Raynal 17836 (p. 1337)

Asplenium L.

Rhizome usually very short, often erect, fronds entire to variously divided, blades tending to be firm; sori with linear indusia lying along veins.

A very large cosmopolitan genus, one species in Maupiti.

Asplenium nidus L. — n.v. 'oaha bird's nest fern

Fronds entire, arranged in a large nest-like rosette that collects leaf litter, veins many, pinnately parallel, with elongate linear sori, covering part or most of blade.

An Indo-Pacific fern, either epiphytic or terrestrial, in Maupiti rare on shaded rocks at middle to high elevations.

Raynal 17856 (p. 1338), Fosberg 64900 (US); Morris 10 (US)

Davallia Sm.

A large tropical genus, fronds tending to be triangular, rhizome creeping, sori in marginal tubules. One species common in Maupiti.

Davallia solida Sw. n.v. titi

Rhizome thickish, covered with hair-like brown scales, creeping, fronds scattered, much divided. Widespread and common in the Pacific islands; on Maupiti common in shaded places at all elevations, all plants examined were sterile.
Raynal 17839 (p. 1338), Fosberg 64828 (US), 64874 (US).

Doryopteris J. Sm.

Small ferns with short rhizome, few fronds, triangular blades that curl when dry, variously divided; sporangia borne under reflexed margin of segments.
Widely distributed small tropical genus. One species rare in Maupiti.

Doryopteris concolor (Langsd. & Fisch.) Kuhn

Small tufts of fronds with straight wiry stipes, triangular palmately divided blades, curled when dry.
A rather widely distributed Pacific species, rare in Maupiti, growing in rock crevices.
Morris 7 (US), Fosberg, sight record.

Humata Cav.

Usually epiphytic, with slender scaly creeping rhizomes, entire or usually dissected fronds, sori with transversely oblong or reniform conspicuous indusia.
A rather small genus in the Malayan-Pacific region, one species in Maupiti.

Humata pectinata (J. E. Sm.) Desv. sensu lato n.v. feti'i no te titi
Humata banksii Alston

Small fern with fronds scattered on rhizome, stipe about equalling the triangular pinnately lobed blade.
A widespread Polynesian and western Pacific species, several forms of which have been described as species. Epiphytic, found once on Maupiti but not seen on the present 1985 survey.
Raynal 17845 (p. 1338)

Nephrolepis Schott

Rhizome usually erect, bearing slender elongate stolons, crowded mostly erect fronds, normally simply pinnate with articulate pinnae, sori with round to cordate or reniform indusia, usually a row of white dots on the upper surface of pinna, marking the positions of the sori.
A pantropic genus with one species native in Maupiti, another one planted.

Nephrolepis biserrata (Sw.) Schott

Rhizome slender, erect, blackish, covered with hard, black convex glossy reticulate scales with cinnamon-colored tomentose margins, rhizome producing hard wiry dark brown stolons sparsely scaly with hard black-based scales; fronds ascending to arching-spreading, pinnate, lanceolate in outline, to 2 m long, pinnae lanceolate, tapering, to 10 or more cm long, a few somewhat reduced ones toward base, sessile, acroscopic side broader, more truncate, almost glabrous on both sides or, fertile pinnae

slightly scaly on costa beneath, rhachis somewhat, but not densely scaly, scales peltate longer than wide, pointed at ends, hyaline with dark point of attachment, irregularly ciliate, turning brown with age, margins of sterile pinnae subentire (?) to subcrenate, undulate; margins of fertile pinnae crenate, sori submarginal, slightly in from sinuses, indusia subpeltate to orbicular-reniform, openings pointing backward and somewhat inward.

A widely distributed pantropic species, probably planted, at least on Motu Auira.

Fosberg 64836 (US)

Nephrolepis rufescens (Schrader) Wawra — n.v. amoa

Nephrolepis acuta var. subferruginea Hook.

Rhizome erect, covered by imbricate red-brown fimbriate scales, their apices blunt, an abundance of elongate cordlike axillary stolons 1.5–2 mm thick, covered by hyaline somewhat reddish broadly lanceolate scales with peltate bases; fronds pinnate, pinnae articulate, crowded tending to be erect or arching, rhachis dark brown, thickly covered with narrowly lanceolate to almost hair-like red-brown scales, these tending to be hyaline with dark brown bases on young fronds, some older fronds with rachis appearing gray-woolly above; outline of frond narrowly lanceolate, sterile ones broader, pinnae close together distally, becoming shorter and more remote toward base, linear lanceolate spreading almost in a single plane or slightly inflexed, apices blunt to acute, fertile ones narrower, more acute, both surfaces sparsely pale brown-scaly, more densely so on and near midrib, scales spreading, pinna-margins undulate or subcrenate, sori sub-marginal, indusia orbicular to narrowly reniform, cordate base directed downward and inward.

Fosberg 64779a (US); 64839 (US); 64847 (US) Raynal 17858 (p. 1338)

Polypodium L., sensu lato

We choose to maintain Polypodium L. in a rather broad sense, including Microsorium, Phymatodes, Phymatosorus, Phlebodium and other groups closely allied to Polypodium L. sensu stricto, but excluding Grammitis and its close relatives. In this sense Polypodium is a readily recognized and convenient group of ferns of world-wide occurence.

Rhizome usually creeping, sometimes very short and fronds crowded; fronds usually articulate to rhizome, simple, entire or much more usually pinnately lobed; sori without indusium, in rows or scattered, venation ordinarily anastomosing or reticulate.

Polypodium maximum (Brack.) Hook. — n.v. metua pua'a 'ata ho'e

Fronds erect, to 0.8 m, from thick horizontal rhizome, rhachis very broadly winged, one or two pairs of lobes spreading at right-angles, venation reticulate sori on terminal lobe, small, scattered.

Rare on Maupiti, at higher elevations.

Raynal 17852 (p. 1338) Morris 9 (US)

Polypodium punctatum (L.) Sw. — n.v. 'irio peho

Rhizome creeping, short, fronds crowded, entire, linear to linear lanceolate, acute or acutish, sori scattered, small.

Widespread in Old World tropics; found once on Maupiti, but not seen on 1985 survey.

Raynal 17851 (p. 1338)

Polypodium scolopendria Burm. f. — n.v. metua pua'a

Rhizome stiff, creeping, 6–10 mm thick, hard-fleshy, strongly diagonally dark-banded by overlapping rows of ovate or ovate-lanceolate acuminate scales, these peltately attached closely and firmly appressed to surface of rhizome, body of scale strongly black-cellular-reticulate, areolae clear, roughly in rows and longer than wide; fronds scattered, erect, articulate to rhizome, an imbricate loose

band of smaller similar scales around articulation; bushy masses of intricately branching roots on lower side of rhizome; stipe round, shorter than blade, upper part black; blade thin-coriaceous, ovate in outline, lobed almost to midrib, up to 6 or more linear-lanceolate lobes alternate on a side, terminal one similar, longer, apices acutish to rounded, sinuses round; no sharp difference between fertile and sterile fronds, terminal, upper, or almost all lobes with one, rarely 2 rows of large orbicular orange sori with no indusia, sori showing through on upper surface as raised disks or rings, pale green on bright green frond surface.

Widespread Indo-Pacific species, commonest in lowlands and coastal habitats, but also common on mountain sides and ridges; in Maupiti common generally, on mountain slopes very erect and very large.

Raynal 17853 (p. 1338), Fosberg 64798 (US), 64981 (US)

Pyrrosia Mirb.
Cyclophorus Desv.

Epiphytic ferns with creeping rhizomes, scattered coriaceous, entire fronds with peltate-stellate scales; sori naked.

A widespread Old-World tropical genus, one species known from Maupiti.

Pyrrosia blepharolepis (C. Chr.) Ching n.v. ripene
Cyclophorus blepharolepis C. Chr.

Rhizome slender, scaly with acuminate brown-tipped scales, scales of blade with black centers, white rays, lamina of blade sub-fleshy, coriaceous.

An epiphytic fern, found once on Maupiti but not seen on 1985 survey. Raynal 17855 (p. 1338)

Thelypteris Schmidel
Dryopteris Adans., pro parte, excl. type.

Ferns usually with once-pinnate fronds, but pinnae usually lobed, sori small, indusiate or rarely naked, indusia round to cordate or reniform but not truly peltate, venation free and forking or somewhat anastomosing.

A very large almost cosmopolitan genus, formerly united with Nephrodium (= Tectaria) or Dryopteris, now separate, and by some segregated into a multitude of small, ill-distinguished "genera"; one species in Maupiti.

Thelypteris forsteri Morton n.v. amo'a 'ata ho'e
Dryopteris invisa (Forster) 0. Ktze. (non Thelypteris invisa (Sav.) Proctor).

Rhizome creeping, buried, fronds broadly lanceolate in outline, arching, pinnae only lobed 1/3 to costa, but appearing more deeply so, sori on similar fertile fronds, in one row reaching almost to midrib from each lobe.

A widely distributed Pacific fern, common on wooded slopes on Maupiti.

Raynal 17857 (p. 1338), Fosberg 64769 (US); Morris 16 (US), 17 (US).

SPERMATOPHYTA

Spermatophyta n.v. seed plants

TYPHACEAE

Typha L.

Emergent aquatics with buried rhizomes, basal erect linear entire, firm leaves, erect hard cylindric flowering stems each bearing two spikes, lower one pistillate, upper staminate, on same rhachis, flowers densely crowded, fruits minute, shed as a cotton-like mass, spread by wind.

A few species, very difficult to distinguish.

Typha domingensis Pers

Tall reed-like stems to 3 m or more from an underground rhizome system, leaves linear, distichously arranged, basal, sheathing at base, 2–3 m long, about 12–13 mm wide, smooth margin, inflorescences with pistillate and staminate portions each about 30 cm long, separated by about 1 cm. staminate arcuately nodding.

Probably introduced in the Society Islands, known at least from Tahiti, Moorea and Raiatea on coastal flats; in Maupiti on Motu Auira in marshes near lagoon side.

Fosberg & Sachet 64981A (US)

PANDANACEAE

Pandanus L.

Trees, shrubs or rarely almost acaulescent, trunk supported by woody prop-roots, sparsely branching, branches thick, ringed by leaf-scars; leaves linear, stiff, hard, usually somewhat folded, usually spiny on margins and midrib; dioecious; flowers reduced to tufts of stamens or single or several united carpels; staminate inflorescences branched, bracteate; pistillate of single or multiple heads; fruit drupaceous.

A widespread Old-World tropical genus of many species, one in Maupiti.

Pandanus tectorius Park.

A very widespread species in Polynesia, Malayan Archipelago, Ryukyu Islands, and also in the Western Indian Ocean; common especially at low elevations and on motus in Maupiti.

Fosberg, sight record.

POACEAE (GRAMINIAE)

The grasses, one of the largest plant families, many genera.

Cenchrus L.

Grasses with spike-like panicles of spiny, burr-like involucrate spikelets.

Widespread in tropical and warm-temperate regions, two species known from Maupiti.

Cenchrus calyculatus Cav. n.v. sand-bur

Perennial, with small clumps of leafy stems, involucres not strongly spinose, with many bristle-like slender spines.

Widespread, but never common, in Polynesia; one clump found on a low ridge in open scrub on S W corner of Maupiti.

Fosberg 64763 (US, BISH, Papeete)

Cenchrus echinatus L. n.v. piripiri; sand-bur

Annual (or short-lived perennial) grass, several stems slightly decumbent from a branching base, lower sheaths purple, strongly compressed, sharply carinate, lower internodes short, lower nodes geniculate, culms ascending to erect upper part exserted, blades narrow, slightly folded, long tapering, held at an angle to sheath, base of blade long hirsute above, ligule a dense row of hairs; panicle spike-like (or raceme-like, bases of spikelets obconic, pedicel-like), 2–3 cm long, rhachis narrow, slightly marginal, undulate, spikelets not crowded, involucrate, involucral segments in 2 series, the outer

numerous, setose-spinose, the inner series with thickened indurate bases, coherent into a hard base, the free parts sharply spinose, the whole enclosing membranous bracts and the grain; the whole structure very readily disarticulating from the rhachis when mature.

A pantropical weed, carried around readily in animals' fur and peoples' clothing, very annoying; common in Maupiti.

Fosberg 64840 (US)

Centotheca (or Centosteca) Desv.

Broad-leafed grass with cross-veins between the parallel nerves, spicate panicles.

Centotheca lappacea (L.) Desv. n.v. 'ofe'ofe

Usually erect, scarcely caespitose, rather slender grass, with broad, wavy-undulate blades, many spike-like branches ascending from a short rhachis, later deflexed, spikelets deciduous and clinging to clothing when mature.

A very common Western Pacific and Polynesian grass; common on slopes especially shaded ones in Maupiti.

Raynal 17859 (p. 1338), Morris 4 (US); Fosberg 64800 (US); 64817 (US).

Coix L.

A rather coarse, broad-leafed grass, with spikelets monoecious, pistillate enclosed in a hard, smooth, nut-like involucre.

Coix lachryma-jobi L.

Indo-Pacific species, spontaneous or planted for use in seed-jewelry. One tiny colony of several plants seen in edge of village on Maupiti.

Fosberg, sight record.

Cynodon Rich.

Wiry stoloniferous or rhizomatus grasses with digitate clusters of spikes-like branches on erect culms.

Cynodon dactylon (L.) Pers.

Creeping, branching, mat-forming grass, internodes numerous, short; leaves small, broadly linear, glabrous except for a few conspicuous hairs inside summit of sheath; ligule very narrow, membranous, entire, fertile culms well-exsertes, 3–4 narrowly linear spikes widely divergent from summit of fertile culm; spikeelets closely appressed, second glume half or more as long as spiklet, rachis narrow slightly carinate, spiklets ovate, 1 floret.

Pantropical and warm-temperate weedy grass, used for lawns where more attractive grasses do not do well; in Maupiti common around dwellings and in trampled places, component, with other grasses, of lawns, doubtfully native.

Fosberg 64913 (US, BISH)

Digitaria Heist

Tufted usually slender grasses, often annual or in wet years perennial, spike-like racemes usually digitate or subdigitate, spikelets solitary or usually in pairs (or 3's), one pedicel longer, one-flowered, usually lanceolate or narrowly ovate, glumes tending to be reduced, lower one even absent, sterile lemma well-developed, with 3 or more strong nerves, fertile lemma strong, smooth, enclosing the palea and flower-parts.

Digitaria ciliaris (Presl) Miq. n.v. Crab Grass

Decumbent herb, stems spreading from a loose tuft, several lower internodes, then culms ascending, sheaths long, carinate but not strongly so, blades lanceolate, at an angle to sheaths, ligule hyaline, prominent; racemes 3–4, 2 lower ones subopposite, divergent, upper 1 or 2 notably above lower ones and opposite, or uppermost shortly stipitate; spikelets broadly lanceolate, 3 nerves visible dorsally, first glume present, triangular scale-like, very short, second glume lanceolate, hairy, 1/2–2/3 length of spikelet, sterile lemma about equalling spikelet.

Widespread tropical equivalent of temperate D. sanguinalis, found in weedy places.

Fosberg 64841 (US), 64834 (US).

Digitaria radicosa (Presb) Miq.
Digitaria timorensis

Slender grass with few digitate spike-like panicles; rhachis margin smooth or almost so, first glum tiny or lacking, second glume about half length of spikelet.

Occasional in open or semi-open grassy areas and roadsides.

Fosberg 64766 (US), 64879 (US).

Digitaria setigera Roth

Slender decumbent grass with digitate spike-like panicles, lanceolate spikelets, lower glume wanting or very minute, upper, less than half the length of spikelet.

A common Indo-Pacific species, found occasionally on Maupiti in open weedy places and along paths.

Fosberg 64758 (US), 64803 (US), 64920 (US, BISH, Papeete)

Echinochloa Beauv.

Annual or perennial grasses with racemosely arranged panicles of uniflorous spikelets. One species, probably introduced, in the Society Islands.

Echinochloa colonum (L.) Beauv.

Stems spreading, with several leaves, panicle of several short branches of crowded uniflorous spikelets, awnless.

A very widely distributed weed of ruderal habitats, occasional in lowlands on the main island of Maupiti.

Fosberg 64790 (US)

Eleusine Gaertn.

A small genus of weedy and economic grasses, very widespread; one weedy species in Maupiti.

Eleusine indica (L.) Gaertn.

Small slightly decumbent tufts, culms ascending with several digitately arranged spicate panicle branches; grain oblong, promanently rugose.

A cosmopolitan weedy grass with a very tenacius root system, common on Maupiti.

Raynal 17865 (p. 1338), Fosberg 64842 (US).

Eragrostis Host

A large genus, mostly of warm countries; one widespread weedy species in Maupiti.

Eragrostis amabilis (L.) W. & A. n.v. love-grass
Eragrostis tenella (L.) Beauv.

Slender depressed to erect grass, leaves linear-lanceolate, several mm wide, strongly pilose at summit of sheath and base, panicle fine, diffuse, branches wide spreading, spikelets very small, florets about 8, lemmas green to purplish.

Widespread tropical weed; in Maupiti common in disturbed places, especially around dwellings.

Fosberg 64912 (US)

Lepturus R. Br.

Tufted, but tufts often producing ascending branches or prostrate stolons, inflorescence a jointed cylindrical spike with spikelets appressed into grooves in the rhachis.

A few widely distributed coastal species, very variable, and several more restricted or even local endemic species, some of doubtful status. One wide-spread species very common on Maupiti.

Lepturus repens (Forst. f.) R. Br.

Wiry grass, at first an erect tuft, stems becoming geniculate decumbent and spreading, tufts tardily sending out elongate wiry stolons, rooting at nodes, whole plant glabrous except leaf margins very minutely scabrous, leaves broadly linear, at most 20 cm long, attenuate to a fine point, sheath equalling or shorter than blade, round on back; spikelets borne in elongate depressions on a cylindric jointed spike, arranged distichously on rhachis which has alternately diagonal articulations which disarticulate at maturity, each cylindric, grooved joint bearing one spikelet consisting of an ovate glume covering the groove in the rhachis joint, its apex prolonged into an acumen or awn, the lemma hyaline, fitting into the groove, enclosing the floret between it and a membranous palea, a small rachilla bearing a sterile floret between the fertile floret and the glume; at anthesis the glumes diverge from the spikelet, exposing the floret and the exserted anthers, the glume closes tightly later until maturity, when the spike disarticulates into cylindric joints, internally of dry aerogenous tissue which provides for dispersal by floating. The glume is minutely scabrous, which may aid in bird dispersal. The terminal node of a spike bears two glumes.

An ubiquitous species of shores and maritime situations throughout the Indo-Pacific region; on Maupiti very abundant, especially on motus.

Fosberg 64751 (US), 64810 (US), 64854 (US), 64971 (US)

Miscanthus Anderss.

Bunches of coarse culms with linear harsh leaves; panicle racemose-corymbiform, with many very hairy spicate-racemiform branches, spikelets very hairy, rhachis not disarticulating at maturity.

Miscanthus floridulus (Labill.) Warb. n.v. Sword-grass
Miscanthus japonicus Anderss.

Large clumps of culms to 2 or more m tall, leaves with scabrous cutting edges, panicle with prominent rhachis, many spike-like racemes of very pilose spikelets, when these are shed the filiform rhachises of the racemes persist, with short persistent pedicels.

A widely occurring Pacific island grass, forming savannas on many islands; on Maupiti dominant on very high eastern and southeastern slopes, occurring sporadically in forests and openings on lower slopes.

Fosberg 64799 (US); Morris 14 (US).

Oplismenus Beauv.

A small genus, of warm regions, of prostrate or decumbent grasses with short internodes, leaves broadly lanceolate to elliptic, thin, undulate, panicles racemoid, with spicate branches, few-flowered

broadly lanceolate to elliptic, thin, undulate, panicles racemoid, with spicate branches, few-flowered spikelets usually with short but conspicuous awns.

Usually growing in shady places, two species in Maupiti.

Oplismenus compositus (L.) n.v. 'ofe'ofe hu'a

Decumbent loosely branching grass with broad thin undulate elliptic leaves, panicles with branches over 1 cm long, divergent from rhachis, spikelets with muticous sterile lemma.

A common forest grass in Polynesia and Micronesia and westward, occasional on wooded slopes in Maupiti.

Raynal 17847 (p. 1338); Fosberg 64793 (US), 64823 (US)

Oplismenus hirtellus var. imbecilis (R. Br.) Fosb. & Sachet

Much smaller than O. compositus, forming thin open mats, leaves broadly lanceolate, panicle branches short, under 1 cm, spikelets crowded, tending to be reflexed, sterile lemma mucronate.

A widespread grass in Indo-Pacific region; common ground cover in lower slope forests on Maupiti.

Fosberg 64778 (US), 64801 (US)

Panicum L.

Brachiaria Griseb.

Grasses of various habit, leaves commonly broadly lanceolate, panicle either open-branched or of several spike-like racemes; spikelets uniflorous.

An enormous temperate and tropical genus, with a number of weedy species, especially in section Brachiaria (often treated as a separate genus). One species possibly exotic in Maupiti.

Panicum ambiguum Trin. n.v. nanamu ti'a rahi

Brachiaria paspaloides (Presl) Hubb.

Decumbent weak stemmed grass forming tangled masses loosely branched; sheaths rounded, hirsute, blades hirsute on both surfaces, linear, 10–20 cm long or more, ligule a close row of short erect bristles; fertile culms puberulent, well exserted; panicle with 2–4 divergent branches on a filiform rhachis, this very puberulent, rhachis of panicle branch flat but narrow, spikelets subsessile and shortly pedicellate, both on same raceme, spikelets elliptic, second glume and sterile lemma strongly 5-nerved.

Widespread tropical grass; in Maupiti of rare occurrence but widely distributed on motus in open coconut groves or cleared land.

Raynal 17861 (p. 1338); Fosberg 64855 (US); Fosberg & Sachet 64960 (US).

Paspalum L.

A large genus of tropical and temperate grasses of various habit, inflorescence of one to many spikes or spike-like racemes at or near the summits of erect or ascending culms, rhachis of individual spike usually broad and flat or with a median keel, spikelets uniflorous, flattened dorsiventrally, usually in 2 crowded rows on the rhachis, often disk-shaped. Several species in Maupiti.

Paspalum conjugatum Berg.

A pantropical weedy grass, occasional especially in more humid places on Maupiti.

Fosberg 64759 (US); Morris 30 (US), 31 (US).

Paspalum distichum L. n.v. salt grass

P. vaginatum Sw.

Decumbent, densely mat-forming grass, stems with many nodes, erect distally, sparingly branched above base; leaves smooth, margins not at all scabrous, arranged conspicuously distictiously, sheaths smooth, scarcely carinate, blades spreading-ascending, becoming inrolled, ligule membranous, truncate-obtuse; fertile culm erect, with 2 spikes, divergent at about 90°, rhachis with 2 rows of oblong-lanceolate flat spikelets, closely appressed to rhachis.

A pantropical and warm temperate zone grass, usually found in somewhat to strongly saline marshes; in Maupiti forming dense stands on flats that are occasionally flooded by sea-water.

Fosberg 64929 (US).

Paspalum orbiculare Forst. f.

Loosely caespitose perennial, culms slender but stiff, purplish at base, lowest sheaths without blades, more distal ones tightly clasping culm, blades narrow, elongate, upper ones falling somewhat short of equalling culm, blade somewhat scabrous on margins, tapering to a very slender tip, ligule very short, truncate, stiff membranous, with abundant short stiff hairs on outer surface; culm slender with 3–4 remote deflexed spikes about 2–2.5 cm long, rhachis of spike narrow, with 2 rows of suborbicular crowded spikelets, these with outer face (sterile lemma) with 3 nerves, the outer submarginal; stigmas exserted, dark purple.

A common widely distributed weedy grass throughout the Pacific islands, found on bare soil and often common in moist places; occasional in open places on Maupiti.

Fosberg 64788 (US).

Paspalum paniculatum L. n.v. 'ofe'ofe

Culoms tall or spreading, leaves thin, panicles of many racemes.

A widespread weedy grass, on Maupiti very local in disturbed places, doubtless introduced.

Raynal 17862 (p. 1338); Fosberg 64845 (US); Morris 27 (US).

Schizostachyum Nees

A small genus of bamboos, one species of which is widespread in the south Pacific, including Maupiti.

Schizostachyum glaucifolium (Rupr.) Munro

A large woody bamboo, to 15 m tall, internodes 3–5 dm long, walls rather thick (2–4 mm) and strong, green, culms forming loose clumps. Seldom, if ever, found flowering.

In most high Polynesian islands, on Maupiti rare, small colonies on wooded slopes, probably carried by Polynesians, used by them for many purposes.

Morris 11 (US)

Sporobolus R. Br.

A medium-large genus of tropical and warm temperate grasses with branched panicles varying from strict to diffuse, spikelets uniflorous, pedicellate. One species, probably introduced, in Maupiti.

Sporobolus fertilis (Steud.) Clayton
Sporobolus indicus var.

Tufted, panicle elongate, branches closely appressed, spikelets small.

Widespread weedy species, occasional locally in open places on Maupiti.

Fosberg 64802 (US), 64889 (US, BISH), 64922 (US).

Thuarea Pers.

A widespread genus of strand grasses, prostrate, monoecious, probably only one or two species, one in the Pacific islands including Maupiti.

Thuarea involuta (Forst. f.) R. & S.
Ischaemum involutum Forst. f.
Thuarea sarmentosa Pers.

Prostrate, somewhat fleshy creeping stems rooting at nodes, forming loose mats, flowering stems short, erect, flowers unisexual, lower florets in spikelet pistillate, upper staminate, these early deciduous, lower pistillate, enclosed by a broad rhachis, in fruit forming a hard small "fist-like" floating structure containing the fruit or caryopsis.

A widespread Indo-Pacific strand grass, seen only very locally on motus in Maupiti.

Fosberg 64848 (US).

Tricholaena Schrad.
Rhynchelytrum Nees

A small African genus of weedy grasses, one of which has spread through the tropics, partially, at least, because of its ornamental qualities.

Tricholaena rosea Nees n.v. Natal red-top
Tricholaenpa repens sensu auct. non T. repens (Willd.) Hitchc.
Rhynchelytrum repens sensu auct. non R. repens (Willd.) Hubb.

Slender erect grass, often behaving as an annual, panicle open, fuzzy with long red hairs, these sometimes fading when old.

Widely introduced and naturalized grass, native of South Africa; in Maupiti occasional to common along roadsides.

Fosberg 64921 (US).

CYPERACEAE

Grass-like plants, but with usually solid, often triangular stems, spiralled arrangement of leaves, sheaths closed, spikelets usually with many scale-like bracts, spirally or distichously arranged, fruit a nut, often called an achene, with one erect seed free from ovary wall.

Cladium P. Br.

A small genus of sedges found in most warm countries, growing in marshes. The most modern treatment of this genus, by Kern, in Flora Malesiana I, 7:688-690, 19, places the entire genus in one species, a course that is being followed here.

Cladium mariscus (L.) Pohl n.v. saw grass
Cladium jamaicense Crantz
Cladium jamaicense var. chinense (Nees) Koyama

Dense stands of erect leafy culms, to 1.8 m, spreading by underground rhizomes, rhizome 3–4 mm thick, arching downward from root crown, then turning up erect, new ones from arching one, then either creeping or turning up; leaves with closed sheaths, sinus deeply V shaped with lowest margins over-lapping, blade to 1 cm wide, carinate dorsally, canaliculate above, elongate, tapering gradually to a long flagelliform scabrous point, keel and margins antrorsely appressed spinulose-scabrous; panicle to 25 or more cm long, interrupted, composed of 2–6 or more pedunculate, bracteate sub-panicles, these branched several times, each branch ending in a glomerule of sessile spikelets, these uniflorous

with 3 style branches, scales several, spirally imbricate, chestnut brown, spikelet ovoid.

Pantropical species with several geographical subspecies, dominating many tropical and subtropical marshes; in Maupiti forming large pure stands in low wet spots in motus.

Fosberg & Sachet 64958 (US); Fosberg 64975 (US).

Cyperus L.

Plants with basal leaves and solitary or caespitose terete to sharply triangular culms, these unbranched and bearing at their summits an inflorescence varying from simply capitate to umbelloid-spicate to several times compound aggrations of compressed spikelts, subtended by leaf-loke bracts usually graduated in size, the distal ones smaller. A practically cosmopolitan genus of many species.

Cyperus compressus L. n.v. mo'u upo'o taratara (cyperacee a tete herissee)

Annual (?), small tufts, spikelets flat, elliptic, green.
Widespread weed, rare on Maupiti.
Fosberg & Sachet 64961 (US).

Cyperus cyperinus Retz. n.v. mo'u upo'o (cyperacee a(grosse) tete)

Mariscus cyperinus (Retz.) Vahl.

Slightly caespitose inflorescence, an umbell of heads of ascending slender spiklets.
Raynal 17828 (p. 1337). Widespread weed, found once on Maupiti, not seen in 1985.

Cyperus cyperoides L. n.v. mo'u upo'o taratara

Mariscus sumatrensis Retz.

Similiar to C. cyperinus but spiklets at right angles to rhachis or slightly reflexed.
A very widespread weedy species, found once on Maupiti but not seen in 1985.
Raynal 17821 (p. 1337)

Cyperus javanicus Houtt. n.v. mo'u taviri ha'ari

Mariscus pennatus (Lam.) Merr.

Coarse caespitose smooth culms, with 10 – 12 gray-green linear long-tapering leaves about 1 cm or less wide, channel-like on upper surface, broadly carinate beneath, margins and, to some extent, keel sharply scabrous umbellate, subtended by 5 strongly unequal leaf-like bracts, longest exceeding lm, rays strongly spreading, with 8 or more divaricate to reflexed spike-branches, sessile patent or slightly reflexed, light brown, lanceolate, compressed, acute, 5 – 9 mm, about 4 scales overlapping on each edge; dark brown sharply trigonous, ovoid, pointed.

A widely distributed Pacific lowland and strand species, found in all Pacific island groups.
Fosberg 64749 (US), 64884 (US); Raynal 17826 (p. 1337).

Cyperus kyllingia Endl. n.v. mo'u upo'o' uo'uo/no'ano'a

Kyllinga nemoralis (Forst.) Dandy.

Small tufted sedge, leave mostly basal, spikelets crowded in small white heads.
Widespread weed, locally established in village.
Raynal 17819 (p. 1337); Fosberg, sight in 1985.

Cyperus polystachyos Rottb.

Tufted, linen lanceolate flat spikelet in subcapitate clusters.
Common weed in wet places especially in interior of motus.
Fosberg 64757 (US), 64959 (US).

Cyperus rotundus L. n.v. nut-grass

A most persistent garden-weed throughout the tropics; occasional in Maupiti.
Fosberg 64844 (US)

Fimbristylis Vahl

Usually slender, often more or less tufted, wiry plants, stems round with leaves basal or only in lower part, or lacking, inflorescence a single spikelet subtended by a bract or more usually an umbelloid assemblage, simple or compound, or reduced to a head, usually subtended by bracts; spikelets with scales spirally arranged, or rarely more or less compressed and scales in 2 ranks, stamens with flat filaments, linear anthers; style usually more or less flattened, often with the edges strongly fimbriate or ciliate especially above, 2 or 3, rarely more, linear stigmatic branches; nut biconvex or trigonous, often obovate, style caducous without leaving a persistent enlarged or bulbous base.

A large mostly tropical genus of sedges, found in various, often moist, habitats; one species known from Maupiti.

Fimbristylis cymosa R. Br.

Caespitose acaulescent herb with bright green coriaceous narrowly linear leaves with short, firm dark brown open sheaths tightly crowded at base, blades ascending to spreading, midrib none, apex abruptly acute; scape ascending to erect, terete, slightly ribbed, completely leafless; inflorescence from capitate to open, umbelloid, subtended by 2-several leaf-like bracts with broad brown sheaths, subulate short blades, not usually exceeding branches, branching very congested to open, if open, with a sessile spikelet at each ramification, or several such, ultimate branchlets bearing either a spikelet or a glomerule or head of spikelets; spikelets ovoid to rarely cylindric, obtuse, scales spirally imbricate, ovate, obtuse to rounded at apex, cinnamon brown center with broad scarious margin; style not at all fimbriate, base enlarged, branches 2 (in ours), recurved, bristles (filaments?) 2, achene dark brown, smooth, obovoid, plump, somewhat planoconvex.

A pantropical extremely variable species, with a number of subspecies and/or varieties which have not yet been satisfactorily defined. In stature the plants vary enormously, also in degree of openness of inflorescence. Even the number of style branches varies. On Maupiti the plant is very abundant on the motus. It stands trampling very well and is a principal component of lawns around dwellings.
Fosberg 64880 (US), 64887 (US), 64888 (US), 64973 (US), 64974 (US)

ARECACEAE (PALMAE)

Trees or shrubs with columnar trunks, rarely branched except at base, a crown of often enormous simple or pseudo-compound leaves, flowers usually in panicles, fruit drupaceous or berry-like, seed with fleshy or bony endosperm.

Cocos L.

Tall trees with a hard but elastic trunk (swaying in wind), ringed with leaf scars, crowned with enormous pinnate leaves.

Genus now restricted to a single species.

Cocos nucifera L. n.v. coconut niu

A tall robust tree with a columnar unbranched trunk, ringed with leaf scars, bearing a crown of enormous pinnately compound leaves several meters long, the leaflets linear with the fold /\-shaped; flowers borne in axillary panicles enclosed in boat-shaped woody bracts, monoecious, the staminate borne on the distal portions of the .tal
panicle, the pistillate much larger and in the basal parts of the panicle; the fruit an enormous

triangular-ovoid drupe with a fibrous mesocarp surrounding a thin hard endocarp or shell; endosperm white, oily, forming a layer 1_1.5 cm thick on inside of shell, surrounding a large cavity containing a watery fluid; embryo small, fusiform, embedded near one of three thin spots on the proximal end of the endocarp; the enlarged calyx surrounds the attachment to the panicle branch.

This is the coconut, one of the most useful of all plants, now found throughout the tropics, carried by man or by floating, from a probable Indian Ocean origin. Much controversy has surrounded the origin of this plant, as no truly wild plants are known that could not have been carried by man. Practically all parts of the plant are used by indigenous peoples throughout the Indo-Pacific region. Copra, the dried endosperm, is an important commercial crop, being the source of coconut oil, used in soap-making and for food oils and fats.

Fosberg, sight record.

ARACEAE

Family unusual in Monocotyledonae in its usually net-veined leaves, flowers in dense fleshy spikes often without perianth, sometimes 4-merous, spike usually subtended or surrounded by a large bract called a spathe.

Alocasia G. Don

A medium sized Indo-Malaysian genus of thick-stemmed herbs, a weaker lateral vein between each pair of principal lateral veins; spathe with a lower part that thickens and persists, an upper "blade" that withers and falls off; spadix with a zone of pistillate flowers below, separated from and above it a zone of staminate flowers, then a roughened sterile appendage; fruit a red berry. One species common in Society Islands, seen in Maupiti.

Alocasia macrorrhiza (L.) G. Don

Erect herb with thick starchy trunk, bright glossy green leaves, blade sagittate with basal sinus reaching petiole, basal lobes rounded, lateral veins thick, submarginal vein close to margin, spathe with lower 3-5 cm persistent, upper 20 cm withering, spadix pistillate near base, then staminate, above this, then a long sterile appendage.

Common throughout Polynesia, not abundant on Maupiti.

Fosberg, sight record.

Colocasia Schott

A small Old World tropical genus with tuberous corm; flowers monoecious, stamen forming synandria. Noted for containing the taro or dasheen.

Colocasia esculenta (L.) Schott — n.v. taro; dasheen; coco-yam

Acaulescent but with a large swollen starchy corm; erect long-petiolate leaves with glaucous, sagittate, vertically hanging peltately attached blades; rarely seen flowering.

Planted for its edible corms, an important food plant, grown to some extent in Maupiti.

Fosberg, sight record.

Cyrtosperma Griff.

A small genus of thick-stemmed or tuberous herbs, petioles often prickly, plants often reaching a great size; leaves sagittate or hastate, spathe persistent, somewhat exceeding spadix, perianth present.

Mostly developed in New Guinea. One species widespread in Pacific islands.

Cyrtosperma chamissonis (Schott) Merr. — n.v. puraka

Large plants, stem tuberous to somewhat elongate and erect; leaves erect, basal lobes and apex acute or acuminate, blade bright green, petiole usually but not always prickly.

Widely planted for its edible corm, often grown in marsh culture, very rare in Maupiti, found once in an upland valley.

Morris 16 (US)

Xanthosoma Schott

Large acaulescent or nearly acaulescent plants with thickened or tuberous starchy corm, glaucous leaves, sagittate with sheath extending well up petiole, spadix fertile to apex.

A tropical American genus with one or two species in cultivation in Pacific islands, one seen in Maupiti.

Xanthosoma sagittifolium (L.) Schott n.v. yautia

Native of tropical America, widely cultivated in the tropics, and in many Pacific islands, including Maupiti, for its edible corms.

Fosberg, sight record.

COMMELINACEAE

Small or medium sized mostly tropical family, mostly herbs with succulent stems, alternate leaves, usually with well-developed sheaths, cymose inflorescence of 3-merous flowers, fruit a loculicidal capsule or indehiscent.

Commelina L.

Small herbs, usually blue-flowered, corolla fugaceous.

One species in Maupiti.

Commelina diffusa Burm. f. n.v. ma'a pape day-flower

A common tropical weed, found on slopes in disturbed or cultivated ground in Maupiti.

Raynal 17863 (p 1338); Gillette 1 (US), 5 (US) Fosberg 64953 (US)

Rhoeo Hance

An acaulescent purple herb with large rosettes of oblong-lanceolate leaves, boat-shaped inflorescence bracts, white flowers.

A genus of one species, originating in the Caribbean - Middle American region, widely cultivated in the tropics.

Rhoeo spathacea (Sw.) Stearn

Rhoeo discolor (L'Her.) Hance.

Seen only as a pot-plant on Maupiti.

Fosberg, sight record.

BROMELIACEAE

Large mostly tropical American family of herbs, typically but not always funnel-shaped, rosettes, frequently epiphytic, a few species are widely cultivated in the tropics, especially the pineapple.

Ananas Mill.

Rosettes of linear-lanceolate, commonly prickly-margined leaves, terminal spicate inflorescences,

crowded and fleshy, after flowering producing a terminal secondary rosette or crown of leaves.
South American, but one species pantropical in cultivation.

Ananas comosus (L.) Merr. n.v. pinapo; pineapple

Planted food plant, fruting spike enlarged, fleshy, edible.
Fosberg 64945 (US).

LILIACEAE
(sensu latissimo including Agavaceae, Amaryllidaceae, etc.)

Very large cosmopolitan family, with simple, alternate leaves, and usually 6-merous flowers, many of them very showy.

Cordyline R. Br.

Erect sparsely branched shrubs with spirally arranged, pinnately parallel-veined leaves, terminal panicles of rather small flowers, ovary superior, fruit a few-seeded berry.
Several Pacific species, one widespread, ethnobotanically important.

Cordyline fruticosa (L.) Chev. n.v. auti
Cordyline terminalis (L.) Kunth

Erect sparsely branched thick-stemmed shrub with an enlarged edible root, young stem tissue physiologically active; leaves large, arranged spirally in 2 or 3 somewhat indefinite ranks on upper portion of stem, blade elliptic about 3_6 dm long, abruptly acuminate, veins pinnately parallel with a strong midrib, continued at base in a wide petiole, channelled above; flowers in a recurved axillary panicle with a definite rhachis with ascending spicate branches, flowers whitish or purplish, limb 6-parted, subtended by 1_3 scale-like bractlets, fruit a firm globose berry, red externally with white flesh and up to 6 shiny black seeds of irregularly hemispheric shape.

Probably native to the western Pacific, carried by Polynesians to the eastern island groups, used for many purposes, the root baked for food, leaves for wrapping food for cooking, also for spreading food for feasts, for hula skirts, etc. Many cultivars with colored leaves exist. In Maupiti the colored forms are planted as ornamentals. The large leafed green form is naturalized on wooded slopes, especially around ancient terraces and other remains, but is seldom seen flowering or fruiting.
Fosberg, sight record.

Crinum L.

Large herbs, acaulescent from tunicate bulbs, rosettes of large, spirally arranged leaves, these usually lanceolate, trough-shaped, bases forming a "neck"; inflorescence a scape bearing an umbel or head of flowers subtended by two spathe-like bracts, ovary inferior, perianth of 6 more-or-less equal segments, united in lower part into a tube; seeds fleshy, produced in a fleshy dehiscent or indehiscent capsule.
Many species, in both hemispheres, some cultivated as ornamentals, identification difficult, as there are many horticultural forms.

Crinum asiaticum L.

(A large green leafed form not seen in flower).
Planted ornamental.
Fosberg, sight record.

Hymenocallis Salisb.

Acaulescent herbs, resembling Crinum but leaves distichous, and filaments united at base by an expanded membranous web.

Tropical American. but widely cultivated, occasionally naturalized.

Hymenocallis littoralis Salisb. n.v. spider-lily

A planted ornamental, sparingly naturalized on Maupiti.

Gillette 11 (US).

Sansevieria Thunb. n.v. bowstring hemp

Acaulescent plants from tough congested rhizomes, leaves thick, from flat to canaliculate to terete, with very strong fibers; inflorescence a spike or narrow raceme or panicle, of six-merous, tubular flowers; fruit a berry.

Sansevieria trifasciata Prain n.v. snake-plant; mother-in-law's tongue
law's tongue

Planted ornamental, tending to persist.

Fosberg 64938 (US)

DIOSCOREACEAE

A large mostly tropical family, of few genera, of twining climbers, with alternate or opposite, rarely whorled, net-veined, often strongly nerved leaves, 6-merous small flowers, dioecious, ovary inferior.

Dioscorea L.

Twiners, from a thick, short rhizome or more usually a tuber, some producing tubers also on aerial stems, leaves simple or rarely apparently compound, palmately nerved; inflorescence a spike or spicate panicle; flowers small, fruit a 3-angled or usually 3-winged capsule.

Many species, some very widely cultivated for their edible starchy tubers, at least 3 species in Maupiti.

Dioscorea alata L.

Stems 2_4_winged, twining to right, not prickly; leaves opposite, ovate-cordate, thin, petiole curved at base, subterranean tubers large, edible, subaerial ones rare, small; capsule broader than long.

A common cultivated yam, found once on Maupiti.

Gillette 8 (US).

Dioscorea bulbifera L.

Smooth-stemmed, twining to left, leaves large, orbicular-cordate, sinus wide, tubers mostly aerial, axillary potato-like, mostly inedible.

A very widely distributed species, rare on Maupiti in thickets on lower slopes.

Fosberg 64816 (US), 64820 (US).

Dioscorea pentaphylla Forst. f. n.v. patara

Plants pubescent, glabrate, stems twining to left, tubers mostly sub-terranean, in wild plants inedible, leaves pseudo-compound, trifoliolate or usually pentafoliolate.

A widespread Pacific species, once found on Maupiti, but not found in the 1985 survey.

Raynal 17850 (p. 1338)

TACCACEAE

A monogeneric family of a few tropical species, herbs from rhizomes or tubers.

Tacca Forst.

Acaulescent, leaves erect, long-petioled, entire or lobed; inflorescence scapose, an involucrate umbel of small flowers with inferior ovaries; fruit many-seeded.

A very few species, one very widespread in the Pacific islands, including the Society Group, frequent on low coral islands.

Tacca leontopetaloides (L.) 0. Ktze. n.v. pia
Tacca pinnatifida Forst.

Acaulescent herb to 1.5 m tall, usually 1-several leaves and 1_2 scapes erect from base, bearing starchy potato-like underground tubers; leaf with 3-parted blade at summit of cylindric striate hollow petiole 1.5_3.0 cm thick, to 90_100 cm tall, blade alternately dichotomously palmatifid, each primary segment twice dichotomous, each rhachis winged, each blade segment deeply lobed, the main veins alternately dichotomous, lobes broadly ovate, strongly acuminate, pinnately veined, with conspicuous network between veins, lobes tending to be bilobed, main segments to 50 cm long, ascendigly divergent, veins prominent beneath, impressed above, central segment pinnately divided, lateral ones once evenly dichotomous, then each part alternately dichotomously pinnatifid; scape terete, striate, hollow, tapering from base, 1.2 cm, to summit, 1 cm diam., expanded at summit to a thick disk-like solid "receptacle", surrounded by an involucre of 6_7 foliaceous bracts in 2 concentric series on margin of receptacle, many pedicels and a smaller number of filiform bracts to 15 cm or more long arise from the low convex upper surface of receptacle, pedicels 4_4.5 cm long, each bearing a flower, some of which develop into fruits, a majority not, perianth parts 6, in 2 series, one broad, one narrow, leathery, ovate, inrolled and becoming incurved, each bearing a stamen at its base, stamen wide, strongly hooded or pouch-shaped, white, fleshy; ovary inferior with a raised disk bearing 3 bilobed fleshy transparent stigmas, ovary 1_loculed, with ovules borne on 3 fleshy parietal placentae; fruit an ovoid-subglobose berry with 6 longitudinal ridges, truncate apex with 6 persistent sepals, many brown longitudinally ribbed ellipsoidal to nearly orbicular seeds embedded in a fleshy pulp. A widespread Indo-Pacific species, with remarkable morphology, possibly carried around by Polynesians, as its tubers were used by them as food. Common on motus of Maupiti.

Fosberg 64972 (US).

ZINGIBERACEAE

Herbs, often large, often aromatic, stems from thick fleshy rhizomes or tubers, leaves alternate, sheathing, flowers trimerous, ovary inferior, flower-parts often variously modified, fruit capsular, seed often arillate. A large tropical family with many ornamentals, a few economic species.

Alpinia Roxb.

Large leafy herbs, leaves pinnately parallel-veined; inflorescence usually terminal, spicate, racemose or paniculate, often bracteate, flowers trimerous, perianth in 2 series, each united, usually tubular and 3-lobed.

A large Old-World tropical genus with a number of ornamental species, one planted in Maupiti.

Alpinia purpurata (Viell.) K. Schum. n.v. red ginger

A tall ascending leafy herb, flowers white, in large spikes with conspicuous red bracts; small plante often arising viviparously in axils of bracts.

Planted ornamental.

Fosberg, sight record.

CANNACEAE

Large perennial herbs; leaves large, alternate, pinnately parallel-veined; flowers trimerous, fertile stamens reduced to 1/2 of 1 stamen, the rest are expanded and showy staminodia, fruit a 3-loculed tuberculate capsule.

A monogeneric tropical family.

Canna L.

A small genus of coarse herbs, usually somewhat showy flowers, ovary inferior.

One introduced species in Maupiti.

Canna indica L. n.v. re'a pua'aniho Indian shot

Widespread in the Pacific islands, probably persisting from cultivation either for its rhizomes which may be edible, or for its scarlet flowers.

Raynal 17830 (p. 1337); Fosberg 64833 (US)

ORCHIDACEAE

An enormous cosmopolitan but mainly tropical family, mostly herbaceous, but with great diversity in habit; flowers exhibiting an incredible variation based on a pattern of 3 similar sepals, 3 petals, the lower one modified into an expanded organ called a lip, stamens and pistil fused into a column with pollen united into masses called pollinia, a stigmatic surface, ovary 1 celled, inferior, all adapted for very specialized insect pollination.

Four genera known from Maupiti, plus several potted Dendrobium species not identified.

Oberonia Lindl.

Epiphytic small herb with distichous equitant leaves and racemes of tiny white flowers. One species reported from Maupiti.

Oberonia equitans (G. Forst.) Mutel
(0. glandulosa Lindl. ?)

Leaves alternate, vertically oriented in a single plane. Found once on Maupiti but not seen on 1985 survey.

Raynal 17854 (p. 1338).

Spathoglottis Bl.

Terrestrial, with large pseudobulbs, giving rise to stiff strongly plicate leaves, scapes with racemes of showy flowers with 3-lobed lip with 2 calli. A south-east Asian, Australian and Pacific genus with one species probably introduced on Maupiti.

Spathoglottis plicata Bl.

Flowers medium sized, bright rose-purple.

Native of Western Pacific and S. E. Asia, widely naturalized in Pacific islands, on Maupiti rare and scattered at least on S. part of Motu Auira.

Fosberg 64871 (US), Fosberg & Mount 64882 (US), 64883 (US).

Taeniophyllum Bl.

Leafless and almost stemless herbs, photosynthetic roots radiating from an extremely condensed stem (crown), flowers minute, cream-white, in bracteate spike-like racemes. A large S.E. Asian, Malayo-Pacific genus, one species known from Maupiti.

Taeniophyllum fasciola (Forst. f.) Seem. n.v. fe'e 'uru

Photosynthetic roots pale-green, flattened, epiphytic on large branches, flowering racemes several, lip saccate or with broad blunt spur. Found once on Maupiti, but not seen in 1985 survey.
Raynal 17825 (p. 1337).

Vanilla Mill.

Climbing, twining vine-like, with well-separated lanceolate thick leaves, greenish flowers; fruit terete, pod-like elongate. Many species in the tropics.

Vanilla planifolia Salisb. n.v. Vanilla

The plant yielding commercial vanilla "beans", probably native of tropical America, in Maupiti naturalized or more likely persisting, at fairly high elevations, from former cultivation.
Fosberg 64780 (US); Morris 3, (US).

DICOTYLEDONAE

CASUARINACEAE

Trees with cylindrical, articulate, striated green branchlets which serve as leaves; the true leaves reduced to whorls of minute scales at the nodes; flowers monoecious or dioecious, much reduced, without perianth, arranged in aments, wind pollinated, the staminate aments cylindric, articulate; pistillate aments capitate, developing into woody cone-like structures formed from thickened indurate floral bracts; fruit a samara with a single wing.
A family of a single genus (by some regarded as two), principally Australasian.

Casuarina L.

Characters of the family.
A small genus, principally Australian, with several species in New Caledonia, New Guinea, and Malesia, one widespread in the Indo-Pacific region, and generally introduced in the tropics and subtropics.

Casuarina equisetifolia L.

Tree, reaching a large size, heart-wood very hard and heavy; branchlets jointed, joints about 1 cm long, about 1 mm or less thick, with 6_8 striae; leaves in whorls of 6 to 8; flowers monoecious to dioecious, staminate in cylindric elongate aments, pistillate in shorter turbinate aments, styles maroon, filiform, fruiting aments cylindric to globose, about 1_1.5 cm thick, up to 2 cm or more long; fruit with a transparent wing.
Widespread Pacific island tree, on Maupiti common locally, especially interiors of motus.
Fosberg & Sachet 64969 (US).

PIPERACEAE

Shrubs, vines or herbs; leaves simple, entire, alternate, opposite, or whorled; flowers in spikes or racemes, much reduced, without perianth, but each subtended by a peltate bract, or surrounded by 3 bracts, perfect or unisexual; stamens 2 or more, anthers usually 2-celled; ovary 1-celled with 1 basal

ovule, stigmas 1 to several, sessile; fruit a drupe or a minute sticky nut.

A pantropical family found in many habitats but common in forest undergrowth, epiphytic, and on rocks.

Peperomia R. & P.

Herbs, usually fleshy; leaves alternate, opposite, rarely whorled, with palmate venation, petioles expanded or not at base; spikes terminal, leaf-opposed, or axillary, fleshy, lower leaves on stems often reduced; flowers bisexual, reduced to an ovary and two stamens subtended by a stalked peltate bract; fruit a very sticky minute nut or nut-like drupe (usually described as a berry).

Pantropical, with a number of ill-distinguished species. Common in moist or wet forests, epiphytic or terrestrial, especially on rocks.

Peperomia blanda (Jacq.) Kunth in H.B.K. n.v. piripapa
Peperomia leptostachya H. & A.

Erect, fleshy, pubescent herb, leaves opposite or whorled, lower ones tending to be reflexed and caducous in dry seasons and situations, oval, oval-obovate, or rarely broadly ovate, obtuse to acutish or rounded at both ends, petioles up to 1 cm long, usually shorter; spikes terminal or in upper axils, pedunculate, slender, elongate, to 6 (or 10) cm or more, peduncles hirtellous, rachis glabrous; fruit globose-subobovoid, 0.9 mm long.

Hawaii and Southeastern Polynesia westward at least to Fiji and the New Hebrides.

Fosberg 64893 (US); Morris 2 (US), 23 (US).

Peperomia tahitensis Yuncker ?

Decumbent to rarely erect, rooting at least at lower nodes, stems shortly pilose, leaves opposite, sparsely pilosulous, dark punctate, obovate, obtuse, usually palmately 3-nerved, margins ciliate, petioles to 1 cm, usually shorter, pilose; spikes terminal and axillary, pedunculate, peduncle hirsute, much longer than leaves, rhachis glabrous, fruit minute, sticky.

A Society Islands endemic, known from Tahiti and probably from Maupiti, though specimens seen from Maupiti are sterile. Here it grows on great basalt boulders.

Raynal 17834 (p. 1337); Fosberg 64896 (US); Gillette 6 (US).

MORACEAE

Lactiferous trees, shrubs, occasional vines; leaves simple, alternate, stipulate; flowers cymose or in heads or on fleshy receptacles, commonly much redued, perianth one series, usually unisexual and monoecious; fruit an achene or drupe, often fused into fleshy multiples.

A large family, mostly tropical, many genera important economically or ecologically. Two genera are in Maupiti, possibly one or two more cultivated.

Artocarpus Forst.

Large trees with large simple often lobed leaves, sheathing stipules, flower closely packed on fleshy receptacles, staminate and pistillate separately; fruit a large fleshy edible syncarp. The breadfruit and jak-fruit belong to this genus.

Artocarpus altilis (Parkinson) Fosberg n.v. breadfruit; uru
Artocarpus communis Forst.
Artocarpus incisus (Thunb.) L. f.

Robust tree to 25_30 m tall, branchlets ringed with stipule-scars; leaves alternate, large, to 2_3 dm long, ovate to obovate deeply (or rarely slightly) lobed or incised, strongly pinnately veined, glossy above, with a strong petiole; flowers monoecious; staminate in large club-shaped terminal spikes,

crowded tightly together, pistillate in dense heads borne terminally on branches, fused together, surface of mass bearing styles, the head enlarging to a globose or subcylindric syncarp, the surface covered by low pyramidal Polygons, the interior a fleshy mass usually without seeds.

This tree, with edible fruits, is an important source of food throughout the Indo-Pacific region. Its native home unknown, but possibly New Guinea, where it may have originated by hybridization of two or more wild species. There are many cultivated varieties, with different local names. It is an important food plant in Maupiti as well as the other Society Islands.

Fosberg 64946 (US).

Ficus L.

Trees, shrubs, rarely creepers; leaves simple, stipules usually sheathing terminal bud, leaving a ring-like scar around stem when fallen; flowers on the inner surface of a fleshy pouch-like enlarged receptacle; fruit a very small hard seed-like achene, borne in large numbers in the cavity of the receptacle. One native species and two exotic ornamentals in Maupiti.

Ficus microcarpa L.f. n.v. Chinese banyan
Ficus retusa L.

A banyan-type tree with aerial roots well devoloped; small, obovate or elliptic leaves, sessile paired small figs.

Planted ornamental.

Fosberg 64866 (US).

Ficus benjamina L. n.v. weeping fig

A wide spreading tree without aerial roots, branchlets slender and drooping, leaves small, elliptic, acuminate, figs yellow.

Planted ornamental.

Fosberg 64935 (US).

Ficus prolixa Forst. f.

A native Pacific island banyan-type fig, widespread in the south west Pacific islands; present but uncommon on wooded slopes and ridges in Maupiti.

A "banyan type" tree, with many hanging aerial roots which become supplementary trunks, leaves oblong, somewhat acuminate; figs small, globose, sessile in pairs at nodes, purplish-black when ripe.

Fosberg 64772 (US); Morris 15 (US).

AMARANTHACEAE

Large family, with many weedy species, as well as local species, not strongly represented in Pacific islands except in Hawaii. Flowers generally small, perianth of one series, segments often scarious; fruit a utricle.

Alternanthera Forssk.

A large genus, principally tropical, of herbs or sub-shrubs, some weedy, a few cultivated, leaves opposite, flowers in axillary, rarely terminal, heads, bracts scarious, overlapping; stamens united in a tube with staminodes between them. One cultivated species in Maupiti.

Alternanthera brasiliana (L.) 0. Ktze.
Alternanthera dentata (Moench) Fries

A slender herb with maroon-purple leaves and pedunculate white heads.

Planted ornamental.

Fosberg 64927 (US).

Gomphrena L.

A genus of herbs, mainly tropical, several weedy and cultivated species widely introduced. Leaves opposite, flowers in dense heads with chaffy colored or white bracts and perianth, stamens united into a tube. At least two species are introduced in the Pacific islands.

Gomphrena globosa L.

A small bushy herb with white or bright pink flower heads.
Planted ornamental.
Fosberg 64930 (US).

POLYGONACEAE, n.v.Buckwheat family

A cosmopolitan, very distinct family of diverse habit. Leaves simple, alternate, usually with tubular sheathing stipules (ocreae), one series of petaloid perianth segments, a 1-locular ovary with 1 basal ovule; fruit an achene, often trigonous.

Antigonon Endl.

A very small genus of climbers, part of the inflorescence modified into a tendril. Native to Mexico and Central America, one species widely cultivated.

Antigonon leptopus H. & A.

A climber with panicles of bright pink flowers.
Planted ornamental.
Fosberg 64926 (US).

NYCTAGINACEAE

Herbs, shrubs, trees, scramblers; leaves and branching alternate or usually opposite, leaves simple, flowers with one series of united, usually corolloid perianth parts, few stamens basally inserted, ovary 1-celled, fruit an anthocarp, an achene enveloped in the persistent lower part of the perianth. Widely distributed mostly in warm countries.

Boerhavia L.

A widely distributed genus of herbs, some slightly woody, leaves opposite, flowers mostly small, perianth strongly constricted near middle, upper part petaloid, lower part ribbed, becoming the anthocarp. A number of ill-distinguished species, one locally common in Maupiti.

Boerhavia tetrandra Forst. f.

Prostrate glabrous herb, several elongate stems radiating from a much-thickened rootstock, internodes slightly falcate; leaves oblong to suborbicular, white beneath, flowers pink, in cymes on axillary peduncles, cymes from open to glomerate, anthocarps 5-ribbed, ellipsoid or clavate, sticky-glandular, several mm long.

Widely distributed Polynesian and Micronesian species, especially common on atolls and coral motus, on Maupiti found locally on motus in rather open situations.

Fosberg 64868 (US)

Bougainvillea Comm. ex Juss.

Woody climbers or scramblers, often with a single stout spine at each node; leaves alternate; flowers usually 3 in a group, subtended by and adnate to 3 showy bracts; perianth tube slender, somewhat constricted, with a short spreading limb, native of South America, very common as ornamentals throughout the tropics and subtropics, with many horticultural forms and cultivars.

Bougainvillea glabra Choisy

Tangled climber, leaves elliptic acuminate, flowers magenta.
Several cultivars of this species planted on Maupiti, along with one or two which may be B.×buttiana Holtt. & Standl.
Fosberg, sight record.

PORTULACACEAE

Herbs, mostly succulent, leaves alternate or opposite, stipulate; sepals 2, petals 4_5, ovary 1-celled with central basal placentation. Cosmopolitan family, some species are familiar weeds.

Portulaca L.

Herbs with very fleshy leaves on somewhat to very fleshy stems; stipules usually modified to an axillary tuft of hairs; ovary semi-inferior; capsule circumscissile, seeds spiral-pyriform, variously sculptured. A large genus, practically world-wide in distribution; 2 species known from Maupiti.

Portulaca johnii v. Poelln.

Very fleshy reddish stems, robust plant, decumbent, leaves obovate, fleshy, flowers yellow, 2 cm across, opening mid-morning, stamens 25_35.
This is locally common on the motus of Maupiti.
Fosberg 64850 (US).

Portulaca oleracea L.

Flowers open at 8 a.m., closed by mid-morning, about 1 cm or less across, petals yellow, suborbicular, slightly emarginate, stamens about 12.
Cosmopolitan species, locally common in open disturbed places on Maupiti, possibly native.
Fosberg & Sachet 64968 (US); Fosberg 64804 (US), 64910 (US)

Talinum Adans.

Small tropical genus, habit various, flowers in terminal cymes or panicles, fruit a 3-valved capsule. One pantropical species occurs in Maupiti.

Talinum paniculatum (Jacq.) Gaertn.

Herbaceous stems, bare below, with spatulate or oblanceolate leaves rather crowded above; terminal open panicles of pink flowers; fruit a thin ellipsoidal capsule.

Talinum patens (L.) Willd. n.v. 'aturi
Pantropical species, rare on Maupiti, found on rock-ledges at upper elevations.
Raynal 17818 (P) (p. 1337); Morris 1 (US).

ANNONACEAE

Woody plants, habit various, leaves alternate, simple, exstipulate; flowers usually trimerous,

perianth segments in 2 or more series, stamens many, carpels many, free or partly so, often becoming fused in fruit, ovules one or more per carpel, fruit of various forms, usually baccate or fleshy aggregates.

Mostly tropical, many genera.

Annona L.

Small trees or shrubs with twigs tending to zig-zag, leaves alternate, simple, entire; flowers with two series of 3 perianth segments, these leathery, green; fruit an aggregate of fleshy carpels; seeds large, hard, embedded in the fleshy, often edible pulp.

A tropical genus, several species widely planted for their sweet edible fruits, two planted in Maupiti.

Annona muricata L. n.v. corasol; soursop

Planted for its large green softly spiny fruit.

Fosberg, sight record.

Annona reticulata L. n.v. bullock's heart

Planted for its almost smooth edible fruit.

Fosberg, sight record.

LAURACEAE

Mostly woody plants (a Maupiti one herbaceous), leaves simple, ex-stipulate (rarely none); flowers bisexual, with 1 or more series of perianth parts, receptacle enlarged; anthers opening by terminal pores with lids; carpel usually one, with one ovule; fruit a drupe or berry, often partly enclosed in a receptacular cupule.

A large mostly tropical family with many ill-distinguished genera, one native, one introduced in Maupiti.

Cassytha L.

Leafless string-like parasites, yellow or orange to green, with haustoria that penetrate plants that they touch; short few-flowered spikes of white flowers, drupaceous fruits.

One pantropical species, common especially in coastal lowlands, other more local species, the widespread one in Maupiti.

Cassytha filiformis L.

Tangled string-like vine, orange to green, smooth to slightly striate, branching with 1-several tiny scale-like reduced leaves at ramifications, stems coiling around stems of other plant's, where touching another stem, of a host plant or its own, producing disk-like swellings or haustoria which adhere and draw water and nutrients from the host; producing short flowering spikes 1_3 cm long, up to 8_10 sessile white flowers, rhachis minutely sparsely pilosulous, flowers subtended by 3 minute scale-like bracts closely appressed, alternating with them 3 closely appressed disk-like scale-like margined sepals, inserted on edge of perigynous disk, alternating with 3 convex triangular-ovate petals, white, valvate, tardily opening, showing at least 2 series, of 3 each, convex stamens, style very short, blunt-pointed, protruding from top of the flask-shaped ovary, this partly embedded in the bottom of the perigynous disk; fruit globose, enveloped in somewhat adherent accrescent disk, and crowned by persistent sepals, petals stamen and style, disk becoming fleshy, white, the whole drupe-like.

Pantropical and very common in most places, parasitic on many hosts, including grasses and sedges, seen even to parasitize itself; abundant at lower elevations and especially on motus in Maupiti.

Fosberg 64885 (US)

Persea Mill.

A tropical American (or in a broader sense, pantropical) genus of trees, flowers grayish, small, in panicles; fruit a one-seeded berry. Many species, one or two and their cultivars are the avocados of tropical horticulture.

Persea americana Mill. n.v. avocado
Persea gratissima Gaertn. f.

Planted as a food tree, not common on Maupiti, but occasionally seems to be spontaneous.
Fosberg, sight record.

HERNANDIACEAE

A few genera of tropical trees, much like Lauraceae, fruit a nut surrounded by, but free from, a fleshy envelope with an opening at the summit.

Hernandia L.

Trees and shrubs with large entire petiolate entire leaves, cymose inflorescences of grayish small flowers, balloon-like fleshy fruits with a hard globose nut with a single seed.
Pantropical with several Pacific islands species, one a strand plant in Maupiti.

Hernandia sonora L. n.v. tonina

Tree, reaching a large size, light colored bark, glabrous except inflorescence, branchlets rather thick; leaves alternate, blades ovate-orbicular, acute, subcoriacious, glossy above, palmately veined, petiole somewhat shorter than blade, attached peltately, about 2 cm in from base, stiff; inflorescence an axillary cyme, fruiting inflorescence somewhat shorter than subtending leaf, rhachis straight, stiff, with a few or several stiff fruiting branches persisting near apex, each bearing a large shortly pedicillate white or rose-purple fruit consisting of a large globose thin fleshy crisp envelope with a small circular aperture, inside of which is the fruit proper, a black subglobose stipitate nut with 3 vertical flutings, a circular constriction near apex, and a single large seed.
Fosberg 64808 (US), 64919 (US).

CAPPARIDACEAE

Trees, shrubs and herbs, many tropical and in arid areas, often ill-smelling; leaves alternate, entire or pseudo-compound, usually palmately so; flowers usually 5-parted, with calyx, corolla, of free petals, few to many stamens, pistil with ovary (and later fruit) usually on a conspicuous gynophore; fruit many-seeded.
Rather few widespread genera.

Cleome L.

Ill-scented herbs with petiolate palmately parted leaves, minute sometimes spinose stipules, racemes of flowers; capsular fruits.

Cleome viscosa L.

A yellow-flowered ill-scented herb.
Pantropical weed of disturbed and cultivated ground, one small plant found on Maupiti in edge of watermelon field on Motu Taina.
Fosberg 64857 (US).

BRASSICACEAE (CRUCIFERAE)

Large family of mostly north-temperate herbs, rarely suffrutescent, leaves simple but often variously dissected or lobed; flowers in racemes, petals 4, stamens 6, pistil with 2-celled ovary, fruit a capsule or indehiscent, seeds one or more in a cell.

Very few representatives in Pacific islands, mostly exotic.

Cardamine L.

Small annual or perennial herbs with pinnately lobed leaves, white flowers, linear capsules (siliques) elastically dehiscent, scattering the very small seeds, leaving the septum persistent.

One poorly understood native Pacific island species, others reported.

Cardamine sarmentosa Sol. ex Forst. f.

Widely distributed Polynesian herb, apparently very rare in Maupiti, one tiny plant found, possibly introduced on Maupiti.

Fosberg 64906 (US).

Lepidium L.

Herbs with entire, toothed or pinnately divided leaves; racemes of small flowers, fruit a short 2-celled capsule (silicle) compressed contrary to the septum, dehiscing septicidally, one compressed seed in each locule.

Many north temperate, especially arid zone species, a few Pacific islands species, one widely distributed strand plant, found on motus of Maupiti.

Lepidium bidentatum Montin

Erect herb, when old slightly woody below, glabrous; leaves alternate, rather crowded toward tips of stems, spatulate to oblanceolate, usually toothed toward apex, attenuate to base to a short petiole, midrib obscure, especially above; racemes terminal, becoming elongate, flowering distally mature fruit at base, petals 4, white, 1.5–2 mm long, stamens 6, ovary flat, stigma subsessile; fruit on pedicels about 6 mm long divergent-ascending, silicle elliptic, convex dorsally, about 5 mm long, slightly emarginate with persistent very short style in notch, septum transverse vertical, persistent hyaline after dehiscence; seed cream-buff color, narrowly obovate, flattened slightly asymmetric, 2.5 mm long.

Found on strands and close to shores throughout Polynesia, in Maupiti near seaward sides of motus.

Fosberg 64748 (US)

FABACEAE (LEGUMINOSAE)

Enormously diverse very large cosmopolitan family, with alternate usually stipulate usually compound leaves, radially or mostly bilaterally symmetric flowers, these 5-merous, usually racemose or paniculate, with usually one carpel; fruit various, but usually a single-celled capsule or legume, with one row of seeds.

Abrus Adans.

Vines with simply pinnate leaves, small racemes of flowers; dehiscent pods of subglobose seeds.

One pantropical species found at rather low elevations, especially coastal.

Abrus precatorius L.

Slender tough woody vine; leaves alternate, simply pinnate; flowers in an interrupted secund raceme; pods straight, more or less terete, readily dehiscent, seed bright scarlet or vermillion with one end black.

The seeds are considered very poisonous, used for making seed jewelry and decorating other handcraft. Quite common on Maupiti on lower slopes and occasional on motus.

Albizia Durazz.
(Often spelled, incorrectly, Albizzia)

Trees or large shrubs, with evenly bipinnately compound leaves; heads or more rarely short spikes of radially symmetrical flowers, 5 sepals and petals, many stamens; fruit usually a thin flat dehiscent pod with transverse seeds.

Many species, mostly tropical, two introduced and naturalized in Maupiti.

Albizia falcataria (L.) Fosb.
Albizia falçata (L.) Baker

A tall tree with white smooth bark; bipinnate leaves with many small leaflets, short spikes of flowers with white filiments; fruit a flat papery pod.

A fast-growing tree, native of Moluccas and New Guinea, widely planted by foresters, on Maupiti much planted at low elevations and becoming naturalized.

Fosberg 64825 (US), 64919 (US); Gillette 3 (US).

Albizia lebbeck (L.) Benth. n.v. woman's tongue tree
(often incorrectly spelled lebbek)

A spreading tree with large pale flat pods.

A few trees seen on a low ridge on S.W. angle of island in scrub forest. Widely introduced on islands as a source of charcoal.

Bauhinia L.

Small trees, shrubs or vines; leaves alternate, characteristically emarginate, bifid, or even divided into two leaflets; flowers showy, axillary, conspicuously bilaterally symmetrical, sepals united at base or most of the way up, forming a cup, vexillum folded inside the wings, stamens variously reduced in numbers, pod strong, elastically dehiscent, the valves coiling.

A large tropical genus, many species, planted as ornamental, two unidentified species, at least, in Maupiti.

Bauhinia sp.

Shrub, laeves round, emarginate.
Shrub growing along trail, sterile.
Morris 19 (US).

Bauhinia sp.

Small tree, leaves tapering somewhat toward the divided apex.
Planted ornamental, only seen sterile.
Fosberg, sight record.

Caesalpinia L.
Poinciana L.

Trees, shrubs, and vines, unarmed to very prickly; leaves evenly bipinnately compound; flowers in racemes, often very showy, sepals variously united, petals clawed, vexillum often narrower, often differing in color from other petals, stamens often strongly exserted; fruit diverse, usually with large seeds.

Caesalpinia pulcherrima (L.) Sw. n.v. pride of Barbados
Poinciana pulcherrima L.

Planted ornamental on Maupiti, both the scarlet and orange flowered forms present.
Fosberg 64881 (US), 64882 (US).

Canavalia Adans.

Creepers or climbers, rarely erect herbs, leaves trifoliolate, flowers showy, on pedunculate axillary racemes, vexillum usually erect or somewhat reflexed; fruit a tough tardily dehiscent pod with a keel on each side close to the main suture.

A pantropical genus, common in coastal lowlands, one species on Maupiti.

Canavalia cathartica Thouars n.v. pipi ta'ero

Extensive herbaceous twining vine, glabrous; leaves alternate, trifoliolate lateral leaflets oval, outer half somewhat broader, on short petiolules, these thick curved, several mm long, middle leaflet suborbicular, jointed to a prolongation of petiole up to 4 cm long, all leaflets very shortly acuminate, bases rounded, petiole 2/3 as long as terminal leaflet; flowering spikes a few cm long, elongating, on long peduncles, flowers a few mm apart, sessile on small pulvini, buds reflexed; flowers papilionaceous, calyx cylindric about 12 mm long, 4–5 mm wide, irregularly several-toothed; corolla bright rose pink, vexillum broadly obovate, emarginate, reflexed, wings held closely around the somewhat curved keel; legumes oblong, somewhat inflated, with 2 keels several mm from ventral suture, several seeded, seed brown, 15×8 mm, scarcely compressed, hilum linear, about 1 cm long.

Pantropical strand and coastal species; on Maupiti local in edges of woods and thickets.
Raynal 17832 (p. 1337); Fosberg 64765 (US).

Cassia L.
Senna Mill.

An enormous genus, containing trees, shrubs and herbs, divided by some botanists into several or many smaller genera, here maintained in a broad sense; leaves simply even-pinnate; flowers showy, usually yellow, in racemes, sometimes conspicuously bracteate, vexillum in bud inside wings; stamens 10, or variously reduced, free; pods terete or variously compressed, angled, or winged, dehiscent or indehiscent.

Cassia alata L. n.v. candle-bush

Planted ornamental, not seen to set fruit in Maupiti.
Fosberg 64977 (US)

Centrosema DC.

Twiners, leaves trifoliolate with persistent stipules, stipellate, middle leaflet on a petiolule; flowers with a large showy vexillum; pods narrow, linear, prominently beaked, sutures thick, septate between seeds.

An American genus, several weedy species naturalized in Pacific islands.

Centrosema plumieri (Turp. ex Pers.) Benth.

A common twiner in many Pacific islands, introduced from America; very common at low elevations in Maupiti.
Fosberg 64764 (US).

Delonix Raf.

A small genus of trees related to Caesalpinia, native to Madagascar, one species is planted throughout the tropics as a gorgeous ornamental.

Delonix regia (Boj.) Raf.

Fosberg, doubtful sight record.

Derris Lour.

Large vines, extensively climbing over other vegetation; leaves pinnately compound, usually with large leaflets; flowers in racemes, but introduced species seldom seen flowering; pods compressed, often with a narrow wing on upper suture.
Several species widely introduced in Polynesia for rotenone production, one common in Maupiti.

Derris malaccensis (Roxb.) Benth.
Derris elliptica sensu auct. non (Roxb.) Benth.

An extensive liana abundant at middle elevations, perhaps introduced into Maupiti as a source of rotenone, seen only sterile.
Fosberg 64761 (US); Morris 28 (US).

Desmodium Desv.

Herbs, rarely shrubs, erect or rarely twiners; leaves trifoliolate, occasionally at least partly unifoliolate, stipules striate; flowers racemose or racemes axillary and much reduced or spikes; fruit jointed, separating into loments, these frequently covered with short hooked hairs.
A large genus, tropical and temperate; two weedy species known from Maupiti.

Desmodium heterocarpon var. strigosum v. Meeuwen — n.v. piripiri 'aratita

Not seen during 1985 survey, probably introduced in Maupiti.
Raynal 17860 (p. 1338)

Desmodium scorpinus (Sw.) Desv.

Trailing twining slender herbaceous vine, seen only on south part of Motu Auira, fruit very narrow.
Fosberg 64846 (US).

Erythrina L.

Trees or shrubs often prickly, tending to be deciduous in dry periods; leaves pinnately trifoliolate; flowers borne on usually terminal racemes, corolla often red or orange, vexillum often conspicuous, wings greatly exceeding keel, stamens 10; fruit dehiscent or indehiscent; seeds often red.
A large tropical genus, some species planted as ornamentals, one endemic Society Islands species almost extinct, one species very widespread in Indo-Pacific, including Maupiti.

Erythrina variegata var. orientalis (L.) Merr. — n.v. coral tree
Erythrina indica Lam.

Large spreading tree, trunk and branches sparsely beset with sharp, broad-based prickles, leaves large, trifoliolate, leaflets as broad as or broader than long, in dry periods dropping during flowering periods; flowers in stiff racemes, these and calyces densely brown-pubescent, petals red, vexillum exceeding wings; pods terete, torulose, tardily dehiscent or breaking irregularly; seeds bean-like, bright red.

A widely distributed tree, sometimes planted as an ornamental, naturalized or perhaps native in many Pacific islands, common in forest on lower slopes in Maupiti.

Fosberg 64796 (US), 64797 (US); Gillette 12 (US).

Indigofera L.

A very large tropical genus of shrubs and herbs; leaves odd-pinnately compound, trifoliolate or unifoliolate, stipules very small; flowers in axillary racemes or spikes, small, usually red or salmon color, pods various, usually terete, curved, beaked.

One weedy species introduced in Maupiti.

Indigofera spicata Forssk.

Widespread weed and green-manure plant, locally naturalized and abundant on roadsides in Maupiti.

Fosberg 64952 (US)

Inga Mill.

Large genus of tropical American trees, leaves pinnately compound, rhachis often notably winged; flowers radially symmetrical, with long conspicuous white stamens; seeds with a white sweet aril, often eaten, at least by children.

One species introduced and locally naturalized in Polynesia.

Inga ynga (Vellozo) J. W. Moore

Inga edulis Mart.

Widely introduced in Polynesia, native of tropical America; in Maupiti probably planted as ornamental.

Fosberg 64941 (US).

Inocarpus Forst.

A small genus of Malayo-Polynesian trees, rather anomalous in the family, leaves simple or unifoliolate; flowers small, not zygomorphic; fruit a 1-seeded fleshy indehiscent pod.

One species widespread in Polynesia, an important food plant in Society Islands.

Inocarpus fagifer (Park.) Fosb. n.v. mape; Tahitian chestnut

Aniotum fagiferum Parkinson

A large tree often with conspicuous thin plank-buttresses; leaves large, thin, oblong; flowers in short axillary spikdes, petals small, whitish equal, fruit somewhat oblique, about 71.5 cm or smaller, fleshy, drupe-like, with one large edible seed.

A very common and important tree ranging from Malaya to Tahiti; frequent on the wooded slopes and coastal lowland forests and thickets on Maupiti, prized for its seeds, eaten roasted.

Fosberg 64822 (US), 64952 (US).

Leucaena Benth.

Medium sized genus of mostly tropical American shrubs and small trees, one indigenous Pacific island species, one pantropical weed shrub or tree, leaves bipinnately compound, leaflets small, flowers radially symmetric, in heads, white; pods flat, thin, seeds transverse.

Leucaena leucocephala (Lam.) de Wit
Leucaena glauca sensu auct. non (L.) Benth.

Pantropical weedy shrub or tree, on Maupiti a localized dense stand of large plants on Motu Taina, a few plants seen on coastal strip of main island.
Fosberg 64858 (US).

Macroptilium (Benth.) Urban
Phaseolus L. (pro minor parte)

A small tropical American genus, segregated from Phaseolus, herbaceous, erect or twining, flowers crowded at summit of stout erect peduncles; vexillum large, keel and wings somewhat twisted; pods narrowly linear, dehiscent, valves tightly twisting.

Macroptilium atropurpureum (DC.) Urban

Widespread weed, in Maupiti twining in lowland thickets.
Fosberg 64939 (US), 64956 (US); Gillette 2 (US).

Mimosa L. s. str.

A tropical American genus of prickly shrubs, lianas, and herbs with bipinnate, sometimes sensitive leaves, heads of tiny flowers, and pods that separate at maturity into 1-seeded segments, leaving intact the two sutures connected at the distal end.

Mimosa pudica L. n.v. sensitive plant

A well-known pan-tropical weedy plant, famous for its leaves, which collapse when touched; common in coastal lowlands and slopes on Maupiti.
Fosberg 64764 (US)

Phaseolus L.

A genus of twiners and creepers with trifoliolate leaves, racemes of twisted flowers and pod-like fruits. The beans, of which there are numerous cultivated varieties.

Phaseolus adenanthus G.F.W Mey.

A slender herbaceous twiner found occasionally on Maupiti.
Fosberg 64770 (US), 64795 (US); Morris 20 (US).

Sophora L.

Many species of shrubs and trees; leaves even-pinnate, racemes of yellow or rarely white irregular flowers, 10 stamens with free filiments, pods tending to be moniliform.

Sophora tomentosa L.

A diffusely branching spreading shrub, reach 2–3 m in height; leaves gray-green, tomentose, even pinnate with pairs of broad, rounded-obovate leaflets; spike-like racemes of yellow flowers.
Pantropical coastal shrub, occasional on strand and lowlands, especially on motus on Maupiti.

Fosberg 64811 (US).

Tamarindus L.

A genus of one species of tree, widespread in the tropics through the agency of man.

Tamarindus indica L.

A tree, prized for its pods with edible acid pulp; widely planted and naturalized in the tropics, presumably native in Indian Ocean region, in Maupiti very sparingly naturalized in lowland thickets.
Fosberg 64923 (US).

Tephrosia Pers.

Tropical and warm temperate herbs with odd pinnate leaves, racemose flowers and pods. Some species are important sources of rotenone, others are planted for green-manure.

Tephrosia piscatoria Pers. n.v. hora tahiti
Tephrosia purpurea (L.) Pers.

A dwarf shrub, stiffly branched; leaves small, with several to 5 or 6 pairs of small obovate leaflets, white or pinkish flowers, compressed falcate pods about 40×3–4 mm.
Sometimes not distinguished from the south Asian T. purpurea. This very sparse, small, depauperate form is found in oceanic Polynesia, was used by Polynesians as a fish poison. Noticed on Maupiti on high rocky ridges.
Fosberg 64775 (US)

Vigna Savi

Herbs with trifoliate leaves, irregular flowers, cylindric pods.

Vigna marina (Burm.) Merr.

Extensively creeping and climbing herb, branching and tangled, young growth twining, almost glabrous sparse retrorse appressed hairs on youngest growth, stems prostrate to ascending, leaves and peduncles curved at base, erect or ascending; petioles stiff, angular, leaflets 3, broadly ovate, obtuse, lateral petiolules very short, thick, central one 1.5–2 cm long, stipels stiff orbicular, thick-scale-like, racemes very short, few-flowered, on peduncles slightly shorter than leaves, pedicels 2–3 mm long, bracts so small as to be almost not evident; calyx campanulate, lower 2 teeth low triangular, upper very obtuse, ciliate; vexillum showy, yellow, broader than high, cordate, emarginate, wings obliquely ovate, obtuse, sessile, keel-petals separate in basal portion, united distally, strongly curved vertically, not at all twisted; pods cylindric, strongly deflexed, curved outward, very shortly beaked, not or very slightly constricted between the 4–6 seeds.
A widespread Indo-Pacific strand species, probably contributing importantly to the fertility of the very poor calcareous soils of coral motus and atolls. Nodules have been observed on the roots of these plants in other areas. Very abundant on Maupiti, even climbing into trees.
Fosberg 64787 (US), 64809 (US); Gillette 4 (US).

OXALIDACEAE

A cosmopolitan family, mostly herbs, a few small shrubs, 2 species of trees, leaves compound, flowers 5 merous, radially symmetric, fruit a capsule or berry.

Oxalis L.

Mostly herbs with trifoliate leaves, solitary or cymose flowers, fruit a thin-walled capsule with many seeds.

Oxalis corniculata L.

A small herb with leaves palmately compound with 3 obcordate leaflets on a slender stalk; flower with 5 yellow petals; fruit a prismatic beaked thin-walled capsule.

Cosmopolitan weed, on Maupiti one colony seen in grassy opening on coastal flat.

Fosberg 64951 (US).

RUTACEAE

Aromatic trees and shrubs, rarely herbs; leaves and other parts with gland-dots, mostly compound or unifolioate leaves, flowers radially symmetric, fruit usually baccate or capsular.

Citrus L.

Small trees and shrubs, often thorny, leaves mostly unifoliate, rarely trifoliate; flowers very fragrant, waxy, white; fruit a berry with a prominently glandular rind.

Citrus aurantiifolia (Christm.) Swingle n.v. lime

Planted for its fruit.

Fosberg, sight record.

Citrus maxima (Burm.) Merr. n.v. Pomelo; Pampelmousse

Citrus decumana L.

Not seen bearing fruit, but fruit served on table in hotel, probably grown on the island.

Fosberg, sight record.

Citrus sp.

One plant found in coastal thicket. Appears to be a very large leafed plant related to C. aurantiifolia (the lime), but specimen is sterile.

Fosberg 64976 (US).

SURIANACEAE

Family of one genus, characters of Suriana maritima.

Suriana L.

Genus of one pantropical species; characters of S. maritima.

Suriana maritima L.

Large bushy shrub with dark brown branches, pubescent to glandular pubescent in all parts, much branched; leaves alternate, oblancolate to spatulate, only the midrib visible, apex rounded to acutish, base cuneate narrowed to almost no petiole; small panicles of flowers axillary, open, bracteate, bracts small, lanceolate, subtending each branch and pedicel, branching only once or twice, branches racemose, pedicels less than 1 cm; calyx 5-parted almost to base, segments narrowly ovate, slightly acuminate; petals yellow, falling early in day; suborbicular, stamens 10, unequal, pilose toward base, ovaries and styles 5, styles from inner bases of separate carpels, 3–5 pubescent hard druplets or nutlets developing, these obovoid to globose, style persistent at inner base of nutlet.

A pantropical strand plant, usually growing on coral sand, frequent on lagoon beaches. The rosette-like cluster of leaves at the branch tips spread in sunlight, close up at night or during stormy weather.
Fosberg 64835 (US).

EUPHORBIACEAE

Habit various, leaves simple or compound, stipules present, rarely interpetiolar; flowers in terminal or axillary cymes, or solitary or fasciculate in leaf axils or in reduced cup-shaped inflorescences called cyathea, flowers mostly without petals, but frequently with petaloid bracts or appendages, ovary 3- or more-celled, placentation axile; one or two ovules in a locule, fruit a capsule or rarely a drupe or berry.

Acalypha L.

Shrubs or herbs, with alternate, often ovate and serrate leaves, these often with 3 veins from base; stipules paired at base of petiole; staminate flowers in catkins, very small, pistillate reduced to simple pistil with capillary branched styles, 3-loculate ovaries, 1 ovule in a locule, subtended by an often reduced bract, on a catkin-like spike or in an axillary head or fascicle.

Acalypha amentacea Roxb. cv.

Planted ornamental.
Fosberg 64936 (US).

Acalypha amentacea ssp. wilkesiana (M.-A.) Fosb.

Planted ornamental, noted for its multicolored, mostly red leaves.
Fosberg, sight record.

Aleurites Forst.

Tree with large alternate usually lobed leaves; panicles of white flowers; fruit a 1–3 loculate drupe, mesocarp firm, dehiscent, releasing hard nut-like endocarp with a single large oily seed.

Aleurites moluccana (L.) Willd. n.v. tutui or tuitui; Candlenut

A spreading tree, becoming large under favorable conditions, leaves light green, large, with 3 or 5 lobes usually only shallowly divided; panicles of white flowers; fruit a round or twinned drupe the fleshy mesocarp drying and peeling off, leaving a hard ribbed endocarp, whitish but when rubbed or waterworn becoming very black, kernel very oily, cathartic when eaten, formerly strung and burned as a candle in certain Pacific Island cultures.
Very rare on Maupiti, probably brought from Malay Archipelago to Polynesia by aborigines, seeds used as a condiment and as equivalent of a candle. Nuts often cast up on beaches.
Gillette 9 (US).

Breynia Forst.

Shrubs with distichous simple entire leaves, small axillary flowers lacking petals; fruit a somewhat fleshy capsule.

Breynia disticha Forst.

Planted ornamental, only the variegated form seen.
Fosberg 64877 (US).

Codiaeum Juss.

Shrubs with alternate subcoriaceous leaves, unisexual flowers, staminate with many crowded stamens; pistillate reduced to trilocular ovules with 3 divergent styles.

Codiaeum variegatum (L.) Bl.

One of the commonest tropical ornamental shrubs, a myriad of strikingly different leaf forms; very common in Maupiti.

Fosberg, sight record.

Euphorbia L. subg. Chamaesyce

Herbs and shrubs, lactiferous, main axis aborted at second node, second axis with opposite, distichous leaves and interpetiolar stipules, each internode ending in a branch, and distal ones in a cyathium or an inflorescence of cyathia, each cyathium containing several or more stamens and a single pistillate flower reduced to a single stipitate trilocular ovary with 3 style branches; fruit a 3-celled capsule with 3 seeds, edge of cyathium with 4–5 discoid glands, each of these with or without a petaloid appendage.

Pantropical, many species, one native in Maupiti, several introduced weeds.

Ephorbia atoto Forst. f. sensu lato n.v. aihere tapau

Slender shrub to 1 m tall, stems rather brittle, lactiferous, somewhat nodose, branching distichous, forming a broad V; leaves opposite, distichous, oblong-oval, rounded at apex, wooly above near base and petiole, base sub-cordate, under-surface white, leaves close-set, slightly imbricate, petioles 2–3 mm, stipules rounded-ovate, basal part fleshy, distal part thin, reddish, margin nearly black, minutely ciliolate; cymes terminal, sessile, a pedicellate cyathium in each fork, 2 ascending branches twice branched, branchlets ending in triads; cyathium cup-shaped, with 4 green circular marginal glands, each with a broad white reniform marginal appendage, stamens many, ovary exserted on a recurved stipe, triangular broadly ovoid, with very small erect stigmas, tips slightly spreading; stipes erect after capsules have dehisced. No ripe capsules available.

Local form of a widespread Polynesian species complex, with a close relative distributed as far west at least as tropical Australia. Taxonomy of group very uncertain.

Raynal 17838 (p 1338); Fosberg 64747 (US), 64989 (US), 64849 (US), 64856 (US), 64865 (US).

Euphorbia hirta L.

A common pantropical herbaceous weed, with erect pubescent stems, arching at tips, dense clusters of tiny cyathia with white petaloid gland appendages; very common in open or disturbed areas on Maupiti.

Fosberg & Sachet 64965 (US).

Euphorbia prostrata Ait.

A very widespread small weed, very prostrate, dark purplish green, stems pubescent on upper side, capsules hairy on angles only; occasional in open bare ground on Maupiti.

Fosberg 64864 (US).

Euphorbia rubicunda Bl.

Euphorbia thymifolia sensu auct. non L.

A widespread tropical weed, prostrate, dull greenish, capsules not well-exserted from cyathia, capsule pubescent all over; common in the village in Maupiti.

Fosberg 64901 (US).

Glochidion Forst.
Phyllanthus L. pro parte excl. type.

Shrubs or small trees, branches not dimorphic, leaves alternate, not notably distichous, bases usually with 2 sides unequal, vein network often prominent, petioles short, flowers very small, unisexual, solitary or in very small fascicles, mostly distal, styles erect, coherent, short, or stigmas sessile; ovary more than 3-loculed, fruit discoid, dehiscing loculicidally, with 2 seeds surrounded by a red arils in each cell. Many species, Indo-Pacific, difficult to classify.

Glochidion sp.

Shrub 1–3 m tall, irregularly branched, leaves alternate, simple, apex acuminate, base usually unequal on two sides, pinnately veined, veins, inconspicuous, petiole short, 2–3 mm, thick, curved; staminate flowers yellow, axillary on filiform curved pedicels, mostly 1 at an axil, segments obovate, about 1.5 mm long; pistillate flowers 1-several at an axil, on filiform Pedicels unequal, 3–5 mm long, straight, perianth segments 6, 1 mm or less long, closely appressed to an erect style 1.5–2.5 mm long, obscurely 6-lobed at summit; fruit thick disk-shaped, 10×3.5 m, obscurely 6-lobed, 6-loculed, the persistent narrowly cylindric style in a depression at center of top of fruit; seeds 2 in a cell, rounded but contiguous sides of a pair flattened, covered by a bright red aril, one or more seeds in a capsule may be abortive.

Endemic (?) to Maupiti, on flat ground in interior of motus and on high peaks and ridges.

Fosberg 64755 (US), 64891 (US); Fosberg & Sachet 64962 (US).

Jatropha L.

Thick-stemmed herbs or shrubs, latex clear, not milky, leaves entire to extremely divided, palmately veined; flowers in cymes, red or green, corolla present, fruit a capsule.

Jatropha integerrima var. hastata (Jacq.) Fosb.

Commonly planted ornamental, shrub with slightly hastate leaves, flowers unisexual, monoecious, corolla bright crimson, showy, of relatively recent introduction in the Pacific, said to be a native of Cuba.

Fosberg 64876 (US).

Manihot L.

Shrubs or small trees, leaves long-petiolate, tending to be palmately lobed or compound, flowers unisexual, monecious, in upper cymes, fruit a capsule.

Manihot esculenta Crantz — n.v. cassava; tapioca
Manihot utilissima Pohl

Erect shrub with knobby stems, large elongate tuberous roots which are very starchy; leaves petiolate, deeply palmately parted, flowers rather small, capsules 3-celled.

Widely planted shrub, native of Brazil, its roots yielding tapioca starch, very abundantly planted in Maupiti, especially in the coastal strip and on lower slopes.

Morris 29 (US).

Pedilanthus Neck. ex Poit.

Fleshy-stemmed shrubs, leaves distichous, flowers in slipper-shaped cyathia; ovary 3-celled; fruit a capsule.

Pedilanthus tithymaloides (L.) Poit. n.v. shoe flower

Planted ornamental, stems dark green or variegated, leaves likewise, cyathium narrow, pointed, red.

Fosberg 64934 (US).

Phyllanthus L.

Herbs, shrubs or small trees, branches strongly dimorphic; leaves distichous, in some species closing at night; flowers small, borne in axils of leaves on slender horizontal branches; fruit a loculicidal, usually triloculate capsule, this rarely fleshy and indehiscent; 2 seeds in each locule.

Phyllanthus amarus Sch. n.v. moemoe

Slender erect herb, main stem simple or sparsely branching, fertile branchlets numerous, with pinnately arranged small leaves, these oblong, rounded at both ends, subsessile, stipules triangular acuminate; flowers minute hanging beneath leaves, a single pistillate at each proximal node, at distal nodes a pistillate and a staminate; pistillate with 5 tepals, ovary 3-celled, with 3 sessile stigmas, capsule depressed globose, 3-celled.

A widespread tropical weed in disturbed places; in Maupiti common around dwellings and in village.

Raynal 17867 (p. 1338); Fosberg 64804 (US), 64909 (US); Fosberg & Sachet 64964 (US).

Phyllanthus virgatus Forst. f. n.v. moemoe

Small rather stiff herb, single-stemmed (single-branched) or few-branched from base, leaves distichously arranged, ovate or ovate-lanceolate, flowers small, in leaf axils, fruit a 3-celled capsule.

Found once on Maupiti but not seen on 1985 survey.

Raynal 17841 (p. 1338).

ANACARDIACEAE

Habit various, sap tending to be resinous and with terebinthine odor, irritating to skin in some people, some species very much so; leaves simple or usually pinnately compound or trifoliate, flowers small, usually somewhat zygomorphic, often paniculate, ovary superior, fruit commonly drupaceous.

Mangifera L.

Large trees, sap resinous, causing dermatitus in some people, leaves simple; flowers small, in large clusters, very irregular; ovary unilocular, fruit a drupe with fibrous endocarp.

Mangifera indica L. n.v. mango

Widely distributed tree, planted for its fruit and naturalized on most tropical islands, one of most abundant trees on Maupiti; dominant in ravines and on lowest slopes.

Morris 12 (US).

Spondias L.

A small genus of trees found in tropics of both hemispheres, leaves pinnate, flowers paniculate, fruit fleshy, edible.

Spondias dulcis Parkinson n.v. vi; hog plum

Large openly branched tree, semi-deciduous or deciduous in dry season; leaves alternate, large,

odd-pinnately compound, leaflets thin, 7–9; flowers small, fruit a large globose drupe with a large corky stone, flesh sweet, edible.

Society Island tree, bearing an edible fruit, introduced elsewhere; occasional on coastal strip of Maupiti, possibly planted.

Fosberg, sight record.

CELASTRACEAE

Shrubs, trees or vines, leaves simple, alternate or opposite, tending to be crenate-serrate margined, stipules none; flowers in cymes, with a prominent disk, 4 or 5 merous, stamens alternating with petals; ovary superior; fruit a capsule or a drupe, seed often arillate.

Celastrus L.

Shrubs, often spiny, leaves alternate, flowers small, fruit a capsule, sometimes somewhat fleshy, aril surrounding lower part of seed.

Celastrus crenatus Forst. f. (This species is to be transferred to the genus Maytenus Mol., but the name has not been published yet.)

Shrub or small tree, branchlets slender, leaves small, ovate to elliptic, apex somewhat acuminate, margins crenate.

Widely distributed on high islands of Polynesia, very rare in upper forests or thickets of Maupiti.

Morris 25 (US).

RHAMNACEAE

Trees, shrubs or vines; leaves simple, alternate or opposite, flowers small, stamens opposite petals and often enclosed by them, ovary superior or inferior; fruit often an indehiscent capsule or drupe.

Colubrina Rich. ex Brongn.

Small trees with hard wood, or semi-scrambling shrubs; leaves alternate, rarely opposite, flowers small, greenish, in few-flowered clusters; fruit a semi-inferior capsule, tardily dehiscent or indehiscent. A pan-tropical genus of rather few species, one pantropical.

Colubrina asiatica (L.) Brongn. n.v.ami

Scrambling, semi-climbing shrub, glabrous, branching, stems round; leaves alternate, sub-orbicular cordate, acuminate, margins crenate-serrate, petiole up to 1 cm; flowers axillary, 1–2 at an axil, green, 5-parted, small, stamens opposite petals; fruit globose or slightly depressed-globose, calyx disk adnate to base of fruit, capsule 3-celled, slightly depressed on top, tardily dehiscent or indehiscent; seeds 1 in a cell; hard, brown, 2 plane faces at an angle, one convex face.

Pantropical, mostly in semi-dry or moist areas; in Maupiti seen on mountain ridge and on coastal strip.

Raynal 17837 (p. 1337); Fosberg 64774 (US), 64979 (US).

TILIACEAE

Habit various, creeping herbs to trees; leaves simple alternate, tending to be palmately lobed and veined, or cordate, usually pubescent, often stellately so, flowers with 5 petals, usually many stamens, ovary superior, entire or 4-lobed, fruit frequently indehiscent.

Grewia L.

Trees with trinerved serrate leaves, fruit deeply 4-lobed.
Pantropical genus, many species.

Grewia crenata (Forst.) Schinz & Guill. n.v. haupa

Small tree; leaves medium small, ovate, somewhat acuminate at apex, truncate to subcordate at base, trinerved, margins somewhat serrate, flowers rather small, greenish to white, stamens many, fruit hairy, 4-lobed, deeply divided, seed 1 in a cell.

Found once in Maupiti but not seen on this 1985 survey.
Raynal 17844 (p. 1338)

Triumfetta L.

Herbs or somewhat shrubby, leaves usually with cordate base, lobed or not, even on same plant; flowers axillary in small clusters or on spikes, calyx deeply lobed, fruit a globose spiny burr, indehiscent, spines often barbed or hooked.

Triumfetta procumbens Forst. f.

Prostrate, elongate trailing herb, occasionally with erect branches, vegetative parts, calyx and fruit pubescent, the hairs mostly branched or stellate; branches and leaves alternate, ovate or orbicular to trilobed, thick, apex obtuse or rounded, base cordate, margin crenate, venation palmate, 5–7 principal veins, network fine, petiole equal to or shorter than blade; stipules subulate to linear; flowers in leaf-opposed triads, appearing terminal at first, calyx cup-shaped at base, deeply 5-lobed, lobes narrowly spatulate; petals yellow, 5, narrowly elliptic to obovate, just shorter than sepals, apex somewhat erose; stamens many, erect, somewhat unequal; fruit a globose burr, spines many, not very stiff or sharp.
A widely distributed Pacific strand species, in Maupiti common on motus.
Fosberg 64863 (US).

Triumfetta rhomboidea Jacq. n.v. toteto

Erect herb with cordate leaves, usually somewhat shallowly lobed or angled, pubescent, inflorescence of several arching spikes, flowers yellow, petals separate, stamens many; fruit globose, densely woolly, with short weak hooked spines.
Pantropical weed, the form in Society Islands has very elongate inflorescence branches, very abundant on Maupiti, especially in lowlands. The small burrs stick to clothing causing great annoyance.
Raynal 17827 (p. 1337); Fosberg 64829 (US), 64925 (US).

MALVACEAE

Plants of various habit, herbs, shrubs, or trees, with a strong tendency to stellate pubescence, to strong bast fibers in stems, and to mucilage production in tissues; leaves simple, alternate, often cordate and palmately veined, stipules present and separate; flowers variously arranged, basically axillary, pentamerous, involucrate or not, calyx united, usually 5-lobed, petals 5, fused at base with filiments which are united, at least in lower portion, into a staminal tube with free portions of filaments bearing anthers separating from upper part of tube; pistil 1, with ovary 5- or more loculed, style enclosed by staminal tube, separation where exserted into 5 or more branches, or these fused, with stigmas free or fused; fruit a capsule, berry or schizocarp, locules with one or several seeds.

Gossypium L.

Coarse herbs, sometimes suffrutescent or lower stem woody, all parts dark punctate with glands

producing gossypol, a poisonous yellow substance; leaves petiolate, often 3–5 lobed, palmately veined; flowers on axillary 1-flowered peduncles, with an involucre of 3 expanded, fan-shaped usually lacinate bracts, calyx sheathing base of flower, not strongly lobed, flower large, not opening widely, petals erect; ovary 3-loculed, locules with few or several ovules; capsule hard, ovoid, beaked, glandular, loculicidal, opening wide exposing seeds ordinarily covered by masses of 2 types of fiber, called cotton.

Gossypium barbadense L. n.v. cotton

A tall suffrutescent herb with 3–5 lobed leaves, the lobes ovate with sides of lobes curved, stipules, flowers subtended by an involucre of 3 erect laciniate bracts, corolla bright yellow, 5–6 cm long, capsule ovoid, acuminate, punctate, hard, 3-valved, dehiscent, seeds several in a cell, densely white-woolly.

Planted for fiber, or possibly persisting from such planting.

Fosberg 64937 (US).

Gossypium hirsutum var. taitense (Parl.) Roberty

Shrub to 2.5 m tall, most parts punctate with black dots, glabrous; leaves alternate, on long stiff slender petiole, blades trilobed, apices acuminate, base deeply cordate, basal sinus mostly closed, basal lobes touching or overlapping, the three distal lobes broadly ovate, their sides nearly straight or somewhat concave; stipules immediately caducous, represented by a scar [minute hairy lanceolate appendage observed at one node-a stipule?] flowers borne singly on long stiff axillary peduncles, at summit of peduncle a reduced leaf, then a very short internode, then the involucre of three large cordate deeply laciniate bracts, flower sessile, calyx bowl-shaped, subtruncate, only very obscurely trilobed; corolla about 4 cm long, cream color, fading reddish, base of five petals united; staminal column short, about 1 cm, style about 2 cm long, stigma clavate; fruit (boll) about 1.5 cm long, beak slender, 3 mm long, seeds about 7, fiber pale brown, about 1 cm long.

Found on a high rocky ridge in scrub vegetation.

Fosberg 64781 (US).

Hibiscus L.

A large genus of herbs, shrubs and trees, leaves variously shaped; stipules small, or large and enclosing terminal bud; flowers on axillary jointed peduncles, involucre a whorl of 5 or more usually narrow, lanceolate bracts, calyx sheathing, with free lobes, or teeth, petals often very showy, style branches 5, stigmas globose, pubescent; fruit a 5-loculed loculicidally dehiscent capsule with usually many seeds.

Hibiscus abelmoschus L.

Abelmoschus moschatus Medic.

Erect hirsute herb, leaves variously 3–5 lobed or angled, petiolate, flowers large, to 5 cm acorss, on strong peduncles in upper axils, involucre of 8–10 linear bracts, it and calyx early caducous, petals light yellow with almost black maroon base, capsule fusiform, 5-ribbed, slightly inflated.

Widespread weed, very rare in Maupiti, in weedy coastal strip on rock pile (archaeological).

Fosberg 64954 (US).

Hibiscus manihot L.

Erect glabrous small tree, trunk 4–5 cm diameter, gray-brown, leaf scars conspicuous, erect branches (from cut stem), leaves fasciculate on incipient lateral branchlets on branches; leaves lanceolate, to 2-3 dm long; thin, apex acuminate base truncate-hastate or subhastate, with obscure secondary lobing, main veins palmate from base, venation otherwise pinnate, petiole to 13 cm, fleshy; stipule scars (or rudiments) present but no stipule scars seen; peduncles axillary from uppermost

nodes, stiff, thick, strongly ascending, to 10 cm long, receptacle much enlarged, flowers not available, fruiting calyx of 5 separate ovate acuminate segments about 3 cm long; capsule broadly ovoid, apically 5-sulcate, hirsute especially in sulci, slightly lobed at apex.

A single plant growing at edge of a manihot patch; Vaitia Distr.

Fosberg 64914 (US).

Hibiscus hastatus L.f.

Hibiscus tricuspis Banks ex Cav.

A small tree with spreading branches, leaves rather large, petiolate, variously 3-5 lobed lobes entire or cut; stipules large; flowers in a few-flowered raceme, large to 8-10 cm across, yellow with dark center, petals 4-5 cm long, fused at base with staminal column, flowers and fruits practically identical with those of Hibiscus tiliaceus.

A Society Island species, possibly a form of Hibiscus tiliaceus, but with very different leaves, very rare on coastal strip of Maupiti.

Fosberg 64931 (US).

Hibiscus rosa-sinensis L. n.v. red hibiscus

A showy bright red ornamental hibiscus, present in the Society Islands in pre-European time, one of the species crossed to create many of the many ornamental hybrid cultivars; this or plants very similar to it commonly planted as ornamentals on Maupiti.

Fosberg, sight record.

Hibiscus tiliaceus L. n.v. purau

Pariti tiliacea (L.) St. Hil.

Low tree with short or no trunk, arching or decumbent, frequently tangled branches, with very tough bast fiber, especially in young growth on mature trees; under sides of leaves and stipules densely stellate-tomentose, on juveniles, sprouts, etc. only thinly puberulent; leaves orbicular, slightly acuminate, deeply cordate at base, white beneath, except juvenile, margin entire (serrate in seedlings), venation palmate, 9 veins from base, pinnate above, with ladder-like arrangement between larger veins, network obscure; stipules large, conspicuous, ovate to oblong, extra-petiolar, bases contiguous outside base of petiole; soon caducous; flowers on initially terminal peduncles with a pair of small stipules and a small leaf at summit subtending a thick pedicel, a branch then arising at the node at base of peduncle, opposed to the leaf at that node, this succession repeated resulting in a cymose arrangement of flowers and fruits; flower closely subtended by an involucre of 10 short lanceolate bracts; calyx of 5 ovate-lanceolate acuminate sepals united at base; corolla showy, of 5 broadly obovate yellow petals, dark maroon at base, yellow part fading reddish, base united and adnate to base of staminal column; column about half length of corolla, free filaments and anthers almost the whole length of column, except basal 3 mm; style with exserted part and 5 short stiff erect branches and clavate stigmas velutinous, maroon color, whole flower about 6 cm long; capsule ovoid-subglobose, 2.5 cm long, on recurved pedicel slightly beaked, sericeous, loculicidal with 5 valves; seeds reniform or obliquely reniform, dark brown.

Pantropical strand and lowland plant, stems producing bast fiber useful for cordage, dominant plant on slopes in Maupiti, abundant also in valleys and lowlands.

Hibiscus (Ornamental hybrids)

An enormous series of cultivars of hybrid origin, of variously mixed parentage; one of the most showy groups of tropical ornamentals, planted in most tropical countries, symbolic of tropical color and luxuriance.

Generalized description: Upright shrub; leaves alternate, simple, usually somewhat serrate toward apex, petiolate, generally ovate; stipules linear or lanceolate; flowering peduncles axillary, flowers large with an involucre of a whorl of linear or lanceolate bracts, calyx tubular with 5 lobes; corolla with

5 large showy obovate petals, bases fused and united with bases of stamens which are fused into a filament tube or staminal column, the numerous anthers on free filament-tips at the top of the column; style enclosed in staminal column; the five branches exserted from top, tipped with globose velvety stigmas, fruit a septicidal capsule; seeds usually lacking, if present usually hairy.
Fosberg, sight record.

Malvastrum Gray

Herbs with yellow or orange flowers, a depressed ovary maturing to a schizocarp separating into a number of 1-seeded carpids.

Malvastrum coromandelianum (L.) Garcke

Tough herb, leaves ovate, serrate, bright green, appressed hirsute beneath, flower orange.
Pantropical weed; on Maupiti a weed in cultivated ground and occasional along roadsides.
Fosberg 64805 (US), 64859 (US).

Malvaviscus Fabr.

Shrub with usually red, hibsicus-like flowers that never open widely, often pendent; fruit baccate.

Malvaviscus arboreus Cav.

Common planted ornamental, petals imbricately lobed at base.
Fosberg 64943 (US).

Sida L.

A large genus of herbs or sometimes slightly woody, with usually dentate leaves, flowers small, on simple or jointed pedicels, these in some species numerous above and forming a panicle, lacking an involucre, calyx sometimes somewhat inflated or plicate-keeled, corolla orange, white or maroon; schizocarp of 5 or more carpids, these sometimes strongly 2-toothed or stiff awned, reticulate on sides.

Sida acuta Burm. f.

Herb, leaves usually appearing distichous, green, flowers subsessile.
A pantropical weed, rare in Maupiti, collected in village.
Fosberg 64803 (US).

Sida rhombifolia L.

Pantropical weed, very variable, one form very common in Maupiti, leaves grayish-green, pedicels long, jointed, flower dull orange. Along roadsides and paths, and in disturbed or cultivated ground.
Fosberg 64832 (US).

Thespesia Sol. ex Correa

Small trees with dense dark-reddish wood; leaves strongly cordate, margins entire; flowers solitary on axillary peduncles, involucre of 3 small spirally arranged ovate bracts, buds and immature fruits exuding a yellow latex-like gossypol when cut, flowers showy lemmon yellow, turning dark reddish when old, staminal tube short, style-branches, and stigmas coherent, fruit a depressed globose tough indehiscent capsule, subtended by persistent calyx, seeds several to few in a locule, pubescent.

Thespesia populnea (L.) Sol. ex Correa

Small tree with thickish stiff round, pointed, cordate leaves, flowers about 5 cm long.
Common widespread coastal species pantropically, common along shores on Maupiti.
Fosberg 64815 (US), 64949 (US).

Urena L.

A sprawling, often semi-woody herb with rather small pink to rose-purple flowers. A genus with one or few species, pan-tropical.

Urena lobata L.

Tall sparsely branched suffructescent herb, leaves orbicular to ovate, simple, shallowly or deeply and intricately lobed; flowers pink, in upper axils and on terminal spikes, 5-parted, stamens with filaments fused; fruit 4-lobed, covered by hooked spines.
Pantropical weed, rare on Maupiti, seen only once near village on roadside.
Fosberg, sight record.

CLUSIACEAE (GUTTIFERAE)

Shrub or trees, often large, with opposite, usually leathery or fleshy large opposite leaves, yellow or white latex; stipules lacking; flowers with imbricate perianth, often scarcely differentiated into calyx and corolla; many stamens, one pistil with stigma sessile on ovary, fruit a drupe, berry or capsule, seeds one to several or many.

Calophyllum L.

Trees with large pinnately-parallel veined opposite leaves, lactiferous; flowers in axillary racemes, rather small with imbricate petaloid perianth; many stamens; fruit a drupe with thin flesh, a single large seed enclosed tightly in a hard endocarp.
A pan-tropical genus with rather many species.

Calophyllum inophyllum L.

Large spreading tree, lactiferous, young branches sharply 4-angled, glabrous except pyramidal terminal bud which is closely minutely brown-scurfy; leaves opposite, oblong with rounded apex and base, blade entire, about 20×10 cm, entire, coriaceous, finely pinnately parallel veined, abruptly slightly decurrent into a rather thick petiole about 2 cm long, curved at base; racemes of flowers axillary or leaf-opposed, white, 7–11 or more flowered, sometimes branched, pedicels 1.5–2 cm long, ascending, buds globose, perianth of 6 (or 8) petaloid parts very concave and imbricate, orbicular; stamens numerous, shorter than petals; ovary globose, white, stigma minute, sessile; fruit a globose drupe about 2.5–3.5 cm diameter, mesocarp thin, fibrous, endocarp of a thin bony layer and a spongy layer grown to a hard testa (?) surrounding a globose firm fleshy seed, this completely homogeneous within, yellowish or cream white, embryo not at all evident.
A widely dispersed Indo-Pacific strand and lowland tree, yielding a high-quality wood, useful for carving and construction; on Maupiti common on motus and island shores. Fruit ideally adapted for dispersal by water, the perfectly spherical endocarps common in beach drift, appearing viable even when obviously weathered.

FLACOURTIACEAE

A rather non-descript family of woody plants; leaves simple; stipules lacking; flowers not showy, with 2 whorls of perianth parts; ovary 1-loculed with parietal placentation, fruit various, frequently baccate; seeds usually many.

Xylosma Forst. f.

Shrubs and small trees, leaves with crenate-serrate margins, pistil with a peltate lobed stigma, fruit a berry.

Xylosma suaveolens (Forst.) Forst. f. sensu lato — n.v. ? (pine a Tahiti, fide Nadeaud)

Small tree, leaves alternate, ovate to broadly elliptic, petiole short; flowers dioecious, on short axillary racemes, perianth ciliate, staminate with many stamens, pistillate with an ovary with subsessile stigma, berry subglobose, black. Common in eastern Polynesia.

Widespread Polynesian species, rare on Maupiti, found in higher elevation forests.

Raynal 17848 (p. 1338); Morris 18 (US)

CARICACEAE

Thick-stemmed herbaceous or semi-woody plants, lactiferous; with palmately-veined petiolate leaves; no stipules, flowers very diverse, axillary and solitary or paniculate; stamens in two whorls; placentation parietal; fruit fleshy, seeds arillate. Tropical American and African.

Carica L.

Characters of family.

Carica papaya L. — n.v. papaya; pawpaw

Thick-stemmed erect, usually unbranched tree with a crown of very large deeply lobed and dissected leaves, flowers polygamo-diecious or polygamous, pistillate large and axillary, staminate and bisexual in axillary panicles.

Universally planted and naturalized in the tropics for its fine edible fruit; common around dwellings in Maupiti.

Fosberg, sight record.

CUCURBITACEAE

Mostly herbaceous tendrilliferous vines, a few erect herbs and woody vines, rarely shrubs, leaves alternate, usually palmately veined and lobed; stipules none; flowers mostly unisexual, pistillate with an inferior ovary, unilocular with parietal plancentation; fruit usually a berry, sometimes dehiscent, seeds 1-many. A large, almost world-wide family.

Citrullus Schrader

Creeper with deeply and sinuously lobed leaves, small yellow-flowers, monoecious usually, and large fruit, center cavity filled with fleshy tissue, with flattened seeds each in a small cavity. A small Old World genus of warm, usually semi-arid regions.

Citrullus lanatus var. caffrorum (Alef.) Fosb. — n.v. water-melon; pastecque

Extensively cultivated on motus in Maupiti for its fruit, which is sold in Tahiti.

Fosberg 64851 (US).

THYMELAEACEAE

Woody plants with strong bast fibers; leaves simple, alternate or opposite; flowers racemose, appearing spicate, or in umbells, perianth of one connate series, and tubular with 4–5 lobes, sometimes, an inner reduced whorl, stamens 2, 4–5 or 8–10, inserted on calyx tube; ovary superior, one ovule in a cell; fruit fleshy or dry. A largely tropical and temperate family, one genus common in

Polynesia.

Wikstroemia Endl.

Shrubs or small trees with smooth dark red or red-brown bark, pairs of white lenticels between attachments of petioles; leaves green to more or less yellowish green, opposite; flowers in usually short or capitate, but often elongating spike-like racemes, dioecious, perianth yellow to yellow-green, tubular, 4-lobed, lobes patently spreading; stamens 8; ovary superior, style short or not, fruit a drupe-like 1-seeded berry, said to be toxic.

A genus of a few variable species, or many ill-defined ones, with Indo-Pacific distribution.

Wikstroemia raiatensis J.W. Moore n.v. avao

Wikstroemia foetida sensu auct. plur. non (L.f.) A. Gray

Shrub with usually smooth dark brown or maroon stems, very tough fiber in bark, opposite simple entire green to olive green leaves, stipules none but in their place paired white scars; flowers in very short pendent spikes or heads, perianth of one series, tubular with spreading 4-parted limb, 8 stamens in throat, pistil 1, fruit a soft red ovoid berry with one seed slightly pilosulous at apex.

The name W. foetida has traditionally been used for this extremely variable species, but proves to have been misapplied to it. The above name may be used for it, at least until a critical study of the southern Polynesian species of Wikstroemia has been made.

Found once on Maupiti, not seen on 1985 survey.

Raynal 17849 (p. 1338)

Wilkstroemia sp.

A single small tree of a peculiar Wikstroemia, substerile, much-branched, with almost pendulous branchlets, large elliptic leaves, and capitate, non-elongating inflorescences was found on a ledge near the top of a precipitous slope on the east side of Holuparaoa Ridge, in thick forest. Its habit, leaf size and shape, as well as capitate non-elongating inflorescences distinguish it from the widespread Polynesian species which has been incorrectly known as W. foetida L. f. (see above). Our specimens, lacking flowers or fruits, is scarcely good enough to base a new species on in this difficult genus.

Fosberg 64295 (US, BISH, Papeete)

LYTHRACEAE

Herbs, shrubs or trees, leaves opposite, tending to be distictous, simple; stipules lacking; flowers axillary and solitary, or in terminal spikes; calyx of 4–8 sepals, on a tubular or cup-shaped hypanthium petals free, 4, 6 or 8, or 10, radial or rarely zygomorphic, often clawed, blades thin and delicate; stamens usually twice as many as the petals, rarely fewer, very rarely many, pistil one, ovary usually closely invested by calyx, so as to appear inferior, in some genera partly inferior, 1–6 loculed, several to many ovules per locule, placentation axile, fruit usually capsular.

Pemphis Forst.

A strand genus, found throughout the Indo-Pacific region excepting Hawaii, mainly insular, of two species only. Wood of trunk very dense and hard.

Pemphis acidula Forst.

Erect slender intricately branched shrub or small tree; leaves opposite, small, elliptic, grayish green, sour or astringent when chewed; flowers, six white petals, axillary, heterostylous, calyx united striate; fruit fleshy.

Fosberg 64841 (US).

RHIZOPHORACEAE

A small tropical family of woody plants of diverse habit, leaves opposite, stipules interpetiolar, wrapped around bud, caducous.

Rhizophora L. n.v. mangrove

Trees with prop roots, axillary cymes of 4-parted flowers, petals ciliate, included, caducous; ovary inferior, seed germinating on tree, radical elongating, thick, fleshy, falling from tree and dispersed by floating.

Rhizophora mucronata var. stylosa (Griff.) Schimper

Not known growing on Maupiti, but 5–6 propagules found in beach drift on lagoon side of Motu Auira, several still green and probably viable, probably drifted from Moorea or Tahoa, where introduced.

Fosberg 64815 (US).

LECHYTHIDACEAE

Tree with alternate large leaves; flowers with many stamens, inferior ovary; fruit a woody capsule or a fleshy or fibrous drupe.

Barringtonia Forst.

Tree with ample leaves, stipules none, flowers in elongate spike-like racemes or solitary; petals 4 or more, stamens many, showy, united at base, early caducous; fruit large, with fleshy or fiberous pericarp; a single large seed.

A genus of a few species in Old World Tropics.

Barringtonia asiatica (L.) Kurz n.v. hotu

Large tree, trunk often swollen and distorted at base, at least when old, glabrous, branchlets rather thick; leaves alternate, very large, obovate, rounded at apex, subcordate at base, coriaceous, main veins conspicuous, margins entire, petiole thick short, curved; stipules none; flowers large, calyx persistent, 4-parted, spreading, petals stamens numerous to 5 cm long, coherent at base, falling as a unit; ovary inferior, style exceeding stamens, fruit very large, turbinate, round to usually square in transverse outline at largest part, corky within, with smooth tough exocarp, a single large seed.

The fruit floats and is a common object in beach-drift, often seen germinating near tops of beaches.

An Indo-Pacific strand tree, reaching a large size, in Maupiti occasional individuals or groves at top of and back of beaches, the large round or square fruits common on beaches; seeds said to be poisonous, used to poison fish.

Fosberg 64814 (US).

MYRTACEAE

Trees, shrubs or rarely climbers; very often aromatic; leaves simple, opposite or in a few genera alternate, usually punctate with pellucid oil glands; stipules usually lacking, flowers with inferior ovary, usually with many, often showy stamens; fruit either a fleshy berry or a hard capsule.

Eugenia L.

Shrubs and trees, aromatic; leaves opposite, gland dotted; flowers on axillary pedicels or in axillary cymes, sepals 5, persistent, petals 5, caducous, stamens many, epigynous; fruit fleshy, with one or several large seeds.

Eugenia cuminii (L.) Druce n.v. Java plum
Eugenia jambolana Lam.

A south Asian-Indonesian tree species that has been abundantly naturalized in many Pacific islands. It is common in various places in Maupiti, including locally on the motus. Its small fleshy fruit is edible but astringent.
Fosberg & Sachet 64966 (US).

Eugenia malaccensis L. n.v. mountain apple; Malay apple

Tree reaching large size; leaves opposite, large, oblong to elliptic or ovate, slightly acuminate; inflorescence thyrsoid-paniculate, few-branched, axillary or cauline, flowers large, with many crimson stamens, fruit a berry, to 5 or more cm in diameter, 1-2 large seeds more or less free from the thick sweet aromatic crisp but watery flesh, pale green to reddish when ripe.
Widely distributed in the Pacific and Malesia, producing an edible fruit, on Maupiti occasional on lower slopes and coastal strip. Probably carried about and introduced by Polynesians.
Morris 13 (US); Fosberg, sight record.

Eugenia uniflora L.

Shrub, much branched, leaves opposite, ovate, flowers axillary, white, small, fruit a depressed globose deeply lobed red, turning maroon or black, juicy berry, with persistent round sepals.
Planted food plant, possibly naturalized but rarely seen in Maupiti.
Fosberg 64947 (US).

Psidium L.

Shrubs and trees with smooth bark, flowers white with small sepals; large white petals; fruit fleshy with many small hard seeds embeded in a soft pulp. Of tropical American origin, widely introduced throughout tropics.

Psidium guajava L.

Very widespread shrub or small tree with smooth bronze colored bark, native of tropical America but carried over the tropics for its edible fruit, in Maupiti an important component of montane scrub and forest.
Morris 24 (US).

ONAGRACEAE

Herbs, rarely shrubs or small trees, leaves alternate, simple, stipules none; flowers with inferior ovary, petals 4, stamens 8; ovary usually 4-loculate, ovules and seeds many.

Ludwigia L.

Herbs, terrestrial or aquatic, flowers usually yellow, petals fugaceous; fruit a capsule with spreading persistent sepals, seeds small, many.

Ludwigia octovalvis (Jacq.) Raven

Erect herb, becoming slightly suffrutescent, to 1.5–2 m tall, branched, stems reddish brown, slightly angled, young stems slightly pilose; leaves alternate, lanceolate, narrowly acute at apex and base, pinnate venation prominent on under surface, subsessile or very short-petioled; flowers in upper axils on short pedicels; ovary inferior; sepals 4, ovate-acuminate, spreading, about 1 cm long; petals 4,

bright yellow, obovate orbicular, 1.5 cm long, slightly emarginate, falling very easily by mid-day; fruit clavate, 3.5 – 4 cm long, sepals tardily caducous, fruit walls disintegrating, leaving persistent fibers; seeds numerous, about 0.6 mm wide, rounded, pale straw-color, smooth.

A pan-tropical plant of marshy places, rice and taro fields, probably spread accidentally by Polynesians and Micronesians; in Maupiti found in taro patches and wet spots in interior of motus.

Fosberg 64756 (US); Fosberg & Sachet 64963 (US).

ARALIACEAE

Mostly trees, oily or resinous-aromatic; leaves usually compound, petiole-bases expanded, inflorescences usually compound umbels; flowers radially symetrically, perianth in 2 series, outer very small, usually 5-parted; stamens the same number or more; ovary usually inferior, locules usually 5 ovules 1 in a locule; fruit a drupe.

Pantropical, rare in Temperate Zone.

Polyscias Forst.

Mostly shrubs, leaves pinnately compound or unifoliolate; inflorescence a racemose compound umbel; fruit usually 2-locular. An Indo-Pacific genus with several cultivated ornamental species.

Polyscias filicifolia (Moore) Bailey

Planted ornamental; leaves once pinnate with long shallowly lobed leaflets.

Fosberg, sight record.

Polyscias fruticosa (L.) Harms

Planted ornamental, leaves decompound.

Fosberg, sight record.

Polyscias guilfoylei (Cogn. ex March) Merr.

Planted ornamental, leaves pinnately compound, leaflets few, broadly elliptic, usually with white remotely serrate margins.

Fosberg, sight record.

Polyscias tricochleata (Miq.) Fosb.

Planted ornamental, leaves trifoliolate, leaflets round, crenate-margined.

Fosberg, sight record.

UMBELLIFERAE

Oily aromatic herbs, rarely woody, with simple or usually compound leaves, with expanded bases, flowers in umbels, calyx reduced, petals 5; stamens 5, ovary 2-celled; fruit with longitudinal oil-ducts, a schizocarp splitting into 2 mericarps.

Centella L.

Creepers with rhizomes superficial or buried, leaves reniform, shallowly dentate, flowers and fruit axillary.

Centella asiatica (L.) Urb.

Creeping herb rooting at nodes, leaves orbicular-reniform, flowers inconspicuous, axillary.

Widespread in Old World tropics, with a close relative in the New World, not certain how far east it is native in the Pacific, generally considered introduced; rare in lowlands of Maupiti in disturbed places.

Fosberg 64791 (US).

PLUMBAGINACEAE

Shrubs or herbs, leaves in rosettes or alternate, simple; flowers spicate or paniculate, 5-merous, ovary 1-loculed, with one basal ovule.

Plumbago L.

Scrambling herb or slender shrub, flowers in terminal spikes, calyx cylindric, strongly stipitate glandular, corolla salverform, with 5 obovate patent lobes; fruit a capsule with one seed.

Plumbago zeylanica L. — n.v. ava turatura

Scrambling herb with striate, slightly zigzag stems; alternate broadly ovate leaves acute to usually obtuse but slightly acuminate apex, obtuse base decurrent on petiole, blade thin, to 6×4 (−5) cm, glabrous and very minutely pale punctate above, thinly scurfy beneath, petiole to 3 cm long, margined, expanded to form rounded stipule-like auricles and slightly sheathing at base; racemes 1−2 or several terminally, pedicels very short, 1 mm or less, subtended by an oblong green or brownish bract and two bracteoles, flowers rather crowded on a rhachis up to 13 cm long, peduncle 1 or less cm, lower part of rhachis clothed only with dried persistent bracts and bracteoles; calyces spreading from rhachis, cylindric, strongly ribbed and sulcate, deeply toothed at summit, the whole conspicuously clothed with erect viscous-glandular hairs; corolla white, glabrous, about 1.5 cm long, salverform with 5 ovate lobes and slightly funnelform throat, marcescent; fruit a single-celled capsule, closely invested by persistent calyx, with a single seed, basally attached.

A wide-spread Indo-Pacific species, ideally equipped for bird-dispersal, having reached as far east as the Marquesas and Henderson Island. In Maupiti it has been found on the tops of high peaks and on the coastal flats.

Raynal 17842 (p. 1338); Fosberg 64773 (US), 64942 (US).

OLEACEAE

Trees, shrubs and climbers, leaves simple or pinnately compound, opposite or subopposite; stipules none; flowers various, corolla gamopetalous or none; stamens 2 or rarely 4; pistil 1, fruit a drupe, capsule, or samara.

Jasminum L.

A shrub, scrambler or vine, leaves opposite or rarely alternate, simple, trifoliate or pinnate; flowers in cymes or panicles, rarely solitary, axillary, calyx 4-many-lobed; corolla gamopetalous, radially symmetric or somewhat zygomorphic, somewhat or quite salverform, usually very fragrant; fruit a pair of small drupes.

Jasminum didymum Forst. f. — n.v. ti'ati'a mou'a/mau'a

A tough slender liana, stems twining or scrambling; leaves opposite, trifoliolate, leaflets broadly ovate, somewhat acuminate, inflorescence thyrsoid-cymose, open, flowers small, white, fragrant, 4-merous; fruit a pair of globose black drupes.

Widespread southern Polynesia to Australia; occasional on wooded slopes and ridges in Maupiti, locally tangled in thickets.

Raynal 17846 (p. 1338), Fosberg 64771 (US).

Jasminum grandiflorum L.

Ordinarily a planted ornamental, but found apparently naturalized at one place on the NW shore of Maupiti, flowering but not seen setting fruit.
Fosberg 64916 (US).

Jasminum multiflorum (Burm. f.) Andr. n.v. star jasmine
Jasminum pubescens Willd.

Planted ornamental; shrubby with white star-like fragrant flowers.
Fosberg, sight record.

GENTIANACEAE

Herbs, more rarely shrubs or trees, glabrous; leaves simple, opposite; stipules none or two small lobes, or a low ridge or ring; flowers solitary or in cymes, terminal, calyx gamosepalous; corolla gamopetalus, 5-merous, anthers in sinuses, or in throat, ovary superior, placentation parietal; fruit a capsule or a berry; seeds many.

Fagraea Thunb.

Trees or shrubs; leaves coriaceous, mostly rather long; flowers solitary or in few-flowered cymes; calyx short, corolla large white, waxy, turning yellowish, very fragrant; stamens and style included; fruit a large globose, ovoid, or ellipsoid, orange berry, with many seeds embedded in pulp. (This genus is usually placed in the family Loganiaceae.)

Fagraea berteriana A. Gray ex Bentham

Handsome tree, leaves large, opposite, obovate, coriaceous; flowers in few-flowered cymes, calyx small, corolla large, tubular-salverform, very fragrant, white turning cream-yellow with age, fruit a large orange berry with many seeds.
A widespread tree in the Pacific Islands, with many local varieties, its flowers prized for their odor; occasional in lowlands on Maupiti, mostly probably planted.
Fosberg, sight record.

APOCYNACEAE

Herbs, shrubs, vines and trees, often lactiferous; leaves opposite, whorled, a rarely crowded and spirally arranged, simple, entire; stipules none; flowers variously disposed, often in irregular cymes; calyx usually divided almost or quite to base; corolla gamopetalous usually contorted in bud, sometimes with scales in throat; anthers sessile in a close ring in tube or throat; pistil of 2 or rarely more separate carpels, united above in a single style with an apparatus subtending the stigma called a clavuncle; fruit a follicle or drupe, usually in pairs; seeds usually flattened, sometimes comose.

Catharanthus G. Don

Herbs or suffrutescent; simple or branched at or near base, stems leafy, flowers appearing terminal but in uppermost axils, corolla salverform; fruit linear in pairs in upper axils. A small genus principally from Madagascar, one species pantropical, planted and naturalized.

Catharanthus roseus (L.) G. Don

Suffrutescent herb, many stems from base, sparingly branched above, most parts minutely puberulent, stems green or red, internodes short; leaves opposite, simple elliptic to oblong, pinnately veined, 5-7 nerves on a side, apex obtuse to rounded, minutely mucronulate, petiole short, 2-4 mm;

flowers solitary, axillary, subsessile; sepals 5, lanceolate subulate; corolla salver-form, white to rose purple, tube slender, abruptly enlarged, then contracted near summit, lobes spreading, very broadly obovate, mucronate, mucro to one side of center, throat almost closed, slightly elevated and closely ciliate, slightly bearded within, lobes twisted to left in bud, anthers included, linear-oblong, style filiform, stigma (clavuncle) cylindric with 2 abrupt constrictions, just below anthers; fruit of two free linear erect carpels, shorter than leaves, apices bluntly acute.

Native of Madagascar, now widely planted and naturalized in the tropics and warm-temperate areas; medicinal properties being intensively investigated.

Fosberg 64837 (US), 64860 (US).

Nerium L.

Shrubs with watery sap, opposite or whorled narrow leathery leaves, and corymbose cymes of showy flowers, corolla with scales in throat; anthers with plumose appendages; fruit a slender elongate capsule. All parts of the plant are very poisonous.

Nerium oleander L. n.v. oleander

Planted ornamental, with pink or white flowers; highly poisonous.

Fosberg, sight record.

Plumeria L.

Thick-stemmed shrub or small trees, very lactiferous; semi-deciduous; leaves crowded, spirally arranged; rounded cymes of large, very fragrant flowers.

Native of tropical America, planted throughout the tropics.

Plumeria obtusa L. n.v. Singapore; plumeria

Tree with cuneate obtuse dark green venulose leaves; white flowers.

Planted ornamental.

Fosberg, sight record.

Plumeria rubra L. n.v. frangipani; plumeria

Planted ornamental, thick-stemmed tree with narrow elleptic strongly acuminate leaves, flower color extremely variable; with clusters of variously colored very fragrant flowers.

Fosberg 64883 (US).

Tabernaemontana L.

Shrubs and trees with salverform flowers, usually white, and fruit consisting of paired dry or fleshy ovoid follicles. Considered in a broad sense found throughout the tropics. Often segregated into many small ill-distinguished genera.

Tabernaemontana divaricata (L.) R. Br. n.v. false gardenia; faux tiare

Tabernaemontane coronaria (Jacq.) Willd.

Ervatamia coronaria (Jacq.) Stapf

Slender dark green shrub; flowers salverform, white, single or double, in slender few flowered cymes. Planted ornamental, originating in India.

Fosberg, sight record.

CONVOLVULACEAE

Herbs or somewhat shrubby, usually somewhat lactiferous, mostly twining vines, very rarely trees; leaves alternate, usually more or less cordate; flowers mostly large and showy, on unbranched or branched axillary peduncles or cymes, calyx of 5 separate overlapping sepals; corolla usually trumpet shaped or campanulate, with 5 broad veins, stamens few, attached above base of corolla; fruit a capsule, rarely a fibrous berry.

Ipomoea L.

Vines, very rarely erect shrubs; flowers large, showy tubular, campanulate or funnelform; anthers straight, pollen grains spiny under high magnification, style filiform, stigma capitate, with 2 or 3 fused heads, fruit a 4-celled capsule.

Ipomoea batatas (L.) Poir. n.v. sweet potato

Planted for its edible tuberous roots, a pre-European plant in Polynesia, doubtless of American origin.
Morris 34 (US); Fosberg 64852 (US); Fosberg & Sachet 64967 (US).

Ipomoea fistulosa Mart. ex Choisy

Planted ornamental, beginning to become naturalized, native of South America, erect habit unusual in Convolvulaceae; flowers pink.
Fosberg 64944 (US).

Ipomoea littoralis Bl.
Ipomoea denticulata Choisy
Ipomoea gracilis sensu auct. non R. Br.

A slender twiner with alternate sagittate to ovate-cordate thin leaves; rose-purple corolla, dark in throat.
A pantropical small morning glory, occasional at all elevations on Maupiti.
Morris 5 (US); Fosberg 64779 (US), 64957 (US).

Ipomoea macrantha R. & S. moon-flower
Ipomoea tuba (Schlecht.) G. Don

A large herbaceous vine occurring pantropically in strand and coastal situations, occasional on and behind beach ridges on Maupiti; flowers large, white.
Fosberg 64843 (US), 64853 (US).

Merremia Dennst. ex Hall. f.

Differs from Ipomoea in more clearly campanulate corollas, coiled anthers, smooth pollen grains.

Merremia peltata (L.) Merr.

A very widespread Pacific liana, common locally in slope and coastal forests of Maupiti; flowers large and showy, white.
Gillette 7 (US); Fosberg 64918 (US).

BORAGINACEAE

Herbs, shrubs and trees, rarely climbers, frequently rough pubescent or hispid; leaves simple, alternate; stipules none, inflorescence usually cymose, often scorpioid; calyx of 5 separate or connate sepals, corolla usually at least slightly zygomorphic, often approaching actinomorphic, stamens 5,

inserted on corolla-tube, pistil 1, ovary superior, bilocular or falsely quadrilocular, style gynobasic or terminal, often forked; fruit a drupe or of 4 nutlets, these may be immersed in aerogenous tissue.

Cordia L.

Trees or shrubs, leaves tending to be rough, petiolate; inflorescence a loose cyme or in some species a spike-like cyme; few to many flowered; flowers more or less showy; calyx gamosepalous, style branched, with 4 stigmas; fruit a drupe.

Cordia subcordata Lam. n.v. tou

Small to medium well-formed tree with a hard dark and light banded wood; leaves alternate, ovate to broadly elliptic, usually slightly rough on the upper surface, veins prominent, 4–6 on a side; flowers in small open few-flowered axillary cymes, calyx cylindric, unequally 3–4 toothed; corolla funnelform, bright orange, lobes 5, very thin, spreading to recurved, margins crispate, throat somewhat plicate within, stamens, 6–8 included in throat, style 2-branched, each branch with 2 divergent flattened fleshy stigmas, these branches and stigmas exserted, fruit a hard drupe enclosed in the enlarged calyx, drying and becoming hard, bony.

An Indo-Pacific strand and lowland species, prized for its wood; in Maupiti found on beach ridges, especially on motus.

Fosberg 64980 (US), 64875 (US).

Tournefortia L.

Shrubs or rarely small trees, more rarely twiners; inflorescence a usually branched scorpoid cyme; flowers small, style terminal on an unlobed ovary.

Tournefortia argentea L.f.

Shrub or small to medium-size tree with rounded umbrella-shaped crown, branching alternate, branchlets thickish, ending in crowded clusters of obovate to elliptic fleshy leaves on short thick petioles, stems and leaves thinly silky-hairy, giving a somewhat frosty gray-green appearance; inflorescences cymose, terminal on branchlets, subtended at base by two or more leafy branchlets, peduncle simple or forking once at an acute angle, then repeatedly alternately branching, main rhachis with up to 12 or more branches, each forking repeatedly, branchlets ending in a scorpioid spike of ultimately many sessile flowers; calyx with 5 closely appressed obtuse lobes; corolla subrotate, the 5 orbicular white lobes spreading to recurved; 5 short stamens included; ovary ovoid with an apical disk bearing 2 erect white fleshy stigmas; fruit globose, small pea-size, drupaceous, with 2 (or 4) irregular shaped stones, flesh maturing to a dry aerogenous floating tissue.

A widely distributed pioneer strand plant, ranging throughout the Indo-Pacific area, from Africa to Ducie Island, north to the Marianas and Ryukyu Islands excluding Hawaii, but introduced there. Its floating fruits provide a very effective means of dispersal. In Maupiti it is very common on the motus, especially at the top of and just back of the beaches, and on beaches also on the main island.

Fosberg 64975A (US).

VERBENACEAE

Habit various, usually but not always woody, often aromatic when broken; leaves opposite, usually simple, rarely palmately compound or trifoliolate; stipules lacking; inflorescence various, racemose, corymbose, or more rarely spicate or cymose; calyx gamopetalous; corolla usually at least somewhat zygomorphic, 5- rarely more, or 4-lobed, stamens the same number as the corolla lobes, but one commonly reduced to a staminode; ovary superior, of 2 or 4 carpels, cells the same number as carpels or twice as many; fruit a drupe or berry, rarely of four nutlets or a capsule.

Premna L.

Small trees or shrubs, aromatic, rarely spiny; inflorescence cymose; flowers small somewhat zygomorphic; fruit a small berry, with 4 seeds.

Premna serratifolia L. sensu lato — n.v. avaro
Premna obtusifolia R. Br.

Small tree or shrub, bark light colored, branchlets often dark with white lenticels; leaves opposite, simple, broadly ovate to broadly oblong, apex obtuse to acuminate, base obtuse to subcordate, petiolate, inflorescence a terminal corymbiform cymose panicle, flat to rarely somewhat rounded on top, 5-20 cm across or more, flowers with united but irregularly 2–5 lobed calyx, corolla pale green to whitish, bilabiate, stamens exserted, fruit a small pea-like black berry with 4 seeds.

Widespread, extremely variable Indo-Pacific species, usually in strand and lowland situations, but only seen very rarely at higher elevations on Maupiti.

Raynal 17843 (p. 1338); Fosberg 64776 (US).

LAMIACEAE (LABIATAE)

Herbs, rarely shrubs, usually aromatic, with square stems and opposite simple leaves; flowers usually in verticels or heads, calyces gamosepalous, corolla gamopetalous and usually conspicuously zygomorphic; stamens ordinarily 2 or 4, in pairs, pistil one, ovary superior, usually 4-lobed, ovules 4, style gynobasic, fruit usually of 4 nutlets, these rarely fleshy, one-seeded.

A large cosmopolitan family with some economic or ornamental members.

Leucas R. Br.

Small herbs, odor weak or none, inflorescence racemose, corolla tubular, not strongly zygomorphic but limb bilabiate, lower lip larger, style-branches 2, very unequal; nutlets triquetrous.

Leucas decemdentata Sm. — n.v. niu

Weak herb, leaves opposite, serrate, inflorescence a terminal raceme, subverticillate, flowers white, tubular, bilabiate.

A widespread small herb in the south Pacific, very rare at upper elevations on Maupiti.

Raynal 17835 (p. 1337); Morris 6 (US).

Ocimum L.

Strongly aromatic herbs or somewhat woody shrubs; flowers racemose, in 6-flowered verticels, calyx bilabiate, deflexed in fruit, corolla bilabiate, upper lip 4-lobed, lower lip entire, 4 stamens in 2 pairs; style branches 2; fruit of 4 nutlets. A pantropical genus of a few species, one O. basilicum, widely used for flavoring food, incense, etc.

Ocimum basilicum L. — n.v. basil; sweet basil

Planted cooking herb, very pleasantly aromatic; leaves almost entire.

Fosberg 64928 (US).

Ocimum gratissimum L. — n.v. miri tahiti (basilic de Tahiti)

Shrubby, leaves broader and bases more abruptly contracted than in O. suave. The Raynal specimen should be reexamined.

Raynal 17824 (p. 1337).

Ocimum suave Willd.

A widely distributed strongly aromatic shrubby plant of tropical American origin; common locally at lower elevations on Maupiti, sometimes united with O. gratissimum L., leaves notably serrate.
Fosberg 64762 (US).

SOLANACEAE

Habit various, ours herbaceous; leaves alternate, simple entire to dissected; stipules none; flowers usually in axillary cymes or rarely a terminal cluster; flowers usually 5-merous, calyx usually 5-lobed, corolla gamopetalous, often rotate, actinomorphic or somewhat zygomorphic, stamens alternating with corolla lobes; pistil 1, ovary superior, placentation axile, ovules many; fruit a berry or capsule.

Nicotiana L.

Erect herbs; cymes terminal, corymbiform or elongate; flowers tubular, funnelform or salverform; fruit a capsule, seeds many, minute.

Nicotiana tabacum L. n.v. ava'ava tahiti tobacco

Found once on Maupiti, possibly planted, but not seen on 1985 survey; of American origin.
Raynal 17829 (p. 1337).

Solanum L.

Herbs, shrubs, or vines, often spiny; cymes axillary or super-axillary; corolla usually rotate stamens connivent; fruit a berry. The tomatoes are by many botanist placed in a separate genus Lycopersicum; but there seems little reason for this.

Solanum lycopersicum L. n.v. tomato

Much branched glandular herb; leaves pinnately parted; flowers yellow; fruit a juicy berry, seed pubescent but surrounded by pulp.
Food plant, planted or spontaneous.
Fosberg 64867 (US).

SCROPHULARIACEAE

Mostly herbs, a few shrubs, a few herbaceous twiners, 1 genus of trees is usually placed here; leaves simple, opposite or rarely whorled, in a few genera "alternate"; flowers mostly bisexual, racemose, spicate, paniculate or solitary, racemes terminal or axillary; calyx of connate or free sepals; corolla tubular to rotate, very zygomorphic to almost actinomorphic, stamens 5, 1 usually reduced to a staminode or even absent, pistil 1, of 2 corpels, ovary superior, ovules usually many; fruit ordinarily a capsule with many small seeds. A fairly large family, mainly temperate, montane in the tropics.

Angelonia HBK.

Herbs with opposite oblong to lanceolate or narrowly elliptic leaves, stipules none; flowers axillary, solitary or in pairs, or forming bracteate terminal racemes by reduction of leaves; corolla tubular, zygomorphic, showy, stamens and pistil included; fruit a capsule. Several species cultivated as ornamentals.

Angelonia angustifolia Benth.

Planted ornamental; flowers solitary, pedicellate, axillary, corolla usually purple (or white).

Fosberg 64933 (US).

BIGNONACEAE

Mostly trees and lianas; leaves usually opposite or whorled, usually compound, simple in several genera, in vines frequently one or more leaflets modified into climbing organs-tendrils or hooks; stipules none; flowers usually cymose, often paniculate, almost always zygomorphic, tubular or elongate-campanulate, 5-lobed, often bilabiate with lower lip trilobate, stamens 5 but with 1 or rarely 3 modified into staminodes; pistil 2-carpelate, ovary superior, 2-loculate or rarely 1-loculate, ovules many; stigma 2-lobed; fruit usually an elongate dehiscent capsule, in a few genera indehiscent; seeds often on a septum which loosens on dehiscence, often winged and imbricate.

A large mainly tropical family many genera with showy flowers, some cultivated as ornamentals.

Crescentia L.

Irregularly branched shrubby small tree; leaves simple or compound; alternate or fasciculate; flowers with large irregular tubular corolla; fruit a large globose indehiscent hard-shelled berry with large seeds embedded in pulp.

Crescentia cujete L. n.v. calabash tree

Leaves fasciculate simple, spatulate, flowers pale green; fruit large, globose, the shell dried and used as a receptacle or calabash. Planted ornamental.

Fosberg 64932 (US).

Tecoma Juss.

Small tree with pinnate leaves, bright yellow flowers in showy clusters.

Tecoma stans (L.) Juss. ex HBK.

Pantropical ornamental, readily becoming naturalized, apparently very rarely established in Maupiti.

Morris 33 (US).

ACANTHACEAE

Herbs, shrubs or vines, stems often nodose, sometimes geniculate, sometimes spiny; leaves opposite, simple; stipules none; inflorescence usually cymose, or flowers solitary, racemose or spicate, often conspicuously bracteate; flowers with deeply lobed calyx, corolla zygomorphic, bilabiate; stamens usually 2 or 4, inserted on corolla; pistil 1, bicarpellate, ovary superior, 2-celled, ovules few, placentation axile; fruit usually a capsule, mostly elastically dehiscent, seeds 2 or usually 4 or more, often on curved stiff structures called retinacula, unique to this family. A large mainly tropical family, including many tropical ornamentals.

Asystasia Bl.

Herbs with broadly ovate leaves, flowers in a monochasial cyme; capsule 4 seeded.

Asystasia gangetica (L.) Anders.

Asystasia coromandeliana Nees

Planted ornamental climbing herb, flowers showy, variously colored, a pale yellow form seen on Maupiti.

Fosberg 64911 (US).

Barleria L.

Shrubs and herbs, leaves opposite; flowers in terminal bracteate spikes, these often spiny, calyx 4-lobed, 2 lobes large, 2 small, corolla showy, with 5 subequal lobes, stamens 4, in two pairs; fruit a capsule; seeds with bygrosscopic hairs.

Barleria cristata L.

Shrub to 1 m tall, flower spikes very leafy, elongate; flowers with 2 calyx lobes enlarged, ovate, scarious, veiny, margins spinulose-ciliate, other two linear; corolla to 5 cm long, tubular-campanulate, lobes spreading, rounded.
Planted ornamental.
Fosberg, sight record.

Justicia L.

Large pantropical genus, one species naturalized in Maupete.

Justicia betonica L.

Erect herb, spikes with large imbricate white bracts with green reticulate venation.
Widespread weed, in Maupiti seen only very locally on dry rocky slope above road in village.
Fosberg 64940 (US).

Thunbergia L.

Mostly vines, one or more species erect shrubs, flowers very showy, with large spathe-like calyx.

Thunbergia fragrans Roxb.

Twining vine, leaves opposite, triangular-ovate, flowers showy, corolla with a slender tube and broad white limb.
A widely naturalized rather ornamental species, perhaps of southeast Asian or Indonesian origin, locally established on coastal strip on Maupiti.
Fosberg 64902 (US).

RUBIACEAE

Habit various; leaves opposite or occasionally whorled, especially in temperate herbaceous genera, simple, almost always entire; stipules mostly interpetiolar; inflorescence usually cymose or thyrsoid, rarely spicate or flowers solitary; hypanthium fused to and including ovary, "ovary inferior", flowers 3–5, or more merous; calyx usually lobed or toothed, corolla gamopetalous, tubular, funnelform, salverform or rotate, stamens same number as corolla lobes and alternate with them, usually inserted in throat or tube, rarely basal; ovary usually 2-, rarely 1- or more-celled; fruit a capsule, a drupe or berry, rarely a compound drupe or a schizocarp; seeds 1-few or many in a cell, endosperm usually present.

Coffea L.

Shrubs and small trees, branches of 2 sorts, ascending vegetative ones, and slender harizontal flowering branches with leaves appearing distichous; flowers axillary, corolla white, salverform, anthers exserted, style with stigma tardily well-exserted; fruit fleshy with 2 large seeds; each in a thin endocarp, with testa one cell in thickness.

Coffea arabica L. n.v. coffee; cafe

Cultivated throughout the tropics, naturalized on many Pacific islands; planted and naturalized on wooded lower slopes in Maupiti.

Gillette 10 (US); Fosberg 64881 (US).

Gardenia Ellis

Shrubs and small trees, buds tending to be gummy, flowers solitary, axillary or terminal, calyx lobes often with vertical flat appendages, corolla salverform, very fragrant, fruit fleshy, placentae perietal in a unilocular fruit, in which the seeds are embedded in the fleshy placentae.

An Old-World genus with several important ornamental species.

Gardenia taitensis DC. n.v. Tiare Tahiti; Tahitian Gardenia

Glabrous shrub or rarely small tree with round stems, short inter-nodes: leaves broadly obovate or elliptic, glossy bright green, obtuse, 6-8 veins on a side, very short petiole; stipules sheathing, obtuse, embedded in gum in bud, lobes obtuse, splitting at maturity, deciduous with leaves; flowering pedicels terminal, about 1.5 cm long, subtended by two branchlets; hypanthium tricarinate, with 3 oblong-ovate erect appendages perpendicular to floral axis; calyx obscure or lacking; corolla salverform, tube greenish, about 2.5 cm long, slightly dilated to summit, lobes 7, broadly lanceolate, asymmetric, obtuse, white, very fragrant; anthers linear, partly exserted; stigma clavate, with 3 spiral keels, partly exserted; plant not known to set fruit in Society Islands.

Native of Melanesia, of aboriginal introduction and a favorite cultivated ornamental, prized for its fragrant flowers in the Society Islands, including Maupiti.

Fosberg 64783 (US).

Guettarda L.

This genus is typified by G. speciosa, described below. This does not much resemble the New-World species which are included, perhaps incorrectly, in the same genus.

Guettarda speciosa L.

Small tree with well-formed round crown, subglabrous to pubescent, stems slightly 4-sided when young, speckled with pale brown lenticels; leaves opposite, broadly oblong to usually slightly broadly obovate or ovate, apex obtuse, slightly acuminate, base cordate or subcordate, veins prominent beneath, slightly impressed above, 9–12 on a side, connected by prominently scalariform venation, network very fine, of several orders of scalariform network; stipules oblong, as broad or broader than high, apex strongly acuminate, acumen recurved, early caducous; cymes in one or both axils at a node, strong peduncles curving upward, twice branched at summit, a sessile flower in each forking, each ultimate branch scorpioid with 2 rows of sessile buds, flowering from base, cymes when young notably bracteate, bracts lanceolate, caducous; calyx tubular, slightly lobed or subtruncate, 2–3 mm long, caducous, corolla salverform, tube 2–3 cm long, lobes 6–7, imbricate in bud, 6–7, oblong to obovate, spreading, the whole corolla tomentulose, flowers of 2 types, short-styled, with style about 2/3 length of corolla tube, stamens at mouth of corolla with tips exserted, long-styled with style equalling or exceeding corolla tube, stigma exserted, corollas opening in night, falling about mid-morning when hit by sun; fruit a depressed globose drupe, to 2 cm wide, with white flesh, broad calyx ring on flat summit, flesh weathering or eaten by crabs after falling to ground, leaving a fibrous coat, a number of seeds embedded in stone.

An Indo-Pacific strand species, ranging from Africa to eastern Polynesia, north to Marianas, absent from Hawaii, found in upland in Marianas and some other islands, planted as an ornamental at least in Ceylon; apparently spread by its floating fruits.

Fosberg 64812 (US), 64833 (US).

Morinda L.

This is a pantropical genus of trees, shrubs and lianas. It is especially characterized by its fused ovaries, forming a fleshy multiple with corollas protruding from the mass; this, enlarged at maturity forming syncarpic fruit. Two species occur in the Society Islands, one of which is found in Maupiti.

Morinda citrifolia L. n.v. nono

Large shrub or small tree, vegetative parts glabrous, stems square with blunt angles, 5–12 mm thick; leaves opposite, large, to 25 or more cm long, 10–12 cm wide, ovate to elliptic, apex acute to obtuse, abruptly short acuminate, base cuneate contracted to a short, 1–2 cm, thick petiole, blade firm, glossy, (5-) 6–8 prominent veins on a side, not prominent ladder-like cross venation between them, obscure network in intervals; stipules prominent, orbicular, united at base, free parts spreading, leaf-like, tardily dehiscent; peduncles lateral, one at a node, leaf-opposed, replacing one leaf of the pair at a fertile node; flowers with hypanthia connate in a broadly cylindric to ovoid head, white; calyx reduced to an entire ring; corolla hypocrateriform, tube slightly dilated upward somewhat bearded within, lobes 5–6, ovate, anthers included, attached below sinuses, style with 2 recurved stigmatic branches well-exserted, flowering progressive, buds and several open flowers at top, buds rounded at apex, lobes valvate; fruit a fleshy syncarp with many stones, becoming white, soft, finally disagreeably putrid, "maa".

Pantropic strand and lowland species, with many medicinal and practical uses, very common, especially at lower elevations on Maupiti.

Raynal 17833 (p. 1337); Morris 21 (US); Fosberg 64862 (US).

Pentas Benth.

A herbaceous or somewhat shrubby group, mainly African, stems branched at base, leafy, bearing a corymbiform cyme of attractive mauve, red, or other colors salverform flowers. At least two species are found in cultivation in warm countries.

Pentas lanceolata (Forssk.) DeFlers

Erect herb to 1 m, flowers in terminal corymbiform cymes, corollas salverform, mauve, cultivated ornamental.

Fosberg 64905 (US).

Timonius DC.

Shrubs and trees; leaves simple, opposite; stipules foliaceous, flat or rolled around bud; flowers unisexual, 3- to many-flowered, pistillate on solitary pedicels or triflorous cymes; calyx usually reduced to teeth, 4–6 or 7 in number, corollas salverform with 4–7 lobes; stamens inserted near summit of tube, ovary 5–7 or more locular, style correspondingly branched; fruit a black drupe with 5–7 or more vertical rows of small stones, the rows radially arranged.

Many species, spread through the Indo-Pacific tropics, one in eastern Polynesia.

Timonius polygamus (Forst. f.) Seem.

Small to medium rather slender shrub, opposite branching, twigs very minutely sericeous; leaves variable in size from plant to plant, obovate, apex obtusish, base cuneate to more abruptly contracted to a short petiole, 4–5 not very prominent veins on a side; stipules triangular, distally carinate, keel excurrent to a short cusp, deciduous from second or third node; flowers dioecious, staminate in axillary cymes, pistillate solitary on axillary peduncles; staminate cymes shorter than leaves, 2–4 times branched, a subsessile or very shortly pedicellate flower in each fork, branchlets ending in triads; flowers white; calyx with 4–6 unequal triangular teeth; corolla hypocrateriform, tube slender, less than 1 cm long, lobes 4–6, lanceolate, blunt, spreading, tube and lobes puberulent without; anthers linear,

attached in throat, included; pistillate much shorter than tube; pistillate flower sessile on summit of an axillary peduncle about 1 cm or less long, ovary subtended by an articulation with 2 minute fleshy triangular bractlets, ovary (hypanthium) urceolate or turbinate-subglobose, greater in diameter than corolla tube, calyx of six minute unequal triangular lobes, persistent on fruit; corolla tube about 5 mm or less long, thicker than in staminate flower, lobes 6, spreading, narrowly ovate-oblong, tube and lobes minutely puberulent without; stigma lobes lanceolate, erect, shortly exserted; peduncle elongating to 1.5–2 cm or more, in fruit, fruit depressed globose or very broadly obovoid, glossy black, fleshy; stones in 6 or more vertical rows of several, radiating outward.

A widespread strand species in southern Polynesia, notable for its variation in vegetative characters. Common in shrub layer in coconut plantations and in thickets and clearings.

Fosberg 64750 (US), 64753 (US), 64784 (US), 64785 (US), 644806 (US), 64978 (US).

GOODENIACEAE

Herbs and shrubs, rarely small trees, leaves simple, alternate or rarely opposite ; flowers in small cymes or racemes or solitary, axillary, calyx 5-lobed or toothed; corolla gamopetalous, 5-lobed, often bilabiate or split down one side; stamens usually free or anthers coherent in a ring, ovary usually inferior, usually bilocular, ovules 1 to many in a locule; style with a cup-like structure below the stigma; fruit a drupe, berry, nut or capsule.

The family is mainly Australian but one genus has radiated through the Pacific, one species in the Atlantic.

Scaevola L.

Shrubs, rarely small trees or herbs; leaves alternate or rarely opposite, often with an axillary tuft of long silky hairs, flowers in small axillary cymes or on solitary axillary peduncles, corolla gamopetalous, with five somewhat reflexed lobes, tube split down one side, stamens free, ovary inferior, bilocular, one basal ovule in each cell, fruit a drupe with an indurate stone.

Scaevola sericea var. tuamotuensis (St. John) Fosb.

Scaevola taccada var. tuamotuensis St. John

Rounded shrub, with "terminalioid" branching habit (branch prolonging by a lateral branch from the lower side of branch somewhat back from upward curving growing tip, curving forward and producing another similar branch), other varieties reaching large shrub or even small tree size, this one low-rounded, tending to creep; leaves obovate to spatulate, apex rounded, sessile, usually with a tuft of white hair in axil, leaf and branch surface glabrous (in this variety); flowers single on axillary pedicel or on several-flowered bracteolate cymes; ovary inferior, calyx lobes small, linear or lanceolate, blunt; corolla with tube split down one side, lobes spreading fan-wise, flower appearing torn in half, corolla lobes with very thin membranous broad pale yellowish borders (white or purple in other varieties), stamens 5, filaments finely filiform; style curved near apex, fruit a soft white subglobose to globose drupe, the stone corky externally, with 2 locules, one seed in each, and two apparent vestigial locules.

This species is a widespread one in Indo-Pacific region, especially in strand situations; the variety tuamotuensis from Society Islands eastward through the Tuamotus; common on motus of Maupiti.

Fosberg 64807 (US), 64872 (US).

ASTERACEAE (Compositae)

Habit various, predominantly herbaceous; leaf arrangement opposite or alternate or even both on same plant, simple or pinnately compound or both on same plant; true stipules none; flowers aggregated in heads (capitula) of 1-many flowers on a receptable, surrounded by an involucure of 1-several whorls or spirals of bracts (phyllaries), in some groups with a chaff-like bract subtending each flower on the receptacle; flowers of 2 sorts, those with corollas with radial symmetry (disk flowers) and those with corolla strap-shaped or fan-shaped split down one side (ligulate flowers or ray-flowers),

some groups with only disk flowers, some with only ray flowers, more usual patterns with one or more circles of ray-flowers surrounding an often large number of disk-flowers, ovary inferior, one basal ovule, calyx reduced to chaff-like scales or to bristles, awns or hairs called pappus or lacking, corolla lobes 4 or 5, stamens 5, filiments free, anthers joined forming a tube surrounding the style, the latter with 2 branches that exceed the anther tube, usually becoming reflexed; fruit a one-seeded indurate matured ovary called an achene (more correctly a cypsela), which may or may not be crowned by a persistent pappus which may serve as a dispersal mechanism either by attaching to animals hair or by wind.

Said to be the largest family of plants, poorly represented in Pacific Island area except for weedy exotics. A dozen or so species in Maupiti all probably introduced by man.

Bidens L.

Mostly herbs, Pacific islands native species somewhat or quite woody, with a resinous odor; leaves opposite, simple or pinnately compound or trifoliolate; heads terminal on branches, involucre of rather few phyllaries spirally arranged; rays usually present, occasionally absent or obscure; disk yellow, rays yellow or white, pappus of 2–3 short stiff awns, usually barbed, rarely lacking, achenes linear.

Bidens pilosa L. forma pilosa

Erect somewhat resinous smelling herb, leaves opposite, simple to pinnately compound, then with 3 or usually 5 ovate leaflets, margins serrulate; heads pedunculate, somewhat open paniculate, heads less than 1 cm high, with 1 series of spatulate green obtuse phyllaries, no ligulate flowers, achenes linear, with 2–3 stiff retrorsely barbed awns.

Pantropical weed; on Maupiti one of the most ubiquitous and common plants, dispersed everywhere in open and semi-open ground by man, by means of its awned fruits which cling to clothing.

Fosberg 64886 (US).

Bidens pilosa f. minor (Bl.) Sherff

Differs from f. pilosa in the presence of several very small white ligulate flowers in each head.

Found occasionally on Maupiti.

Fosberg 64907 (US).

Blumea D.C.

Aromatic herbs, usually pubescent or woolly, leaves alternate; heads in a corymbiform panicle, involucre of many overlaping narrow phyllaries, rays none, disk-flowers many, very slender, pappus of short bristles, heads yellow or purple.

Blumea sinuata (Lour.) Merr.

Blumea laciniata (Roxb.) DC.

Erect herb to 1 m tall; rather wooly; leaves spatulate-ovate, cuneate at base, obtuse at apex, irregularly dentate, panicles spike-like; involucres of several subequal series of lanceolate, margined bracts, disk yellow.

Widely distributed in SE Asia and the western Pacific, a rather recent arrival in the Society Islands, rare in weedy lowlands and coastal strip on Maupiti.

Fosberg 64763 (US).

Conyza Less.

Herbs with alternate leaves, panicles of small heads, involucres of several series of subequal narrow

phylleries, ray flowers very reduced, disk flowers small, yellow, pappus of rather short bristles.

Conyza bonariensis (L.) Cronq.
Erigeron bonariensis L.

Tall herb to 2 or even 3 m, linear serrate alternate pubescent leaves, dome-shaped panicles of small heads with almost obsolete ligules, achenes with light brown pappus bristles.
Widespread tropical and temperate zone weed, on Maupiti common in disturbed ground, especially on motus.
Fosberg 64869 (US).

Elephantopus L.

Usually more or less hirsute herbs with few rather large alternate leaves, heads narrow, aggregated in small tight clusters enclosed by several broad sessile bracts at tips of slender branches, ray flowers none, disk flowers with straight awn-like pappus bristles.

Elephantopus mollis HBK n.v. ava'ava teitei

Tall, slender, sparsely branched stiffly hirsute or hispid herbs, disk flowers pale lavender; vary fast-growing.
A weed of tropical American origin, now one of the commonest plants on Maupiti, from sea level to the high mountains.
Raynal 17864 (p. 1338); Fosberg 64826 (US).

Emilia Cass

Tender weak-stemmed herbs, usually rather pale or glaucous green; leaves alternate, lobed, terminal lobe usually triangular, heads solitary or in loose few-flowered clusters on long peduncles; involucre of one whorl of linear, coherent phyllaries; ray-flowers none.

Emilia fosbergii Nicolson n.v. ma'a rapiti

Leaves and stems slightly glauceous green, flowers red considerably exceeding involucre.
A widespread tropical and subtropical plant of uncertain origin, possibly a very successful escape from cultivation, common generally on
Maupiti.
Raynal 17866 (p. 1338); Fosberg 64878 (US), 64882 (US).

Emilia sonchifolia (L.) DC.

Slender, leaves and stems glaucous, somewhat purplish; head narrow, flowers purple, scarcely exceeding involucre.
A very widespread plant of disturbed or open ground, occasional on Maupiti, much less common than its congener noted above.
Fosberg 64792 (US).

Gaillardia Foug.

Weak-stemmed, branched herbs, leaves alternate broadly linear, entire or lobed, heads terminal on long peduncles, involucre spreading, one series of conspicuous ray-flowers, disk globose, pappus of coarse bristles.

Gaillardia pulchella Foug.

Grayish green somewhat hirsute herbs, ray flowers yellow to dark purplish red, usually with yellow tip. Planted ornamental.
Fosberg 64908 (US).

Pluchea Cass.

Herbs or usually shrubs, leaves alternate, heads many in corymbiform clusters, pinkish or purplish, rays lacking. Pantropical, few species.

Pluchea symphytifolia (Mill.) Gillis

Tropical American shrubby species, very weedy and since the 1930's rapidly spreading in the Pacific; seen in Maupiti only in interior of Motu Auira.
Fosberg 64754 (US).

Pseudelephantopus Rohr.

Tough wiry herbs, leaves few alternate, heads arranged in a terminal spike, narrow, rays lacking, disk flowers white or dark lavender, pappus of several unequal awns, the longest with an s-shaped curve near the middle. One tropical species, now widely distributed.

Pseudelephantopus spicatus (B. Juss.) Vahl. n.v. ava'ava ha'avare; rau'ara nu'a

Pantropical weed, in Maupiti it is occasional on weedy slopes, road-sides, and disturbed places.
Raynal 17822 (p. 1337); Fosberg 64827 (US); Morris 22 (US).

Synedrella Gaertn.

Erect herbs with opposite leaves; heads axillary, 2 at a node; involucres narrow, erect, of chaff-like phyllaries, few flowered; achenes margined, margins sharply dentate, pappus of 2 stout subulate spines.

Synedrella nodiflora (L.) Gaertn. n.v. tauatini (mille)

A pantropical weed, usually less than 0.5 m tall ; on Maupiti reaching a height of 2 m, both on Motu Auira and on coastal strip.
Raynal 17823 (p. 1337), Fosberg 64830 (US).

Vernonia Schreb.

Herbs, shrubs or trees, leaves simple, alternate, heads in corymbiform panicles; involucres of several to usually many imbricate series of phyllaries; disk flowers only, corolla regular, 5 lobed, usually purple, sometimes pink or white, pappus of capillary bristles but with an outer series of tiny scales.
An enormous mostly tropical genus, one pantropical herbaceous species common in Polynesia, including Maupiti.

Vernonia cinerea (L.) Less. sensu lato n.v. little ironweed

A slender simple to sparingly branched puberulent herb; leaves alternate, obovate, slightly crenate margined, apex obtuse, base narrowed to a slender petiole; inflorescence an open irregularly branched corymbiform panicle, heads small, cylindric-ovoid, phyllaries imbricate, varying in length, lance-oblong, sharply acuminate, florets 15–20, bright purple, corolla lobes 5, pappus bristles white, elongating, exserted to almost twice length of involucre, caducous from mature achene leaving a short crown, achene cylindric, antrorse pubescent, involucre reflexed in age.

A ubiquitous Indo-Pacific weed, probably of Indian or Ceylonese origin, now pantropical. Pacific plants with small heads have been described as var. parviflora.

Widespread very common Indo-Pacific weed, frequent in lowlands and on motus in Maupiti.

Raynal 17868 (p 1338); Fosberg 64786 (US)