

BOTANICAL SURVEY OF THE
UAFATO CONSERVATION AREA,
WESTERN SAMOA

by

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INTRODUCTION

Samoa is a volcanic archipelago situated in the south Pacific Ocean at a latitude of 13—15° south and a longitude of 168—173° west, and runs in a west-northwest direction east of Fiji, north of Tonga, south of Tokelau, and west of Niue and the Cook Islands. Its nine inhabited islands and several uninhabited islets, plus two distant coral islands have a total area of ca. 3100 km².

The archipelago is divided politically into Western Samoa, which is an independent country, and American Samoa, which is an unincorporated territory of the United States, and the two are separated by a strait 64 km wide. Western Samoa, the site of the Uafato Conservation Area, comprises two main islands, Savai'i (1820 km² area, 1860 m elevation) and 'Upolu (1110 km², 1100 m), which are separated by a strait 21 km wide. The Uafato Conservation area is located on the northeast corner of 'Upolu, on land belonging to Uafato village, lying between the villages of Lona to the west and Ti'avea to the east (Fig. 1).

Since Samoa is situated between the tropic of Capricorn and the Equator, its climate is tropical. Typical temperatures (at sea level) are between 24—29° C. The difference between the average temperature of winter (June to September) and summer (December to March) is only about 2° C, and the average annual temperature is about 26° C. The relative humidity is constantly high, averaging about 80%.

Rainfall is heavy throughout the archipelago, and the annual precipitation in the Conservation Area is probably between 350 and 450 cm. Half of the rainfall falls from December to March, but there is no real dry season. Droughts of varying duration occasionally occur, but these do not have much permanent effect on most of the vegetation. Periodic cyclones hit the islands; although there has been a recent rash of destructive cyclones (Tusi in 1987, Ofa in 1990, and Val in 1991), serious ones happen, on the average, less than once a decade.

Nearly the whole surface of the archipelago is covered with volcanic rock. Geologists divide the apparently irregularly occurring periods of volcanic activity in Western Samoa into six "volcanics" (Kear and Wood 1959). Nearly the whole Conservation Area is covered with Fagaloa volcanics, the oldest and most highly eroded of the series. The Fagaloa volcanics form a mountain range extending from Falefa eastward to Amaile. On its north side it forms parallel, steep coastal ridges separated by small steep-sided valleys ending at the coast in small bays. Inland (southward) the ridges extend down from the mountains to a plateau-like valley through which runs what was formerly known as "Richardson's Track."

Uafato village lies in a deep embayment bounded on the west side by Cape Tagisia. The Conservation Area begins just to the east of East Point (the eastern boundary of Fagaloa Bay), extends around Cape Tagisia, through Uafato village, and eastward for about 4 more km and over about four coastal ridges to Cape Utu'ele, the eastern boundary. The highest elevation in the Conservation Area is at Malata, a plateau just to the west of Uafato village and site of a former village or fortress; the southern edge of this plateau is at 730 m, overlooking Afulilo Reservoir.

METHODOLOGY

The botanical survey was conducted in the Conservation Area during two series of field trips to Uafato, the first during 1—4 April, the second during 30—31 May 1997. During these

trips, both the vegetation and flora were studied. The flora was recorded by compiling a checklist of each of the sites visited. Voucher specimens were collected for many of the species present, especially those whose identity could not be immediately determined. These voucher specimens, which are cited in the checklist of the flora of the area (Table 2) will be stored at the University of Hawai'i, the Smithsonian Institution, the Auckland Museum and Herbarium, and other facilities.

The checklist was augmented by information recorded during previous botanical surveys in the area. The first of these was the National Ecological Survey of Western Samoa, or "lowland survey" (Park et al. 1992), during which two trips were made to the area—one to the first ridge east of Uafato village (Table 1.5) and the other to Va'oto Bay. The second of the botanical surveys was the "upland survey" (Schuster et al., in prep.), in which the vegetation of a forest in or near the Conservation Area was studied (Table 1.9).

The vegetation was sampled using as a parameter the diameter at breast height (dbh) of trees over 5 cm diameter in a fixed area (1000 sq. m²) or a minimum number of trees without an area requirement. Normally the former way is best: an area of 100 x 10 m was marked off with flagging tape, and the diameter of all trees over 5 cm dbh are measured (using a dbh tape) and recorded. This data was then processed by determining the basal area of each of the trees using the formula for the area of a circle. (Thus a tree with a dbh of 10 would be $\pi r^2 = 3.14 \times 5 \text{ cm} \times 5 \text{ cm} = 78.5 \text{ cm}^2$.)

When it was not feasible to lay out the 1000 m² plots—usually because of time restraints or because there was no forest to speak of due to cyclone damage—an alternate method called a "100-tree count" was employed instead. In this method, at least a hundred trees (picked as a minimum to give a credible sample) were randomly selected and measured (dbh) at the site. This data was treated like that obtained for trees measured in the 1000 m² plots. Of the ten plots sampled during the present survey, four actually involved 1000 m² plots, the other six, 100-tree counts. Two additional plots added to this report, one from the lowland survey (Park et al. 1992) and one from the upland survey (Schuster et al., in prep.), were both 100-tree counts.

The vegetation data of 12 sites (see Fig. 1) is summarized in Tables 1.1–1.12, with each of the plant species ranked in order of total basal area (=dominance). Included for each species are number of individuals, number with a dbh of 15 cm and above, total basal area, and relative dominance (which is the percentage obtained by dividing the total basal area of a species by the total basal area of all the species in the plot). Below the actual table is a listing of all other plant species recorded at the site—other trees (recorded in the area but not in the sample), epiphytic and terrestrial ferns, vines, orchids, and other species not fitting into the above categories.

THE FLORA.

A "flora" can be defined as a compilation of all of the plant species of an area. In the case of the Uafato Conservation Area, the flora includes all vascular plants ("higher plants"), i.e., all plants with vascular tissue that are found within the area. This does not include the "lower plants," comprising mostly the mosses, lichens, liverworts, and algae.

Although many botanists have collected in Samoa (beginning as far back as 1787) and there have been a number of publications on the plants, the flora of Samoa has not been well documented in the literature. Three botanists (Reinecke 1896, 1898; Rechinger 1907–1915;

Christophersen 1935, 1938) have published significant Samoan flora studies, the best of which is undoubtedly the work of Christophersen, not only because of its comprehensive coverage, but also because it is the most recent of the three. None of the floras are even near to being comprehensive, either because of insufficient collections, or because the authors failed to review or cite the work of previous collectors. A fern flora of Samoa was done by Yuncker (1943), but this is now woefully out of date. However, the vascular flora of Samoa is estimated to be about 765 species (Whistler 1992a).

Vascular plants are divided into flowering plants (angiosperms), ferns (pteridophytes), and fern-allies (several taxonomic groups located between ferns and flowering plants). A complete listing of all vascular plant species recorded for the Conservation Area is found in Table 2. This table is divided into 4 categories: (1) Dicotyledonae, one of the two divisions of angiosperms; (2) Monocotyledonae, the other division of angiosperms; (3) Pteridophyta, the ferns; and (4) Fern Allies. Within each of these categories the plant species are arranged in their taxonomic "families" in alphabetical order, and in the families the species are likewise arranged in alphabetical order.

Each listing includes the scientific name, authors (botanists who named the plants), Samoan name (if there is one), a brief description of the plant, an indication of its frequency in the area, and its status (indigenous, endemic, Polynesian introduction, or modern introduction). Native species are usually divided into those found only in a limited area (endemic) or those whose distribution extends beyond the area concerned (indigenous). Introduced (alien) species are often divided into those that were brought by man in ancient times (in this case, a Polynesian introduction) or in European times (modern introduction).

A total of 339 plant species were recorded in the conservation area. Of these, 258 are flowering plants (198 dicots and 60 monocots), 77 are ferns, and 4 are fern allies. Of these, 82% are native (indigenous and endemic) and 18% are alien species (Polynesian and modern introductions).

THE VEGETATION

The study of the vegetation of Samoa has lagged far behind the study of the flora, with very little research having been published prior to 1976. Most of the recent work has been done in American Samoa (Whistler 1980, 1992b, 1994a), especially in the new National Park of American Samoa, where permanent plots have been set up for monitoring (Whistler 1995).

Only a few vegetation studies have been carried out in Western Samoa and these are mostly for small areas such as the Aleipata Islands (Whistler 1984), the 'O le Pupu-Pu'e National Park on the south coast of 'Upolu (Ollier et al. 1979), the cloud forest of Savai'i (Whistler 1978), and the Aopo-Sasina area of Savai'i (Whistler 1994b). Another related study was a forest inventory of Western Samoa (Chandler et al. 1978), but this includes only timber volumes of tree species with Samoan names. Pearsall and Whistler (1991) did vegetation typing for the whole country, but this was done on a very large scale with no actual vegetation samples made. Two recent studies did, however, do actual vegetation sampling, and both (Park et al. 1992; Schuster et al., in prep.) included a plot (one each) located either in or adjacent to the Conservation Area.

The vegetation of the Conservation area is described below. The primary division is between disturbed vegetation, i.e., vegetation that has been drastically altered by the actions of man or weather (cyclones), and climax vegetation, i.e., vegetation that is in its "natural" state and

can be expected to remain in or near this state over long periods of time. These two divisions are not always distinct from each other, however, since intermediates between them exist.

Disturbed Vegetation

The disturbed vegetation of the Conservation Area can be divided into two types, managed land vegetation and secondary forest, which are described below.

Managed Land Vegetation

This category includes vegetation that is currently being managed, usually by weeding or planting activities. It comprises the land upon which the village is located, the roads, and the plantations that are cultivated or weeded by the villagers. Nearly all of the species found here are either cultivated plants (mostly for food) or weeds, nearly all of them alien species. Since it is such an artificial type of vegetation with nearly all of its species being introduced, no study sites were sampled here and nothing else needs to be said about it.

Secondary Forest

This category includes forests that are in a state of flux after some disturbance. Disturbances by man are mainly from the felling of trees for timber or the establishment of plantations that have subsequently been abandoned. There has been no commercial harvesting of timber at Uafato (other than the taking of individual ifilele trees), and so secondary forests resulting from this activity are not present. However, the cyclones that have hit Samoa in recent years have extensively damaged the Samoan forests. It is particularly the case with the montane forest at Uafato. In some areas, nearly all the trees have been blown down. However, this disturbed forest will be further discussed under montane rainforest.

The division between plantations that are actively managed (especially for coconuts) and plantations that have been neglected or abandoned is not always clear. When the plantation is no longer tended, weeds (both herbaceous and woody species) tend to take over the area. Seedlings of light-loving tree species also become established and grow. Tree species characteristic of secondary forest typically have readily dispersed seeds, their seedlings need lots of sunlight for establishment, and their growth is rapid. After a few years, the abandoned plantation tends to be dominated by these secondary forest trees. However, eventually the forest becomes shady, and the secondary forest species can no longer reproduce themselves. As they age and die, they are replaced by climax forest species, which eventually form a climax forest (see below).

At Uafato, active plantations extend up the slopes behind the village, and abandoned or neglected ones can be found in patches in various places. The trees that dominate here are *Rhus taitensis* (tavai), *Alphitonia zizyphoides* (toi), and *Hibiscus tiliaceus* (fau). Secondary forest can be seen on the slopes of Talisiga ridge inland from the road, and is distinctive from a distance because of the even canopy formed by the *Rhus* trees. A disturbed ridge forest was encountered in one plot behind the village (Table 1.6), but will be included in the discussion of ridge forest. No other study sites were sampled in secondary forest.

Climax Vegetation

Littoral Forest

This category includes forests found in proximity to the sea and which are dominated by tree species usually restricted to this habitat. This is mainly because littoral species typically have seeds that are well adapted to seawater dispersal but poorly adapted to dispersal inland. At Uafato, this forest is highly disturbed and most of the trees have been removed, especially in the village itself. However, littoral forest dominates away from the village, especially on cliffs. It is replaced inland by valley forest in the valleys and by coastal and ridge forest on the ridges and steeper slopes.

No study sites were sampled in littoral forest. However, most of the forests in the Conservation Area are dominated by *Barringtonia asiatica* (fish-poison tree, futu). Less common are *Hernandia peltata* (pu'a), *Calophyllum inophyllum* (fetau), *Guettarda speciosa* (puapua), *Erythrina variegata* (gatae), *Cocos nucifera* (coconut, niu), and *Terminalia catappa* (talie). These species are all widespread indigenous species, and because few plants can survive in this rigorous, salty habitat, it has one of the lowest biodiversity figures for any community in Samoa.

Littoral forest is typically very open, and the ground cover is dominated by a few fern species, such as *Asplenium nidus* (läüganapa, bird's-nest fern), and by some littoral vine species, such as *Ipomoea macrantha*. Other species typically present include *Colubrina asiatica* (fisoa), *Clerodendrum inerme* (aloalo tai), and *Wollastonia biflora* (ateate), especially on the sunny seaward margin of the forest. Epiphytes are scarce, except for *Asplenium nidus* and a couple of orchid species.

Lowland Rainforest

Prior to the arrival of the first Samoan settlers, this forest covered nearly all of the lowlands of Samoa up to an elevation of 500 m or so. When undisturbed, it is dominated by tall forest trees. Several different subtypes can be distinguished based upon differences in dominant tree species, and these can be correlated to topography, soil type, and elevation. Three types are recognized here, valley forest, coastal forest, and ridge forest.

1. Valley Forest

This forest is dominated by species adapted to the gentle slopes, protected location, and alluvial soils found in small valleys. The typical dominant tree is *Dysoxylum samoense* (mamala), the same as in found in valleys and coastal alluvial areas of American Samoa (Whistler 1992, 1994a). However, in this area between Uafato and Ti'avea, the dominant tree is instead *Inocarpus fagifer* (ifi), a Polynesian introduction that is naturalized in some places, but nowhere else in Samoa has it been reported to be a dominant.

Two study sites were located in this type of forest (Tables 1.1 and 1.2). The dominant by far

in these two valleys (Maepu and Va'oto) is *Inocarpus*, which at the two sites had a combined relative dominance of 45%, and was also the most numerous species. The next most abundant species, in declining order of dominance, are *Dysoxylum samoense* with 22%, *Terminalia catappa* (talie) with 8%, *Macaranga* spp., which are characteristic of disturbed forest, with 7%, *Guetarda speciosa* (puapua) with 5%, and *Sterculia fanaiho* (fana'io) with 3%.

This is a rather open forest, since it typically has large trees supporting a closed canopy whose shade limits the amount of ground cover and shrubby species that can exist on the forest floor. The most common ground cover species are ferns, particularly *Asplenium nidus* (laugapapa, bird's-nest fern) and *Tectaria dissecta*, and vines, such as *Epipremnum pinnatum* (fue laufao) and *Merremia peltata* (fue lautetele), which may cover portions of the forest floor. Other vines present include *Faradaya amicornum* (mamalupe), *Rourea minor*, and *Piper graeffei* (fue manogi). Epiphytes are not very abundant, since they do better inland where the rainfall needed to sustain them is higher.

2. Coastal Forest

This forest is dominated by species intermediate between littoral forest and lowland forest, most typically, *Diospyros samoensis* ('au'auli), *Syzygium clusiifolium* (asi vai), and *Syzygium dealatum* (also called asi vai). Also common are *Sterculia fanaiho* (fana'io) and *Planchonella garberi* (ala'a). These are the most numerous trees, but there are usually a small number of much larger littoral trees in the forest, mainly *Calophyllum inophyllum* (fetau), *Terminalia catappa* (talie), and/or *Barringtonia asiatica* (fetu). When major disturbance has recently occurred, *Macaranga harveyana* (laupata) may be common or even dominant, as it is on Talisiga ridge (Table 1.1).

The ground cover in coastal forest is dominated by seedlings of the dominant trees, ferns such as *Asplenium nidus* (laugapapa, bird's-nest fern) and *Phymatosorus grossus* (lau magamaga), and shrubs such as *Phaleria glabra*. Several vines may be common, especially in sunny parts of the forest, most commonly *Passiflora laurifolia* (an alien passionfruit species) and *Hoya australis* (fue sele la). Epiphytes are comparatively scarce, with the two most common species being the two terrestrial ferns noted above.

3. Ridge Forest

This forest is dominated by species adapted to the exposed, relatively dry conditions on ridges. Since the topography is steep, run-off is fairly rapid, leaving the soil comparatively dry. In the Conservation Area, different species dominate on different ridges. At four study sites at lower elevations (Tables 1.4, 1.6, 1.7, 1.8; Table 1.5 is on the same ridge as Table 1.4 and is not included in this comparison), the dominant species, when the data from the four sites is averaged, are *Canarium vitiense* (ma'ali) with 19%, *Syzygium inophyllum* (asi) with 14%, *Palaquium stehlinii* (gasu) with 13%, *Intsia bijuga* (ifilele) with 9%, *Dysoxylum samoense* (mamala) with 7%, and *Inocarpus fagifer* (ifi) with 6%.

Combining these dominance figures masks the differences, however. In one plot (Table 1.4), *Intsia bijuga* is the dominant, in the second (Table 1.6) *Rhus taitensis* (tavai) was dominant (because of past disturbance to the site), in the third (Table 1.7), *Canarium vitiense* was

dominant, and in the fourth (Table 1.8), *Palaquium stehlinii* was dominant. Overall on the lower ridges of the Uafato CA, the dominant species are probably *Syzygium*, *Canarium*, and *Palaquium*, and perhaps *Intsia*. *Intsia* is spotty in distribution, being dominant on the ridge just east of Maepu, being present and perhaps dominant on the next ridge to the east (where no site was sampled), and scattered and sometimes dominant elsewhere in the Conservation Area. This uneven distribution suggests that the tree is introduced to the area, and does not spread far from the ridge(s) where it was planted. It is interesting to compare the data from the Tutuila unit of the National Park of American Samoa (Whistler 1994a), which includes plots situated on areas that have topography, volcanics, and vegetation similar to that found in the Conservation Area.

Another two plots were sampled in ridge forest at higher elevation (Tables 1.9 and 1.10). In these two, which were between 400 and 460 m elevation, the dominant species, when the data from the two plots are averaged, the dominant tree species are *Myristica hypargyrea* ('atone) with 22%, *Cyathea lunulata* (olioli, tree fern) with 13%, *Haplolobus floribundus* (mafoa) with 12%, *Clinostigma onchorhynchum* (niu vao) with 11%, *Fagraea berteriana* (pualulu) with 6%, and *Weinmannia samoensis* with 6%. Both of these sites were quite disturbed, and the dominance of *Myristica* is likely to have been because the recent cyclones felled the more typical ridge forest species.

Vines were very common in this upper ridge forest, particularly *Freycinetia storckii* ('ie'ie), and to a lesser extent, *Faradaya amicornum* (mamalupe), *Alyxia bractelosa* (lau maile). Also common was the invasive alien species *Clidemia hirta*. The dominance of these species is also an indicator of the high degree of disturbance to this vegetation.

Montane Rainforest

This is the forest found in the uplands of Samoa, perhaps all the way up to the highest elevation. However, it is sometimes divided into the montane rainforest, perhaps from 500 to 1000 m elevation, and cloud forest, which extends up to the highest elevation (1860 m on Savai'i). However, cloud forest, if it is a separate entity, is not found in the Conservation Area, whose highest elevation is only 730 m. The montane forest in the Conservation Area is normally dominated by *Dysoxylum huntii* (maota mea), but although this species is present in the area, no sites were found where it was dominant. This may be due to soil differences in the Conservation Area, which leads to other species being dominant. All of the montane rainforest seen during the survey was heavily damaged. This was particularly true on the ridges and slopes behind Uafato, where it appears that the recent cyclones have removed 90% of the trees present. The damage is not quite as severe on Malata, where the tree density was higher.

When the data for the two sites with sampled vegetation (Table 1.11 and 1.12), the dominant by far is *Fagraea berteriana* (pualulu), which averaged 26% relative dominance. This is a difficult tree to measure using standard methods, since it begins as an epiphyte, and may be quite large before its roots and trunk finally reach the ground (where it can be measured). Also common were *Trichospermum richii* (ma'osina), which averaged 9%, *Cyathea vaupelii* (olioli, a tree fern), *Myristica hypargyrea* ('atone), which averaged 5%, and *Cerbera odollam* (leva vao), which also averaged 5% relative dominance. The latter species was previously thought to be quite rare in Samoa, and was not known from this part of 'Upolu.

Ground cover, vines, and epiphytes were very dense in this forest, especially when the

canopy is broken or the trees destroyed. The dominant species on both the ground, where it often forms a dense tangle, and climbing on trees, was *Freycinetia storckii* ('ie'ie). Other species common to abundant on the ground were *Culcita straminea*, *Cyathea* spp., and *Blechnum orientale*, all of which are large ferns. The most common epiphytes, beside the *Freycinetia*, are the fern *Oleandra neriiformis*, the orchid *Glomera montana*, and the ferns *Selliguea feeoides*, *Humata heterophylla*, *Ctenopteris emersonii*, and *Elaphoglossum feejeense*.

DISCUSSION

Flora

The vascular flora of Samoa is estimated to be about 765 species (Whistler 1992a). Thus, with its 278 recorded native species, the Uafato Conservation Area contains at least 37% of the native vascular plant species found in Samoa (see Table 2). There may be more species if the whole area at Malata is visited, since the highest elevation reached during the study was about 520 m, and the southern edge of Malata goes to 730 m. This is quite a high number for such a small area (only 1--2% of the area of Western Samoa). Thus the Conservation Area has a relatively large flora, probably much more than any of the other sites that are given at least nominal protection (with the probable exception of Ole Pupū-Pu'e National Park).

Vegetation

The ridge and valley forests in the Conservation Area are probably the best remaining forests on 'Upolu, and are probably the best lowland forest in Western Samoa. In this way they parallel the ridges of Tutuila in the National Park of American Samoa, which has similarly intact vegetation. This may be because of the routes taken by the recent cyclones, or perhaps the trees of the ridge forest are more resistant to cyclone damage than are trees of other forest types. The relatively high quality of these forests at Uafato make the Conservation Area particularly valuable to conservation plans for Western Samoa.

Alien Plant Problems

One of the major problems in the conservation of biodiversity on islands is the influx of invasive alien species that either take over a habitat or alter the conditions there so severely that the island biodiversity suffers accordingly. One of the best examples of this is Hawai'i, where many native species of plants (and more spectacularly, the birds) have become extinct since the first Polynesians arrived, and particularly since the advent of Europeans.

Samoa is no exception to this problem of alien species. Several plant species have become invasive in Samoan ecosystems, especially in disturbed areas (which includes much of the country due to the recent cyclones). The Uafato Conservation Area, however, is relatively free of these invasive species, with the exception of mile-a-minute vine, *Mikania micrantha* (fue saina) and Koster's curse, *Clidemia hirta* (no Samoan name). The former is probably the most widespread and abundant weed in Samoa, but it has been in the country for nearly a century and the vegetation has more or less adjusted to its presence. Koster's curse, however, was not

reported in Western Samoa until about 1979, and it is the most abundant weed in wet, disturbed mountainous areas. The same rapid invasion of this species occurred in American Samoa, where prior to 1976 it was not found on the island of Ta'u, but less than 20 years later it was the most common alien species in the montane regions of the island (Whistler 1992b).

Other noxious alien species present in Western Samoa, but which have not been recorded from the Uafato Conservation area, are *Furcraea elastica* (pulu vao), *Castilla elastica* (pulu mamoe), *Cestrum nocturnum* (teine ole po, night-blooming cestrum), *Solanum torum* (no Samoan name), and *Hyptis capitata* (vao mini). So as far as alien species are concerned, the Uafato Conservation area is relatively pristine and has a high degree of native species present.

Threatened and Endangered Plant Species

There are no officially recognized threatened or endangered plant species recognized in Western Samoa. Although there are a number of native plants and plants introduced by the original Polynesian settlers that are now rare or possibly extinct, the status of these species have not been documented in the literature.

However, there are a few plants in the checklist (Table 2) that merit further discussion. One is *Cordia aspera* (tou), a species that is native or perhaps an ancient introduction to Samoa. This plant, whose fruit was formerly used for the glue employed in making tapa cloth, is very uncommon nowadays, and in Samoa has been collected only a few times this century. It was seen once at Va'oto bay in 1991 (Park et al. 1992), where a single individual was noted, but it was not located again during the present study (the exact site was not visited). Another rare species is *Cerbera odollam* (leva vao), which is very rare on 'Upolu, or so it seemed until a number of the trees were found in the Conservation Area. It is a littoral tree in most of Polynesia, but for some reason in Samoa it is only found inland, and is replaced in coastal areas by *Cerbera manghas* (leva).

A third species of note is an unnamed species of *Aglaia* that was collected at Malata. It differs from the common *Aglaia* (*Aglaia samoensis*, laga'ali) in having fewer leaflets and in having the lower side of the leaflets covered with a dense, velvety layer of golden-brown hairs. It was collected only once before, in 1996 in the plot at the southern side of the Uafato Conservation area. Neither species had flowers or fruits, so its true identity awaits further collections.

Intsia bijuga should also be mentioned. It is the most valuable timber tree in Samoa, but most of it has been cut down over the last three decades. It is rather uncommon on 'Upolu, except in the Uafato Conservation Area. A timber survey is currently under way that will hopefully address this. The tree is currently being selectively cut by villagers of Uafato, and it is important that it is not over-harvested.

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TABLE 1. UAFATO CONSERVATION AREA BOTANICAL PLOT DATA (12 Plots)
PLOT 1. Talisiga Ridge Coastal Forest (30 May 1997): 50 m elevation.

Species Name	Samoan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Diospyros samoensis</i>	'au'auli	24	15	15,178	24%
2. <i>Planchonella garberi</i>	'ala'a	19	11	9,987	16%
3. <i>Terminalia catappa</i>	talie	2	2	8,706	14%
4. <i>Macaranga harveyana</i>	lau pata	57	17	7,209	11%
5. <i>Hibiscus tiliaceus</i>	fau	20	5	4,927	8%
6. <i>Inocarpus fagifer</i>	ifi	7	6	3,938	6%
7. <i>Cocos nucifera</i>	niu	7	7	3,530	6%
8. <i>Syzygium dealatum</i>	asi vai	3	3	3,296	5%
9. <i>Sterculia fanaiho</i>	fana'io	20	3	1,541	2%
10. <i>Syzygium clusiifolium</i>	asi vai	20	2	1,397	2%
11. <i>Calophyllum inophyllum</i>	fetau	1	1	1,320	2%
12. <i>Meryta macrophylla</i>	fagufagu	23	0	979	1%
13. <i>Myristica fatua</i>	'atone	3	2	457	1%
14. <i>Pandanus tectorius</i>	fasa	2	1	331	1%
15. <i>Psychotria insularum</i>	matalafi	5	0	201	+
16. <i>Alphitonia zizyphoides</i>	toi	1	1	182	+
17. <i>Polyscias samoensis</i>	tagitagi vao	2	0	40	+
18. <i>Morinda citrifolia</i>	nonu	1	0	38	+
19. <i>Aidia cochinchinensis</i>	ola	1	0	38	+
20. <i>Rhus taitensis</i>	tavai	1	0	28	+
21. <i>Cananga odorata</i>	moso'oi	1	0	20	+

Area: 1000 m²

221

75

63,343

Other Trees: *Adenanthera pavonina*, *Allophylus timoriensis*, *Cananga odorata*, *Canthium merrillii* (s), *Diospyros elliptica*, *Dysoxylum samoense* (s), *Elattostachys falcata* (s), *Ficus scabra*, *Ficus tinctoria*, *Flacourtia rukam* (s), *Glochidion ramiflorum*, *Maesa tabacifolia*, *Neisosperma oppositifolium*, *Omalanthus nutans*, *Phaleria glabra* (*), *Planchonella grayana*, *Premna serratifolia*. **Ferns (Epiphytic):** *Asplenium nidus*, *Phymatosorus scolopendria*, *Pyrrhosia lanceolata*, *Vittaria elongata*. **Ferns (Terrestrial):** *Asplenium nidus* (**), *Asplenium polyodon*, *Christella harveyi*, *Davallia solida*, *Nephrolepis hirsutula*, *Phymatosorus scolopendria* (*), *Schizaea dichotoma*. **Vines:** *Abrus precatorius*, *Dioscorea bulbifera*, *Dioscorea pentaphylla*, *Faradaya amicornum*, *Freycinetia reineckei*, *Hoya australis* (*), *Ipomoea macrantha*, *Jasminum didymum*, *Mikania micrantha*, *Passiflora laurifolia* (*), *Piper graeffei*, *Rourea minor* (s). **Orchids:** *Dendrobium calcaratum*, *Dendrobium dactyloides*, *Taeniophyllum fasciola*. **Others:** *Alyxia stellata*, *Clerodendrum inerme*, *Cordyline fruticosa*, *Heliconia laufao*, *Maytenus vitiensis*, *Miscanthus floridulus*, *Musa paradisiaca*, *Oplismenus compositus*, *Procris pedunculata*, *Scleria polycarpa*, *Tacca leontopetaloides*, *Zingiber zerumbet*.

PLOT 3. Vaoto Cape Lowland Forest (2 April 1997): ca. 50 m elevation.

Species Name	Samoan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Inocarpus fagifer</i>	ifi	47	28	35,069	52%
2. <i>Terminalia catappa</i>	talie	2	1	12,483	19%
3. <i>Dysoxylum samoense</i>	mamala	2	2	10,201	15%
4. <i>Sterculia fanaiho</i>	fana'io	16	6	2,997	4%
5. <i>Syzygium inophylloides</i>	asi toa	1	1	1,743	3%
6. <i>Macaranga harveyana</i>	lau patu	6	2	1,149	2%
7. <i>Diospyros samoensis</i>	'au'auli	4	2	825	1%
8. <i>Myristica fatua</i>	'atone	3	2	781	1%
9. <i>Planchonella garberi</i>	'ala'a	1	1	615	1%
10. <i>Antirhea inconspicua</i>	-----	1	1	572	1%
11. <i>Syzygium clusiifolium</i>	asi vai	4	0	231	+
12. <i>Morinda citrifolia</i>	nonu	2	0	171	+
13. <i>Kleinhovia hospita</i>	fu'afu'a	1	0	154	+
14. <i>Polyscias samoensis</i>	tagitagi vao	2	0	99	+
15. <i>Pipturus argenteus</i>	soga	1	0	95	+
16. <i>Meryta macrophylla</i>	fagufagu	3	0	90	+
17. <i>Ficus tinctoria</i>	mati	1	0	64	+
18. <i>Aidia cochinchinensis</i>	olamea	2	0	58	+
Area: None (100-tree count)		99	46	67,414	

Other Trees: *Planchonella grayana*, *Psychotria insularum*. **Ferns (Epiphytic):** None recorded. **Ferns (Terrestrial):** *Asplenium nidus* (*), *Tectaria dissecta* (*), *Tectaria setchellii*. **Vines:** *Faradaya amicornum*, *Merremia peltata*, *Rourea minor*. **Orchids:** None recorded. **Others:** *Cordyline fruticosa*, *Heliconia laufao*.

Other Species on the Top of the Ridge

Trees: *Adenanthera pavonina* (s), *Artocarpus altilis*, *Calophyllum neo-ebudicum* (s), *Clínostigma* sp. (s), *Diospyros elliptica*, *Ficus scabra*, *Hibiscus tiliaceus*, *Neisosperma oppositifolium*, *Omalanthus nutans*. **Ferns (Epiphytic):** *Trichomanes humile*. **Vines:** *Alyxia bracteolosa*, *Dioscorea bulbifera*, *Flagellaria gigantea*, *Jasminum betchei*, *Mikania micrantha*, *Piper graeffei*. **Others:** *Alyxia stellata*, *Carica papaya*, *Clidemia hirta*, *Cyrtococcum oxyphyllum*.

PLOT 4. Uafato Ridge Forest (4 April 1997): 80 m elevation.

Species Name	Samoaan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Intsia bijuga</i>	ifilele	15	15	18,383	35%
2. <i>Syzygium inophylloides</i>	asi toa	8	8	14,350	27%
3. <i>Inocarpus fagifer</i>	ifi	16	10	6,353	12%
4. <i>Dysoxylum samoense</i>	mamala	1	1	3,116	6%
5. <i>Palaquium stehlinii</i>	gasu	10	7	2,565	5%
6. <i>Diospyros samoensis</i>	'au'auli	6	3	2,529	5%
7. <i>Myristica fatua</i>	'atone	15	2	1,458	3%
8. <i>Sterculia fanaiho</i>	fana'io	2	1	1,404	3%
9. <i>Cananga odorata</i>	moso'oi	9	0	323	1%
10. <i>Kleinhoyia hospita</i>	fu'afu'a	2	1	366	1%
11. <i>Anacolosia insularis</i>	-----	6	0	332	1%
12. Unidentified	-----	1	1	254	+
13. <i>Planchonella garberi</i>	'ala'a	3	0	202	+
14. <i>Planchonella samoensis</i>	mamalava	1	0	201	+
15. <i>Adenantha pavonina</i>	lopa	2	0	174	+
16. <i>Neonauclea forsteri</i>	'afa	1	0	133	+
17. <i>Aidia cochinchinensis</i>	olamea	4	0	124	+
18. <i>Hibiscus tiliaceus</i>	fau	3	0	106	+
19. <i>Haplolopus floribunda</i>	mafoa	1	0	50	+
20. <i>Syzygium clusiifolium</i>	asi vai	2	0	40	+
21. <i>Elaeocarpus tonganus</i>	'a'amati'e	1	0	28	+
22. <i>Meryta macrophylla</i>	fagufagu	1	0	28	+
23. <i>Polyscias samoensis</i>	tagitagi	1	0	20	+
Area: 1000 m ²		111	50	52,602	

Other Trees: *Aglaia samoensis*, *Calophyllum inophyllum* (s), *Calophyllum neo-ebudicum* (s), *Canarium vitiense*, *Canthium merrillii*, *Diospyros elliptica* (s), *Fagraea berteriana*, *Ficus obliqua*, *Ficus scabra*, *Flacourtia rukam* (s), *Glochidion ramiflorum* (s), *Morinda citrifolia*, *Phaleria glabra*, *Psychotria insularum*, *Rhus taitensis* (s), *Syzygium samarangense* (s), *Terminalia catappa*.
Ferns (Epiphytic): *Antrophyum plantagineum*, *Asplenium nidus*, *Davallia epiphylla* (**), *Davallia solida*, *Humata polypodioides*, *Nephrolepis bisserrata*, *Phymatosorus scolopendria*, *Pyrosia lanceolata* (*), *Vaginularia angustata*. **Ferns (Terrestrial):** *Arachniodes aristata* (*), *Asplenium nidus* (*), *Asplenium polyodon*, *Christella harveyi*, *Diplazium* sp., *Nephrolepis hirsutula*, *Phymatosorus scolopendria* (*), *Pteris pacifica*, *Tectaria dissecta* (**), *Tectaria setchellii*.
Vines: *Alyxia bracteolosa*, *Dioscorea bulbifera*, *Dioscorea pentaphylla*, *Epipremnum pinnatum*, *Faradaya amicornum* (*), *Freycinetia storckii*, *Hoya australis*, *Jasminum betchei*, *Jasminum didymum*, *Merremia peltata* (*), *Passiflora laurifolia* (*), *Piper graeffei* (*), *Rourea*

minor. **Orchids:** *Dendrobium dactylodes* (*), *Eria robusta*. **Others:** *Alyxia stellata*, *Clidemia hirta*, *Cordyline fruticosa*, *Cyrtococcum oxyphyllum*, *Heliconia laurao*, *Paspalum conjugatum*.

PLOT 5. Uafato Ridge Forest (24 August 1991): 80 m elevation.

Species Name	Samoan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Intsia bijuga</i>	ifilele	26	25	32,852	49%
2. <i>Syzygium inophylloides</i>	asi toa	17	16	19,581	29%
3. <i>Canarium vitiense</i>	ma'ali	2	2	6,084	9%
4. <i>Diospyros samoensis</i>	'au'aui	9	5	3,097	5%
5. <i>Myristica fatua</i>	'atone	17	5	2,265	3%
6. <i>Planchonella garberi</i>	'ala'a	5	2	774	1%
7. <i>Hibiscus tiliaceus</i>	fau	3	1	677	1%
8. <i>Glochidion ramiflorum</i>	masame	2	1	452	1%
9. <i>Planchonella grayana</i>	-----	2	1	406	1%
10. <i>Palaquium stehlinii</i>	gasu	2	1	310	+
11. <i>Rhus taitensis</i>	tavai	2	1	265	+
12. <i>Aglaia samoensis</i>	laga'ali	3	0	219	+
13. <i>Anacolosia insularis</i>	-----	4	0	159	+
14. <i>Adenanthera pavonina</i>	lopa	1	0	129	+
15. <i>Aidia cochinchinensis</i>	olamea	3	0	110	+
16. <i>Mammea glauca</i>	manapau	1	0	84	+
17. <i>Syzygium clusiifolium</i>	asi vai	2	0	65	+
18. <i>Calophyllum inophyllum</i>	fetau	1	0	20	+

Area: none (102-tree count) 102 60 67,549

Other Trees: *Allophylus timoriensis*, *Diospyros elliptica*, *Fagraea berteriana*, *Inocarpus fagifer*, *Meryta macrophylla*, *Neonauclea forsteri*, *Omalanthus nutans* (s), *Phalaris glabra*, *Polyscias samoensis*, *Psychotria insularum*, *Sterculia fanaiho*, *Terminalia catappa*. **Ferns (Epiphytic):** *Antrophyum alatum?*, *Antrophyum plantagineum*, *Asplenium nidus*, *Asplenium polydon*, *Davallia epiphylla*, *Davallia solida*, *Pyrrosia lanceolata*, *Trichomanes bipunctatum*. **Ferns (Terrestrial):** *Arachniodes aristata*, *Christella harveyi*, *Diplazium bulbiferum*, *Nephrolepis hirsutula*, *Phymatosorus scolopendria*, *Pteris pacifica*, *Schizaea dichotoma*, *Tectaria dissecta*. **Vines:** *Epipremnum pinnatum*, *Faradaya amicornum*, *Hoya australis*, *Mikania micrantha*, *Passiflora laurifolia*, *Piper graeffei*, *Rourea minor*. **Orchids:** *Dendrobium dactylodes*, *Dendrobium goldfinchii*, *Didymoplexis micradenia*. **Others:** *Alyxia stellata*, *Carica papaya*, *Cordyline fruticosa*, *Maytenus vitiensis*, *Oplismenus compositus*.

PLOT 6. Uafato Village Disturbed Ridge Forest (3 April 1997): 140 m elevation.

Species Name	Samoan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Rhus taitensis</i>	tavai	7	5	10,713	16%
2. <i>Canarium vitiense</i>	ma'ali	4	4	10,154	15%
3. <i>Alphitonia zizyphoides</i>	toi	4	4	9,095	14%
4. <i>Sterculia fanaiho</i>	fana'io	23	12	6,471	10%
5. <i>Diospyros samoensis</i>	'au'auli	8	3	5,883	9%
6. <i>Inocarpus fagifer</i>	ifi	14	7	4,613	7%
7. <i>Syzygium inophylloides</i>	asi toa	6	4	3,885	6%
8. <i>Fagraea berteriana</i>	pua lulu	1	1	3,847	6%
9. <i>Myristica fatua</i>	'atone	30	5	3,092	5%
10. <i>Hibiscus tiliaceus</i>	fau	9	3	1,836	3%
11. <i>Haplolobus floribundus</i>	mafoa	7	4	1,826	3%
12. <i>Palaquium stehlinii</i>	gasu	9	4	1,743	3%
13. <i>Kleinhovia hospita</i>	fu'afu'a	5	2	753	1%
14. <i>Planchonella garberti</i>	'ala'a	5	1	642	1%
15. <i>Planchonella samoensis</i>	mamalava	1	1	615	1%
16. <i>Cananga odorata</i>	moso'oi	1	1	615	1%
17. <i>Flacourtia rukam</i>	filimoto	3	0	223	+
18. <i>Canthium merrillii</i>	olasina	1	0	64	+
19. <i>Psychotria insularum</i>	matalafi	2	0	40	+
20. <i>Aglaia samoensis</i>	laga'ali	1	0	38	+
Area: None (141-tree)		141	61	66,150	

Other Trees: *Aidia cochinchinensis*, *Cocos nucifera*, *Diospyros elliptica* (s), *Dysoxylum samoensis*, *Elatostachys falcata* (s), *Ficus tinctoria*, *Geniostoma rupestre*, *Intsia bijuga*, *Leucosyke corymbulosa*, *Morinda citrifolia*, *Phaleria glabra*, *Polyscias samoensis*, *Pometia pinnata* (s), *Psychotria insularum*. **Ferns (Epiphytic):** *Antrophyum plantagineum*, *Asplenium nidus*, *Davallia epiphylla*, *Nephrolepis biserrata*, *Phymatosorus scolopendria*, *Pyrrosia lanceolata*. **Ferns (Terrestrial):** *Asplenium nidus*, *Asplenium polyodon*, *Christella harveyi* (*), *Phymatosorus scolopendria*, *Tectaria dissecta* (*), *Trichomanes cf. bipunctatum*, *Trichomanes humile*. **Vines:** *Alyxia bracteolosa*, *Canavalia cathartica*, *Gynochtodes epiphytica*, *Faradaya amicornum* (*), *Freycinetia storckii*, *Jasminum betchei*, *Merremia peltata*, *Passiflora laurifolia*, *Piper graeffei* (+), *Rourea minor*, *Zehneria mucronata*. **Orchids:** *Dendrobium dactyloides*, *Taeniophyllum fasciola*. **Others:** *Clidemia hirta*, *Cordyline fruticosa*, *Procris pedunculata* (e).

Trees nearby:

Calophyllum neo-ebudicum, *Commersonia bartramia*, *Garcinia myrtifolia*, *Myristica hypargyrea* (200 m elevation), *Premna serratifolia*.

PLOT 7. Vaoto Ridge Forest (2 April 1997): 250 m elevation.

Species Name	Samoaan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Canarium vitiense</i>	ma'ali	10	10	24,634	40%
2. <i>Syzygium inophylloides</i>	asi toa	3	2	12,942	21%
3. <i>Dysoxylum cf. samoense</i>	mamaia	2	2	9,195	15%
4. <i>Planchonella garberi</i>	'aia'a	6	5	4,833	8%
5. <i>Myristica fatua</i>	'atone	22	3	2,412	4%
6. <i>Inocarpus fagifer</i>	ifi	2	2	1,275	2%
7. <i>Neonaucllea forsteri</i>	'afa	1	1	1,136	2%
8. <i>Planchonella samoensis</i>	mamalava	1	1	1,017	2%
9. <i>Aglaia samoensis</i>	laga'ali	5	2	761	1%
10. <i>Haplolopus floribundus</i>	mafoa	8	1	620	1%
11. <i>Syzygium samarangense</i>	nonu vao	4	1	492	1%
12. <i>Macaranga stipulosa</i>	lau fatu	8	0	424	1%
13. <i>Syzygium clusiifolium</i>	asi vai	4	0	389	1%
14. <i>Artocarpus altilis</i>	'uiu	1	1	380	1%
15. <i>Diospyros samoensis</i>	'au'aui	2	0	321	1%
16. <i>Polyscias samoensis</i>	tagitagi vao	6	0	256	+
17. <i>Sarcopygme pacifica</i>	u'unu	6	0	214	+
18. <i>Antirrhoea inconspicua</i>	—	1	0	154	+
19. <i>Trema cannabina</i>	magele	1	0	113	+
20. <i>Sterculia fanaiho</i>	fana'io	3	0	108	+
21. <i>Cananga odorata</i>	moso'oi	1	0	50	+
22. <i>Cyathea vaupelii</i>	olioli	1	0	38	+
23. <i>Myristica hypargyrea</i>	'atone	1	0	28	+
24. <i>Canthium merrillii</i>	olasina	1	0	28	+
25. <i>Glochidion ramiflorum</i>	masame	1	0	20	+

Area: none (100-tree count) 100 31 61,940

Other trees: *Calophyllum neo-ebudicum*, *Cyathea lunulata*, *Dysoxylum maota*, *Morinda citrifolia*, *Pisonia umbellifera*, *Psychotria insularum*, *Terminalia richii* (s). **Ferns (Epiphytic):** *Antrophyum plantagineum*, *Asplenium nidus* (*), *Davallia epiphylla*, *Lomagramma cordipinna*, *Trichomanes tahitense*. **Ferns (Terrestrial):** *Angiopteris evecta*, *Christella harveyi*, *Diplazium proliferum*, *Diplazium* sp., *Lomagramma cordipinna*, *Nephrolepis hirsutula*, *Pleocnemia cumingiana*, *Pteris pacifica*, *Tectaria dissecta* (*). **Vines:** *Epipremnum pinnatum* (*), *Faradaya amicornum*, *Flagellaria gigantea*, *Gynochthodes epiphytica*, *Jasminum betchei*, *Merremia peltata*, *Passiflora laurifolia*, *Piper graeffei* (*), *Piper rechingerii* (*), *Rourea minor*. **Orchids:** *Dendrobium biflorum*, *Flickingeria comata*. **Others:** *Clidemia hirta*, *Dichapetalum vitiense*, *Heliconia laufao*.

PLOT 8. Uafato Village Lowland Forest (1 April 1997): 325 m elevation.

Species Name	Samoan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Palaquium stehlinii</i> 43%	gasu	42	22	23,459	
2. <i>Canarium vitiense</i>	ma'ali	5	5	12,107	22%
3. <i>Haplolobus floribundus</i>	mafoa	16	4	3,160	6%
4. <i>Dysoxylum samoense</i>	mamala	1	1	3,018	6%
5. <i>Planchonella garberi</i>	'ala'a	2	2	2,840	5%
6. <i>Myristica fatua</i>	'atone	24	4	2,323	4%
7. <i>Diospyros samoensis</i>	'au'auli	8	5	2,114	4%
8. <i>Cyathea lunulata</i>	olioli	7	6	1,484	3%
9. <i>Inocarpus fagifer</i>	ifi	7	1	1,400	3%
10. <i>Cananga odorata</i>	moso'oi	12	1	1,180	2%
11. <i>Cyathea affinis</i>	olioli	3	0	362	1%
12. <i>Myristica hypargyreae</i>	'atone	2	0	174	+
13. <i>Macaranga stipulosa</i>	lau fatu	2	0	143	+
14. <i>Cyathea vaupelii</i>	olioli	1	0	79	+
15. <i>Polyscias cf. reineckei</i>	tagitagi vao	2	0	70	+
16. <i>Aglaia samoensis</i>	laga'ali	1	0	64	+
17. <i>Sterculia fanaiho</i>	fana'io	2	0	56	+
18. <i>Meryta macrophylla</i>	fagufagu	1	0	28	+
19. <i>Fagraea berteriana</i>	pua lulu	1	0	20	+
Area: 1000 m ²		139	51	54,081	

Other Trees: *Alphitonia zizyphoides* (s), *Calophyllum neo-ebudicum* (s), *Canthium merrillii* (s), *Clinostigma cf. onchorhynchum*, *Ficus uniauriculata*, *Flacourtia rukam* (s), *Flueggea flexulosa*, *Glochidion cf. cuspidatum*, *Glochidion ramiflorum*, *Intsia bijuga*, *Ixora amphifolia*, *Hedycarya denticulata*, *Meryta macrophylla*, *Phaleria glabra*, *Pometia pinnata* (s), *Psychotria insularum*, *Syzygium inophylloides* (s), *Syzygium samarangense* (s), *Terminalia richii* (s). **Ferns (Epiphytic):** *Antrophyum plantagineum*, *Humata heterophylla*, *Lomagramma cordipinna*, *Lycopodium carinatum*, *Lycopodium serratum*, *Nephrolepis biserrata* (*), *Nephrolepis hirsutula*, *Phymatosorus scolopendria*, *Pyrrhosia lanceolata*, *Selligua feoides*, *Trichomanes cf. humile*, *Trichomanes saxifragoides*, *Trichomanes tahitense*. **Ferns (Terrestrial):** *Angiopteris evecta*, *Arachniodes aristata*, *Asplenium nidus*, *Asplenium polyodon*, *Christella harveyi*, *Cyathea affinis*, *Cyathea lunulata*, *Cyathea vaupelii*, *Diplazium sp.*, *Pleocnemia cumingiana*, *Pleocnemia irregularis*, *Selaginella whitmeei*, *Tectaria dissecta* (*), *Trichomanes boryanum*, *Vaginularia angustata*. **Vines:** *Alyxia bracteolosa*, *Epipremnum pinnatum* (*), *Faradaya amicorum* (*), *Flagellaria gigantea*, *Freycinetia storckii*, *Gynochthodes epiphytica*, *Jasminum betchei*, *Merremia peltata*, *Passiflora laurifolia* (*), *Piper graeffei* (**), *Rourea minor*. **Orchids:** *Bulbophyllum ebulbe*, *Dendrobium biflorum*, *Dendrobium dactylodes*, *Flickingeria comata*, *Eria robusta*,

Glomera montana?, *Phreatia micrantha*, *Phreatia myosurus*. **Others:** *Clidemia hirta*, *Cordyline fruticosa*, *Heliconia laufao*.

PLOT 9. Richardson's Tract Ridge Forest (17 May 1996): 460 m elevation.

Species Name	Samoa Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Myristica hypargyrea</i>	'atone	13	10	4,511	22%
2. <i>Clinostigma onchorhynchum</i>	niu vao	6	6	3,974	19%
3. <i>Weinmannia samoensis</i>	-----	1	1	2,205	11%
4. <i>Cyathea lunulata</i>	-----	6	5	1,969	9%
5. <i>Trichospermum richii</i>	ma'osina	12	3	1,138	6%
6. <i>Endiandra elaeocarpa</i>	-----	7	1	832	4%
7. <i>Planchonella garberi</i>	'ala'a	2	1	743	4%
8. <i>Musa x paradisiaca</i>	taemanu	4	1	630	3%
9. <i>Reynoldsia lanutoensis</i>	vivao	1	1	619	3%
10. <i>Canthium merrillii</i>	olasina	3	2	592	3%
11. <i>Myristica fatua</i>	'atone	6	1	570	3%
12. <i>Calophyllum neo-ebudicum</i>	tamanu	5	1	372	2%
13. <i>Macaranga stipulosa</i>	lau fatu	6	0	326	2%
14. <i>Euodia samoensis</i>	so'opini	2	1	307	1%
15. <i>Syzygium samarangense</i>	nonu vao	1	1	285	1%
16. <i>Dysoxylum huntii</i>	maotamea	2	1	278	1%
17. <i>Bischofia javanica</i>	'o'a	1	1	201	1%
18. <i>Homalium whitmeeanum</i>	-----	3	0	201	1%
19. <i>Cyathea affinis</i>	olioli	2	0	192	1%
20. <i>Astronidium samoense</i>	-----	2	0	160	1%
21. <i>Polyscias reineckei</i>	tagitagi vao	2	0	153	1%
22. <i>Cyathea vaupelii</i>	olioli	2	0	114	1%
23. <i>Dysoxylum samoense</i>	mamala	3	0	98	+
24. <i>Ficus tinctoria</i>	mati	1	0	96	+
25. <i>Diospyros major</i>	-----	1	0	79	+
26. <i>Cyathea decurrens</i>	olioli	1	0	79	+
27. <i>Glochidion ramiflorum</i>	masame	2	0	78	+
28. <i>Hernandia moerenhoutiana</i>	pipi	1	0	50	+
29. <i>Cordyline fruticosa</i>	lau ti	1	0	50	+
30. <i>Melastoma denticulatum</i>	fua lole	1	0	38	+
31. <i>Cananga odorata</i>	moso'oi	1	0	28	+
32. <i>Syzygium clusiifolium</i>	asi vai	1	0	20	+
Area: 100-tree Count		102	38	20,990	

Other Trees: *Aglaia* sp. nova, *Alphitonia zizyphoides*, *Alstonia pacifica*, *Baccaurea taitensis*, *Barringtonia samoensis*, *Canthium merrillii*, *Commersonia barramiamia*, *Crossostylis biflora*, *Cypholophus macrocephalus*, *Diospyros samoensis* (s), *Elaeocarpus tonganus*, *Flacourtia rukam*, *Garcinia myrtifolia*, *Gironniera celtidifolia*, *Haplolobus floribundus*, *Maesa tabacifolia*, *Melochia aristata*, *Meryta macrophylla*, *Metrosideros collina*, *Neonauclea forsteri*, *Pipturus argenteus*, *Rhus taitensis*, *Sarcopygme pacifica*, *Spiraeanthemum samoense*, *Sterculia fanaiho*, *Streblus anthropophagorum*, *Syzygium brevifolium*, *Syzygium inophylloides*, *Syzygium savaiiense*, *Terminalia richii* (s), *Timonius affinis*, *Trema cannabina*. **Ferns (Epiphytic):** *Antrophyum alatum*, *Asplenium australasicum*, *Asplenium horridum*, *Asplenium laserpitiifolium*, *Ctenopteris blechnoides*, *Ctenopteris emersonii*, *Davallia graeffei*, *Davallia solida*, *Elaphoglossum feejeense*, *Humata heterophylla*, *Humata polypodioides*, *Hymenophyllum polyanthos*, *Hymenophyllum praetervium*, *Lemmaphyllum accedens*, *Lomagramma cordipinna*, *Lycopodium squarrosum*, *Nephrolepis biserrata*, *Oleandra neriiformis*, *Phymatosorus nigrescens*, *Phymatosorus scolopendria*, *Polypodium subauriculatum*, *Selligua feeoides*, *Trichomanes caudatum*, *Trichomanes humile*, *Trichomanes saxifragoides*, *Trichomanes taitense*, *Vaginularia angustissima*, *Vittaria scolopendrina*. **Ferns (Terrestrial):** *Angiopteris evecta*, *Asplenium australasicum*, *Asplenium feejeense*, *Blechnum orientale*, *Christella harveyi*, *Coniogramma fraxinea*, *Culcita straminea*, *Cyathea affinis*, *Cyathea decurrens*, *Cyathea lunulata*, *Cyathea vaupelii*, *Cyathea whitneei*, *Dicranopteris linearis*, *Diplazium proliferum*, *Histiopteris incisa*, *Lindasea harveyi*, *Marattia smithii*, *Microsorium sylvaticum*, *Nephrolepis hirsutula*, *Orthiopteris tenuis*, *Pleocnemia irregularis*, *Pteris mertensioides*, *Selaginella whitneei*, *Tectaria crenata*, *Tectaria decurrens*, *Trichomanes boryanum*. **Vines:** *Alyxia samoensis*, *Dichapetalum vitiense*, *Dioscorea pentaphylla*, *Epipremnum pinnatum*, *Faradaya amicorum*, *Flagellaria gigantea*, *Freycinetia reineckei*, *Freycinetia storckii*, *Hoya australis*, *Hoya diptera*, *Hoya vitiensis*, *Merremia peltata*, *Mikania micrantha*, *Passiflora laurifolia*, *Piper graeffei*, *Piper rechingerii*, *Raphidophora graeffei*, *Rourea minor*, *Strongyledon* sp. nova. **Orchids:** *Bulbophyllum ebulbe*, *Bulbophyllum longiscapum*, *Bulbophyllum polypodoides*, *Bulbophyllum samoense*, *Coelogyne lycastoides*, *Dendrobium biflorum*, *Dendrobium dactylodes*, *Diplocaulobium fililobum*, *Erythrodes* sp.?, *Glomera montana*, *Malaxis resupinata*, *Phaius terrestris*, *Phreatia micrantha*, *Phreatia myosurus*. **Others:** *Clidemia hirta*, *Cordyline fruticosa*, *Cyrtandra pogonantha*, *Cyrtandra richii*, *Heliconia laufao*, *Joinvillea adscendens*, *Macropiper timothianum*, *Paspalum conjugatum*, *Peperomia reineckei*, *Procris pedunculata*, *Zingiber zerumbet*.

PLOT 10. Uafato Disturbed Montane Forest (3 April 1997): 400 m elevation.

Species Name	Samoan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Haplolobus floribundus</i>	mafoa	25	7	3,626	24%
2. <i>Myristica hypargyrea</i>	'atone	20	8	3,333	22%
3. <i>Cyathea lunulata</i>	olioli	5	4	2,488	16%
4. <i>Fagraea berteriana</i>	pua lulu	2	2	1,963	13%
5. <i>Rhus taitensis</i>	tavai	1	1	1,075	7%
6. <i>Baccaurea taitensis</i>	—	12	1	760	5%
7. <i>Canthium merrillii</i>	olasina	9	1	700	5%
8. <i>Clinostigma onchorhyncum</i>	niu vao	1	1	491	3%
9. <i>Cyathea vaupelii</i>	olioli	4	0	333	2%
10. <i>Trichospermum richii</i>	ma'osina	1	1	227	1%
11. <i>Hemandia moerenhoutii</i>	pipi	3	0	137	1%
12. <i>Buchanania merrillii</i>	—	1	0	133	1%
13. <i>Astronidium samoense</i>	—	2	0	117	1%
14. <i>Omalanthus acuminatus</i>	fogamamala	2	0	117	1%
15. <i>Macaranga stipulosa</i>	lau fatu	2	0	88	1%
16. <i>Dysoxylum huntii</i>	maotamea	1	0	50	+
17. <i>Musa x paradisiaca</i>	taemanu	1	0	50	+
18. <i>Calophyllum neo-ebudense</i>	tamanu	2	0	48	+
19. <i>Metrosideros collina</i>	—	2	0	40	+
20. <i>Crossostylis biflora</i>	saitamu	1	0	28	+
21. <i>Syzygium samoense</i>	fena vao	1	0	28	+
22. <i>Syzygium inophylloides</i>	asi toa	1	0	20	+
23. <i>Erythrospermum acutum</i>	—	1	0	20	+
Area: none (100-tree count)		100	26	15,172	

Other Trees: *Alstonia pacifica*, *Elaeocarpus tonganus*, *Endiandra elaeocarpa*, *Garcinia myrtifolia*, *Glochidion* sp., *Psychotria* sp., *Sarcopygme pacifica*. **Ferns (Epiphytic):** *Humata polypodioides*, *Humata heterophylla* (**), *Lomagamma cordipinna*, *Nephrolepis biserrata*, *Nephrolepis hirsutula*, *Phymatosorus nigrescens*, *Vaginularia angustata*. **Ferns (Terrestrial):** *Asplenium australasicum*, *Asplenium polyodon*, *Blechnum orientale*, *Lindsaea harveyi*, *Lomagamma cordipinna*, *Nephrolepis biserrata*, *Pleocnemia irregularis*. **Vines:** *Alyxia bracteolosa* (*), *Faradaya amicornum* (*), *Flagellaria gigantea*, *Freycinetia reineckei*, *Freycinetia storckii* (***), *Hoya diptera*, *Medinilla samoensis*, *Merremia peltata*, *Piper graeffei*. **Orchids:** *Bulbophyllum ebulbe*, *Dendrobium biflorum*. **Others:** *Clidemia hirta* (*), *Cordyline fruticosa*, *Joinvillea adscendens*, *Melastoma denticulatum*.

PLOT 11. Uafato Disturbed Montane Forest (4 April 1997): 450 m.

Species Name	Samoan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Fagraea berteriana</i>	pua lulu	2	1	2,876	22%
2. <i>Trichospermum richii</i>	ma'osina	21	5	2,181	17%
3. <i>Cyathea vaupelii</i>	olioli	36	1	1,807	14%
4. <i>Pandanus tectorius</i>	fasa	9	1	1,167	9%
5. <i>Myristica hypargyrea</i>	'atone	6	2	803	6%
6. <i>Cyathea affinis</i>	olioli	9	0	541	4%
7. <i>Rhus taitensis</i>	tavai	3	1	352	3%
8. <i>Commersonia bartramia</i>	————	6	0	349	3%
9. <i>Cyathea decurrens</i>	olioli	6	0	348	3%
10. <i>Cerbera odollam</i>	leva vao	1	1	314	3%
11. <i>Crossostyris biflora</i>	saitamu	2	1	281	2%
12. <i>Macaranga stipulosa</i>	lau fatu	4	0	258	2%
13. <i>Alphitonia zizyphoides</i>	toi	5	0	219	2%
14. <i>Planchonella samoensis</i>	mamalava	1	1	177	1%
15. <i>Canthium merrillii</i>	olasina	3	0	153	1%
16. <i>Syzygium samarangense</i>	nonu vao	2	0	145	1%
17. <i>Cyathea lunulata</i>	olioli	1	0	133	1%
18. <i>Haplolobus floribundus</i>	mafoa	4	0	114	1%
19. <i>Barringtonia samoensis</i>	falaga	1	0	95	1%
20. <i>Musa x paradisiaca</i>	taemanu	1	0	95	1%
21. <i>Cordyline fruticosa</i>	lau ti	2	0	88	1%
22. <i>Dysoxylum huntii</i>	maotamea	2	0	76	1%
23. <i>Palaquium stehlinii</i>	gasu	3	0	68	1%
24. <i>Baccaurea taitensis</i>	————	2	0	58	+
25. <i>Sterculia fanaiho</i>	fana'io	1	0	38	+
26. <i>Hernandia moerenhout.</i>	pipi	1	0	28	+
27. <i>Calophyllum neo-ebud.</i>	tamanu	1	0	28	+
28. <i>Weinmannia samoensis</i>	————	1	0	20	+

Area: none (100-tree count) 138 14 12,814

Other Trees: *Astronidium samoense*, *Clinostigma onchorhynchum*, *Commersonia bartramia*, *Ficus godeffroyi*, *Flacourtia rukam*, *Gironniera celtidifolia*, *Glochidion* sp., *Meryta macrophylla*, *Neonauclea forsteri*, *Syzygium inophylloides*. **Ferns (Epiphytic):** *Antrophyum alatum*, *Oleandra neriiformis*, *Humata heterophylla*, *Lomagramma cordipinna*, *Phymatosorus nigrescens*, *Selligua feeoides*. **Ferns (Terrestrial):** *Angiopteris evecta*, *Asplenium australasicum*, *Asplenium multifidum*, *Cyathea affinis*, *Cyathea decurrens*, *Cyathea lunulata*, *Cyathea truncata*, *Cyathea vaupelii*, *Lomagramma cordipinna*, *Pleocnemia irregularis*, *Polypodium subauriculatum*, *Tectaria decurrens*. **Vines:** *Flagellaria gigantea*, *Freycinetia reineckei*, *Merremia peltata*.

Orchids: *Bulbophyllum samoense*, *Malaxis resupinata*, *Malaxis samoensis?*, *Spathoglottis plicata*. **Others:** *Centosteca lappacea*, *Clidemia hirta* (**), *Cyrtandra compressa*, *Cyrtandra graeffei*, *Cyrtandra pogonantha*, *Lantana camara*, *Mapania macrocephala*, *Schizostachyum glaucifolium*, *Timonius affinis*, *Zingiber zerumbet*

PLOT 12. Malata Montane Forest (31 May 1997): 530 m elevation.

Species Name	Samoan Name	No. of Trees	No. of Trees over 15 cm dbh	Basal Area (cm ²)	Relative Dominance
1. <i>Fagraea berteriana</i>	pualulu	9	8	10,933	29%
2. <i>Calophyllum neo-ebudicum</i>	tamanu	10	5	4,332	12%
3. <i>Syzygium curvistylum</i>	—	5	4	3,469	9%
4. <i>Syzygium brevifolium</i>	—	2	2	2,623	7%
5. <i>Cerbera odollam</i>	leva vao	3	3	2,477	7%
6. <i>Syzygium samoense</i>	fena vao	14	6	2,177	6%
7. <i>Hernandia moerenhoutiana</i>	pipi	12	4	1,735	5%
8. <i>Clinostigma onchorhynchum</i>	niu vao	5	4	1,560	4%
9. <i>Aglaia</i> sp. nova	—	7	3	1,497	4%
10. <i>Myristica hypargyrea</i>	'atone	9	4	1,445	4%
11. <i>Reynoldsia lanutoensis</i>	vivao	1	1	1,017	3%
12. <i>Dysoxylum huntii</i>	maotamea	5	2	996	3%
13. <i>Cyathea lunulata</i>	olioli	3	3	637	2%
14. <i>Canthium merrillii</i>	olasina	2	2	629	2%
15. <i>Cyathea vaupelii</i>	olioli	6	1	462	1%
16. <i>Neonauclea forsteri</i>	afa	1	1	346	1%
17. <i>Cyathea affinis</i>	olioli	2	0	249	1%
18. <i>Alphitonia zizyphoides</i>	toi	1	1	201	1%
19. <i>Melastoma denticulatum</i>	fua lole	3	0	60	+
20. <i>Hedycarya denticulata</i>	—	1	1	50	+
21. <i>Syzygium samarangense</i>	nonu vao	1	0	50	+
22. <i>Cordyline fruticosa</i>	lau ti	1	0	38	+
23. <i>Weinmannia samoense</i>	—	1	0	38	+
24. <i>Homalium whitmeeanum</i>	—	1	0	20	+
Area: none (100-tree count)		105	54	37,121	

Other trees: *Alstonia pacifica*, *Arytera brackenridgei*, *Astronidium* cf. *samoense*, *Buchanania merrillii*, *Elaeocarpus tonganus*, *Elaeocarpus ulianus*, *Endiandra elaeocarpa*, *Haplolobus floribundus*, *Macaranga stipulosa*, *Maesa tabacifolia*, *Mammea glauca*, *Planchonella samoensis*, *Spiraeanthemum samoense*, *Strebulus anthropophagorum*, *Syzygium inophylloides*, *Terminalia richii* (s), *Timonius affinis*. **Ferns (Epiphytic):** *Antrophyum plantagineum*, *Asplenium australasicum*, *Asplenium horridum*, *Asplenium laserpitiifolium*, *Asplenium multifidum*, *Asplenium polydon*, *Ctenopteris emersonii* (*), *Davallia solida*, *Elaphoglossum feejeense* (*),

Humata heterophylla (*), Humata polypodioides, Humata serrata, Hymenophyllum imbricatum, Hymenophyllum polyanthos, Lemmaphyllum accedens, Leucostegia pallida, Lycopodium phlegmeria, Nephrolepis biserrata, Oleandra neriiformis (***), Polypodium subauriculatum, Selligua feeoides (*), Trichomanes humile, Vittaria scolopendrina. **Ferns (Terrestrial):** Angiopteris evecta, Blechnum orientale (*), Culcita straminea (**), Cyathea affinis, Cyathea lunulata, Cyathea vaupelii, Dicranopteris linearis, Lindsaea harveyi, Marattia smithii, Trichomanes dentatum. **Vines:** Alyxia cf. bracteolosa, Faradaya amicorum (*), Flagellaria gigantea, Freycinetia reineckei, Freycinetia storckii (***), Hoya vitiensis, Medinilla samoensis, Mikania micrantha, Morinda tripetala, Passiflora laurifolia, Piper graeffei, Piper rechingerii. **Orchids:** Bulbophyllum ebulbe, Bulbophyllum samoense, Coelogyne lycastoides (*), Dendrobium cf. biflorum, Dendrobium dactylodes, Diplocaulobium fililobum, Eria rostriflora, Flickingeria comata, Glomera montana (**), Mediocalcar paradoxa?, Malaxis cf. resupinata, Phaius terrestris, Phreatia micrantha, Phreatia myosorus, Phreatia paleata. **Others:** Clidemia hirta, Cordyline fruticosa, Hedychium sp., Joinvillea adscendens.

NOTE: Plants followed by (s) indicates that only saplings of that species were found in the plot. Plants followed by (e) are epiphytes. Plants followed by (*) were common in the plot, those followed by a (**) were very common, and those followed by (***) were dominant.

TABLE 2. ANNOTATED CHECKLIST OF THE VASCULAR FLORA OF THE
UAFATO CONSERVATION AREA

All vascular plant species recorded during the biodiversity survey are listed below, along with the authors of the scientific names, a brief description of the species, their habitat, frequency, and status, and voucher specimen number (when collected). Vouchers are stored in herbaria at the University of Hawai'i, the Bishop Museum, the Smithsonian, and other facilities. The plants here are divided into Dicotyledonae, Monocotyledonae, Pteridophyta (ferns), and Fern allies. In each category they are in families in alphabetical order and alphabetically by species in each family.

DICOTYLEDONAE
ACANTHACEAE

Blechum pyramidatum (Lam.) Urb.

Herb with opposite leaves, small white, terminal spikes of campanulate flowers borne among ovate bracts, a spindle-shaped capsule. Common in plantations and disturbed lowland areas. A modern introduction.

Justicia procumbens L.

Small erect herb with opposite leaves, tiny lavender, bilabiate flowers in dense, ovoid, bract-bearing, terminal spikes, and a small capsule. Common in plantations and disturbed places. A modern introduction.

Ruellia prostrata Poir.

vaouli

Herb with opposite leaves, solitary, axillary, lavender, campanulate flowers, and a club-shaped capsule. Common in plantations and disturbed areas. A modern introduction.

ANACARDIACEAE

Buchanania merrillii Christoph.

Large tree with simple, alternate, oblanceolate leaves, small flowers in axillary panicles, and a hard, lens-shaped fruit. Uncommon in montane forest. Endemic. Voucher 10470.

Rhus taitensis Guillemin

tavai

Large tree with pinnately compound leaves, tiny white flowers, and a small, purple, fleshy fruit. Common to abundant in lowland and especially secondary forest. Indigenous.

ANNONACEAE

Cunanga odorata (Lam.) Hook. f. & Thoms.

moso'oi

Straight, medium-sized tree with the leaves all in one plane, apocarpus, yellow, fragrant flowers, and a black subglobose fruit. Occasional to common in disturbed forest and openings in lowland forest. A Polynesian introduction or possibly indigenous.

APOCYNACEAE

Alstonia pacifica (Seem.) A. C. Smith

Small tree with glossy opposite leaves, milky sap, small white flowers, and a long, curved, cylindrical capsule. Occasional in ridge forest. Indigenous.

Alyxia bracteolosa Rich

lau maile

Liana with milky sap, shiny opposite leaves, tiny white flowers, and a bluish-black globose fruit that is wrinkled when dry. Common in lowland to montane forest. Indigenous.

Alyxia samoensis (Christoph.) A. C. Smith

lau maile

Vine with milky sap, shiny opposite leaves, tiny white flowers, and a fusiform fruit. Common in lowland to cloud forest. Endemic. Voucher 10032.

Alyxia stellata (Forst.) Roemer & Schultes

nau; lau maile

Scandent shrub with small, shiny opposite leaves, milky sap, tiny white flowers, and a small subglobose to ellipsoid fruit. Occasional in ridge forest and scrub. Indigenous.

Cerbera manghas L.

leva vao

Medium-sized tree with glossy green, whorled leaves, milky sap, showy white flowers with a red throat, and a large, reddish, ellipsoid fruit. Occasional in littoral forest. Indigenous. Voucher 10356.

Cerbera odollam Gaertn.

leva

Medium-sized tree with glossy green, whorled leaves, milky sap, showy white flowers with a yellow throat, and a large, ellipsoid fruit. Rare in montane forest. Indigenous or a Polynesian introduction. Voucher 10341.

Neisosperma oppositifolium (Lam.) Fosb. & Sachet

fao

Medium-sized tree with whorled leaves, milky sap, small white flowers with a contorted bud, and large, green, paired, ovoid fruits. Uncommon in littoral and coastal forest. Indigenous.

ARALIACEAE

Meryta macrophylla (Rich) Seem.

fagufagu; ma'ulu'ulu

Small dioecious tree with large alternate leaves, thick, yellowish inflorescences in large thick spikes, and a greenish, compound fruit. Occasional in ridge to montane forest. Indigenous.

Polyscias reineckei Harms

tagitagi

Medium-sized tree with alternate, pinnately compound leaves, inconspicuous flowers in compound umbels, and flattened, angular, round fruits. Uncommon in ridge to montane forest. Endemic.

Polyscias samoensis (A. Gray) Harms

tagitagi

Small tree with alternate, pinnately compound leaves, small white flowers in compound umbels, and flattened, round, striate fruits. Occasional in lowland to ridge forest. Indigenous.

Reynoldsia lanutoensis Hochreut.

vivao

Large tree with alternate, pinnately compound leaves, flowers in umbels, and green, compressed-globose fruits. Occasional in upper ridge forest and montane forest. Endemic.

ARISTOLOCHIACEAE

Aristolochia cortinata Reinecke

Liana with alternate, ovate leaves, curved-tubular, purple flowers, and an ovoid capsule. Uncommon in lowland forest. Endemic.

ASCLEPIADACEAE

Hoya australis R. Br.

fue selela

Semi-woody vine with fleshy, opposite leaves, milky sap, pubescent petioles, white flowers usually marked with red at the corolla base, and a cylindrical follicle filled with plumose seeds. Occasional in lowland to montane forest. Indigenous.

Hoya diptera Seem.

fue selela

Vine with opposite, elliptic leaves, attenuate leaf tips, milky sap, small white flowers in umbels, and a cylindrical follicle containing plumose seeds. Occasional in ridge scrub forest. Indigenous. Voucher 10339.

Hoya pottsii Traill

fue selela

Vine with opposite leaves 3--5 palmately veined from the base, white waxy flowers in umbels, and a follicle bearing comose seeds. Occasional in the coastal to lowland forest. Indigenous.

Hoya cf. *vitiensis* Turrill

fue selela

Vine with opposite, thick, mostly lanceolate leaves, milky sap, white or maroon flowers, and a follicle bearing comose seeds. Occasional in lowland to montane forest. Indigenous. Voucher 10477.

ASTERACEAE

Ageratum conyzoides L.

Erect herb with coarse, opposite, fragrant leaves and lavender disc florets in heads arranged in terminal panicles. Common as a weed in sunny, disturbed places. A modern introduction.

Crassocephalum crepidioides (Benth.) S. Moore

fua lele

Tall herb with toothed or lobed, alternate leaves, drooping heads of disc florets red-brown at the tips, and plumed achenes. Common in disturbed places, especially in taro fields. A modern introduction.

Eleutheranthera ruderalis (Sw.) Schultz-Bip.

Coarse herb with opposite leaves and drooping, stalked, axillary heads of several yellow disc florets surrounded by oblong, green bracts. Occasional to common in cultivated places. A modern introduction.

Erechtites valerianifolia (Wolf) DC.

fua lele

Tall, erect herb with alternate, deeply pinnately lobed leaves, pink disc florets in heads arranged in terminal panicles, and plumed achenes. Occasional to common in open, disturbed places. A modern introduction.

Mikania micrantha H. B. K.

fue saina

Herbaceous vine with opposite, arrowhead-shaped leaves, white disc florets in heads arranged in panicles, and plumed achenes. Common to abundant in disturbed places. A modern introduction.

Struchium sparganophorum (L.) Kuntze

Erect herb with alternate leaves and inconspicuous, white disc florets in sessile, axillary heads. Occasional along streamsides and other wet places. A modern introduction.

Synedrella nodiflora (L.) Gaertn.

tae'oti

Coarse herb with opposite leaves and yellow disc florets arranged in sessile, axillary heads. Common in disturbed places. A modern introduction.

Wollastonia biflora (L.) DC.

ateate

Subshrub with opposite leaves, long-stalked daisy-like heads, and yellow disc and ray florets. Common in sunny littoral places. Indigenous.

BARRINGTONIACEAE

Barringtonia asiatica (L.) Kurz

futu

Large tree with large, obovate, alternate leaves, large flowers with numerous long white and pink stamens, and a large top-shaped fruit. Common to abundant in littoral forest. Indigenous.

Barringtonia samoensis A. Gray

falaga

Medium-sized tree with large alternate leaves, cataphylls, flowers in hanging racemes, numerous showy red stamens, and a top-shaped fruit. Occasional in lowland to montane forest. Indigenous.

BORAGINACEAE

Cordia aspera Forst. f.

tou

Small tree with alternate leaves, small white sympetalous flowers, and a white ovoid drupe. Rare in lowland forest. Indigenous or a Polynesian introduction. Voucher 8350.

BURSERACEAE

Haplolobus floribundus (K. Schum.) Lam

mafoa

Large tree with alternate, exstipulate, pinnately compound leaves, axillary panicles of small white, glabrous flowers, and an ovoid drupe. Locally common in lowland forest. Indigenous. Vouchers 8099, 10461.

Canarium vitiense A. Gray

ma'ali

Large tree with fragrant resin, alternate, pinnately compound leaves bearing 7--13 elliptic leaflets, small white flowers, and an ellipsoid to ovoid drupe. Occasional in lowland to montane forest. Indigenous.

CARICACEAE

Carica papaya L.

esi

Scarcely branching, dioecious tree with large, alternate, palmately lobed leaves, cream-colored, salverform male flowers in pendulous racemes, solitary, axillary, cream-colored female flowers, and a large orange, edible fruit. Common in disturbed places and cultivated in villages. A modern introduction.

CELASTRACEAE

Maytenus vitiensis (A. Gray) Ding Hou

Scandent shrub with alternate, serrate-edged leaves, small white flowers, and a three-angled capsule. Uncommon in ridge forest. Indigenous.

CLUSIACEAE

Calophyllum inophyllum L.

fetau

Large tree with fissured bark, opposite, leathery, finely veined leaves, showy yellow and white flowers, and a subglobose green drupe. Common and sometimes dominant in littoral forest, rarely much farther inland. Indigenous.

Calophyllum neo-ebudicum Guillaumin

tamanu

Large tree with fissured bark, opposite, finely veined, leathery leaves, showy white and yellow flowers, and a subglobose purplish drupe. Occasional to common in lowland to montane forest. Indigenous.

Garcinia myrtifolia A. C. Smith

Medium-sized tree with opposite, leathery leaves, yellow and white flowers, and an ellipsoid fruit with a persistent discoid stigma. Uncommon in ridge to montane forest. A naturalized, modern introduction.

Mammea glauca (Merr.) Kost.

manapau

Medium-sized tree with leathery, often glaucous, opposite leaves, showy yellow and white flowers, and a ovoid fruit with a persistent discoid stigma. Uncommon in coastal to montane forest. Endemic. Voucher 8096.

COMBRETACEAE

Terminalia catappa L.

talie

Large tree with alternate, subsessile, obovate leaves, racemes of numerous, small white flowers, and a large, conspicuously winged fruit. Occasional in littoral and lowland forest, rarely up to 350 m elevation. Indigenous or an early European introduction. Voucher 10331.

Terminalia richii A. Gray

malili

Large tree with alternate, lanceolate leaves, racemes of small white flowers, and a small, compressed-globose, purple drupe. Uncommon in lowland and montane forest. Indigenous.

CONNARACEAE

Rourea minor (Gaertn.) Alston in Trimen

Liana with alternate, odd-pinnately compound leaves that are red when young, white flowers, and a follicle containing one red seed. Occasional in lowland to montane forest. Indigenous. Voucher 10022.

CONVOLVULACEAE

Ipomoea macrantha Roemer & Schultes

Sprawling or scrambling vine with alternate, cordate leaves, showy white salverform flowers with a long tube, and a subglobose, 4-seeded capsule. Occasional to common in littoral and lowland forest. Indigenous.

Ipomoea pes-caprae (L.) R. Br.

fue moa

Prostrate vine with purple stems, clear sap, alternate bilobed leaves, and showy mauve, sympetalous flowers. Common to abundant on rocky and sandy shores. Indigenous.

Merremia peltata (L.) Merr.

fue vao; fue lautetele

Sprawling or high climbing vine with alternate, cordate, peltate leaves, white or yellow funnellform flowers, and a subglobose, 4-seeded capsule. Common in forest clearings and lowland to montane forest. Indigenous.

Operculina turpethum (L.) A. Silva Manso

Prostrate or climbing vine with winged stems, alternate, cordate leaves with a mucronate tip, a white, campanulate corolla, and a 4-seeded capsule. Occasional in disturbed places in plantations and open forest. Indigenous.

Stictocardia tiliifolia (Desr.) Hall. f.

tagamimi; palulu

Climbing vine with clear sap, large, alternate, cordate leaves finely black-dotted on the lower surface, large, showy, lavender, rotate flowers, and a subglobose, 4-seeded capsule. Occasional in disturbed places. A modern introduction.

CUCURBITACEAE

Zehneria mucronata (Bl.) Miq.

Herbaceous vine with thin, alternate, mostly deltoid leaves, tiny white axillary flowers, and an orange, oblong, blunt-tipped fruit. Occasional in lowland to montane forest. Indigenous.

CUNONIACEAE

Spiraeanthemum samoense A. Gray

Medium-sized tree with simple, opposite leaves, conspicuous stipules, racemes of tiny white flowers, and tiny apocarpus fruits. Occasional in montane ridge forest. Endemic.

Weinmannia samoensis A. Gray

Medium-sized tree with simple to 3-7-foliolate, opposite leaves having conspicuous stipules, tiny flowers in racemes, and tiny red, apocarpus fruits. Occasional in montane ridge forest. Indigenous. Voucher 10017.

DICHAPETALACEAE

Dichapetalum vitiense (Seem.) Engl.

Scandent shrub with alternate simple leaves, small white flowers, and a brown, fuzzy drupe. Uncommon in lowland forest. Indigenous. Voucher 10043.

EBENACEAE

Diospyros elliptica (Forst.) P.S. Green 'anume

Small to medium-sized tree with alternate, leathery, dark green, mostly blunt-tipped leaves, small, 3-merous, white flowers, and a red to yellow, ellipsoid drupe. Occasional in lowland ridge forest. Indigenous.

Diospyros major (Forst. f.) Bakh.

Medium-sized tree with large ovate, alternate, coriaceous leaves, small, white, 3-merous flowers, and a large ellipsoid fruit. Uncommon in montane forest. Indigenous. Voucher 10020.

Diospyros samoensis A. Gray 'au'auli

Medium-sized tree with alternate, leathery, mostly acute-tipped leaves, small, white, 4-merous flowers, and a red to yellow, globose fruit bearing the persistent 4-lobed calyx. Common in lowland forest, less common in montane forest. Indigenous.

ELAEOCARPACEAE

Elaeocarpus tonganus Burkill a'amati'e

Medium-sized tree with alternate, ovate leaves turning red at senescence, petioles swollen at both ends, many-petaled white flowers, and a blue spherical drupe. Occasional in lowland to montane forest. Indigenous.

Elaeocarpus ulianus Christoph.

Medium-sized tree with alternate, ovate leaves, many-petaled white flowers, and a large ovoid drupe containing a jagged-edged seed. Occasional in lowland to cloud forest. Endemic.

EUPHORBIACEAE

Antidesma sphaerocarpum Muell. Arg.

Shrub or small tree with alternate leaves, tiny inconspicuous flowers in racemes, and a small, spherical, purple berry. Occasional in lowland forest. Indigenous.

Baccaurea raitensis Muell. Arg.

Small tree with alternate, simple, obovate leaves, tiny white, unisexual flowers in racemes, and a brown, globose fruit. Occasional in montane forest. Endemic. Voucher 10350.

Bischofia javanica Bl.

'o'a

Large tree with alternate, trifoliate leaves, tiny greenish flowers in loose panicles, and small, brown spherical fruits. Occasional in lowland to montane forest. Indigenous.

Chamaesyce hirta (L.) Millsp.

vao apulupulu

Small succulent herb with opposite, pubescent leaves, milky sap, tiny green flowers in dense axillary cyathia, and a 3-lobed schizocarp. Common in disturbed places. A modern introduction.

Chamaesyce hypericifolia (L.) Millsp.

Erect herb with glabrous, opposite leaves, milky sap, tiny white flowers in axillary cyathia, and a 3-lobed schizocarp. Occasional on roadsides and other disturbed places. A modern introduction.

Flueggea flexuosa Muell. Arg.

poumuli

Medium-sized to large tree with a straight trunk, alternate leaves, tiny green flowers, and a small, black, globose berry. Uncommon in native forest, where it may be a relict of cultivation, commonly planted in villages. A modern introduction.

Glochidion cuspidatum Pax

masame

Small to medium-sized tree with alternate leaves pubescent below, tiny yellow flowers, and a wheel-like capsule containing red seeds. Occasional in montane forest. Indigenous.

Glochidion ramiflorum Forst.

masame

Small to medium-sized tree with glabrous alternate leaves, tiny yellow flowers, and a wheel-like capsule containing red seeds. Occasional in secondary and lowland to montane forest. Indigenous.

Macaranga harveyana (Muell. Arg.) Muell. Arg.

lau pata

Small to medium-sized tree with alternate, peltate leaves, glaucous petioles and young stems, tiny green flowers, and a soft-spiny capsule. Common in disturbed places and early secondary forest. Indigenous.

Macaranga stipulosa Muell. Arg.

lau fatu; patafatu

Large tree with huge, alternate, peltate leaves, tiny green unisexual flowers, and a small, lobed capsule. Occasional in lowland to montane forest. Endemic.

Omalanthus nutans (Forst. f.) Guillemin

fogamamala; fanua mamala

Small tree with milky sap, alternate, deltoid leaves, small greenish unisexual flowers (male ones in racemes, female ones solitary and long-stalked), and a red bilobed fruit. Occasional in open forest and disturbed places. Indigenous.

Phyllanthus amarus Sch. & Thon.

Erect herb with spirally arranged branches bearing small, alternate, elliptic, round-tipped leaves arranged in one plane, tiny green, axillary flowers on the lower sides of the branchlets, and a tiny globose schizocarp. Common in disturbed places. A modern introduction.

FABACEAE

Abrus precatorius L.

matamoso

Climbing vine with alternate, pinnately compound leaves, short racemes of mauve papilionaceous flowers, and red and black seeds in an oblong pod. Occasional to uncommon in coastal forest. Indigenous.

Adenantha pavonina L.

lopa

Medium-sized tree with pinnately compound leaves, small yellow flowers in spikes, and red seeds in a twisted pod. Occasional in disturbed and lowland forests. A modern introduction.

Caesalpinia major (Medic.) Dandy & Exell

'anaoso; se'u pe'a

Scandent to climbing shrub with thorny stems, alternate, bipinnately compound leaves having distinct, pinnately compound stipules, yellow flowers, and yellow-gray seeds in a spiny pod. Occasional in littoral areas to montane forest. Indigenous.

Canavalia cathartica Thou.

Liana or creeping vine with alternate, trifoliolate, acute-tipped leaves, mauve, papilionaceous flowers, and a flattened-oblong pod. Occasional in coastal to lowland forest. Indigenous.

Canavalia rosea (Sw.) DC.

fue fai va'a

Creeping vine with alternate, trifoliolate, notched or round-tipped leaves, mauve papilionaceous flowers, and a flattened-oblong pod. Occasional on sandy beaches. Indigenous.

Dendrolobium umbellatum (L.) Benth.

laia

Shrub with alternate, trifoliolate leaves, small white papilionaceous flowers, and a small, jointed, several-seeded pod. Common in sunny littoral areas. Indigenous.

Desmodium heterophyllum (Willd.) DC.

Hairy, weak-stemmed herb with alternate, trifoliolate leaves, small mauve, papilionaceous flowers, and a jointed, papery pod. Occasional in plantations and other disturbed places. A modern introduction.

Entada phaseoloides (L.) Merr.

fue inu

Liana with alternate, pinnately compound leaves, small, seemingly apetalous white flowers in dense racemes, and a large woody pod containing large, flat round seeds. Uncommon in lowland forest. Indigenous.

Erythrina variegata L.

gatae

Large thorny tree with alternate, trifoliolate leaves, broadly ovate leaflets, large showy red papilionaceous flowers in racemes, and a linear-oblong pod. Occasional in littoral forest. Indigenous.

Inocarpus fagifer (Parkinson) Fosb.

iff

Large tree with a fluted trunk, large, simple, alternate, oblong leaves, tiny white flowers, and a thick-shelled pod containing a large edible seed. Common to abundant in lowland forest. A Polynesian introduction.

Intsia bijuga (Colebr.) Kuntze

ifflele

Large tree with alternate, pinnately compound leaves; showy red and white flowers, and a large, flattened-oblong, woody pod. Locally common on ridges of lowland forest. Indigenous or a Polynesian introduction.

Mimosa pudica L.

vao fefe

Somewhat woody herb with thorny stems, alternate, bipinnately compound leaves with palmately arranged pinnae, pink flowers in a dense globose head, and a bristly pod. Common in lawns, croplands, and waste places. A modern introduction.

Mucuna gigantea (Willd.) DC.

fue inu

High-climbing woody vine with alternate, trifoliolate leaves, showy, greenish papilionaceous flowers in hanging racemes, and a smooth pod. Occasional to common in littoral to lowland forest. Indigenous.

Pueraria lobata (Willd.) Ohwi

a'a

Hairy vine with large, alternate, lobed, trifoliolate leaves, violet papilionaceous flowers with a blotch of yellow, and a long, hairy pod. Occasional in disturbed places. A Polynesian introduction.

Senna tora (L.) Roxb.

vao pinati

Subshrub with alternate, pinnately compound leaves having obovate leaflets, yellow, 5-parted flowers, and a long, linear pod. Occasional to locally common in disturbed places. A modern introduction.

Strongylodon sp. nova

Liana with glabrous, trifoliolate leaves, showy red papilionaceous flowers, and a flattened, round pod containing a large, round seed. Occasional in montane forest. Indigenous. Voucher 10459.

Vigna marina (Burm.) Merr.

fue sina

Prostrate vine with alternate, trifoliolate leaves, yellow, papilionaceous flowers, and a black, narrow cylindrical pod. Common on the littoral strand. Indigenous.

FLACOURTIACEAE

Erythrospermum acuminatissimum (A. Gray) A. C. Smith

Small tree with alternate, subsessile leaves, racemes of white or pink flowers, and a three-valved capsule. Occasional in montane forest. Indigenous. Voucher 10337.

Flacourtia rukam Zoll. & Mor. ex Mor.

Silimoto

Medium-sized tree with alternate, toothed leaves, red petioles, small, white, apetalous flowers bearing many stamens, and an edible, red, globose fruit. Occasional in lowland to montane forest. Indigenous.

Homalium whitmeeanum St. John

Small to medium-sized tree with alternate, toothed leaves, white, many-petaled flowers in dense, hanging racemes, and a tiny fruit enclosed within the calyx. Uncommon in montane ridge forest. Indigenous. Voucher 10025.

GESNERIACEAE

Cyrtandra compressa C. B. Clarke

Shrub with opposite leaves, large, showy white, salverform flowers in cymes of three, and a fleshy oblong berry. Occasional in montane forest. Endemic. Voucher 10345.

Cyrtandra graeffei C. B. Clarke

Shrub with densely pubescent, opposite, serrate leaves, a showy white salverform corolla, and a fleshy ovoid berry. Occasional in montane forest. Endemic.

Cyrtandra pogonantha A. Gray

Shrub with opposite, elliptic to obovate leaves, clusters of 10–15 white, campanulate flowers concealed within a large cyathiform bract, and a fleshy, red ovoid berry. Common in montane forest. Endemic. Voucher 10344.

Cyrtandra richii A. Gray

Shrub with opposite, elliptic leaves, white, subsessile cymes, a campanulate corolla with exserted stamens, and a fleshy ovoid berry. Common in lowland to cloud forest. Endemic.

HERNANDIACEAE

Hernandia moerenhoutiana Guillemain

pipi

Large, soft-wooded tree with alternate, ovate leaves, small white flowers and a reddish, lantern-like fruit enclosing the single black seed. Occasional in montane forest. Indigenous.

Hernandia nymphaeifolia (Presl) Kub.

pu'a

Large, spreading tree with alternate, glossy, peltate leaves, small white flowers, and a green to white or pink, lantern-like fruit enclosing a single marble-like black seed. Common in littoral forest. Indigenous.

ICACINACEAE

Citronella samoensis (A. Gray) Howard

Small tree with glossy, alternate leaves, small white flowers, and a large, black, oblong fruit. Occasional in lowland to cloud forest. Indigenous. Voucher 10460.

LAURACEAE

Cinnamomum verum J.S. Presl

tigamoni

Medium-sized tree with alternate, fragrant leaves 3-veined from the base, panicles of small greenish flowers with 3 petals, and an ovoid fruit. Occasional in plantations. A modern introduction.

Endiandra elaeocarpa Gill.

Medium-sized tree with alternate leaves, inconspicuous flowers, and a blackish, long-ellipsoid fruit. Occasional in montane forest. A modern introduction.

LOGANIACEAE

Fagraea berteriana A. Gray ex Benth.

pua lulu

Large tree with glossy opposite leaves with a conspicuous hump at the base of the petiole, large, showy, tubular, white to pale orange flowers, and a large orange berry containing many black seeds. Occasional in lowland to montane forest. Indigenous.

Geniostoma rupestre Forst.

taipoipo; lau mafatifati

Small tree with glossy opposite leaves, tiny white flowers, and a small greenish capsule containing red seeds. Common in lowland to montane forest. Indigenous.

MALVACEAE

Hibiscus abelmoschus L.

fau tagaloa

Small hairy shrub with alternate, palmately lobed leaves, large showy yellow, monadelphous

flowers with purple at the base, and a hairy ovoid capsule. Occasional in disturbed places. A Polynesian introduction.

Hibiscus tiliaceus L.

fau

Medium-sized, scrambling tree with alternate, cordate leaves, yellow flowers purple at the base, and a 5-celled capsule. Common in disturbed and secondary forest. Indigenous.

Sida rhombifolia L.

mautofu

Erect subshrub with ovate, alternate leaves, pale orange, monadelphous flowers on a long axillary pedicel, and a beaked, rotate, 9–12-parted schizocarp. Common in disturbed places. A Polynesian introduction.

Thespesia populnea (L.) Sol. ex Corr.

milo

Medium-sized tree with glossy, cordate, alternate leaves, yellow monadelphous flowers purple at the base, and a subglobose, non-splitting fruit. Occasional in littoral forest. Indigenous.

Urena lobata L.

mautofu

Erect subshrub with alternate leaves, pink monadelphous flowers, and a subglobose, bur-like fruit. Occasional in disturbed places. A Polynesian introduction.

MELASTOMACEAE

Astronidium samoense (S. Moore) Markgraf

Small tree with opposite leaves 3–5-veined from the base, calyx usually cleft into 4–7 acute lobes, 5-merous white flowers, and a subglobose capsule. Occasional in montane forest. Endemic. Voucher 10021, 10334.

Clidemia hirta (L.) D. Don

Shrub with opposite, hispid leaves palmately veined from the base, small white flowers in axillary clusters, and a purple, globose drupe. Common to abundant in sunny disturbed places and native forests and scrub. A modern introduction.

Medinilla samoensis (Hochreut.) Christoph.

Climbing vine with opposite, leaves 3–5-veined from near the base, pink flowers, and a subglobose capsule. Occasional in montane forest. Indigenous.

Metastoma benticulatum Labill.

fua loie

Shrub with pubescent, alternate leaves 3-5-veined from the base, white flowers, and a scaly capsule filled with a red, seedy pulp. Common in disturbed places and montane scrub forest. Indigenous.

MELIACEAE

Aglaia samoensis A. Gray

lagalii

Small tree with alternate, pinnately compound leaves, tiny fragrant flowers in long panicles, and an ellipsoid drupe. Occasional in lowland to montane forest. Endemic.

Aglaia sp. nova

Medium-sized tree with alternate, pinnately compound leaves, leaflets 3-5 with undersurface red-brown hairy, and flowers and fruits not known. Occasional in montane forest, known only from the two voucher collections. Endemic. Vouchers 10019, 10482a.

Dysoxylum huntii Merr.

maota mea

Large tree with alternate, pinnately compound leaves with 4-6 pairs of leaflets, white tubular flowers in short panicles, and a subglobose capsule containing 4 red seeds. Common to abundant in montane forest and scrub. Endemic.

Dysoxylum maota Reinecke

maota, tufaso

Large tree with alternate, pinnately compound leaves, more than 6 pairs of leaflets, white tubular flowers with a whorl of bracts below the calyx, and a wrinkled, brown-yellow, sharp-pointed, subglobose capsule containing 4 red seeds. Occasional in lowland forest. Indigenous.

Dysoxylum samoense A. Gray

mamala; maota mamala; tufaso

Large tree with thick, orange, garlic-smelling bark, alternate, pinnately compound leaves with more than 6 pairs of leaflets, white tubular flowers lacking bracts, and a brown, subglobose capsule containing four red seeds. Common in lowland forest. Endemic.

MENISPERMACEAE

Stephania japonica (Thunb.) Miers

Vine with alternate, glossy, peltate leaves, tiny inconspicuous flowers, and a small, red, flattened fruit. Uncommon in disturbed forest and plantations. Indigenous. Voucher 8094.

MONIMIACEAE

Hedyocarya denticulata (A. Gray) Perk. & Giig

Small tree with opposite, dark green leaves, dentate leaf margins, head-like inflorescences of tiny sessile yellow flowers, and a glossy red, globose fruit. Occasional in montane forest. Endemic.

MORACEAE

Artocarpus atilis (Parkinson) Fosb.

niu

Large tree with milky sap, large, alternate, leathery, toothed or lobed leaves, male flowers in a thick cylindrical inflorescence, female flowers in heads, and a fleshy, edible, multiple fruit (breadfruit). Occasional in lowland forest, a remnant of former cultivation. A Polynesian introduction.

Ficus godeffroyi Warb.

mati

Small to medium-sized tree with milky sap, glabrous, alternate leaves having 6–8 lateral veins and a rounded base, and a reddish fig-like fruit. Occasional in lowland to montane forest. Endemic.

Ficus obliqua Forst. f.

aoa

Large banyan tree with milky sap, alternate lanceolate leaves, and an orange, subglobose fruit subtended by caducous bracts. Occasional in lowland to montane forest. Indigenous.

Ficus scabra Forst. f.

mati vao

Small to medium-sized tree with scabrous, alternate, cordate to ovate leaves, milky sap, and fig-like fruits. Occasional in lowland forest. Indigenous.

Ficus tinctoria Forst. f.

mati

Small tree with milky sap, glossy, leathery, oblong leaves, bracts at the base of the peduncle, and a red, subglobose, fig-like fruit. Occasional in lowland to montane forest. Indigenous.

Ficus uniauriculata Warb.

Small to medium-sized tree with milky sap, large, alternate, scabrous leaves having a one-sided auriculate base, and a fuzzy, fig-like fruit. Uncommon in lowland to montane forest. Endemic.

Streblus anthropophagorum (Seem.) Corner

Small tree with milky sap, alternate, glossy leaves, yellow male flowers in hanging catkins, and a shiny red berry on female catkins. Occasional in montane and montane scrub forest. Indigenous. Voucher 10336.

MYRISTICACEAE

Myristica fatua Houtt.

'atone

Medium-sized tree with alternate, narrowly elliptic leaves somewhat gold-colored on the lower surface, tiny yellow flowers, and a tan, ellipsoid fruit containing a large seed surrounded by a red aril. Common in lowland forest. Indigenous.

Myristica hypargyrea A. Gray

'atone

Medium-sized tree with large, oblong, alternate leaves gray-green on the lower surface, tiny yellow flowers, and a large, reddish-brown, subglobose fruit with a large seed surrounded by a yellow aril. Common in montane forest, occasional in lowland forest. Indigenous.

MYRSINACEAE

Maesa tabacifolia Mez

Shrub with stems dotted with white lenticels, alternate leaves, tiny white flowers in racemes or panicles, and a small, flesh-colored fruit. Occasional in lowland to cloud forest. Indigenous.

Rapanea myricifolia (A. Gray) Mez?

Small tree with alternate, leathery leaves, tiny white cauliflorous flowers, and a small, purplish, subglobose fruit. Uncommon in montane forest. Indigenous.

MYRTACEAE

Metrosideros collina A. Gray

Medium-sized to large tree with opposite leaves, clusters of flowers with showy red, exerted stamens, and a woody capsule containing numerous tiny seeds. Occasional in montane scrub forest. Indigenous.

Psidium guajava L.

ku'ava

Small tree with flaky bark, opposite leaves, white flowers bearing many stamens, and an edible, yellow, pink-fleshed, many-seeded fruit. Occasional in disturbed places. A modern introduction.

Syzygium brevifolium (A. Gray) C. Muell.

Medium-sized tree with subsessile, opposite leaves, several terminal flowers with numerous white stamens, and a purple, subglobose, drupelike fruit. Occasional in montane scrub to cloud forest. Endemic. Voucher 10037.

Syzygium clusiifolium (A. Gray) C. Muell.

asi vai

Medium-sized tree with finely veined, opposite leaves, widely branching, cauliflorous inflorescences of white flowers bearing numerous stamens, and a purple, ellipsoid, drupelike fruit. Occasional in lowland forests. Indigenous. Voucher 10020a.

Syzygium curvistylum (Gillespie) Merr. & Perry

Medium-sized tree with opposite, attenuate-tipped leaves, small white flowers in short inflorescences, and a purple, subglobose, drupelike fruit. Uncommon in lowland to montane forest. Indigenous. Voucher 10481.

Syzygium dealatum (Burkill) A. C. Smith

asi vai

Medium-sized tree with quadrangular stems, opposite leaves, terminal inflorescences of white flowers bearing many stamens, and a purple, ovoid to ellipsoid, drupelike fruit. Occasional in coastal forest. Indigenous. Voucher 10456.

Syzygium inophylloides (A. Gray) C. Muell.

asi toa

Large tree with finely veined, opposite leaves with a twisted attenuate tip, panicles of white flowers bearing numerous stamens, and a yellow, obovoid to ellipsoid, drupelike fruit. Common in lowland to montane forest. Indigenous.

Syzygium neurocalyx (A. Gray) Christoph.

oli; fena

Small tree with long, sessile, opposite leaves, large terminal sessile flowers, and a large, edible, subglobose, drupelike fruit. Uncommon in montane forest. A Polynesian introduction or perhaps indigenous. Voucher 10351.

Syzygium samarangense (Bl.) Merr. & Perry

nonu vao

Small to medium-sized tree with opposite, subsessile leaves, showy white flowers with numerous stamens, and large, red, ovoid to obovoid, drupelike fruits. Common in lowland to montane forest. Probably recently introduced and naturalized.

Syzygium samoense (Burkill) Whistler

fena vao

Medium-sized tree with opposite leaves, inflorescences with small bracts, white flowers bearing numerous stamens, and a red, ovoid to urceolate, drupelike fruit. Occasional in montane forest. Endemic. Voucher 10480.

Syzygium savaiiense (A. Gray) C. Muell.

Small to medium-sized tree with opposite leaves, flattened inflorescence branches, white flowers bearing numerous stamens, and a purple, ovoid to ellipsoid, drupelike fruit. Occasional in montane forest. Endemic.

NYCTAGINACEAE

Pisonia umbellifera (Forst.) Seem.

Small tree with leaves somewhat whorled, pink or white flowers, and a sticky, long-cylindrical fruit. Uncommon in lowland to montane forest. Indigenous.

OLACACEAE

Anacolosia insularis Christoph.

Small tree with alternate leaves having domatia, tiny white, axillary subsessile flowers, and a yellow ellipsoid drupe. Uncommon in lowland forest. Endemic. Voucher 8102.

OLEACEAE

Jasminum betchei F. Muell.

Climbing vine with opposite leaves, showy white, salverform flowers containing two stamens, and black, paired, ellipsoid drupes. Occasional in lowland forest. Indigenous.

Jasminum didymum Forst. f.

Climbing vine with opposite, trifoliate leaves, white flowers with two stamens, and black, paired, subglobose drupes. Occasional in lowland forest. Indigenous.

OXALIDACEAE

Oxalis corniculata L.

Low, often prostrate herb with alternate, long-petioled, trifoliate leaves having obcordate leaflets,

yellow, 5-merous flowers, and a capsule that bursts open to expel the seeds. Occasional in lawns, pastures, and other sunny, disturbed places. A Polynesian introduction.

PASSIFLORACEAE

Passiflora foetida L.

pasio vao

Hairy, herbaceous vine with tendrils, alternate, palmately 3-lobed leaves, showy white flowers, and a small, globose, edible berry surrounded by branching calyx lobes. Occasional in disturbed places. A modern introduction.

Passiflora laurifolia L.

pasio

Climbing vine with tendrils, alternate, lanceolate to elliptic leaves, showy white and purple flowers, and an orange, ovoid berry. Occasional to locally common in disturbed forests. A modern introduction.

PIPERACEAE

Macropiper timothianum A. C. Smith

'ava'ava aitu

Shrub with alternate, cordate leaves, fascicles of male spikes, and fascicles of female spikes that produce numerous, tiny red fruits. Common in montane to cloud forest. Indigenous.

Peperomia tutuilana Yuncker

Small erect herb with alternate leaves, solitary spikes in the upper leaf axils, and tiny green flowers and fruits. Occasional on rocks or trees in the coastal to lowland forest. Indigenous. Voucher 10462.

Peperomia reineckei C. DC.

Epiphytic herb with alternate leaves less than 2.7x longer than wide, paired axillary spikes, and tiny green flowers and fruits. Occasional in montane to cloud forest. Endemic.

Piper graeffei Warb.

fue manogi

Climbing vine with alternate leaves, veins palmately branching from the base, long, hanging, unisexual spikes of tiny green flowers, and tiny red fruits. Common to abundant in lowland to montane forest. Indigenous. Voucher 8098.

Piper rechingerii C. DC.

Climbing vine with alternate leaves, veins palmately branching above the base, hanging

unisexual spikes of tiny green flowers, and tiny red fruits. Occasional in montane forest.
Endemic.

POLYGALACEAE

Polygala paniculata L.

pulunamulole

Small herb with fragrant roots, alternate leaves, and tiny white flowers in terminal and axillary racemes. Occasional in disturbed places. A modern introduction.

RHAMNACEAE

Alphitonia zizyphoides (Spreng.) A. Gray

toi

Large tree with alternate, lanceolate leaves gray beneath, clusters of small white flowers, and a purple, globose berry. Common in secondary forest, occasional in lowland to montane forest.
Indigenous.

Colubrina asiatica (L.) Brongn.

fisoa

Spreading shrub with glossy, alternate leaves, small white flowers, and a green globose capsule. Occasional in sunny littoral areas. Indigenous.

RHIZOPHORACEAE

Crossostylis biflora Forst.

saitamu

Medium-sized tree with stilt roots, opposite leaves, greenish flowers bearing many stamens, and a rotate, many-parted, capsulelike fruit. Occasional in montane forest. Indigenous.

RUBIACEAE

Aidia cochinchinensis Lour.

olamea

Shrub or small tree with opposite leaves, white flowers in dense clusters, and a small red fruit. Occasional in lowland forest. Indigenous. Voucher 10547.

Antirhea inconspicua (Seem.) Christoph.

Small tree with opposite leaves, small orange flowers, and a small red succulent fruit. Occasional in lowland forest. Indigenous.

Calycosia sessilis A. Gray

Unbranched shrub with terminal, whorled leaves, white flowers in a dense, flattened, sessile, terminal head, and a small, red, succulent fruit. Occasional in montane forest. Endemic.

Canthium merrillii (Setchell) Christoph. olasina

Medium-sized tree with opposite leaves, white flowers in axillary clusters, and a bluish, laterally compressed, subglobose fruit. Occasional in lowland to montane forest. Indigenous.

Geophila repens (L.) I. M. Johnston togo vao

Prostrate herb with opposite, kidney-shaped leaves, small white flowers, and a red globose fruit. Uncommon in lowland forest. Indigenous.

Guettarda speciosa L. puapua

Medium-sized tree with opposite obovate leaves, showy white, long-tubed, fragrant flowers, and a brown, globose fruit. Occasional in littoral and lowland forest. Indigenous.

Gynochtodes epiphytica (Rechinger) A. C. Smith & S. Darwin

Liana with opposite leaves, small white, axillary flowers, and a greenish, subglobose drupe. Occasional in lowland forest. Indigenous. Voucher 10325.

Ixora amplifolia A. Gray filofloa

Shrub with opposite leaves, terminal clusters of white to pink, salverform flowers, and a small, red, globose fruit. Occasional in lowland forest. Endemic. Voucher 10466.

Morinda citrifolia L. nonu

Shrub or small tree with large dark green glossy leaves, small white flowers, and a large yellowish, irregularly shaped, fleshy, multiple fruit. Common in littoral and lowland forest. Probably a Polynesian introduction.

Morinda tripetala Christoph.

Woody climbing vine with opposite, obovate, acuminate-tipped leaves, inconspicuous domatia, small, orangish, 3-merous flowers, and a subglobose, multiple fruit. Occasional in montane scrub forest. Endemic. Voucher 10338.

Neonauclea forsteri (Seem. ex Havil.) Merr.

a'fa

Large tree with opposite leaves, conspicuous oval stipules on the terminal bud, and white flowers in a terminal head. Occasional in lowland to montane forest. Indigenous.

Psychotria insularum A. Gray

matalafi

Small tree with opposite leaves, small, white, salverform flowers, and a glossy, globose, red fruit. Common in lowland to montane forest. Indigenous.

Sarcopygme pacifica (Reinecke) Setchell & Christoph.

u'unu

Medium-sized, scarcely branched tree with large, opposite leaves, showy white flowers in a large, stalked head, and a large, pendulous, multiple fruit. Occasional in lowland to montane forest. Endemic.

Timonius affinis A. Gray

Shrub or tree, often as an epiphyte, with opposite leaves, small, yellow, salverform flowers, and a bluish globose fruit. Uncommon in montane. Indigenous.

RUTACEAE

Euodia hortensis Forst.

usi

Shrub with opposite, simple or trifoliate, aromatic leaves, small white flowers in panicles, and a green, 4-lobed capsule splitting to release the 4 shiny black seeds. Uncommon in disturbed places, mostly as a relict of cultivation. A Polynesian introduction.

Euodia samoensis Christoph.

so'opine

Small tree with opposite, trifoliate leaves, small white flowers, and a 4-lobed fruit splitting to release 4 shiny black seeds. Occasional in lowland to montane forest. Endemic.

SAPINDACEAE

Allophylus timoriensis (DC.) Bl.

Small tree with alternate, trifoliate leaves, small white flowers in racemes, and a red, globose fruit. Uncommon in littoral to montane forest. Indigenous. Voucher 10355, 10467.

Arytera brackenridgei (A. Gray) Radlk.

taputo'i

Medium-sized tree with alternate, pinnately compound leaves, lanceolate leaflets, tiny white

flowers, and a 2-lobed capsule. Occasional to common in lowland forest. Indigenous. Voucher 10475.

Elatostachys falcata (A. Gray) Radlk. taputo'i

Large tree with alternate, pinnately compound leaves, inconspicuous flowers with red stamens, and a 3-lobed capsule. Occasional in lowland to montane. Indigenous.

Pometia pinnata Forst. tava

Large, buttressed tree with alternate, pinnately compound leaves, dense panicles of apetalous flowers, and a large, edible, subglobose fruit. Occasional to locally dominant in lowland forest. Indigenous.

SAPOTACEAE

Palaquium stehlinii Christoph. gasu

Large tree with milky sap, ovate alternate leaves, small flowers with at least twice as many stamens as petals, and a large, single-seeded, ellipsoid fruit. Common to abundant in lowland to montane forest. Endemic.

Planchonella garberi Christoph. 'ala'a

Large tree with alternate, lanceolate leaves, small white, axillary flowers, and a subglobose, red to black fruit containing one or more shiny black seeds. Occasional in lowland forest. Indigenous.

Planchonella grayana St. John

Large tree with milky sap, alternate, elliptic leaves, small axillary flowers, and a flesh-colored, globose fruit containing several shiny black seeds. Uncommon in lowland forest. Indigenous, but a recent arrival to Samoa. Voucher 8095.

Planchonella samoensis H. J. Lam ex Christoph. mamalava

Large tree with milky sap, large, alternate, distinctly veined leaves, small white, axillary flowers, and an ellipsoid, red to yellow fruit containing a single shiny black, flattened, spindle-shaped seed. Common to abundant in lowland to montane forest. Indigenous.

SOLANACEAE

Capsicum frutescens L.

polo feu

Subshrub with alternate leaves, cream-colored, rotate flowers reflexed at anthesis, and a bright red, cylindrical berry. Occasional in disturbed places. A modern introduction.

Physalis angulata L.

vivao

Erect herb with alternate leaves, pale yellow, rotate flowers, and a bladder-like calyx enclosing a small edible berry. Common in disturbed places. Apparently a Polynesian introduction.

STERCULIACEAE

Commersonia bartramia (L.) Merr.

Small tree with alternate, pubescent leaves, clusters of tiny white flowers, and a spiny fruit. Uncommon in open sunny places. Indigenous. Voucher 10343.

Kleinhovia hospita L.

fu'afu'a

Medium-sized tree with alternate, cordate leaves, pink flowers, and an inflated capsule. Common in disturbed places and secondary forest. Indigenous.

Melochia aristata A. Gray

ma'o

Shrub with alternate cordate leaves, pink flowers, and a small capsule pointed at the top. Occasional in disturbed places and secondary forest. Indigenous.

Sterculia fanaiho Setchell

fana'io

Medium-sized tree with alternate leaves having the blade angled to the petiole, small reddish flowers, and a large reddish-brown capsule containing a few large seeds. Occasional in lowland forest. Indigenous.

THYMELAEACEAE

Phaleria glabra (Turrill) Domke

sunī vao

Shrub with opposite leaves, long tubular white flowers, and a red subglobose fruit. Occasional in lowland forest. Indigenous.

Wikstroemia foetida (L. f.) A. Gray

fau mu

Shrub with opposite leaves, small yellow flowers in few-flowered clusters, and a glossy orange, subglobose fruit. Occasional in disturbed places. Indigenous.

TILIACEAE

Trichospermum richii (A. Gray) Seem.

ma'osina

Medium-sized tree with alternate leaves having a pair of basal glands, stellate pubescence, white flowers with many stamens, and a flattened and winged, obovate capsule. Occasional in montane forest. Indigenous.

ULMACEAE

Gironniera celtidifolia Gaud.

Medium-sized tree with coarse, alternate leaves, greenish unisexual flowers, and small drupes in dense clusters. Occasional in montane forest. Indigenous.

Trema cannabina Lour.

magele

Small tree with alternate, lanceolate leaves cordate at the base, tiny greenish white flowers, and ovoid drupes borne in dense clusters. Occasional in disturbed forest. Indigenous.

URTICACEAE

Cypholophus macrocephalus Wedd.

faupata

Unbranched shrub with ovate, opposite, rugose leaves, tiny greenish flowers in dense, sessile axillary clusters, and a tiny orange drupe. Occasional in montane forest. Indigenous.

Leucosyke corymbulosa (Wedd.) Wedd.

'ala'alatoa

Small tree with alternate, palmately veined leaves gray below, tiny greenish flowers, and a white fleshy multiple fruit. Uncommon in lowland and montane scrub forest. Indigenous. Voucher 8105.

Pipturus argenteus (Forst. f.) Wedd.

soga; fau soga

Small tree with alternate, grayish leaves, tiny flowers in branching inflorescences, and a white, fleshy multiple fruit. Common in disturbed places and early secondary forest. Indigenous.

Procris pedunculata (Forst.) Wedd.

rūa lolo

Terrestrial or epiphytic herb with opposite leaves, tiny white male flowers, dense clusters of sessile, axillary female flowers, and a red, strawberry-like aggregate fruit. Occasional in littoral to montane forest. Indigenous.

VERBENACEAE

Clerodendrum inerme (L.) Gaertn.

aloalo tai

Scandent shrub with opposite leaves, showy white flowers having exserted stamens, and an obovoid fruit splitting into four nutlets. Common on littoral strand. Indigenous.

Faradaya amicornum Seem.

mamalupe

Liana with opposite leaves, showy, white, salverform flowers having exserted stamens, and a large red, curved-ellipsoid fruit. Common in lowland to montane forest. Indigenous.

Lantana camara L.

latana.

Thorny shrub with opposite, rugose, toothed leaves, heads of multicolored flowers, and a small, shiny black, globose fruit. Occasional in disturbed places and sometimes in openings in native forests. A modern introduction.

Premna serratifolia L.

aloalo

Shrub or small tree with broad, opposite leaves marked with leaf miners, tiny greenish flowers in dense, flat-topped corymbs, and a small black, globose fruit having a persistent calyx. Occasional in littoral to montane forest. Indigenous.

MONOCOTYLEDONAE

AGAVACEAE

Cordyline fruticosa (L.) Chev.

ti; lau ti

Shrub with parallel-veined leaves, pink flowers in branching panicles, and bright red berries. Common in lowland to montane forest. A Polynesian introduction or possibly indigenous.

ARACEAE

Alocasia macrorrhiza (Schott) G. Don

ta'amu

Large herb with large, basal, ascending arrowhead-shaped leaves, flowers arranged in a spadix

surrounded by a spathe, and small red fruits. Uncommon in wet places, a remnant of former cultivation. A Polynesian introduction. Voucher 8350.

Epipremnum pinnatum (L.) Engl.

fue laufao

High-climbing vine with alternate, fenestrate leaves and unisexual flowers in a spadix surrounded by a spathe. Common in lowland to montane forest. Indigenous.

Rhapidophora graeffei Engl.

fue laufao; tuafaga; pau tutuga

High-climbing vine with alternate, entire leaves and unisexual flowers in a spadix surrounded by a spathe. Common in lowland to cloud forest. Endemic.

ARECACEAE

Balaka taitensis (Wendl.) Becc.

maniuniu

Small palm tree with pinnately compound leaves, tepals less than 7 mm long or wide, and an ellipsoid fruit 4–6-angled when dry. Occasional in lowland to montane forest. Endemic.

Clinostigma onchorhynchum Becc.

niu vao

Large palm with pinnately divided fronds, widely branching panicles of white flowers, and an oblong, shiny black fruit. Occasional in montane forest. Endemic. Voucher 10036.

Cocos nucifera L.

niu

Large palm with pinnately divided fronds, thick panicles of unisexual flowers, and a large fruit with a thick fibrous husk. Common in coastal areas, mostly cultivated. Indigenous.

CYPERACEAE

Fimbristylis dichotoma (L.) Vahl

Clump-forming, thin-stemmed sedge with brown ellipsoid spikelets in panicles. Occasional in disturbed places. A modern introduction.

Mapania macrocephala (Gaud.) K. Schum.

Large sedge with a green spikelets arranged in a large, terminal, lobed-globose, headlike inflorescence. Occasional in montane forest. Indigenous. Voucher 10346.

Mariscus sumatrensis (Retz.) Raynal

Medium-sized sedge with green spikelets in several cylindrical spikes borne on spreading rays and subtended by several, long, leaf-like bracts. Occasional in disturbed places. Indigenous or perhaps a Polynesian introduction.

Scleria polycarpa Boeck.

selesele

Coarse sedge with triangular stems and branching inflorescences bearing tiny, hard, white globose fruits. Occasional in lowland to montane forest. Indigenous.

DIOSCOREACEAE

Dioscorea bulbifera L.

soi

Vine with edible, aerial bulbils, alternate, cordate leaves, tiny flowers in hanging racemes, and a winged capsule. Common in disturbed places and secondary forest. A Polynesian introduction.

Dioscorea pentaphylla L.

pilita

Vine with alternate, palmately divided leaves, tiny flowers in hanging racemes, and a capsule fruit. Uncommon in disturbed places and secondary forest. A Polynesian introduction.

FLAGELLARIACEAE

Flagellaria gigantea Hook. f.

lafo

High-climbing cane with large, grass-like leaves modified at the tips into tendrils, tiny white flowers in a branching inflorescence, and a subglobose fruit. Occasional to common in lowland to montane forest. Indigenous. Voucher 10383

HELICONIACEAE

Heliconia laufao Kress

laufao

Banana-like plant with large leaves, orange flowers issuing from a large, thick, orange bract, and orange, fleshy fruits. Occasional in lowland to montane forest. Endemic.

JOINVILLEACEAE

Joinvillea adscendens Gaud. ex Brongn. & Gris.

Reed-like plant with large, alternate, plicate leaves, tiny white flowers in panicles, and a small, red, globose fruit. Uncommon in montane forest. Indigenous.

MUSACEAE

Musa x paradisiaca L. ssp. *seminifera* (Lour.) K. Schum. taemanu

Tall herb with fleshy stems, large oblong leaves, and a banana fruit filled with seeds. Occasional in disturbed montane forest. Indigenous or a Polynesian introduction.

ORCHIDACEAE

Bulbophyllum ebulbe Schltr.

Small creeping epiphytic orchid with swollen leaf bases and a raceme of small cream-colored flowers. Occasional to locally common in lowland to montane forest. Indigenous.

Bulbophyllum longiscapum Rolfe

Epiphytic orchid with acute-tipped leaves, swollen leaf bases, and a long scape bearing white flowers spotted with red. Occasional in coastal to montane forest. Indigenous.

Bulbophyllum membranaceum Teijsm. & Binnend.

Small, creeping epiphytic orchid with ovate leaves, swollen leaf bases, and small solitary or paired, reddish flowers. Occasional to locally common from mangrove to montane forest. Indigenous.

Bulbophyllum samoanum Schltr.

Small epiphytic orchid with linear-lanceolate leaves, swollen leaf bases, and solitary, long-stalked, yellowish flowers tinged red. Occasional in montane forest. Indigenous.

Coelogyne lycastoides F. Muell. & Kraenzl.

Large epiphytic orchid with large plicate leaves and a panicle of several large, cream-colored flowers marked with brown. Common in montane forest. Indigenous.

Dendrobium biflorum (Forst. f.) Sw.

Epiphytic orchid with stiff stems bearing grass-like leaves and short axillary branches bearing a pair of white flowers with long attenuate tepals. Common to abundant in lowland to montane forest. Indigenous.

Dendrobium calcaratum A. Rich.

Epiphytic orchid with long, thick stems, ovate, mostly terminal leaves, and short branches bearing a dense cluster of orange colored flowers. Uncommon in lowland forest. Indigenous.

Dendrobium dactyloides Rchb. f.

Epiphytic orchid with lanceolate leaves and short axillary branches bearing a pair of pale yellow flowers. Common to abundant in lowland to montane forest. Indigenous.

Dendrobium goldfinchii F. Muell.

Erect epiphytic orchid with stem and leaves laterally compressed and tiny white flowers in a terminal raceme. Occasional in coastal to lowland forest. Indigenous.

Dendrobium sladei J. J. Wood and Cribb

Epiphytic orchid with ovate leaves, flowering branches arising above the leaf sheath, and flowers yellowish with purple lateral lobes on the lip. Occasional in montane forest. Indigenous. Voucher 10014.

Didymoplexis micradenia (Rchb. f.) Hemsley

Leafless, purplish stemmed, saprophytic ground orchid with one or a few terminal, whitish flowers. Occasional in lowland to foothill forest. Indigenous. Voucher 8104.

Eria robusta (Bl.) Lindl.

Epiphytic orchid with long, fleshy, imbricate leaves and a dense raceme of white flowers borne perpendicular to the rachis. Uncommon in lowland to montane. Indigenous.

Eria rostriflora Rchb. f.

Small epiphytic orchid with a thick stem and small white flowers in several terminal racemes. Occasional in montane to cloud forest. Indigenous.

Flickingeria comata (Bl.) A.D. Hawkes

Epiphytic orchid with large, thick, oval leaves, and white to cream-colored flowers mottled red and bearing a yellow "beard". Occasional in lowland to montane forest. Indigenous.

Glomera montana Rchb. f.

Long-stemmed epiphytic orchid with linear-lanceolate leaves and a dense cluster of white flowers pink inside. Common to abundant in montane forest. Indigenous.

Malaxis resupinata (Forst. f.) Kuntze

Medium-sized ground orchid with ovate, plicate leaves and a terminal raceme of dark maroon flowers. Occasional in lowland to montane forest. Indigenous. Voucher 10018.

Malaxis samoënsis (Schltr.) Whistler

Small ground orchid with subfalcate leaves and small pale yellow flowers in a few-flowered raceme. Occasional in lowland to cloud forest. Indigenous.

Mediocalcar paradoxum (Kraenzl.) Schltr.

Creeping epiphytic orchid with solitary yellow-orange flowers. Occasional in lowland to montane forest. Indigenous.

Oberonia heliophila Rchb. f.

Small to medium-sized, laterally compressed, epiphytic orchid with equitant leaves and tiny white flowers in a long, narrow, drooping, terminal raceme. Occasional in lowland forest. Indigenous.

Phaius terrestris (L.) Ormerod

Large ground orchid with plicate leaves and a raceme of large, showy white flowers with a yellow labellum. Occasional in lowland to montane forest. Indigenous. Vouchers 10033, 10332.

Phreatia micrantha (A. Rich.) Schltr.

Medium-sized, laterally compressed epiphytic orchid with equitant leaves and several basal racemes of tiny white flowers. Common in lowland to montane forest. Indigenous.

Phreatia myosurus (Forst. f.) Ames

Small laterally compressed orchid with linear, equitant leaves and several basal racemes bearing tiny white flowers. Common in lowland to montane forest. Indigenous.

Phreatia paleata Rchb. f.

Medium-sized laterally compressed epiphytic orchid with small flowers on a long basal raceme. Uncommon in montane forest. Indigenous. Voucher 10476.

Spathoglottis plicata Bl.

Large ground orchid with plicate leaves and a terminal raceme of showy pink flowers. Occasional in disturbed sunny places and openings in lowland to montane forest. Indigenous.

Taeniophyllum fasciola (Forst.) Rchb. f.

Tiny leafless and stemless epiphytic orchid consisting of flattened photosynthetic roots and short racemes of tiny white flowers. Occasional in lowland forest. Indigenous.

PANDANACEAE

Freycinetia reineckei Warb.

'ie'ie

Coarse climber with pandanus-like leaves 2.5–5 cm wide, unisexual inflorescences, ovaries with 2 stigmas, and large oblong compound fruits with numerous linear fruitlets. Occasional to common in lowland to montane forest. Endemic.

Freycinetia storckii Seem.

'ie'ie

Coarse climber with pandanus-like leaves 1.8–2.8 cm wide, unisexual inflorescences, ovaries with 4–6 stigmas, and a large cylindrical compound fruit. Common to abundant in lowland to montane forest. Indigenous.

Pandanus tectorius Parkinson

fasa

Dioecious tree-like monocot with strap-shaped leaves, spinulose leaf margins, and compound fruits with keys variable in size and shape. Occasional in montane forest and montane scrub. Indigenous.

POACEAE

Axonopus compressus (Sw.) Beauv.

Mostly prostrate, mat-forming grass with narrow inflorescences bearing 3 spikes (a terminal pair and a lower one). Common in disturbed places and plantations. A modern introduction.

Brachiaria mutica (Forssk.) Stapf

Large erect grass with soft-hairy leaves, a branching inflorescence, and awnless spikelets with conspicuous black stigmas. Common to locally abundant in disturbed areas, particularly in wet places. A modern introduction.

Centosteca lappacea (L.) Desv.

sefa

Erect grass with broad leaves and tiny awnless spikelets in a spreading panicle. Occasional in sunny places in lowland to montane forest. Indigenous or a Polynesian introduction.

Cynodon dactylon (L.) Pers.

Prostrate, mat-forming grass with erect inflorescences usually bearing 4 digitately arranged, narrow, spreading, spicate branches. Common in lawns and sunny, disturbed places. A modern introduction.

Cyrtococcium oxyphyllum Stapf

Medium-sized grass with linear-lanceolate leaves and small awnless spikelets in a narrow panicle. Uncommon in shady lowland to montane forest areas and disturbed places. Indigenous or a Polynesian introduction. Voucher 10329.

Dactyloctenium aegyptium (L.) Willd.

Low festucoid grass with a short inflorescence stalk bearing 1-5 thick, digitately arranged branches of purplish, bristly spikelets. Occasional in disturbed places. A modern introduction.

Echinochloa colona (L.) Link.

Erect grass with awnless spikelets closely packed on several short panicle branches. Common in sunny, disturbed places. A modern introduction.

Eleusine indica (L.) Gaertn.

ta'ata'a

Medium-sized grass with shortly awned spikelets in thick panicle branches (usually 2 or 3 of

them terminal with one lower). Common in sunny disturbed places, especially along dirt roads. A Polynesian introduction.

Miscanthus floridulus (Labill.) Warb.

u

Tall grass with a large plumose inflorescence with falling spikelets bearing silky hairs. Common in sunny places in the lowlands and on fernlands. Indigenous.

Oplismenus compositus (L.) Beauv.

Medium-sized grass with awned spikelets on several branches from the rachis. Locally common in disturbed shady places. Probably a Polynesian introduction.

Paspalum conjugatum Bergius

vao lima

Creeping grass with flat, round, awnless spikelets on a pair of spreading, terminal inflorescence branches. Common to abundant in sunny disturbed places and openings in lowland to montane forest. A modern introduction.

Paspalum paniculatum L.

Erect grass with numerous, long panicle branches bearing small, round, flattened spikelets. Common to abundant in sunny disturbed places and forest clearings. A modern introduction.

Schizostachyum glaucifolium (Rupr.) Munro

'ofe

Tall bamboo with green stems and branching panicles of spikelets, but infrequently flowering. Uncommon forming clumps in secondary forest in the mountains, probably as a remnant of former cultivation. A Polynesian introduction. Voucher 10342.

Setaria glauca (L.) Beauv.

Small grass with a dense, yellow, cylindrical inflorescence bearing spikelets subtended by basal bristles. Occasional in disturbed places. A modern introduction.

ZINGIBERACEAE

Zingiber zerumbet (L.) Smith

'avapui

Medium-sized ginger with linear-lanceolate leaves and leafless flowering stalks bearing a terminal, cylindrical to ovoid inflorescence bearing red bracts and fragrant white flowers. Occasional in secondary forest and plantations. A Polynesian introduction. Voucher 10468.

PTERIDOPHYTA

ANGIOPTERIDACEAE

Angiopteris evecta (Forst. f.) Hoffman

gase

Very large terrestrial fern with a globose stem, large, radiating, bipinnate fronds, margins subentire, and sori 7–12 in a cluster free from each other. Common in lowland to montane forest. Indigenous.

ASPIDIACEAE

Arachniodes aristata (Forst. f.) Tindale

Medium-sized terrestrial fern with a creeping rhizome, deltoid, tripinnate fronds, segments with aristate margins, and indusiate sori. Occasional to locally common in lowland forest. Indigenous. Voucher 8092.

Pleocnemia cumingiana Presl

Large terrestrial fern with an erect rhizome, bipinnate to tripinnatifid fronds, pinnules lobed nearly to costa, and sori with or without a reniform indusium. Occasional in lowland to montane forest and clearings. Indigenous.

Pleocnemia irregularis (Presl) Holttum

Large terrestrial fern with an erect rhizome, bipinnatifid to tripinnatifid frond, and exindusiate sori scattered on lower surface. Occasional in montane forest. Indigenous? Vouchers 10028, 10348.

Tectaria crenata Cav.

Large terrestrial fern with pinnate lamina pinnatifid at tip, ribs, undersurface of costa finely pubescent, and sori in two regular rows between the veins. Common in shady, lowland to montane forest. Indigenous.

Tectaria decurrens (Presl) Copeland

Large terrestrial fern with an erect rhizome, deeply pinnatifid fronds, 2–4 pairs of pinnae plus a larger terminal one, and numerous sori in 2 rows between main lateral veins. Common in shady lowland to montane forest. Indigenous. Voucher 10349.

Tectaria dissecta (Forst. f.) Lellinger

Medium-sized terrestrial fern with an erect rhizome erect, tufted, predominately bipinnatifid, ovate fronds, and terminal sori. Common in dry lowland forest to montane forest. Indigenous. Voucher 8097.

Tectaria serchellii Maxon

Medium-sized terrestrial fern with a short-creeping rhizome, bipinnate fronds, 2--5 pairs of pinnae, and relatively large, irregularly scattered, exindusiate sori. Occasional in lowland forest. Endemic.

ASPLENIACEAE

Asplenium australasicum Hooker

laugapapa

Large epiphytic or sometimes terrestrial fern with large simple fronds in a rosette, midrib sharply keeled on lower surface, and sori arranged along veins from the midrib to the margin. Occasional in lowland to montane forest. Indigenous.

Asplenium feejeense Brackenridge

Medium-sized terrestrial fern with lanceolate, simple or pinnate fronds with the apex usually proliferous, and indusiate sori unequal in length. Occasional in lowland to montane forest. Endemic.

Asplenium laserpitiifolium Lam.

Medium-sized to large epiphytic fern with tufted, deltoid, dark green, tripinnate to quadripinnate fronds and indusiate sori 1--2 per lobe. Occasional in lowland to montane forest. Indigenous.

Asplenium multifidum Brackenridge

Medium-sized terrestrial fern with tripinnate to 5-pinnate fronds with the ultimate segments linear, and linear sori almost covering the width of the ultimate segments. Occasional in montane forest. Indigenous.

Asplenium nidus L.

laugapapa

Large epiphytic or terrestrial fern with large simple fronds in a rosette, midrib rounded on lower surface, and sori in parallel rows from the near the midrib to halfway to the margin. Common in lowland to montane forest. Indigenous.

Asplenium polyodon Forst. f.

Medium-sized epiphytic or sometimes terrestrial fern with pinnate fronds, up to 15 pairs of pinnae and a dissimilar terminal one, and long, linear sori covering most of the vein. Common in lowland to montane forest. Indigenous. Voucher 10041?

ATHYRIACEAE

Diplazium bulbiferum Brackenridge

Medium-sized terrestrial fern pinnate fronds with a pinnatifid apex, sometimes proliferous in upper part, lanceolate pinnae up to 13 cm long, free veins, and linear, diplazioid, indusiate sori. Common in forest clearings. Indigenous. Voucher 8093.

Diplazium dilatatum Bl.

Large terrestrial fern with broadly deltoid fronds, shallowly lobed, lanceolate pinnules up to 12 cm long, free veins, and linear sori. Common in lowland to montane forest. Indigenous.

Diplazium proliferum (Lam.) Thouars

Large terrestrial fern with pinnate fronds, up to 15 pairs of pinnae lobed to almost pinnate at base, proliferous, veins united in pairs, and linear sori. Occasional in lowland to montane forest. Indigenous. Voucher 10463.

BLECHNACEAE

Blechnum orientale L.

Large terrestrial fern with pinnate fronds, numerous pinnae up to 25 cm long with several pairs abruptly reduced or obsolete, and linear sori borne along the midrib. Occasional to common in montane forest and scrub forest. Indigenous.

CULCITACEAE

Culcita straminea (Labill.) Maxon

Large terrestrial fern with tripinnate to quadripinnate, deltoid fronds up to 3 m or more in height and terminal sori borne between the lobes of the ultimate segments, surrounded by an indusium of two valves. Common in montane scrub forest. Indigenous. Vouchers 10035, 10340.

CYATHEACEAE

Cyathea affinis (Forst. f.) Sw. olioli

Tree fern with stipe and rachis covered with a velvety layer of minute red-brown scales, tripinnate fronds with a stipule gland present at the base of the pinnae and pinnules, and sori with an indusium open on one side. Common in the montane forest. Indigenous.

Cyathea alta Copeland olioli

Medium-sized tree fern with a stipe warty and scaly at the base, rachis covered with a reddish brown tomentum, sub-tripinnate fronds, entire to subentire segments, and sori with an indusium reduced to a brown scale. Occasional in the montane forest. Indigenous.

Cyathea decurrens (Hook.) Copeland olioli

Large tree fern with smooth or slightly bumpy stipes, quadripinnate to quadripinnatifid fronds, upper surface of costules, costa, and sometimes the rachis with a row of pubescence, and small sori with inconspicuous indusia. Occasional in montane forest. Indigenous. Voucher 10040.

Cyathea lunulata (Forst. f.) Copeland olioli

Large tree fern with stipe base warty and covered with pale scales, warty rachis, tripinnate fronds with bullate scales common on lower pinnae surface, and small sori with an inconspicuous, reduced indusium. Common in lowland to montane forest. Indigenous.

Cyathea truncata (Brackenridge) Copeland olioli

Tree fern with warty stipes covered with pale brown, linear scales, rachis and stipe covered with a velvety brown layer, tripinnate fronds, segments constricted at the base into a short stalk, and small sori with inconspicuous indusia of scales. Occasional in the montane forest and scrub. Indigenous. Voucher 10347.

Cyathea vaupelii Copeland olioli

Tree fern with stipes bearing brown scales and red velvety layer that extends to the upper side of costa and costules, tripinnate fronds, acute to acuminate pinnule tip, and sori with a complete, persistent indusium. Common in lowland to montane forest. Endemic. Voucher 8091, 10039.

Cyathea whitmeei Baker olioli

Large tree fern with a scaly stipe covered with red-brown tomentum, subtripinnate fronds, tip of

pinnule attenuate, and sori with a complete, persistent indusium. Occasional in foothill to montane forest. Indigenous. Voucher 10042.

DAVALLIACEAE

Davallia epiphylla (Forst. f.) Spreng.

Medium-sized epiphytic fern with broadly deltoid, quadripinnate or more fronds, fertile segments bifid at apex, and cylindrical-ovate sori with a free tip. Common in lowland to montane forest. Indigenous.

Davallia graeffei Luerssen

Medium-sized epiphytic fern with a glaucous, creeping rhizome covered with lanceolate scales, fronds subtripinnate, and sori terminal on the segment lobes bearing a horn protruding beyond it. Occasional to common in foothill to montane forest. Endemic.

Davallia solida (Forst. f.) Sw.

Iaugasese

Medium-sized epiphytic fern with deltoid, tripinnate to tripinnatifid fronds and sori several to a lobe, each with a tubular indusium truncate on the outer margin. Common in lowland to montane forest. Indigenous. Voucher 10328.

Humata heterophylla (Smith) Desv.

Small epiphytic fern with dimorphic, simple fronds (sterile ones lanceolate with entire margins, fertile ones pinnatifid and lobed over half way to margins) and sori borne one to each tooth of the lobes. Common in lowland to montane forest. Indigenous. Voucher 10027.

Humata polypodioides Brackenridge

Small epiphytic fern with deltoid, deeply pinnatifid fronds, fertile segments slightly narrower than sterile ones, and sori borne one to each tooth of the lobes. Common in lowland to montane forest. Indigenous.

Humata serrata Brackenridge

Small epiphytic fern with fronds bipinnatifid to bipinnate, segments with sharply dentate margins, and sori borne on the tips of the segments with an acute horn projecting beyond it. Occasional in foothill to montane forest. Endemic. Voucher 10479.

Leucostegia pallida (Mett.) Copeland

Medium-sized epiphytic fern pale green, deltoid, tripinnate to quadripinnate fronds red when

young and sori marginal, impressed on lower surface with a thin indusium and the sporangia extending over the margin. Occasional in montane forest. Indigenous.

DENNSTAEDTIACEAE

Orthopteris tenuis (Brackenridge) Brownlie

Large terrestrial fern tripinnate, deltoid, glabrous fronds and sori marginal in a conelike structure pointing outwards. Occasional in foothill to montane forest. Indigenous. Voucher 10026.

ELAPHOGLOSSACEAE

Elaphoglossum feejeense Brackenridge

Medium-sized epiphytic fern with simple, leathery, oblanceolate fronds and sori covering the underside of the fertile fronds. Occasional in foothill forest. Indigenous.

GLEICHENIACEAE

Dicranopteris linearis (Burm.) Underwood

asaua

Large terrestrial fern with bipinnatifid fronds, linear segments, and sori in a row on either side of the midrib. Locally abundant in plantations and montane scrub forest. Indigenous.

GRAMMITIDACEAE

Ctenopteris blechnoides (Greville) Wagner & Grether

Small epiphytic fern with pinnatifid, subsessile, oblanceolate fronds long attenuate at both ends, and oblong sori on its upper segments. Occasional to common in lowland to montane forest. Indigenous.

Ctenopteris emersonii (Hooker & Grev.)

Medium-sized epiphytic fern with linear, pinnatifid fronds, oblong lobes, and sori borne on the lower surface of the lamina of the upper lobes that are similar to lower sterile lobes. Common in montane forest. Endemic? Vouchers 10015, 10335.

HEMIONITIDACEAE

Coniogramme fraxinea (Don) Diels

Large terrestrial fern with pinnate fronds bearing 3-6 pairs of pinnae or the lower 2 pairs again

pinnate, pinnae elliptic with entire margins, and sori linear, extending along the veins from near the midrib to near the margin. Occasional in montane forest. Indigenous.

HYMENOPHYLLACEAE

Hymenophyllum imbricatum Bl.

Small epiphytic fern with deltoid to broadly ovate, membranous, bipinnate to bipinnatifid fronds 12--18 cm long, a broadly winged rachis, and sori nearly globose and broader than the lateral and terminal segments that bear them. Common in montane forest. Indigenous.

Hymenophyllum polyanthos Sw.

Small epiphytic fern with membranous, bipinnate to tripinnate, linear to lanceolate fronds up to 20 cm long and sori terminal on short segments, with a rounded entire indusium. Common in lowland to montane forest. Indigenous. Voucher 10031.

Hymenophyllum praetervisum Christ

Small epiphytic fern with bipinnate, membranous fronds 2--8 x 1--2 cm, rachis narrowly winged, ultimate segments dentate, and terminal sori having a top-shaped, dentate indusium. Uncommon in foothill to montane forest. Endemic. Vouchers 10024, 10473.

Trichomanes assimile Mett.

Small epiphytic fern with bipinnatifid to tripinnatifid, lanceolate to ovate fronds about 5 x 2--3 cm, segments without a specialized margin, and sori immersed in the segment. Occasional in montane forest. Indigenous. Voucher 10030.

Trichomanes bipunctatum Poiret

Small epiphytic fern with tripinnatifid, deltoid to ovate fronds 5--12 cm long, segments with a submarginal vein, and sori with a tubular, winged involucre with triangular lips. Common in lowland to montane forest. Indigenous. Vouchers 8101, 10030.

Trichomanes boryanum Kuntze

Small terrestrial fern with an erect rhizome, pinnate fronds 10--15 cm long, narrowly oblong, planar pinnae, and sori borne on the upper margins of the segments. Occasional in lowland to montane forest. Indigenous.

Trichomanes caudatum Brackenridge

Small epiphytic fern tripinnatifid, ovate to lanceolate frond 6--20 cm long, pinnae and lamina tip usually caudate, ultimate segments linear, sometimes bifid, and sori on short axillary segments with a cylindrical indusium. Uncommon in montane forest. Indigenous. Voucher 10023.

Trichomanes dentatum van den Bosch

Medium-sized terrestrial fern with tufted, ovate to broadly deltoid fronds and conspicuous sori with a cylindrical indusium. Occasional in montane forest. Indigenous. Voucher 10353.

Trichomanes humile Forst. f.

Small epiphytic fern with bipinnatifid fronds 2--5 cm long, margins with 2 rows of elongate cells, and sori with a dilated mouth. Locally common in lowland to montane forest. Indigenous. Voucher 10029.

Trichomanes saxifragoides Presl

Tiny epiphytic fern with a long-creeping rhizome, flabelliform, almost round fronds, and sori immersed in segments with a tubular, winged indusium dilated at the mouth. Occasional in lowland to montane forest. Indigenous.

Trichomanes taeniatum Copeland

Tiny epiphytic fern with a digitate or dichotomous frond, ciliate margins, and terminal sori. Uncommon in foothill to montane forest. Indigenous. Voucher 10474.

Trichomanes tahitense Nadeaud

Tiny epiphytic fern with peltate, round fronds and sori 1--3 on the lamina and exerted beyond the margin. Occasional in lowland to montane forest. Indigenous.

LINDSAEACEAE

Lindsaea harveyi Carruthers ex Seem.

Medium-sized terrestrial fern with bipinnate to subtripinnate fronds, pinnae 1--5 per side, and sori 1--2 mm long, one to a lobe. Uncommon in lowland forest. Indigenous.

LOMARIOPSIDACEAE

Lomagramma cordipinna Holttum

Medium-sized terrestrial and epiphytic fern with terrestrial sterile lamina simply pinnate, epiphytic sterile lamina bipinnate, fertile lamina pinnate or bipinnate, and sori covering the lower surface of the fertile lamina. Locally abundant in lowland to montane forest. Indigenous.

MARATTIACEAE

Marattia smithii Mett.

Large terrestrial fern with a globose stem, radiating bipinnate lamina, lanceolate pinnae, serrate pinnae margins serrate, and sori in a cluster of 6-12, fused together. Uncommon in montane scrub forest. Indigenous. Voucher 10034.

NEPHROLEPIDACEAE

Arthropteris repens (Brackenridge) Christensen

Small creeping fern with pinnate, narrowly lanceolate fronds, up to 35 pairs of pinnae, and medial, indusiate sori. Locally common on rocks and tree trunks in lowland forest. Indigenous.

Nephrolepis biserrata (Sw.) Schott

Large epiphytic or sometimes terrestrial fern with pinnate fronds up to 2 m long, numerous narrowly lanceolate and non-auriculate pinnae, and sori well within the margin. Common in lowland to montane forest. Indigenous.

Nephrolepis hirsutula (Forst. f.) Presl

vao tuaniu

Large terrestrial or sometimes epiphytic fern with erect, pinnate fronds up to 1 m long, scaly rachis, numerous, narrowly lanceolate pinnae with an auricle on the upper margin, and sori close to the margin. Common to abundant in plantations and forest clearings. Indigenous.

OLEANDRACEAE

Oleandra neriiformis Cav.

Medium-sized epiphytic fern with a creeping rhizome, simple entire, linear-lanceolate fronds, and sori in a single row close to and on both sides of the midrib. Common in montane forest and montane scrub forest. Indigenous.

POLYPODIACEAE

Lemmaphyllum accedens (Bl.) Donk

Small epiphytic fern with simple, dimorphic, ovate to elliptic fronds, fertile ones with an attenuate tip, and sori borne in a single row on either side of the midrib. Occasional in foothill to montane forest. Indigenous.

Phymatosorus commutatus (Bl.) Pichi Serm.

Large terrestrial or epiphytic fern with large pinnatifid fronds up to 2 m long and numerous sori scattered on the lower surface. Occasional in lowland to montane forest. Indigenous. Voucher 10354.

Phymatosorus grossus (Langs. & Fischer.) Brownlie

lau magamaga

Medium-sized large terrestrial fern with pinnatifid fronds with 1--10 pairs of lobes and sori in one or two rows on either side of the midrib of the lobes. Common to abundant in littoral to montane forest. Often identified as *Phymatosorus scolopendria*. Indigenous.

Phymatosorus nigrescens (Bl.) Pichi Serm.

Large epiphytic fern with deeply pinnately divided fronds with 1--10 pairs of lobes, and sori in a single row on either side of the costule that form a conspicuous tubercle on the upper surface. Occasional in lowland to montane forest. Indigenous.

Polypodium subauriculatum Bl.

Medium-sized to large epiphytic fern with pinnate fronds with many serrate, acuminate pinnae, and immersed sori in a single row on either side of the costa within an areole. Occasional in montane forest. Indigenous.

Pyrrosia lanceolata (L.) Farwell

lautasi

Small epiphytic fern with simple, thick lanceolate fronds, and sori in dense rows covering most of the underside between the margins and midrib of the fertile fronds. Common in littoral and lowland forest. Indigenous.

Selliguea feeoides Copeland

Small epiphytic fern with dimorphic simple fronds (sterile ones ovate, fertile ones lanceolate)

and sori linear in single lines between the midrib and margin. Common in montane forest. Indigenous. Vouchers 10038, 10327.

PTERIDACEAE

Pteris ensiformis Burm.

Medium-sized terrestrial fern with dimorphic pinnate fronds, pinnae of fertile fronds long, narrow, obliquely ascending, and sori continuous along most of the lobe margin. Occasional in coastal to lowland forest. Occasional in littoral forest. Indigenous.

Pteris merrensioides Willd.

Large terrestrial fern with bipinnatifid fronds up to 35 x 6 cm and lobed to costa, costa of upper surface with interrupted, wings and lacking appressed, soft spines, and sori borne along most of lobe margin. Occasional in lowland to montane forest. Indigenous.

Pteris pacifica Hier.

Medium-sized to large terrestrial fern with fascicled, bipinnatifid fronds lobed to near the costa, up to 9 pairs of pinnae, a purple rachis, soft spines at the costule junction, and sori nearly continuous on lobe margin. Occasional in lowland forest. Indigenous.

SCHIZAEACEAE

Schizaea dichotoma (L.) Smith

Small terrestrial fern with fronds dichotomously branched 2--8 times, the ultimate segments winged, 1--1.5 mm wide, and sori terminal on the pinnately arranged fertile lobes. Occasional in lowland to foothill forest. Indigenous.

THELYPTERIDACEAE

Christella harveyi (Mett.) Holttum

Large terrestrial fern with pinnate fronds, lowest 3--5 pairs much reduced, veins not anastomosing, and sori submarginal on the segments, with a persistent, hairy, reniform indusium. Common in lowland to montane forest. Indigenous. Voucher 8100.

Christella parasitica (L.) Leveille

Medium-sized terrestrial fern with pinnate fronds bearing up to 20 pairs of pinnae, lowest pinna pairs not reduced, lower surfaces hairy and usually with orange glands, and sori in a single row

near the costa or along costules. Occasional in lowland forest. Indigenous. Vouchers 10326, 10464.

Sphaerostephanos unitus (L.) Holttum

Large terrestrial fern with bipinnatifid fronds, lower 6 or more pinnae pairs abruptly reduced, yellow glands on the lower lamina surface, and sori with a short-hairy indusium. Common in sunny disturbed places. Indigenous.

VITTARIACEAE

Antrophyum alatum Brackenridge

Small epiphytic fern with tufted, entire, spatulate fronds, and sori dense on longitudinal veins of the lower surface. Common in lowland to montane forest. Indigenous.

Antrophyum plantagineum (Cav.) Kaulfuss

Small epiphytic fern with a simple linear-lanceolate fronds and sori linear in troughs following along the veins. Common in lowland to montane forest. Indigenous.

Vaginularia angustissima (Brackenridge) Mett.

Tiny epiphytic fern with tufted, linear fronds and linear sori in a groove along the veins. Common in lowland to montane forest. Indigenous.

Vittaria elongata Sw.

Small to medium-sized epiphytic fern with simple, linear fronds, and sori in a marginal groove. Common in coastal to montane forest. Indigenous.

Vittaria scolopendrina (Bory) Thwaites

Medium-sized epiphytic fern with sessile, simple, entire, linear fronds 40–90 x ca. 2.5 cm, and sori in a marginal groove. Uncommon in foothill to montane forest. Indigenous. Vouchers 10016, 10471.

FERN ALLIES
LYCOPODIACEAE

Lycopodium carinatum Desv.

Small epiphytic fern ally with sterile linear leaves ca. 10 x 1 mm gradually passing to ovate fertile leaves 1-2 mm long. Occasional in lowland to montane forest. Indigenous.

Lycopodium phlegmaria L.

Small epiphytic fern ally with spreading, ovate, sterile leaves 2-4 mm wide, and fertile leaves in a distinct, long slender spike ca. 1 mm wide. Common in lowland to montane forest. Indigenous.

Lycopodium squarrosum Forst. f.

Medium-sized epiphytic fern ally with branched stems usually 2 cm or more wide, and sterile and fertile leaves spreading, similar, linear. Occasional in lowland to montane forest. Indigenous.

SELAGINACEAE

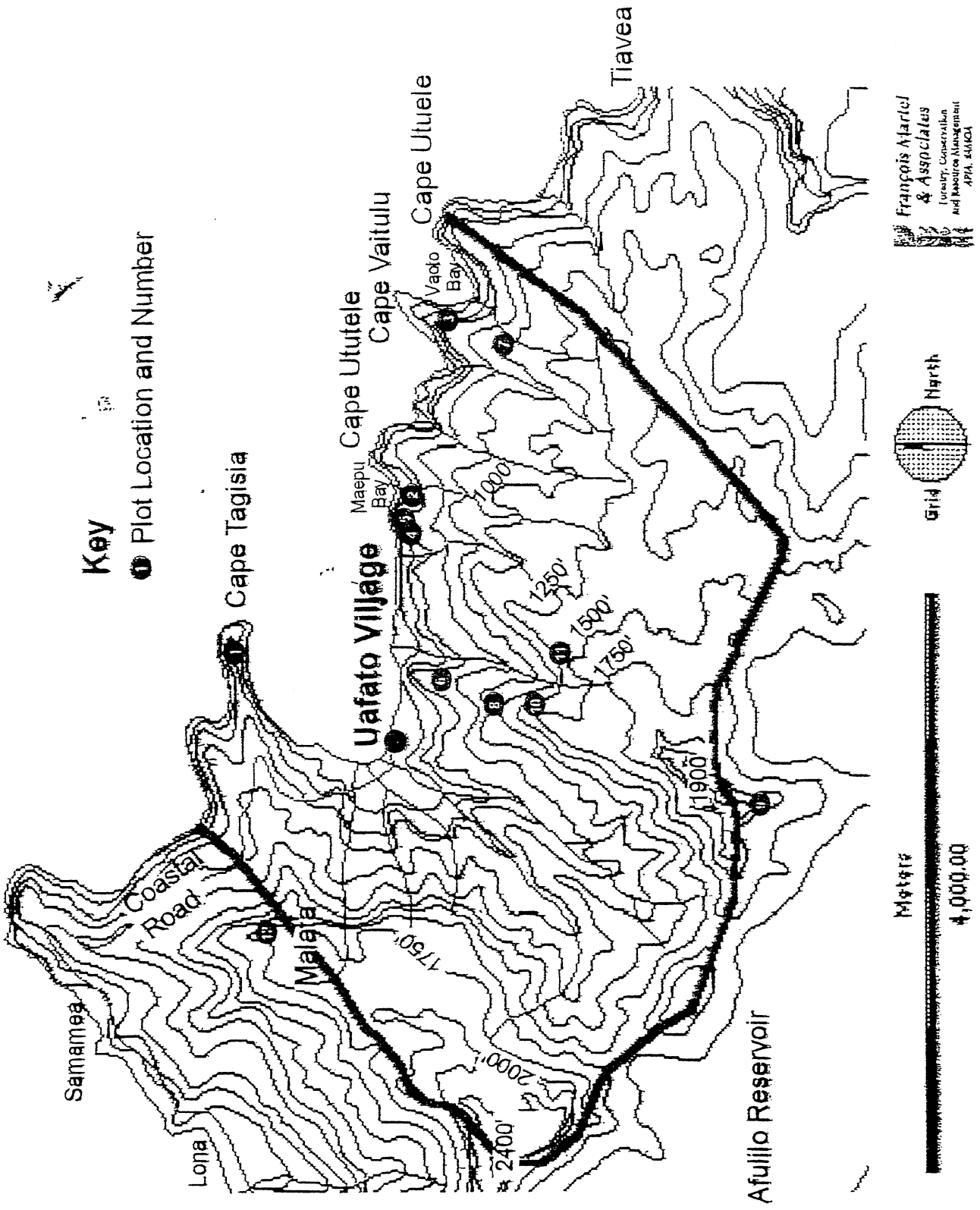
Selaginella whitmeei Baker

Terrestrial fern-ally with erect stems, flattened, bi- to tripinnate, dimorphic branches, tiny scalelike leaves, and fertile leaves arranged into strobili. Common in lowland to montane forest. Endemic

TABLE 3. Locations of the 12 Vegetation Sites

1. Talisiga Ridge northeast of the village, near the north end of the ridge at 50 m elevation, in a forest dominated by 'au'auli (*Diospyros samoensis*).
2. Maepu Valley, the valley just east of the first ridge east of the village, at 50 m elevation, in a forest dominated by ifi (*Inocarpus fagifer*).
3. Va'oto Ridge just to the west of Va'oto Bay, 2 km east of the village, on the east-facing slope at about 50 m elevation in a forest dominated by ifi (*Inocarpus fagifer*).
4. The first ridge east of the village, at an elevation of 80 m, in forest dominated by ifilele (*Intsia bijuga*) and asi (*Syzygium inophylloides*).
5. The first ridge east of the village, at an elevation of 80 m, in forest dominated by ifilele (*Intsia bijuga*) and asi (*Syzygium inophylloides*). This plot was sampled in 1991, and is adjacent to site no. 4.
6. The ridge just behind the village at an elevation of 140 m, in secondary forest dominated by tavai (*Rhus taitensis*), ma'ali (*Canarium vitiense*), and toi (*Alphitonia zizyphoides*).
7. Va'oto Ridge just to the west and above Va'oto bay, at an elevation of 250 m in a forest dominated by ma'ali (*Canarium vitiense*).
8. The ridge just behind the village, beyond site no. 6, at an elevation of 325 m in forest dominated by gasu (*Palaquium stehlinii*).
9. On a ridge just east of Afulilo Reservoir, on the south slope of the mountain range at an elevation of 460 m, in a forest dominated by 'atone (*Myristica hypargyraea*) and niu vao (*Clinostigma onchorhynchum*). This plot was sampled in May of 1996.
10. On a ridge near the top of the mountains behind the village, at an elevation of 400 m, in a forest dominated by mafoa (*Haplolobus floridundus*) and 'atone (*Myristica hypargyraea*).
11. On the slopes and floor of a montane valley behind the village, at an elevation of 450 m, in a forest dominated by pua lulu (*Fagraea berteriana*) and ma'osina (*Trichospermum richii*).
12. On the northern part of the Malata plateau, reached from the ridge demarking the eastern boundary of Fagaloa Bay, at an elevation of 530 m, in forest dominated by pua lulu (*Fagraea berteriana*).

Figure 1. Uafato CA Botanical Survey Sites



NB: Approximate CA boundary shown in green, rivers in blue, roads in red, elevations in feet