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**A STUDY OF THE RARE PLANTS  
OF AMERICAN SAMOA**

by

**ART WHISTLER  
ISLE BOTANICA**

for

**THE U.S. FISH AND WILDLIFE SERVICE  
HONOLULU, HAWAII  
DECEMBER 1998**

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## INTRODUCTION

Samoa is a volcanic archipelago running in a north-northwest direction east of Fiji, north of Tonga, and east of the Cook Islands and Tahiti. It is divided politically into Western Samoa (now calling itself "Samoa"), which is an independent country, and American Samoa, which is an unincorporated territory of the United States. The archipelago, lying at a longitude of 168-173° W and a latitude of 11-15° S, comprises nine inhabited volcanic islands, plus Swains Island and uninhabited Rose Atoll, with a total area of ca. 3100 km<sup>2</sup>. The main islands of Western Samoa, which comprise the western portion of the archipelago, are Savai'i (1820 km<sup>2</sup> area, 1860 m elevation) and 'Upolu (1110 km<sup>2</sup>, 1100 m). These two islands represent about 94% of the total area of the island chain.

American Samoa, which comprises the east end of the archipelago, consists of five volcanic islands (Tutuila, 'Aunu'u, Ofu, Olosega, and Ta'u) and two atolls (Rose and Swains). Tutuila is the westernmost and by far the largest of the islands of American Samoa. It has an area of approximately 142 km<sup>2</sup> (55 mi<sup>2</sup>), and a maximum elevation of 653 m (2140 ft) at the summit of Matafao. Lying off its southeastern end is the small tuff cone island of 'Aunu'u that has an area of less than 2 km<sup>2</sup> (ca. 0.6 mi<sup>2</sup>). Approximately 100 km (62 miles) to the east lie the three islands, Ofu, Olosega, and Ta'u, that comprise the group known as Manu'a. Ta'u, which is the easternmost of the volcanic islands, has an area of 39 km<sup>2</sup> (15 mi<sup>2</sup>), and a maximum elevation of ca. 960 m (3150 ft) at the summit of Mt. Lata. The much smaller islands of Ofu and Olosega, with areas of 5 km<sup>2</sup> (2 mi<sup>2</sup>) and 4 km<sup>2</sup> (0.8 mi<sup>2</sup>) and elevations of 495 m (1625 ft) and 640 m (2100 ft), respectively, lie together within a common reef about 10 km (6 miles) to the west of Ta'u. East of Manu'a about 140 km (84 mi) lies uninhabited Rose Atoll, and 320 km (192 mi) north lies Swains Island, which is home to a small population. The current population of American Samoa is over 60,000.

## The Climate

Since American Samoa comprises small islands situated between the Tropic of Capricorn and the Equator, its climate is maritime and tropical. The mean daily temperature for Tutuila is 26.7° C (80° F), with an average daily maximum of 29.7° C (85.4° F) and an average daily minimum of 23.6° C (74.6° F). There is little seasonal variation, with the mean temperature of the warmest month, March, being 27.2° C (80.9° F) and that of the coolest month, August, being 25.9° C (78.7° F).

The rainfall at the airport at Tafuna on the south-central coast of Tutuila averages about 3200 mm (124 in) per year. The monthly average there from October to May is 300 mm (12 in), while in the dry season from June to September it is 180 mm (7 in). Half of the rainfall in Samoa occurs from December to March, but there is no real dry season, since even in the driest places (which are on the leeward or north and west sides of the islands) all months average over 10 cm of precipitation. This variation is strongly affected by the tradewinds, which blow regularly from the southeast from about April to December. The months when they wane are characterized by uncomfortable, muggy weather and storms that come in from other directions. Topographic features

strongly effect these totals in some places. For example, Pago Pago, which lies just to the west of Le Pioa ("Rainmaker") mountain, averages nearly 5000 mm (200 in) a year. There is no dramatic rainshadow effect on Tutuila, since the island is not very high in elevation and its axis runs somewhat parallel to the prevailing wind direction, but more rain can be expected to fall on the south and east coasts than on the north and west coasts, as is the case in Western Samoa. The relative humidity is constantly high, ranging between 82 and 86% (at 5 p.m.) throughout the year. Droughts of varying duration occasionally occur, but these do not have much permanent effect on the vegetation. Major hurricanes, the most recent of which were in 1987 (known as Tusi), 1990 (Ofa), and 1991 (Val), periodically hit the islands, but the occurrence of three strong hurricanes in such close proximity is unusual.

### The Geology

lot correct  
Samoa is a volcanic archipelago that is "oceanic" in origin, i.e., it was formed from basalt rising from a "hot spot" on the ocean floor of the Pacific plate beyond the continental islands to the west. The archipelago was born in isolation, and has never had a connection to any other land area. The islands originated in the Pliocene Epoch (over two million years ago), and were formed generally in a westerly direction, with the youngest on the west end of the chain (Savai'i in Western Samoa) and the oldest on the east end (Rose Atoll). The most recent volcanic activity in American Samoa was a submarine eruption between Ta'u and Olosega in 1866. The only signs of geologically recent volcanism on Tutuila are the Tafuna Plain, and several adjacent tuff and cinder cones, including the island of 'Aunu'u, but these eruptions are thousands of years old.

Tutuila was created in a series of volcanic eruptions forming an island elongated in an east-west direction. This was followed by stream erosion and submergence, which has resulted in a rugged terrain and deeply embayed coastline. The most salient features of the island are the well-sheltered Pago Pago Bay, the mountain peaks (particularly Le Pioa, also known as "Rainmaker Mountain," and Matafao), the steep ridges ascending into the interior of the island, and the cliff-bound Tafuna plain and its associated craters.

Pago Pago Bay, which nearly bisects the island, was formed in an ancient caldera that was bounded on the east by Le Pioa, on the north by Alava Ridge, on the west by Matafao, and on the south by a now non-existent wall outside the mouth of the present day harbor. After the volcanic series ended, erosion of the center of the caldera and drowning of the valley produced the spectacular present day harbor that parallels the southern slope of Alava Ridge, the highest point of which has a maximum elevation of 490 m (1610 ft).

Eight areas of Tutuila are classified as trachyte plugs-cores of ancient volcanoes that remain after the crater rims have eroded away, the two largest two of which are the aforementioned Le Pioa and Matafao (Stearns 1944). These plugs comprise a fine-grained, highly eroded, cream-colored "trachyte" rock. The soil formed on these plugs is generally low in important minerals, which results in a stunted, scrubby vegetation called montane scrub on their slopes and summits (Whistler 1980).

The islands of Manu'a were formed by a different series of volcanic activity (Stice

and McCoy 1968). Ta'u originated mostly from a single shield volcano whose caldera was located on the south side of the present island. The summit of the rim of the old caldera is called Mt. Lata, which reaches an elevation of about 960 m (3150 ft). A subsequent series of collapses formed the scenic escarpments, sea cliffs, and terraces that comprise the south coast of the island. The largest and most accessible of the terraces, Liu, begins at the southeast corner of the island and gently slopes up to the west along the base of the imposing inland cliffs that lead up to the summit of Mt. Lata. A spectacular, short, steep-sided canyon called Laufuti cuts into its central portion, forming a series of waterfalls at its head. Volcanic activity after the formation of the main shield left a series of volcanic cones and pit craters, the largest of which is Luatele Crater (listed on some maps as Judd's Crater, a name unknown to the local inhabitants) on the northeast corner of the island. Marine erosion has produced the majestic cliffs and talus slopes that surround the island, and erosion and deposition created the flat and narrow bench that extends the length of the east coast of the island a few meters above sea level. The islands of Ofu and Olosega are the remnants of another shield volcano, the sunken caldera of which lies to the south of the islands. The two islands are connected by a reef flat that is now spanned by a bridge. The old volcano was worn down over a long period of time so all that remains now is the northern rim.

### **The Flora**

The first collection of the flora of American Samoa was made during the ill-fated La Pérouse expedition that landed on the north coast of Tutuila in 1787, but the specimens were later lost when the ships, along with all on board, subsequently disappeared in Melanesia. A second collection was made in 1838 by another French expedition, this one under the command of Dumont D'Urville, but little is known about the specimens, which are deposited in the Paris Museum. The first significant collections were made in 1839 during the visit of the United States Exploring Expedition (USEE) to Samoa. Unfortunately, the specimens were poorly curated, and mistakes in locality are not uncommon. In fact, some specimens of endemic Samoan plant species were incorrectly labeled as having been collected in Tahiti. Even the correctly labeled USEE specimens cite only "Samoa" as the locality, so it is not certain on which islands of the archipelago they were collected-although there is some indication from the published list of specimens of Pickering (1876) and the work of Gray (1854).

The next plant collector to visit Tutuila was apparently the Rev. T. Powell, an amateur English botanist employed as a missionary by the London Missionary Society in ca. 1850-1885. Unfortunately, most of his specimens also lack localities, so it is impossible to determine which ones were collected on Tutuila and Manu'a and which ones on the other islands (he is known to have collected on Savai'i and 'Upolu as well). The only relevant publication by Powell was a list of Samoan plant names (Powell 1868). Another amateur botanist, Dr. E. Graeffe, a Swiss physician who traveled extensively in the region in the 1860s and 1870s, is known to have collected specimens in American Samoa (Tutuila) at about the same time. Unfortunately, many of his specimens, like those of the earlier collectors, lack specific localities and some are

apparently mislabeled (i.e., some specimens apparently collected in Fiji are labeled as coming from Samoa).

The last botanist in the 19th century to work in Samoa was F. Reinecke, who wrote the first flora of Samoa (1896, 1898). Unfortunately, a number of Reinecke's specimens cited from American Samoa may be incorrectly labeled, since he collected a number of species that no one else has collected there (but which are found in Western Samoa). Several other collectors visited Tutuila before 1920, but their contributions to the flora of American Samoa are minor. The best known of these was K. Rechinger, who visited a decade after Reinecke (in 1905) and collected a few specimens on Tutuila, but the bulk of his collections were made in Western Samoa. He published his information several years later (Rechinger 1907-1915). Another botanist visited American Samoa in 1905, C. Lloyd, but the report on his work (Lloyd and Aiken 1934) does not cite any specimen numbers and it is not clear how much of the work applies to American Samoa rather than Western Samoa.

The first major collector in American Samoa since the USEE was W. A. Setchell, who visited Tutuila in 1920 and published a flora of the island (Setchell 1924). His collection includes about 580 numbers, which makes it larger than the one collected in the whole archipelago during the USEE. He was soon followed by D. W. Garber, who collected about 578 numbers on Tutuila and in Manu'a between 1921 and 1925. Garber never published any of this Samoan work, but his collections were listed by both Christophersen (1935, 1938) and Yuncker (1945). Other minor collections in American Samoa from that decade are those made by Eames in 1921 with about 30 specimens, Bryan in 1924 with about 68, and Diefenderfer in 1929 and 1930 with about 48. These minor collections were included in Christophersen's publications.

The next major collection in American Samoa after the one of Setchell was made by E. Christophersen in 1929 and 1931 (about 407 specimens from Tutuila), and were included in his two publications on the flora of Samoa, which still form the most complete published account of the flora of the archipelago. Later collections were made by W. and A. Harris (with about 350 specimens from Manu'a, mostly weeds) in 1938 and T. Yuncker (with about 444 specimens from Tutuila and Manu'a) in 1939. Both of these collections (except for Yuncker's Tutuila specimens) were listed by Yuncker (1945) in his flora of Manu'a. Other minor collections from Ta'u were made by Judd, McMullin, Swezey, and Schultz, but only a few specimens are known from each.

More recent collections have been made on Tutuila, including those of A. Wisner in 1959, C. Lamoureux (about 80 specimens) in 1965, and C. Long (about 200 specimens) also in 1965. The original botanist on the study of American Samoa by Amerson et al. (1982), J. Kuruc, collected a number of specimens from American Samoa in 1975, but most of his collections were lost or are without any data. Another collection of undetermined size was made by P. Cox from Manu'a in 1987, but no record of these has been published other than those in the genus *Meryta* (Cox 1985). The largest collection from American Samoa, with nearly 1900 numbers, was made by the present author from 1972 to 1998. Little of this work has heretofore been published other than in revisions of two genera made by Whistler (1986, 1988a). Additionally, specimen numbers with little other information are included in two National Park studies of American Samoa (Whistler 1992b, 1994).

The angiosperm flora of Samoa is about one third as large as that of Fiji, which lies just 1140 km (700 mi) to the west, but it is larger than that of any other tropical Polynesian (archipelago) or island except Hawai'i, which has more species but fewer genera. In fact, Samoa has nearly as many species as the rest of tropical Polynesia (excluding Hawai'i) combined. The flora is estimated to comprise about 540 native species of flowering plants (Whistler 1992a), two thirds of them dicots. These are included in about 282 genera in 95 plant families. The level of endemism of the angiosperms is estimated to be about 30% at the species level, but only one genus, *Sarcopygme* of the Rubiaceae family, is endemic to the archipelago. An additional 250 or so species are naturalized or adventive (Whistler 1988b). The fern flora is estimated to comprise 230 species, with a much lower rate of endemism.

The most extensive work on the flora, until recently, was done by Christophersen, who collected in Samoa in 1929 and 1931, but his work (Christophersen 1935, 1938) is not an actual flora since it lacks taxonomic keys, descriptions, and specimen citations other than those of his own collections. Some of the knowledge of the flora has been filled in by more recent monographs and revisions of Pacific genera and families. The three largest genera, *Psychotria*, *Syzygium*, and *Cyrtandra*, have recently been revised for Samoa (Whistler 1986; Whistler 1988a; Gillett 1973). Many other genera and families in Samoa have also been revised, including Araliaceae (Smith & Stone 1968), *Ascarina* (Smith 1976), Clusiaceae (Smith & Darwin 1974), Cunoniaceae (Smith 1952c; Bernardi 1964; Hoogland 1979), *Diospyros* (Smith 1971b), *Elaeocarpus* (Smith 1953), *Geniostoma* (Smith & Stone 1962; Conn 1980), *Macropiper* (Smith 1975), Meliaceae (Smith 1952b), *Metrosideros* (Smith 1973b), Myrsinaceae (Smith 1973a), Orchidaceae (Cribb & Whistler 1996), Rutaceae (Smith 1952a), and *Terminalia* (Smith 1971a). However, many of these revisions are now out-of-date because of more recent collections, and since they are widely scattered through the literature, especially in Smith's flora of Fiji (1979-1996), most are relatively inaccessible.

The native vascular flora of American Samoa, based upon Whistler (1980, 1992b, 1994 and the present work) is now estimated to be about 340 flowering plants, 135 ferns, and 9 fern allies. These are listed in Appendix A of this report. The largest flowering plant families represented in the flora are Orchidaceae (61 native species), Rubiaceae (19), Fabaceae (18), Cyperaceae (17), Poaceae (13), Euphorbiaceae (12), and Urticaceae (10). As noted earlier, the rate of endemism in Samoa is about 30%, but the local endemism for American Samoa is only about 1%, i.e., only about 1% (seven or eight species) of the flora of American Samoa is endemic to the Territory (see Table 1). An additional 202 species of vascular plants (all angiosperms) have been introduced and naturalized (most of them as "weeds," but a few as relicts of cultivation) — in American Samoa. Some of these were brought in by Polynesians ("Polynesian introductions") prior to the European Era, but most were brought in during recent times ("modern introductions") after about 1830.

Table 1. Plant species endemic to American Samoa.

SPECIES	FAMILY	STATUS
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<i>Cyrtandra geminata</i> Reinecke	Gesneriaceae	Endemic to Tutuila
<i>Elatostema scabriusculum</i> Setchell	Urticaceae	Endemic to American Samoa
<i>Elatostema tutuilense</i> Whistler	Urticaceae	Endemic to Tutuila
<i>Melicope richii</i> A. Gray	Rutaceae	Endemic to Tutuila
<i>Melicope vatiana</i> (Setchell) T. Hartley	Rutaceae	Endemic to American Samoa
<i>Pandanus</i> sp. nova?	Pandanaceae	Endemic to Ta'u?
<i>Psychotria garberiana</i> Christoph.	Rubiaceae	Endemic to Manu'a
<i>Taeniophyllum whistleri</i> Cribb	Orchidaceae	Endemic to American Samoa

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## METHODOLOGY

A detailed checklist of the flora was prepared prior to the beginning of the field research, based on the publications of Christophersen (1935, 1938), Christensen (1943), Yuncker (1945), and Whistler (1980, 1992b, 1994), as well as on more recent monographs listed in the introduction of this study. The checklist was modified after the survey to include new species and new islands records. A total of eleven new species were recorded in the Territory during the survey (Table 2), and another one was collected prior to the survey in 1996. Of the twelve species, nine were probably present in American Samoa for a long time (eight of them native, one a Polynesian introduction), but which were not previously reported. Three others have recently arrived, two of them as unintentionally weeds, and one perhaps naturally from Western Samoa.

The field study associated with the present project began in May 1997 and extended until September of 1998. The dates of the field study were as follows: Tutuila: 2-6 June, 7-12 December 1997; 3,5,6, 19 March, 11-15 May, 26-28 August, 11 September 1998. 'Aunu'u: 4 March 1998. Ofu-Olosega: 21-26 May 1997. Ta'u: 3-10 May 1998. A total of 24 days was spent on Tutuila, one on 'Aunu'u, 6 on Ofu-Olosega, and 8 on Ta'u. Swains Island and Rose Atoll were not visited during the survey. The survey crew consisted of the principal investigator assisted on different occasions by Dr. Ted Webb and Siafoi Fa'aumu of the Department of Marine and Wildlife Resources, Dr. Bob Cook and Mino Fiulua of the U.S. National Park Service, Dr. Don Vargo of the Land Grant College of American Samoa, Orlo Steele of the Environmental Protection Agency, and Rory West.

During the field excursions, extensive field notes were taken, including information about the species encountered. A collection of about 386 voucher specimens was made, sets of which are deposited at various institutions, including the Smithsonian, Kew Gardens, Auckland Museum, and the personal collection of the author (which is currently being stored at the University of Hawai'i Botany Department herbarium). The voucher specimens of the rare plants are included in the discussion below and in checklist of the flora in Appendix A. The following discussion and recommendations are based upon the literature review and subsequent field work.

Table 2. New species records for American Samoa

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SPECIES	FAMILY	ISLAND	STATUS
<i>Alpinia samoensis</i> Reinecke <sup>1</sup>	Zingiberaceae	Ta'u	Endemic to Samoa
<i>Amaranthus lividus</i> L.	Amaranthaceae	'Aunu'u	Recent introduction
<i>Benincasa hispida</i> (Thunb.) Cogn.	Cucurbitaceae	Tutuila	Poly. introduction
<i>Calymmodon latealatus</i> Copeland	Grammitidaceae	Ta'u	Indigenous
<i>Coryphopteris pubirachis</i> (Baker) Holttum	Thelypteridaceae	Ta'u	Endemic to Samoa
<i>Grammitis graminella</i> (Christensen) Sledge	Grammitidaceae	Ta'u	Endemic to Samoa
<i>Indigofera hirsuta</i> L.	Fabaceae	Tutuila	Recent introduction
<i>Joinvillea plicata</i> (Hook. f.) T. K. Newell & B. C. Stone	Joinvilleaceae	Ta'u	Endemic to Samoa
<i>Pandanus</i> sp. nova?	Pandanaceae	Ta'u	Endemic to Ta'u?
<i>Passiflora aurantia</i> Forst.	Passifloraceae	Ofu	Indigenous
<i>Plecnemia irregularis</i> (Presl) Holttum	Aspidiaceae	Tutuila	Recent introduction
<i>Polyscias reineckeii</i> Harms	Araliaceae	Tutuila	Endemic to Samoa

<sup>1</sup>Collected in 1996 by Chris Solek.

## DISCUSSION

The vascular plant flora of American Samoa can be divided into two categories, introduced ("alien") species and native species. **Native** species are those that have arrived naturally in an area, i.e., without human transport. **Introduced** species are those that have been transported to an area by human activity, and hence they do not occur naturally there. Native species can be subdivided into two categories, indigenous and endemic species. **Endemic** species are native plants whose distribution is restricted to a single area, archipelago, or island. If a plant is found in the whole Samoan archipelago and nowhere else, it is endemic to Samoa. If it is found only in American Samoa, it is endemic to American Samoa. If it is found only on Tutuila or Ta'u, then it is endemic to that island. While many plant species found in American Samoa are endemic to the whole archipelago, only eight species are endemic to the Territory (see Table 1)-three of them to Tutuila, one to Manu'a, one possibly to Ta'u, and three to more than one island.

**Indigenous** species are native plants that also occur outside of Samoa. Some are found only in the adjacent archipelagoes or islands, but some are pantropical (found throughout the tropics). The smaller the range of the species, the greater the concern for its rarity in American Samoa, i.e., plant species endemic to one island, or even one part of one island, are of more concern than those found in the whole territory, and likewise, those found only on several islands of the Territory are of more concern than those found in the whole archipelago. Although Western Samoa is beyond the scope of this study, since it is an independent country, to separate Western from American Samoa is botanically unsound since the flora of the two entities is very similar (but much larger in Western Samoa, which has about 13 times the land area). Consequently, information on distribution and frequency outside of the Territory is taken into account when determining which rare plants are of concern in American Samoa.

Most of the species that have become rare or have disappeared from American Samoa are native, and introduced species are usually of little concern during studies of rare and endangered

plants. However, some of them will be discussed below because they are Polynesian introductions that may have cultural significance or may now be rare in the rest of their range. Introduced plants can be subdivided into two categories-**Polynesian introductions**, which are species that were prehistorically brought to Samoa by Polynesian seafarers, and **modern introductions**, which were introduced to the Territory in modern times (i.e., since 1830). Nearly all of the former are native to the Old World tropics, while a majority of the latter are from tropical America.

Being native is usually a prerequisite for study as possible threatened and endangered species, but rare Polynesian introductions are included here because they either have cultural significance (i.e., they were known and used in some traditional way) or may be rare elsewhere in their range outside of Samoa. Of the sixteen Polynesian introductions considered to be rare now in American Samoa, nine are **intentional Polynesian introductions** and have Samoan names (see Whistler 1984): *Atuna racemosa* (**ifiifi**), *Benincasa hispida* (**fagu**), *Cordia aspera* (**tou**), *Cucumis melo* (**'atiu**), *Parinarium insularum* (**sea**), *Phalaris disperma* (**sun**), *Solanum viride* (**polo iti**), *Syzygium neurocalyx* (**oli, fena**), and *Tephrosia purpurea* (**'avasa**). The other seven are **unintentional Polynesian introductions**, and only three or four of them have Samoan names: *Cyathula prostrata*, *Laportea interrupta* (**ogoogo**), *Portulaca quadrifida* (**tamole?**), *Senna sophora* (**lau matui**), *Sida samoensis*, *Uraria lagopodoides*, and *Urena lobata* (**mautofu**). Not included on any of these lists are modern introductions, i.e., the ornamentals, weeds, and crop plants that have been introduced in recent times.

In all, 111 plants are considered here to be rare in American Samoa based on the number of times they have been recently collected or reported, whether or not they were found during the present survey, and/or their being restricted to a single habitat or island in American Samoa. These are divided here into two categories: rare native plants of concern in American Samoa (51 species), which are sensitive because of their global rarity, and rare native plants that are more frequently found elsewhere in the Pacific (60 species), particularly in Western Samoa, and which are, consequently, of lesser importance because of their wider distribution. The former are included in Appendix B and the latter in Appendix C. These two appendices can be combined to constitute the list of rare plant species in American Samoa. The species are listed in both appendices in alphabetical order by scientific names, which are in **bold italics**. Included for each species is the taxonomic family to which it belongs, status (indigenous or endemic), range, specimens collected (by island), occurrence during the present survey, habitat, Samoan name (if any) in **bold**, and general information (where needed). Voucher specimens collected during the present survey are in **bold italics**.

Seventeen of the species of concern are discussed further in the recommendations section below in regard to their possible status as threatened and endangered plant species.

## RECOMMENDATIONS

Several recommendations are made here regarding further research and action on proposed candidate status as threatened or endangered plant species in American Samoa, and other studies to determine critical habitat and areas that need further botanical study.

### (1) Proposed Species for Listing as Threatened or Endangered

Seventeen species need further consideration for their possible status as officially listed threatened or endangered species in the Territory of American Samoa. These are divided into species endemic to American Samoa (2 species), species indigenous to the territory (11), and species that were introduced in ancient times but which are now rare in the territory (4), since their status in the Territory is dependent upon how common they are globally.

A previous report (USFWS 1998) listed five "species of concern" in American Samoa. Three of these, *Elatostema tutuilense*, *Habenaria monogyne*, and *Manilkara dissecta* are included in the list below. The other two, *Acronychia* (misspelled on the list as *Acaronychia*) *retusa*, now called *Melicope retusa* (see Appendix A), and *Litsea samoensis*, are not. *Melicope* has been collected in Samoa nine times by the principal investigator, including three times in American and once during the present survey, and although rare in American Samoa, it is more common elsewhere. *Litsea* was collected three times during the present survey and is considered in this report to be uncommon rather than rare. It is more common in the montane regions of Savai'i in Western Samoa. The main threat to the native species seems to be small population size rather than over-harvesting or other human activity. The main threat to the ethnobotanical plants is probably that they are no longer cultivated and are being lost by neglect rather than by over-harvesting or loss of habitat.

### Endemic Species

#### *Cyrtandra geminata* Reinecke Gesneriaceae

This species of *Cyrtandra* (the second largest genus in Samoa with about 19 species), which has large, showy flowers, is endemic to the montane scrub vegetation on Matafao and Le Pioa (Rainmaker) at 450-600 m elevation on Tutuila. It has been collected a number of times on those two mountains, but was not found during the present survey, although this does not necessarily mean that it has become rarer in recent times. It is proposed here for listing as threatened or endangered because of its restriction to only two small areas in one vegetation type on one island.

#### *Elatostema tutuilense* Whistler Urticaceae

This small low herb is known from a single collection made in 1895 near Utumoa Stream, which lies just west of Pago Pago on Tutuila. It was not found during the present survey, even though its general known locality was searched (twice-once during the present survey and once during earlier work by the principal investigator). It may now be extinct, but the area above the Utumoa waterfall should be searched. It is proposed here for listing as threatened or endangered because of its extreme rarity (if it still exists). This species is already listed as a "species of concern" by the USFWS (1998).

### Indigenous Species

*Gossypium hirsutum* L. (vavae)  
Malvaceae

This indigenous cotton species in Samoa belongs to var. *taitense*, which ranges from the Marquesas to Fiji and northward to the Northern Marianas. It is reported to be found "sparingly" in Fiji, and appears to be uncommon over most of its Pacific range. In Samoa it is known only from sea cliffs on 'Apolima Island (Western Samoa), 'Aunu'u, Ofu, a single plant found on Tutuila (Onenao), and a seedling on Rose Atoll. The Ofu population is inaccessible (it was spotted by means of a telescope), the Tutuila individual was not found during the present survey, and the seedling on Rose is not likely to have survived. The species was found once during the present survey, in the small population on the cliffs of 'Aunu'u. It is proposed here for listing as threatened or endangered because it is so rare in Samoa and is probably equally uncommon elsewhere in its Micronesian, Polynesian, and Fijian range.

*Dioclea wilsonii* Standl.  
Fabaceae

This vine, which has attractive dark purple flowers, is known in American Samoa only from a few individuals on top of Mt. Tau on Tutuila, and is widespread but rare elsewhere in Polynesia (Hawai'i, Tahiti, and the Austral Islands) and possibly Fiji ("*Dioclea* sp."). It may originally be native to coastal forests of Honduras, if this is the same species, but has spread long distances by means of its hard, seawater-resistant seeds. It was collected on Mt. Tau once during the present survey and once in 1976, but there is no plausible explanation as to how this vine got to that summit and no place else in Samoa. Further taxonomic work needs to be done since it is hard to believe that the same species occurs in both Honduras and Polynesia. In any case, the vine is very rare in Samoa and the Pacific Islands, and is proposed here for listing as threatened or endangered in the Territory.

*Gyrocarpus americanus* Jacq. (vili; moa)  
Gyrocarpaceae

This tree is native from tropical America to east Africa, but is rare in its Polynesian range at least and may be extinct in some of the islands where it formerly occurred. In Samoa it is or was called **vili** (which means to spin) or **moa** (which means chicken), both of which are based on the fluttering or spinning motion of the winged fruit thrown in the air by playful children. It was apparently collected in the 1850s or 1860s on 'Aunu'u and in the 1920s by Garber on Nu'utele Islet offshore from the village of Ofu. It was not found on 'Aunu'u during the present study, nor was anyone encountered there who even knew the plant, but on Ofu some people remember it as a tree growing near the village when they were young. It is also rare in Western Samoa, where it is currently known only from the western end of Savai'i. It is proposed here for listing as threatened or endangered because it is so rare in American Samoa, Western Samoa, and Polynesia, although it may have already disappeared from American Samoa.

*Crateva religiosa* Forst. f. (pupu elo?)

## Capparidaceae

This medium-sized tree is native from India to the Tuamotus, but is rare over much of this range, including all of Polynesia. It is currently known from only a single place in Tonga (Tafahi Island), two localities in Samoa, and an undetermined number of sites in French Polynesia. It was first collected in American Samoa on Ofu by Garber in the 1920s, and was found again a few years ago on the same island. Powell, who must also have seen the plant, called it **pupu elo**, but this name has not been substantiated. The tree was found twice during the present survey, once on the adjacent Olosega, and is apparently restricted to the talus slopes on those two islands, from near sea level to 40 m elevation. In Western Samoa it is currently known only from the western end of Savai'i. It is proposed here for listing as threatened or endangered because it is so rare in American Samoa, Western Samoa, and over its Polynesian range. However, it should be noted that this or a related species (a single species is recognized by most current botanists) occurs in Micronesia, where on some islands (e.g., Yap) it is a minor food source.

*Limnophila fragrans* (Forst. f.) Seem. (**tamole vai**)  
Scrophulariaceae

This small fragrant herb is native from Australia and Melanesia to the Society Islands, but is rare over much of this range, including, at least, all of Polynesia. It was apparently once known as **tamole vai** in Samoa, and may have been used in traditional medicines, but it, its name, and its uses have been virtually forgotten. It is a wetland plant that is restricted mostly to marshes (typically in taro patches) and has been recorded at only four sites in American Samoa: Faga'alu (which does not seem to have suitable habitat today), Vatia marsh (Tutuila), Ofu marsh, and Ta'u marsh. It was not found in the two Manu'a marshes during a search by the survey team, and is currently known only from the Vatia marsh. However, it is likely to still occur in the Ta'u marsh, as seed anyway, since the area is currently overgrown and difficult to traverse. The plant is also rare in Western Samoa, and has not been found recently at most of its former collection sites (montane craters on 'Upolu). It is proposed here for listing as threatened or endangered because of its rarity in Samoa and Polynesia, and the paucity of its suitable habitat remaining in the territory. The main threat to this species seems to be limited habitat and man's activities or lack of activities in its natural habitat (taro fields).

*Habenaria monogyne* Schltr.  
Orchidaceae

This attractive terrestrial orchid is endemic to Samoa, where it has been found in montane rainforest at 300 to 900 m elevation. It was collected in American Samoa only once (1920) and five times in Western Samoa, but not there since 1931. The Setchell specimen was collected "on dry slopes...about 500 m altitude, on Matafao trail" on Tutuila. This is a well-traveled and well-collected trail, so it is not from inaccessibility that the orchid has not been found again since 1920. It is proposed here for listing as threatened or endangered because it is rare in both American and Western Samoa. This species is already listed as a "species of concern" by the USFWS (1998).

*Hedyotis romanzoffiensis* (Cham. & Schlecht.) Fosb.

## Rubiaceae

This small shrub, which is restricted to sunny littoral habitats on coral islands, is endemic to Polynesia, ranging from Tuvalu (formerly known as the Ellice Islands) eastward to the Tuamotus and northward to Christmas Island in Kiribati (formerly known as the Gilbert Islands), mostly on sandy beaches of atolls. Its only collection in American Samoa was from Swains Island in 1839 (United States Exploring Expedition) and 1891 (Lister). It was not found during the present survey, nor during the last botanical visit to the island of its only known American Samoa location (by the principal investigator in 1976), and it may now be extirpated from American Samoa. It is proposed here for listing as threatened or endangered because it is a regional endemic with uncertain abundance elsewhere in its range.

### *Ischaemum stokesii* Brown

#### Poaceae

This grass is restricted in Samoa to the summits of Matafao and Le Pioa in montane scrub vegetation from ca. 450 to 650 m elevation, but it is also apparently indigenous to the small distant island of Rapa, where it is reported to be rare (J. Florence, pers. comm.). It was reported by Setchell, almost certainly incorrectly, to have been introduced to Tutuila by Mrs. Robert Louis Stevenson. It was found twice (collected once) during the present survey and is proposed here for listing as threatened or endangered because of its very limited distribution.

### *Lepturopetium* cf. *marshallense* Fosb. & Sachet

#### Poaceae

This unusual grass is indigenous to several Pacific islands in Polynesia, Micronesia, and perhaps Melanesia. In American Samoa it has been found only in a small patch on basalt rock near the sea at the very eastern tip of Tutuila, and elsewhere in the Northern Cook Islands, Cocos Island, Kwajalein, the Marshall Islands, and Tuvalu. What makes this grass so unusual is that it appears to be a hybrid between species in two other grass genera (*Lepturus* and *Chloris*) and suddenly appeared in the Pacific a few decades ago (originally recognized in New Caledonia). This may be the only natural intergeneric hybrid plant known in the Pacific. It is proposed here for listing as threatened or endangered because of its rarity and because of its unusual origin.

### *Manilkara dissecta* (L. f.) Dubard (pani)

#### Sapotaceae

**Pani** is small tree native from Vanuatu to Samoa. Its bark was formerly used as a dye and the wood was used for various artifacts, but the tree, its name, and its uses are now virtually forgotten in Samoa. It is restricted in American Samoa to coastal forest between ca. 20 and 175 m elevation in the area between Masefau and Vatia on the north coast of Tutuila, and is rare in Western Samoa (where it is reported only from the east end of Upolu and one offshore island there). It was found twice during the present survey. It is proposed here for listing as threatened or endangered because of its rarity in American Samoa and Western Samoa, and its restricted Pacific range. This species was already listed as a "species of concern" by the USFWS (1998).

*Mapania parvibracteata* (C. B. Clarke) T. Koyama  
Cyperaceae

This sedge is apparently also found in Fiji, but was incorrectly identified until recently. Prior to 1997, it had been collected only twice in American Samoa (1929, 1931), both times on Le Pioa (Rainmaker), but was collected during the present survey on Mt. Tau, and appears to be restricted to montane scrub vegetation from 200 to 500 m elevation. It is proposed here for listing as threatened or endangered because it is rare in American Samoa, absent from Western Samoa, and of uncertain status in the rest of its range (Fiji).

**Polynesian Introductions**

*Cordia aspera* Forst. f. (tou)  
Boraginaceae

**Tou** is a small to medium-sized tree that is a Polynesian introduction to Samoa, or is possibly indigenous, and ranges from Tonga to the Philippines. Its small white fruits were formerly used as a glue for pasting together layers of tapa cloth (*siapo*), but the tree is now rare, and is, along with its use and even its name, virtually forgotten in Samoa. It is recorded from Tutuila, Ofu, and Ta'u in lowland and disturbed forest from 30 to 365 m elevation, and was recorded three times (collected twice) during the present survey. It is also rare in Western Samoa and Tonga, and is of uncertain status over the rest of its range, and is proposed here for listing as threatened or endangered because of its rarity in Samoa (both Western and American), in the region, and because of its former ethnobotanical use.

*Cucumis melo* L. ('atiu)  
Cucurbitaceae

This aboriginal cantaloupe (var. *argestris*) was a Polynesian introduction to Samoa and eastward to the Marquesas, and is native to somewhere in the Old World tropics. Its fruit, which differs most obviously from the commercial varieties by its small size (ca. 2.5 cm or 1 inch in diameter), was formerly used for making fragrant fruit leis and possibly as a minor food source, but the plant is now rare in Samoa. It, its Samoan name ('atiu), and its uses have been virtually forgotten. It is known in recent times only from the periphery of the Ofu and Ta'u airports (and one minor record from Faleasau on Ta'u) in heavily disturbed places near sea level, but was not found during the present survey during visits to its known collection sites. It is proposed here for listing as threatened or endangered because of its rarity in Samoa and the rest of Polynesia (it is extinct in Tonga) and because of its former ethnobotanical uses.

*Parinari insularum* A. Gray (sea)  
Chrysobalanaceae



This medium-sized tree is probably native to Fiji, but appears to have been an ancient Polynesian introduction to Samoa, Tonga, and Wallis Island. *Sea*, a name which nowadays is usually mistaken for *seasea* (*Syzygium corynocarpum*) or *sea* (a sea cucumber), has a large odoriferous fruit that was formerly used for making fragrant fruit leis. The tree has probably now disappeared from Samoa, along with the knowledge of its name and its uses, and has not been collected in American Samoa since 1920 (and not in Western Samoa since 1931), and prior to that only once (Ofu in 1895, if this record is reliable) in the Territory. It is proposed here for listing as threatened or endangered because it is rare or has possibly disappeared in American Samoa and Western Samoa, and is of uncertain status in the rest of its small range.

*Solanum viride* Forst. f. ex Spreng. (**polo iti**)  
Solanaceae

**Polo iti** is a subshrub that was introduced by Polynesians or perhaps is indigenous to Samoa, and ranges from Fiji to Hawai'i. Its fruits were formerly a minor source of food and an element in colorful fruit leis, but the plant, its Samoan name, and its uses have now been virtually forgotten. It has been collected in American Samoa on Tutuila, Ofu, Ta'u, and Swains Island a total of five times, but was not found during the present survey, even though the only two recent collection sites (since 1931) were visited during the survey. It usually occurs in disturbed lowland places and in coastal forest. It is proposed here for listing as threatened or endangered because of its rarity in American Samoa and in the rest of its range (including Hawai'i, where it is believed to have disappeared), and because of its former ethnobotanical uses.

## (2) Montane Scrub Vegetation Survey

During the research, 111 native and Polynesian-introduced plants were identified as being rare in American Samoa. These are not randomly dispersed, but are more concentrated in some areas. These areas, since they contain so many rare species, should be further studied to see what their status is (whether or not they are likely to be developed or destroyed in the near future) and whether they contain any more sensitive species. The most significant area actually comprises eight sites covered with a unique type of vegetation called montane scrub, and includes Matafao, Le Pioa (Rainmaker Mountain), and Mt. Tau on Tutuila. It corresponds geologically to "trachyte plugs" characterized by nutrient-deficient trachyte soil derived from ancient volcano cores, which may account for the uniqueness of their vegetation and flora. A list of sensitive rare species found in this habitat is shown in Table 3, including two Tutuila endemic species. It is recommended that these areas be further studied to determine the frequency of rare plants found there (and consequently in American Samoa).

Table 3. Plant species restricted in American Samoa to montane scrub vegetation.

<i>SPECIES</i>	<i>FAMILY</i>	<i>STATUS</i>
<i>Dioclea wilsonii</i> Standl.	Fabaceae	Indigenous

<i>Guioa rhoifolia</i> (A. Gray) Radlk.	Sapindaceae	Indigenous
<i>Gahnia vitiensis</i> Rendle	Cyperaceae	Indigenous
<i>Macharina falcata</i> (Nees) Koyama	Cyperaceae	Indigenous
<i>Mapania parvibracteata</i> (C. B. Clarke) T. Koyama	Cyperaceae	Indigenous
<i>Liparis caespitosa</i> (Thou.) Lindl.	Orchidaceae	Indigenous
<i>Liparis gibbosa</i> Finet	Orchidaceae	Indigenous
<i>Ischaemum stokesii</i> Brown	Poaceae	Indigenous
<i>Orthiopteris tenuis</i> (Brackenridge) Brownlie	Dennstaedtiaceae	Indigenous
<i>Cyrtandra geminata</i> Reinecke	Gesneriaceae	Endemic to Tutuila
<i>Melicope richii</i> A. Gray	Rutaceae	Endemic to Tutuila

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### (3) Botanical Survey of Pala Lagoon

The area surrounding Pala Lagoon, Tutuila, comprises the largest wetland in American Samoa. It is also home to a number of species that are partially or entirely restricted in American Samoa to this area (Table 4). Three species are known in American Samoa only from this area (*Ximenia americana*, *Anacolosia insularis*, and *Scirpodendron ghaeri*), while three others have their main population here (*Pongamia pinnata*, which is also found in a small area of Ta'u, *Sophora tomentosa*, which is also found in small littoral patches on 'Aunu'u and Ofu, and *Xylocarpus moluccensis*, which has a small, recently diminished population on 'Aunu'u). The vegetation of Pala Lagoon should be studied, perhaps with the cooperation of the American Samoa Environmental Protection Agency, to determine the population of these species and whether or not the area needs protection, particularly one small area in the middle of the lagoon shoreline with a unique littoral/coastal forest.

Table 4. Sensitive plant species largely restricted in American Samoa to Pala Lagoon, Tutuila.

<i>SPECIES</i>	<i>FAMILY</i>	<i>STATUS</i>
<i>Anacolosia insularis</i> Christoph. <sup>1</sup>	Olcaceae	Endemic to Samoa
<i>Pongamia pinnata</i> (L.) Merr.	Fabaceae	Indigenous
<i>Sophora tomentosa</i> L.	Fabaceae	Indigenous
<i>Xylocarpus moluccensis</i> (Lam.) Roemer	Meliaceae	Indigenous
<i>Ximenia americana</i> L. <sup>1</sup>	Olcaceae	Indigenous
<i>Scirpodendron ghaeri</i> (Gaertn.) Merr. <sup>1</sup>	Cyperaceae	Indigenous

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<sup>1</sup>Entirely restricted in American Samoa to Pala Lagoon.

### (4) Further Study of the Montane Forest of Ta'u

The island of Ta'u extends up to 960 m (3150 ft) in elevation and because of the extremely high rainfall there, the summit is covered with dense rain forest and a unique type of scrubby vegetation called summit scrub. The summit area is difficult to reach and relatively few botanical specimens have been made there. The one trip to the summit made during the present survey produced five new plant records for American Samoa, and a sixth one was recorded during an earlier trip by members of the Department of Marine and Wildlife Resources. It is likely that more undiscovered species are present in the summit area, and in a botanically unexplored area on the south coast of the island. It is recommended that further botanical trips be made to Ta'u to record any new plants present in the Territory, and to determine the frequency of some of the rare plants already known from there (see Appendices B and C).

### **(5) Preparation of a Flora of Samoa**

A manual of the flora of American Samoa, and Samoa as a whole is, is greatly needed. There is currently no written flora of the Territory or of the archipelago. Publications to date, some of which are referred to as floras, lack descriptions and keys, and are greatly out of date (Reinecke 1896, 1898; Setchell 1920; Christophersen 1935, 1938; Yuncker 1945). The most up-to-date publications are merely annotated checklists (Whistler 1992b, 1994) of the flora. The adjacent islands of Polynesia are much better covered. Fiji has a 6-volume work on its flora (Smith 1979-1996), Tonga has a recent flora (Yuncker 1959), Niue has two floras, the most recent of which is W. R. Sykes (1970), the Cook Islands flora is currently being worked on by Sykes, the flora of Tahiti is currently being worked on and published by J. Florence, and a manual of the flora of Hawai'i was recently published (Wagner et al. 1990). A flora of Samoa is needed by scientists, park managers, and local students and laymen so that species in the flora can be identified in the field (or even identified at all).

## REFERENCES CITED

- Anon. 1998. Pacific islands (excluding Hawai'i) plants and animals: updated November 5, 1998: listed, proposed, or candidate species, as designated under the U.S. Endangered Species Act. USFWS, Hawai'i, document.
- Amerson, A. B. Jr., W. A. Whistler, & T. D. Schwaner. 1982. Wildlife and wildlife habitat of American Samoa. I. Environment and ecology; II. Accounts of flora and fauna. U. S. Dept. Interior. 2 Vols.
- Bernardi, L. 1964. Revisio generis *Weinmanniae*. Bot. Jahrb. Syst. 83 (2): 126-186.
- Christophersen, E. 1935, 1938. Flowering plants of Samoa. Bernice P. Bishop Mus. Bull. 128: 1-221. II. Bernice P. Bishop Mus. Bull. 154: 1-77.
- Christensen, C. 1943. A revision of the Pteridophyta of Samoa. Bernice P. Bishop Mus. Bull. 177: 1-138.
- Conn, B. J. 1980. Revision of *Geniostoma* subg. *Geniostoma*. Blumea 26 (2): 245-364.
- Cox, P. A. 1985. The genus *Meryta* (Araliaceae) in Samoa. Jour. Arnold Arbor. 66 (1): 113-121.
- Cribb, P. J. and W. A. Whistler. 1996. The Orchids of Samoa. Kew Gardens, London. 141 pp.
- Gillett, G. W. 1973. The genus *Cyrtandra* (Gesneriaceae) in the South Pacific. Univ. Calif. Pub. Bot. 66: 1-59.
- Gray, A. 1854. Botany. Phanerogamia. U. S. Explor. Exped. 15 (1): 1-177.
- Hoogland, R. D. 1979. Studies in the Cunoniaceae II. Blumea 25 (2): 321-478.
- Lloyd, C. G. & W. H. Aiken. 1934. Flora of Samoa. Bull. Lloyd Libr. Bot. 33: 1-116.
- Pickering, C. 1876. The geographical distribution of animals and plants in their wild state. (From USEE, Vol. 19, pt. 2: 276-311). Naturalist's agency, Salem, Mass.
- Powell, T. 1868. On various Samoan plants and their vernacular names. Jour. Bot. 6: 278-285, 342-347, 355-370.
- Rechinger, K. 1907-1915. Botanische und Zoologische Ergebnisse einer wissenschaftlichen Forschungsreise nach den Samoa-Inseln... Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 81: 197-317. 1907; 84: 385-562. 1908; 85: 175-432. 1910; 88: 1-65. 1911; 89: 443-708. 1913; 91: 139-213. 1915.
- Reinecke, F. 1896, 1898. Die Flora der Samoa-Inseln. Bot. Jahrb. Syst. 23: 237-368; 25: 578-708.
- Setchell, W. A. 1924. American Samoa. Part I. Vegetation of Tutuila Island. Publ. Carnegie Inst. Wash. 341: 1-175.
- Smith, A. C. 1952a. Studies of Pacific Island plants, 9. Notes on the Rutaceae of Fiji, Samoa, and Tonga. Jour. Arnold Arbor. 32: 226-255.
- 1952b. Studies of Pacific Island plants, 10. The Meliaceae of Fiji, Samoa, and Tonga. Contr. U. S. Natl. Herb. 30 (4): 469-522.
- 1952c. Studies of Pacific Island plants, 12. The Cunoniaceae of Fiji and Samoa. Jour. Arnold Arbor. 33: 119-149.
- 1953. Studies of Pacific Island plants, 15. The genus *Elaeocarpus* in the New Hebrides, Fiji, Samoa, and Tonga. Contr. U. S. Natl. Herb. 30 (5): 523-573.
- 1971a. Studies of Pacific Island plants, 24. The genus *Terminalia* (Combretaceae) in Fiji, Samoa, and Tonga. Brittonia 23 (4): 394-412.

- 1971b. Studies of Pacific Island plants, 23. The genus *Diospyros* (Ebenaceae) in Fiji, Samoa, and Tonga. Jour. Arnold Arbor. 52 (3): 369-403.
- 1973a. Studies of Pacific Island plants, 25. Myrsinaceae of the Fijian Region. Jour. Arnold Arbor. 54 (1): 1-41, (2): 228-292.
- 1973b. Studies of Pacific Island plants, 26. *Metrosideros collina* (Myrtaceae) and its relatives in the southern Pacific. Amer. Jour. Bot. 60 (5): 479-490.
- 1975. The genus *Macropiper* (Piperaceae). Jour. Linn. Soc., Bot. 71 (1): 1-38.
- 1976. Studies of Pacific Island plants, 33. The genus *Ascarina* (Chloranthaceae) in the southern Pacific. Jour. Arnold Arbor. 57 (4): 405-425.
- 1979--1996. Flora vitiensis nova: a new flora of Fiji. Vol. 1: 1-495 (1979); II: 1-810 (1981); III: 1-758 (1985); IV: 1-377 (1988); V: 1-626 (1991); VI: 1-125 (1996). National Trop. Bot. Gard., Kaua'i, Hawai'i.
- Smith, A. C. and S. P. Darwin. 1974. Studies of Pacific Island plants, 28. The Guttiferae of the Fijian Region. Jour. Arnold Arbor. 55 (2): 215-263.
- Smith, A. C. and B. C. Stone. 1962. Studies of Pacific Island plants, 17. The genus *Geniostoma* (Loganiaceae) in the New Hebrides, Fiji, Samoa, and Tonga. Contrib. U. S. Natl. Herb. 37 (1): 1-41.
- 1968. Studies of Pacific Island plants, 19. The Araliaceae of the New Hebrides, Fiji, Samoa, and Tonga. Jour. Arnold Arbor. 49 (4): 431-501.
- Stearns, H. T. 1944. Geology of the Samoan Islands. Bull. Geolog. Soc. Amer. 55: 1279-1332.
- Stice, G. D. & F. W. McCoy, Jr. 1968. The geology of the Manu'a Islands. Pac. Sci. 22: 247-457.
- Sykes, W. R. 1970. Contributions to the flora of Niue. N. Z. Dept. Sci. and Indust. Res. Bull. 200: 1-321.
- Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1990. Manual of the flowering plants of Hawai'i. Univ. Hawaii Press, Honolulu. 2 Vols.
- Whistler, W. A. 1980. The vegetation of Eastern Samoa. Allertonia 2 (2): 45-190.
- 1984. Annotated list of Samoan plant names. Econ. Bot. 38(4): 464-489.
- 1986. A revision of *Psychotria* (Rubiaceae) in Samoa. Jour. Arnold Arbor. 67: 341-370.
- 1988a. A revision of *Syzygium* (Myrtaceae) in Samoa. Jour. Arnold Arbor. 69: 167-192.
- 1988b. Checklist of the weed flora of Western Polynesia. South Pacific Commission Technical Paper 194. Noumea, New Caledonia. 69 pp.
- 1992a. Vegetation of Samoa and Tonga. Pac. Sci. 46 (2): 159-178.
- 1992b. Botanical inventory of the proposed Ta'u unit of the National Park of American Samoa. Techn. Rept. 83. Cooperative National Park Resources Study Unit, Honolulu. 85 pp. (Mimeograph)
- 1994. Botanical inventory of the proposed Tutuila and Ofu units of the National Park of American Samoa. Techn. Rept. 87. Cooperative National Park Resources Study Unit, Honolulu. 85 pp. (Mimeograph)
- Yuncker, T. G. 1945. Plants of the Manua Islands. Bernice P. Bishop Mus. Bull. 184: 1-73.
- Yuncker, T. G. 1959. Plants of Tonga. Bernice P. Bishop Mus. Bull. 220: 1-283.

## APPENDIX A. ANNOTATED CHECKLIST OF THE VASCULAR FLORA OF AMERICAN SAMOA

The following checklist of the vascular flora of American Samoa is divided into four sections: Dicotyledonae, Monocotyledonae, Pteridophytes (Ferns), and Fern Allies. Each of these groups is further divided into "families" (the names ending in "-CEAE"), which are arranged in alphabetical order and which contain the species, also arranged in alphabetical order. Each of the species, which are printed in **bold**, is followed by the name(s) of the authors. Information on frequency, habitat, status (endemic, indigenous, Polynesian introduction, or modern introduction), and distribution within Samoa (TU=Tutuila, AU=Aunu'u, OF=Ofu, OL=Olosega, TA=Ta'u, SW=Swains, and RO=Rose) are included for each species. Elevations given are those recorded for the species within the whole Samoan Archipelago.

### DICOTYLEDONAE ACANTHACEAE

**Asystasia gangetica** (L.) T. Anders.

Herb uncommon as an adventive or an escape in disturbed areas, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU.

**Blechum pyramidatum** (Lam.) Urb.

Herb common in disturbed areas, reported from near sea level to 610 m elevation. A modern introduction, native to tropical America. TU, AU, TA.

**Hemigraphis alternata** (Burm. f.) T. Anders.

Herb locally abundant in a few localities in disturbed forest and on roadsides, originally an escape from cultivation, reported only from the lowlands. A modern introduction, native to tropical Asia. TU, TA, SW.

**Justicia procumbens** L.

Herb common in disturbed areas, reported only from the lowlands. A modern introduction, native to tropical Asia. TU, AU, OF, TA.

**Ruellia prostrata** Poir.

vaouli

Herb common in disturbed areas, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU, AU, OF, TA.

**Ruellia tuberosa** L.

Herb uncommon as a weed in villages, reported from near sea level to 300 m elevation. A modern introduction, native to the Old World tropics. TU, AU, TA.

## AIZOACEAE

### **Sesuvium portulacastrum (L.) L.**

Succulent herb uncommon on coastal rocks, reported only near sea level. Indigenous, widespread in the Pacific. TU, OF, OL, TA.

## AMARANTHACEAE

### **Achyranthes aspera L.**

tamatama

Subshrub uncommon in coastal areas and sometimes weedy, reported only from the lowlands. Indigenous or a Polynesian introduction, widespread in the tropics. TU, AU, OF, OL, TA.

### **Achyranthes velutina Hooker & Arnott**

tamatama

Shrub rare in littoral areas, reported only near sea level. Indigenous, ranging from Tokelau to the Austral Islands. Some authors believe this species is just a variety of the former species that occurs on Polynesian and Micronesian atolls. SW.

### **Alternanthera sessilis (L.) R. Br. ex DC.**

Herb occasional to common in disturbed places, particularly in wetland crops such as taro, reported from near sea level to 1060 m elevation in Samoa. A modern introduction, possibly native to southern China. TU, AU, TA.

### **Amaranthus lividus L.**

Herb uncommon in disturbed places, reported from near sea level to ca. 250 m elevation. A modern introduction, native to North America. AU. A new record for American Samoa.

### **Amaranthus viridis L.**

Herb uncommon in croplands and waste places. Possibly a Polynesian introduction, now pantropical in distribution. TU, OF?, OL, TA.

### **Cyathula prostrata (L.) Bl.**

Herb uncommon to rare in disturbed forest and mountain clearings, reported from near sea level to 900 m elevation. Probably an unintentional Polynesian introduction, or indigenous, native to the Old World tropics. TU, TA.

## ANACARDIACEAE

### **Buchanania merrillii Christoph.**

Large tree occasional in foothill to montane forest, reported from 250 to 450 m elevation. Endemic. TU.

### **Rhus taitensis Guillemain**

tavai

Large tree common to abundant in lowland and especially secondary forest, reported from near sea level to 700 m elevation. Indigenous, ranging from Futuna to Tahiti. TU, OF, OL, TA.

**Schinus terebinthifolius** Raddi

Small tree uncommon as a weed of disturbed places in Utulei (Tutuila), possibly originally escaping from a hedge at the Rainmaker Hotel. A modern introduction, native to Brazil. TU.

ANNONACEAE

**Cananga odorata** (Lam.) Hooker f. & Thoms.

moso'oi

Medium-sized tree occasional to common in disturbed forest, reported from 15 to 600 m elevation. A Polynesian introduction or possibly indigenous, widespread westward to southern Asia. TU, OF, OL, TA.

APIACEAE

**Centella asiatica** (L.) Urb.

togo

Low herb occasional to common in pastures and sunny disturbed places, reported from near sea level to 1050 m elevation in Samoa. Probably an intentional Polynesian introduction, native to tropical Asia. TU, AU, OF, TA.

APOCYNACEAE

**Alstonia pacifica** (Seem.) A. C. Smith

Small tree common in open forest on ridges, reported from 150 to 1300 m elevation in Samoa. Indigenous to Samoa, ranging westward to the Solomon Islands. TU, OF? (Reinecke).

**Alyxia bracteolosa** Rich

lau maile

Vine common in lowland to montane forest, reported from 10 to 1300 m elevation in Samoa. Indigenous, also found in Fiji, Horne Island, Wallis, and Tonga. TU, OF, OL, TA.

**Alyxia stellata** (Forst.) Roemer & Schultes

gau, lau maile

Climbing shrub common in open forest and on ridges, reported from 20 to 1700 m elevation in Samoa. Indigenous, ranging from New Caledonia to the Marquesas. TU, AU, OF, OL, TA.

**Cerbera manghas** L.

leva

Medium-sized tree occasional in littoral forest, and rarely inland up to 450 m (where it is probably a relict of cultivation). Indigenous, ranging from Malaysia to the Marquesas. TU, AU, OF, OL, TA.

**Ervatamia obtusiuscula** Markgraf

pulu

Small tree uncommon in lowland to foothill forest, reported from near sea level to 250 m elevation. Indigenous, ranging from Vanuatu to Makatea and the Society Islands. TU, OF, OL.

**Neisosperma oppositifolium** (Lam.) Fosb. & Sachet

pulu fao

Medium-sized tree rare overall, but occasional in littoral forest on Swains, reported only near sea level. Indigenous, ranging from the Seychelle Islands to Tahiti. SW.



## ARALIACEAE

**Meryta macrophylla** (Rich) Seem.

ma'ulu'ulu; fagufagu

Small tree occasional in coastal to montane forest, reported from 15 to 830 m elevation. Indigenous, also found in Tonga. TU, OF, OL, TA.

**Polyscias reineckei** Harms

tagitagi vao

Small tree rare or perhaps uncommon in lowland to montane forest, reported from 100 to 750 m elevation. **Endemic.** TU. A new record for American Samoa.

**Polyscias samoensis** (A. Gray) Harms

tagitagi vao

Small tree common in coastal to foothill forest, reported from near sea level to 350 m elevation. Indigenous, also found on Niuafo'ou (Tonga). TU, TA.

**Reynoldsia lanutoensis** Hochreut.

vi vao

Small to large tree common in montane forest and summit scrub, reported from 400 to 1100 m elevation in Samoa. **Endemic.** TA.

## ARISTOLOCHIACEAE

**Aristolochia cortinata** Reinecke

Liana occasional in lowland to montane forest, reported from 20 to 600 m elevation. **Endemic.** TU.

## ASCLEPIADACEAE

**Asclepias curassavica** L.

Subshrub uncommon as a weed, particularly in pastures, reported from near sea level to 640 m elevation. A modern introduction, native to tropical America. TU.

**Hoya australis** R. Br. in Traill

fue sele la, lau magamaga

Vine occasional from littoral to montane forest, reported from near sea level to 580 m elevation. Indigenous, ranging from Australia to Samoa. TU, AU, OF, OL, TA.

**Hoya pottsii** Traill

fue sele la

Vine occasional in the coastal to montane forest, reported from 10 to 600 m elevation. Indigenous, ranging from Hainan Island to Samoa. TU, OF, OL, TA.

**Hoya vitiensis** Turrill

fue sele la

Vine occasional in foothill to montane forest, reported from 200 to 750 m elevation. Indigenous, also found in Fiji. A purple-flowered variety is recorded from American Samoa, var. *tutuilensis* (Christoph.) Whistler. TU, OF, OL.

**Hoya** sp. nova

fue sele la

Vine occasional in lowland to montane forest, reported from 10 to 600 m elevation.

**Endemic.** TU, OF, OL, TA.

## ASTERACEAE

**Acmella uliginosa** (Sw.) Cass.

Herb uncommon in disturbed places, especially in wet areas, reported from near sea level to 250 m elevation. A modern introduction, native to tropical America. TU.

**Adenostemma viscosum** Forst.

Herb rare in montane forest clearings and along forest trails, reported from near sea level to 1700 m elevation. Indigenous or an unintentional Polynesian introduction, ranging from Africa to eastern Polynesia. OF, TA, SW.

**Ageratum conyzoides** L.

Herb common as a weed in sunny, disturbed places and croplands, reported from near sea level to 1650 m elevation in Samoa. A modern introduction, native to tropical America. TU, OF, TA.

**Bidens alba** (L.) DC.

Herb abundant in disturbed places, apparently displacing the following species, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, TA.

**Bidens pilosa** L.

Herb now uncommon in dry, sunny disturbed places, reported from near sea level to 1550 m elevation in Samoa. A modern introduction, native to tropical America. TU, AU, OF, TA.

**Blumea milnei** Seem.

Subshrub rare in forest clearings, and has possibly now disappeared from Samoa, elevation not reported. Indigenous, ranging from New Guinea to Samoa. OL? (Reinecke).

**Conyza bonariensis** (L.) Cronquist

Herb rare as a weed in disturbed places, perhaps has now disappeared from Samoa, reported only from near sea level. A modern introduction, native to South America. TU.

**Crassocephalum crepidioides** (Benth.) S. Moore

Herb common in disturbed places, especially in taro fields, reported from near sea level to 1800 m elevation in Samoa. A modern introduction, native to tropical Africa. TU, OF, TA.

**Eclipta prostrata** (L.) L.

Herb uncommon in disturbed places, mostly in wet soil, reported only from the lowlands. A modern introduction, pantropical in distribution. TU, TA.

**Eleutheranthera ruderalis** (Sw.) Schultz-Bip.

Herb occasional in cultivated places, reported only from the lowlands. A modern introduction, native to tropical America. TU, OF.

**Emilia sonchifolia** (L.) DC.

fua lele

Herb occasional in sunny disturbed places, reported from near sea level to 300 m elevation. A modern introduction, native to the Old World tropics. TU, AU, OF, TA.

**Erechtites valerianifolia** (Wolf) DC.

fua lele

Herb occasional in open, disturbed places, reported from near sea level to 1750 m elevation in Samoa. A modern introduction, native to tropical America. TU, TA.

**Mikania micrantha** H. B. K.

fue Saina

Herbaceous vine common to abundant in disturbed places, reported from near sea level to 1600 m elevation in Samoa. A modern introduction, native to tropical America. TU, AU, OF, OL, TA.

**Pluchea indica** (L.) Less.

Shrub rare in disturbed coastal places, reported only near sea level. A modern introduction, first reported from Samoa in 1993, native to southern Asia. TA.

**Pseudelephantopus spicatus** (B. Juss. ex Aubl.) C. F. Baker

vao elefane

Herb occasional in lawns and disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, TA.

**Struchium sparganophorum** (L.) Kuntze

Herb occasional on streamsides and other wet places, reported from near sea level to 400 m elevation. A modern introduction, native to tropical America. TU.

**Synedrella nodiflora** (L.) Gaertn.

tae'oti

Herb common in disturbed places, reported from near sea level to 550 m elevation. A modern introduction, native to tropical America. TU, OF, TA, SW.

**Tridax procumbens** L.

Herb occasional in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, TA.

**Vernonia cinerea** (L.) Less.

Herb occasional to common in sunny disturbed places, reported from near sea level to 360 m elevation. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

**Wedelia triloba** (L.) Hitchc.

Herb occasional in disturbed places, particularly around villages, reported only from the lowlands. A modern introduction, native to the New World tropics. TU, AU.

**Wollastonia biflora (L.) DC.**

ateate

Shrub common to abundant in sunny coastal areas, sometimes extending inland in coconut plantations, reported from near sea level to 450 m elevation. Indigenous, ranging from tropical Asia to the Austral Islands. TU, AU, OF, OL, TA.

**Youngia japonica (L.) DC.**

Herb uncommon in disturbed places, reported from near sea level to 300 m elevation. A modern introduction, indigenous from India to Japan. TU.

**BARRINGTONIACEAE**

**Barringtonia asiatica (L.) Kurz**

futu

Large tree common to abundant in littoral to coastal forest, reported from near sea level to ca. 200 m elevation. Indigenous, ranging from Madagascar to the Marquesas. TU, AU, OF, OL, TA, SW.

**Barringtonia samoensis A. Gray**

falaga

Medium-sized tree occasional in lowland to montane forest, reported from 5 to 600 m elevation. Indigenous, ranging westward to Indonesia. TU, OF, TA.

**BIGNONIACEAE**

**Spathodea campanulata Beauv.**

fa'apisi

Large tree uncommon in disturbed places and cultivated, reported from near sea level to 650 m elevation. A modern introduction, native to Africa. TU.

**BORAGINACEAE**

**Cordia aspera Forst. f.**

tou

Small tree rare in lowland to foothill forest, reported from 30 to 360 m elevation. A Polynesian introduction or indigenous, ranging from Tonga to the Philippines. TU, OF, TA.

**Cordia subcordata Lam.**

tauanave

Medium-sized tree uncommon in littoral forest, reported from near sea level. Indigenous, ranging from tropical Asia to eastern Polynesia. TU, AU, OF?, OL, TA? (Guest), SW.

**Heliotropium procumbens Mill.**

Herb uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, TA.

**Tournefortia argentea L. f.**

tausuni

Small tree occasional on the seaward edge of littoral forest. Indigenous, ranging from Mauritius to southeastern Polynesia. TU, AU, OF, OL, TA, SW, RO.

## BRASSICACEAE

### **Rorippa sarmentosa** (DC.) Macbr.

a'atasi

Herb occasional as a weed, sometimes occurring in sunny undisturbed habitats from near sea level to 1700 m elevation in Samoa. A Polynesian introduction or perhaps indigenous, ranging from New Caledonia to Hawai'i. TU, AU, OF, OL, TA, SW.

## BURSERACEAE

### **Canarium harveyi** Seem.

Medium-sized tree occasional to locally abundant in coastal to montane forest, reported from near sea level to 600 m elevation. A modern introduction, also found in Fiji, Tonga, and Niue. TU, OL, TA.

### **Canarium vitiense** A. Gray

ma'ali

Large tree occasional in coastal to montane forest, reported from 10 to 800 m elevation. Indigenous, also found in Fiji and Tonga. TU, OF, OL, TA.

### **Garuga floribunda** Decne.

vi vao

Large tree occasional in coastal to foothill forest, reported from near sea level to 450 m elevation. Indigenous, ranging from the Philippines and Indonesia to Samoa. TU, AU, OF, OL, TA.

## CAPPARIDACEAE

### **Capparis cordifolia** Lam.

Prostrate shrub uncommon on coastal rocks, reported only near sea level. Indigenous, ranging from Palau to southeastern Polynesia. OF, OL, TA.

### **Crateva religiosa** Forst. f.

Medium-sized tree rare in coastal forest, reported from near sea level to 40 m elevation. Indigenous, ranging from India to the Tuamotus. OF, OL.

## CARICACEAE

### **Carica papaya** L.

esi

Small tree common in disturbed places and cultivated in villages, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, TA.

## CASSYTHACEAE

### **Cassytha filiformis** L.

vao manoa?

Leafless parasitic vine occasional in littoral areas and on coastal lava flow scrub, reported from near sea level to 300 m elevation. Indigenous, pantropical in distribution. TU, OF, TA, SW.

## CELASTRACEAE

### **Maytenus vitiensis** (A. Gray) Ding Hou

Scandent shrub uncommon in open forest on ridges, reported from 25 to 600 m elevation. Indigenous, ranging from Fiji to the Gambier Islands. TU.

## CHLORANTHACEAE

### **Ascarina diffusa** A. C. Smith

lau afia, afia

Small to medium-sized tree occasional in montane forest and summit scrub, reported from 470 to 1800 m elevation in Samoa. Indigenous, ranging from the Solomon Islands to Rarotonga. TA.

## CHRYSOBALANACEAE

### **Atuna racemosa** Raf.

ififi

Medium-sized tree rare in lowland to montane forest, but often forming small groves, reported from near sea level to 450 m elevation. A Polynesian introduction, semi-naturalized and persisting in old forest, ranging from tropical Asia to western Polynesia. TU, OF? (Guest), TA? (Guest).

### **Parinari insularum** A. Gray

sea

Medium-sized tree rare in secondary forest, probably a relict of cultivation, but perhaps has now disappeared from Samoa. A Polynesian introduction from Fiji, also found in Tonga and Wallis Island. TU, OF, OL? (Guest), TA? (Guest).

## CLUSIACEAE

### **Calophyllum inophyllum** L.

fetau

Large tree common in littoral to coastal forest, reported from near sea level to ca. 100 m elevation. Indigenous, ranging from tropical Africa to eastern Polynesia. TU, AU, OF, OL, TA, SW.

### **Calophyllum neo-ebudicum** Guillaumin

tamanu

Large tree occasional to common in lowland to montane forest, reported from 25 to 650 m elevation. Indigenous, ranging from New Britain to Niue. TU, OF (Guest), OL, TA.

### **Garcinia myrtifolia** A. C. Smith

Medium-sized tree uncommon in lowland to montane forest, reported from 50 to 650 m elevation. Probably a modern, naturalized introduction, first collected in Samoa in 1974, also found in Tonga and Fiji. TU, OL, TA.

### **Mammea glauca** (Merr.) Kost.

manapau

Medium-sized tree uncommon in coastal to montane forest, reported from 20 to 960 m elevation in Samoa. **Endemic.** TU.

## COMBRETACEAE

### ***Terminalia catappa* L.**

talie

Large tree occasional in littoral to foothill forest, reported from near sea level to 350 m elevation. Indigenous or an early European introduction, widespread in the Old World tropics. TU, OF, OL, TA.

### ***Terminalia richii* A. Gray**

malili

Large tree uncommon in lowland to montane forest, reported from near sea level to 830 m elevation. Indigenous, also found in Fiji and Niue. TU, OL, TA.

### ***Terminalia samoensis* Rechinger**

talie

Medium-sized tree uncommon in littoral forest, reported only near sea level. Indigenous, ranging from the Celebes to the Society Islands. TU, OF, OL.

## CONNARACEAE

### ***Rourea minor* (Gaertn.) Alston in Trimen**

Liana occasional in lowland to montane forest, reported from 50 to 500 m elevation. Indigenous to Samoa, ranging from India to Niue. TU, OF, OL, TA.

## CONVOLVULACEAE

### ***Ipomoea alba* L.**

Creeping vine uncommon in disturbed places, reported from ca. 100 to ca. 600 m elevation. A modern introduction, pantropical in distribution. TU.

### ***Ipomoea littoralis* Bl.**

palulu; tagamimi

Herbaceous vine occasional in sunny coastal and lowland areas, and sometimes weedy in plantations, reported from near sea level to 300 m elevation. Indigenous, widespread throughout the Pacific. TU, AU, OF, OL, TA.

### ***Ipomoea macrantha* Roemer & Schultes**

Vine occasional to common in sunny coastal areas, reported from near sea level to 75 m elevation. Indigenous, widespread throughout the tropics. TU, AU, OF, TA, SW, RO.

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

fue moa

Prostrate vine common to abundant on rocky and sandy shores, reported only near sea level. Indigenous, pantropical in distribution. TU, OF, OL, TA.

### ***Merremia peltata* (L.) Merr.**

fue vao; fue lautetele

Vine common in forest clearings and open forest of lowland to montane forest, reported from 100 to ca. 1000 m elevation in Samoa. Indigenous, ranging from Africa to Tahiti. TU, TA.

**Merremia umbellata (L.) Hall. f.**

Vine occasional in disturbed places, reported from near sea level to 350 m elevation. A modern introduction, pantropical in distribution. TU.

**Operculina turpethum (L.) A. Silva Manso**

Prostrate or climbing vine uncommon in disturbed places in plantations and open forest, reported from 5 to 180 m elevation. Indigenous, widespread in the Old World tropics. TU, OF, TA.

**Operculina ventricosa (Bertero) Peter**

Vine occasional in disturbed places, reported from near sea level to 300 m elevation. Indigenous to the Caribbean, but reported from Polynesia in ca. 1939, and now found in the Cook Islands, Niue, Tonga, and Samoa, and in the Marianas. TU, TA.

**Stictocardia tiliifolia (Desr.) Hall. f.**

tagamimi; palulu

Climbing or prostrate vine occasional in low vegetation in disturbed places, reported from near sea level to 100 m elevation. A modern introduction, native to the Old World tropics. TU, OF, OL, TA.

CRASSULACEAE

**Kalanchoe pinnata (Lam.) Pers.**

pagi

Subshrub occasional as a weed of disturbed places and littoral forest, reported only near sea level. A modern introduction, native to tropical Africa. SW.

CUCURBITACEAE

**Benincasa hispida (Thunb.) Cogn.**

fagu

Herbaceous vine rare in disturbed areas, reported only from the lowlands. A Polynesian introduction, native to Southeast Asia or Malaysia. TU. A new record for American Samoa.

**Cucumis melo L.**

'atiu

Vine rare in heavily disturbed places, reported only near sea level. A Polynesian introduction, native to the Old World tropics. TU, OF, TA.

**Luffa cylindrica (L.) Roemer**

Vine uncommon in sunny coastal areas and sometimes weedy in plantations, reported from near sea level to 400 m elevation. Indigenous or a Polynesian introduction, widespread in the Pacific. The Samoan population belongs to var. *insularum* (A. Gray) Cogn. TU, AU, OF, OL, TA.

**Momordica charantia L.**

Vine common in disturbed places, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU.



**Zehneria mucronata** (Bl.) Miq.

Vine occasional in clearings in the forest, reported from near sea level to 1700 m elevation in Samoa. Indigenous, ranging from Taiwan to Tahiti. TU, OF, TA.

**Zehneria samoensis** (A. Gray) Fosb. & Sachet

Vine occasional in the littoral to coastal forest, occasionally inland as a weed, reported from near sea level to ca. 200 m elevation. Indigenous, also found in Tonga and Niue. TU, AU, TA.

CUNONIACEAE

**Spiraeanthemum samoense** A. Gray

Medium-sized tree occasional in foothill forest to montane scrub and forest, reported from 180 to 1850 m elevation in Samoa. **Endemic.** TU.

**Weinmannia samoensis** A. Gray

Medium-sized common in montane forest, summit scrub, and montane scrub, reported from 300 to 1700 m elevation in Samoa. Indigenous, also found in Rarotonga and perhaps Fiji. TU, OL, TA.

EBENACEAE

**Diospyros elliptica** (Forst.) P.S. Green

'anume

Small to medium-sized tree common in coastal forest and less so in lowland and foothill forest, reported from near sea level to 300 m elevation. Indigenous, ranging from the Lau Islands (Fiji) to Niue. TU, AU, OF, OL, TA.

**Diospyros samoensis** A. Gray

'au'auli

Small to medium-sized tree common to abundant in coastal forest and extending up into foothill forest, reported from near sea level to 350 m elevation. Indigenous, also found from Lau (Fiji) to Niue. TU, AU, OF, OL, TA.

ELAEOCARPACEAE

**Elaeocarpus tonganus** Burkill

a'amati'e

Medium-sized tree occasional in lowland to montane forest, reported from 50 to 750 m elevation. Indigenous, ranging from Tonga to the Austral Islands. TU, OF, OL, TA.

**Elaeocarpus ulianus** Christoph.

Medium-sized tree occasional in lowland to montane forest, reported from 100 to 900 m elevation. **Endemic.** TU, OF.

## EUPHORBIACEAE

***Acalypha lanceolata* Willd.**

ogoogo sina

Herb uncommon in disturbed places, reported only from the lowlands. An unintentional Polynesian introduction, native to the Old World tropics. TU, AU, OF, TA.

***Aleurites moluccana* (L.) Willd.**

lama

Medium-sized to large tree occasional in coastal and lowland forest, reported from 20 to 150 m elevation. A Polynesian introduction, ranging from Asia to Hawai'i. TU, OF, OL, TA.

***Antidesma sphaerocarpum* Muell. Arg.**

Shrub or small tree occasional in lowland to foothill forest, reported from near sea level to 350 m elevation. Indigenous, also found in Futuna, 'Uvea, and Rotuma. TU, AU, OF, OL, TA.

***Baccaurea taitensis* Muell. Arg.**

Small tree occasional in foothill to montane forest, reported from 250 to 720 m elevation. Endemic. TU.

***Bischofia javanica* Bl.**

'o'a

Medium-sized to large tree occasional in disturbed places and secondary to undisturbed forest, reported from near sea level to 1120 m elevation in Samoa. Indigenous or possibly a Polynesian introduction, ranging from India to Rarotonga. TU, AU, OF, OL, TA.

***Chamaesyce atoto* (Forst. f.) Croizat in Degener**

pulu tai?

Prostrate herb uncommon in sunny littoral areas, reported only near sea level. Indigenous, ranging from Ceylon to the Tuamotus. TU, AU, OF, TA.

***Chamaesyce hirta* (L.) Millsp.**

vao 'apulupulu

Prostrate herb common in disturbed places, reported only from the lowlands. A modern introduction, pantropical in distribution. TU, AU, OF, TA, SW.

***Chamaesyce hypericifolia* (L.) Millsp.**

Herb occasional on roadsides and other disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, TA.

***Chamaesyce hyssopifolia* (L.) Small**

Herb locally common in disturbed places, reported only from the lowlands. A modern introduction, native to tropical or subtropical America. TU.

***Chamaesyce prostrata* (Ait.) Small**

Prostrate herb occasional around houses and in other sunny disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

**Chamaesyce thymifolia (L.) Millsp.**

Prostrate herb occasional around houses in disturbed areas, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, TA.

**Drypetes vitiensis Croizat**

Small to medium-sized tree uncommon in coastal forest, reported from near sea level to 200 m elevation. Indigenous, also found in Fiji, Tonga, and Niue. TU, OF.

**Euphorbia cyathophora Murray**

Herb occasional in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, OF, OL, TA.

**Euphorbia reineckei Pax**

Subshrub rare in foothill (rarely) to montane forest, reported from 200 to 1700 m elevation in Samoa. **Endemic.** TU.

**Flueggea flexuosa Muell. Arg.**

poumuli

Medium-sized to large tree rare in forest, where it is may mostly be a relict of former cultivation, commonly planted in villages, reported from near sea level to 430 m elevation. A modern introduction introduced before 1880, native to the Philippines and Melanesia. TU, TA.

**Glochidion cuspidatum Pax**

masame

Small to medium-sized tree occasional in forest clearings, reported from 300 to 750 m elevation. Indigenous, ranging from Melanesia (but not Fiji) to Samoa. TU.

**Glochidion ramiflorum Forst.**

masame vao

Small to medium-sized tree common in open and secondary forest, reported from near sea level to 1400 m elevation in Samoa. Indigenous, ranging from Melanesia to eastern Polynesia. TU, AU, OF, OL, TA.

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

lau papata; pata

Small to medium-sized tree common in disturbed places and early secondary forest, reported from near sea level to 400 m elevation. Indigenous, ranging from Fiji to Tahiti. TU, AU, OF, OL, TA.

**Macaranga stipulosa Muell. Arg.**

lau fatu; patafatu

Large tree occasional in lowland to montane forest, often in clearings, reported from 75 to 700 m elevation. **Endemic.** TU, OL, TA.

**Omalanthus nutans (Forst. f.) Guillemin**

fogamamala; fanua mamala

Small tree occasional in open forest and disturbed places, reported from 25 to 1500 m elevation in Samoa. Indigenous, ranging from New Caledonia and the Caroline Islands to the Society Islands. TU, OF, OL, TA.

**Phyllanthus amarus** Sch. & Thon.

Herb common in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

**Phyllanthus debilis** Klein ex Willd.

Herb uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to southern India and Ceylon. TU.

**Phyllanthus urinaria** L.

Herb occasional in lawns and other disturbed places, reported from near sea level to 870 m elevation. A modern introduction, native to tropical America. TU, OL, TA.

**Phyllanthus virgatus** Forst. f.

Herb rare in sunny or disturbed places in the forest, reported from 40 to 260 m elevation. Indigenous or a Polynesian introduction, ranging from Asia to eastern Polynesia. TU, OL, TA.

**Ricinus communis** L.

Shrub uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to Africa. TU.

FABACEAE

**Abrus precatorius** L.

matamoso

Vine occasional to uncommon in coastal forest, reported from near sea level to 100 m elevation. Indigenous or possibly a Polynesian introduction, widespread in the tropics. TU, AU, OF, TA.

**Adenanthera pavonina** L.

lopa

Medium-sized tree occasional in disturbed forest and casually cultivated, reported from near sea level to 300 m elevation. A modern introduction, native to Southeast Asia and Malaysia. TU, AU, OF, OL (Guest), TA, SW.

**Alysicarpus vaginalis** (L.) DC.

Prostrate herb common in lawns and sunny disturbed places, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU, AU, OF, TA.

**Caesalpinia bonduc** (L.) Roxb.

'anoso; se'u pe'a

Climbing thorny shrub rare in littoral shrubland, reported up to 60 m elevation. Indigenous, widespread in the Pacific. AU.

**Caesalpinia major** (Medic.) Dandy & Exell

'anoso; se'u pe'a

Climbing thorny shrub uncommon in littoral areas to montane forest, reported from sea level to 650 m elevation. Indigenous, pantropical in distribution. TU, OF, OL, TA.

**Calopogonium mucunoides** Desv.

Vine locally common in disturbed places, reported from near sea level to ca. 600 m elevation. A modern introduction, native to tropical America. TU, OF.

**Canavalia cathartica** Thou.

Climbing vine common in coastal and littoral forest, sometimes weedy farther inland, reported from sea level to 340 m elevation. Indigenous, widespread in the tropics. TU, AU, OF, OL, TA.

**Canavalia rosea** (Sw.) DC.

fue fai va'a

Creeping vine occasional on sandy beaches, reported only near sea level. Indigenous, widespread in the tropics. TU, AU, OF, TA.

**Canavalia sericea** A. Gray

Creeping vine rare in littoral strand and littoral shrubland, reported from near sea level to ca. 50 m elevation. Indigenous, widespread in the Pacific. OL.

**Crotalaria pallida** Ait.

Shrub common in disturbed places, reported only from the lowlands. A modern introduction, probably native to tropical Africa. TU.

**Crotalaria retusa** L.

Subshrub uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to Asia. TU, AU, TA.

**Dendrolobium umbellatum** (L.) Benth.

lala

Shrub common in littoral strand vegetation, reported from near sea level to 260 m elevation. Indigenous, ranging from Mauritius to Niue. TU, AU, OF, OL, TA.

**Derris trifoliata** Lour.

fue o'ona

Liana uncommon in littoral and coastal forest, reported from near sea level to 130 m elevation. Indigenous, widespread in the Pacific eastward as far as Rarotonga. TU, AU, OF, OL, TA.

**Desmanthus virgatus** (L.) Willd.

Subshrub uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU.

**Desmodium heterocarpon** (L.) DC.

Subshrub occasional in sunny disturbed areas and fernlands, reported from near sea level to 175 m elevation. A Polynesian introduction or perhaps indigenous, ranging from Southeast Asia to Hawai'i. The Samoan population belongs to var. *strigosum* V. Meeuw. TU, OF, OL, TA.

**Desmodium heterophyllum** (Willd.) DC.

Herb locally common in disturbed places, reported only from the lowlands. A modern introduction, native to Southeast Asia and Malaysia. TA.

**Desmodium incanum** DC.

Herb occasional to common in lawns and sunny disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, OL, TA.

**Desmodium tortuosum** (Sw.) DC.

Herb occasional in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, TA.

**Desmodium triflorum** (L.) DC.

Prostrate herb occasional in disturbed places, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU, AU, OF, TA.

**Dioclea wilsonii** Standl.

Vine rare in montane scrub vegetation, reported at only 350 m elevation. Indigenous, also found in Fiji, Polynesia, and apparently Honduras. TU.

**Entada phaseoloides** (L.) Merr.

fue inu

Liana uncommon in coastal to lowland forest, reported from near sea level to 180 m elevation. Indigenous, ranging from eastern Africa to the Austral Islands. TU, TA.

**Erythrina fusca** Lour.

lalapa?

Thorny, medium-sized tree rare in swampy coastal places, reported only from the lowlands. Probably a modern introduction, pantropical in distribution. TU.

**Erythrina subumbrans** (Hassk.) Merr.

gatae Palagi

Medium-sized tree occasional in disturbed places, once planted as a nitrifying plant for cacao or other crops, reported from near sea level to ca. 600 m elevation. A modern introduction, native from Southeast Asia to Malaysia. TU, TA.

**Erythrina variegata** L

gatae

Large thorny tree occasional in littoral to lowland forest, reported from near sea level to 125 m elevation. Indigenous, ranging from tropical Asia to the Marquesas. The Samoan population belongs to var. *orientalis* (L.) Merr. TU, AU, OF, OL (Guest), TA.

**Indigofera hirsuta** L.

Shrub rare in disturbed places, reported only from the lowlands. A modern introduction, native from Africa to southern Asia. TU. A new record for American Samoa.

**Indigofera spicata** Forssk.

Subshrub uncommon in lawns and other disturbed places, reported only from the lowlands. A modern introduction, native from Africa to Australia. TU.

**Indigofera suffruticosa** Miller

Shrub occasional in disturbed places, reported from near sea level to ca. 200 m elevation. A modern introduction, native to tropical America. TU, TA.

**Inocarpus fagifer** (Parkinson) Fosb.

ifi

Large tree occasional to common in coastal to lowland, reported from near sea level to 350 m elevation. A Polynesian introduction, ranging from tropical Asia to the Marquesas. TU, AU, OF, OL, TA.

**Intsia bijuga** (Colebr.) Kuntze

ifilele

Large tree locally common in coastal to foothill forest, reported from near sea level to 250 m elevation. Indigenous, ranging from eastern Africa to Samoa. TU.

**Leucaena leucocephala** (Lam.) de Wit

Shrub or small tree occasional to locally abundant in dry, disturbed places, reported from near sea level to ca. 250 m elevation. A modern introduction, native to tropical America. TU, AU, OF, OL, TA.

**Macroptilium lathyroides** (L.) Urb.

Herb occasional in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU.

**Mimosa invisa** Mart. ex Colla

vao fefe Palagi

Thorny subshrub uncommon in disturbed places such as roadsides, reported from near sea level to 890 m elevation. A modern introduction, native to tropical America. TU.

**Mimosa pudica** L.

vao fefe

Somewhat woody herb common in lawns, croplands, and waste places, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, TA.

**Mucuna gigantea** (Willd.) DC.

fue inu

Liana occasional to common in littoral to lowland forest, reported from near sea level to 200 m elevation. Indigenous, ranging from India to Hawai'i. TU, AU, OF, OL, TA.

**Mucuna glabra** (Rein.) Wilmot-Dear

fue inu

Liana rare or perhaps uncommon (it is hard to distinguish from the proceeding species when sterile) in foothill to montane forest, reported from 300 to 1200? m elevation in Samoa. Indigenous, probably also found in Tonga. TA.

**Paraserianthes falcataria** (L.) I. Nielsen

tamaligi

Large tree occasional in disturbed areas, reported from 200 to 350 m elevation. A modern introduction, native to Melanesia. TU.

**Pongamia pinnata (L.) Merr.**

Large tree rare in littoral to coastal forest, reported near sea level to ca. 100 m elevation. Indigenous, ranging from the Seychelle Islands to Samoa. TU, TA.

**Pueraria lobata (Willd.) Ohwi**

a'a

Vine occasional in disturbed places, reported from near sea level to 350 m elevation. A Polynesian introduction, native to Asia. TU, AU, OF, OL, TA.

**Pueraria phaseoloides (Roxb.) Benth.**

Vine uncommon in disturbed places, perhaps mostly a pasture legume that sometimes escapes, reported only from the lowlands. A modern introduction, native to Southeast Asia. TU.

**Senna alata (L.) Roxb.**

la'au fai lafa

Shrub occasional in disturbed places and sometimes in wetlands, reported from near sea level to 300 m elevation. A modern introduction, native to tropical America. TU, OF, TA.

**Senna sophora (L.) Roxb.**

lau matui

Subshrub rare in disturbed places, perhaps no longer found in Samoa, reported only from the lowlands. A Polynesian introduction, native to the Old World tropics. TU.

**Senna tora (L.) Roxb.**

vao pinati

Subshrub occasional in pastures and other disturbed places, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU, TA.

**Sophora tomentosa L.**

Shrub rare to locally common on sandy beaches and spits, reported only near sea level. Indigenous, pantropical in distribution. TU, AU, OF.

**Tephrosia purpurea (L.) Pers.**

'avasa

Small shrub rare on coastal rocks, reported from near sea level to 200 m elevation. A Polynesian introduction or possibly indigenous, ranging from tropical Africa to Hawai'i. AU, OF, OL, TA.

**Uraria lagopodoides (L.) Desv. ex DC.**

Subshrub rare in lawns and other disturbed places, reported only from the lowlands. A Polynesian introduction, native to southern Asia. TU, AU, OF? (Reinecke), TA.

**Vigna adenantha (G. F. W. Meyer) Maréchal, Mascherpa, & Stainier**

Prostrate vine rare in coastal areas and plantations, reported only from the lowlands. Probably indigenous, pantropical in distribution. TU, OF, TA.

**Vigna marina (Burm.) Merr.**

fue sina

Prostrate vine common to abundant in littoral strand vegetation, reported only near sea level. Indigenous, pantropical in distribution. TU, AU, OF, OL, TA, SW.



## FLACOURTIACEAE

### **Casearia** sp. nova

Small tree occasional in lowland to foothill forest, reported from 10 to 400 m elevation. This species has not yet been described. **Endemic.** TU.

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

Small tree occasional in lowland to montane forest, reported from 20 to 600 m elevation. Indigenous, also found in Fiji. TU.

### **Flacourtia rukam** Zoll. & Mor. ex Mor.

filimoto

Medium-sized tree occasional in lowland to montane forest, reported from ca. 50 to 500 m elevation. Indigenous, also found in Tonga and westward. TU, OF, OL, TA.

### **Homalium whitmeeanum** St. John

Small to medium-sized tree occasional in montane scrub and forest, reported from near sea level to 1120 m elevation in Samoa. Indigenous, also found in Tonga. TU.

## GESNERIACEAE

### **Cyrtandra angustivenosa** Rechinger

Shrub occasional in foothill forest to summit scrub, reported from 250 to 900 m elevation. **Endemic.** TU, OF, OL, TA.

### **Cyrtandra geminata** Reinecke

Shrub rare overall, but occasional in montane scrub, reported from 450 to 600 m elevation. **Endemic to Tutuila.** TU.

### **Cyrtandra longipedunculata** Rechinger

Shrub uncommon in foothill forest to summit scrub, reported from 250 to 960 m elevation. **Endemic.** TU, OL, TA.

### **Cyrtandra pulchella** A. Gray

Shrub occasional in foothill to montane forest, reported from 200 to 900 m elevation. **Endemic.** TU, OF, OL, TA.

### **Cyrtandra samoensis** A. Gray

Shrub occasional in littoral to montane forest, reported from near sea level to 850 m elevation. Indigenous, also found in Tonga and Niue. TU, OF, OL, TA.

## GOODENIACEAE

### **Scaevola taccada** (Gaertn.) Vahl

to'ito'i

Shrub abundant on the seaward margin of littoral forest, reported from near sea level up to 300 m elevation. Indigenous, widespread throughout the tropical Pacific. TU, AU, OF, OL, TA, SW.

## GYROCARPACEAE

### **Gyrocarpus americanus** Jacq.

vili; moa

Tall tree rare in coastal forest, reported from near sea level to near 50 m elevation. Indigenous, ranging from tropical America to eastern Africa. AU, OF.

## HERNANDIACEAE

### **Hernandia moerenhoutiana** Guillemín

pipi

Large tree occasional in lowland to montane forest, reported from 100 to 1300 m elevation in Samoa. Indigenous, ranging from the Solomon Islands to the Society Islands. TU, TA.

### **Hernandia nymphaeifolia** (Presl) Kub.

pu'a

Large tree common in littoral forest, particularly on sandy shores, reported only near sea level. Indigenous, ranging from eastern Africa to the Marquesas. TU, AU, OF, OL, TA, SW.

## ICACINACEAE

### **Citronella samoensis** (A. Gray) Howard

Small occasional in lowland to montane forest, reported from 50 to 1600 m elevation in Samoa. Indigenous, also found in Tonga. TU, OL, TA.

### **Medusanthera samoensis** (Reinecke) Howard

matamo

Small to medium-sized tree occasional in lowland to montane forest, reported from 60 to 1400 m elevation in Samoa. **Endemic.** TU, OF, OL, TA.

## LAMIACEAE

### **Hyptis pectinata** (L.) Poit.

Herb uncommon in pastures and waste places, reported from near sea level to 550 m elevation. A modern introduction, native to tropical America. TU, TA.

### **Leucas decemdentata** (Forst. f.) Sm.

Herb rare in rocky coastal areas, reported from near sea level to 150 m elevation. Indigenous or a Polynesian introduction, ranging from tropical Asia to the Society Islands. OF, TA.

## LAURACEAE

### **Cinnamomum verum** J.S. Presl

tigamoni

Large tree occasional in cultivation and sometimes escaping into secondary forest, reported from near sea level to 600 m elevation. A modern introduction, native to Ceylon and southwestern India. TU.

### **Endiandra elaeocarpa** Gill.

Medium-sized to large tree uncommon in lowland to montane forest, reported from 85 to 900 m elevation. Probably a modern introduction, native to Fiji. TA.

### **Litsea samoensis** (Christoph.) A. C. Smith

papaono

Medium-sized to large tree uncommon in lowland to montane forest, reported from 150 to 1320 m elevation in Samoa. Indigenous, also found on Niue. TU.

## LOGANIACEAE

### **Fagraea berteriana** A. Gray ex Benth.

pua lulu

Large, often epiphytic tree common in lowland to montane forest, reported from ca. 50 to 1060 m elevation in Samoa. Indigenous, ranging from Fiji to the Marquesas. TU, OF, OL, TA.

### **Geniostoma rupestre** Forst.

taipoipo; lau mafatifati

Small tree common in coastal to montane forest, reported from near sea level to 1600 m elevation in Samoa. Indigenous, ranging from Taiwan and the Celebes to the Cook Islands. TU, AU, OF, OL, TA.

## LORANTHACEAE

### **Dacrydium forsteriana** (J. A. & J. H. Schultes) Barlow

tapuna

Hemiparasitic shrub uncommon in littoral to montane forest, reported from near sea level to 700 m elevation. Indigenous, ranging from Fiji to the Cook Islands. TU, TA.

## LYTHRACEAE

### **Cuphea carthagenensis** (Jacq.) Macbr.

Herb occasional in pastures and wet, sunny places, reported from near sea level to 1060 m elevation in Samoa. A modern introduction, native to tropical America. TU.

### **Pemphis acidula** Forst.

gagie

Shrub rare overall, but locally common in littoral areas on Swains, reported only near sea level. Indigenous, ranging from eastern Africa to the Marquesas. SW.

## MALVACEAE

### **Gossypium hirsutum** L.

vavae

Shrub rare in exposed coastal areas, reported from near sea level to about 100 m elevation. Indigenous, widespread from the Marianas and Samoa to the Marquesas (var. *taitense*; the species is also found in South America). TU, AU, OF, RO.

### **Hibiscus abelmoschus** L.

fau Tagaloa

Shrub uncommon to occasional in disturbed places, reported only from the lowlands. A Polynesian introduction, probably native to tropical Asia. TU, AU, OL, TA.

### **Hibiscus tiliaceus** L.

fau

Medium-sized tree common to abundant in littoral forests, mangrove swamp margins, and disturbed and secondary forest, reported from near sea level to 650 m elevation. Indigenous, pantropical in distribution. TU, AU, OF, OL, TA, SW, RO.

### **Sida rhombifolia** L.

mautofu

Subshrub common in disturbed places, reported only from the lowlands. A Polynesian introduction, pantropical with unknown origin. TU, AU, OF, OL, TA, SW.

### **Sida samoensis** Rechinger

Prostrate, somewhat woody herb rare in coastal villages and sunny disturbed places, reported only near the coast. Possibly a Polynesian introduction, native to Fiji and western Polynesia. TU, AU, OF, TA.

### **Thespesia populnea** (L.) Sol. ex Corr.

milo

Medium-sized tree occasional in littoral forest, reported only near sea level. Indigenous, ranging from tropical Africa to eastern Polynesia. TU, AU, OF, OL, TA.

### **Urena lobata** L.

mautofu

Subshrub rare in disturbed places, reported only from the lowlands. A Polynesian introduction, probably native to tropical Asia. TU, OF, TA.

## MELASTOMACEAE

### **Astronidium navigatorum** Christoph.

Small tree uncommon in foothill to montane forest, reported from 250 to 900 m elevation. **Endemic.** TU.

### **Astronidium pickeringii** (A. Gray) Christoph.

Small tree common in lowland to montane forest, reported from 130 to 1050 m elevation in Samoa. **Endemic.** TU, OL, TU.

**Clidemia hirta** (L.) D. Don

Shrub common to abundant in sunny disturbed places and native forest and scrub, reported from near sea level to 1080 m elevation in Samoa. A modern introduction, native to tropical America. TU, OF, OL, TA.

**Disotis rotundifolia** (Sm.) Triana

Herb uncommon in disturbed places, reported up to ca. 500 m elevation. A modern introduction, native to tropical Africa. TU.

**Medinilla samoensis** (Hochreut.) Christoph.

Climbing vine occasional in foothill to montane forest, reported from 350 to ca. 930 m elevation. Indigenous, probably also found on Futuna. TU, OF, OL, TA.

**Melastoma denticulatum** Labill.

fua lole

Shrub common in forest clearings and disturbed places, reported from near sea level to 1060 m elevation in Samoa. Indigenous, ranging from New Caledonia to Tahiti. TU, OF, OL, TA.

MELIACEAE

**Aglaia samoensis** A. Gray

laga'ali

Small tree occasional in lowland to montane forest, reported from 20 to 1030 m elevation in Samoa. **Endemic**, or perhaps also found on Uvea. TU, OF, OL, TA.

**Dysoxylum huntii** Merr.

maota mea

Large tree common to abundant in lowland to montane forest, reported from 150 to 1750 m elevation in Samoa. **Endemic**. TU, OL, TA.

**Dysoxylum maota** Reinecke

maota

Large tree common in lowland to montane forest, reported from near sea level to 450 m elevation. Indigenous, also found on 'Uvea and Futuna and in Tonga (Tafahi). TU, AU.

**Dysoxylum samoense** A. Gray

mamala; maota mamala; tufaso

Large tree common to abundant in lowland to montane forest, reported from near sea level to 1120 m elevation in Samoa. **Endemic**. TU, AU, OF, OL, TA.

**Xylocarpus moluccensis** (Lam.) Roemer

le'ile'i

Small to medium-sized rare in littoral forest and mangrove swamp margins, reported only near sea level. Indigenous, ranging from Madagascar to Samoa. TU, AU.

MONIMIACEAE

**Hedycarya denticulata** (A. Gray) Perk. & Gilg

Small tree common in lowland to montane forest, reported from 150 to 1550 m elevation in Samoa. **Endemic**. TU, OF, OL, TA.

## MORACEAE

**Castilla elastica** Sessé pulu mamoe

Large tree rare in disturbed forest in American Samoa, reported from ca. 100 to 700 m elevation in Samoa. A modern introduction, native to tropical America. TU, TA.

**Ficus godeffroyi** Warb. mati

Small to medium-sized tree occasional in lowland to montane forest, reported from 20 to 1400 m elevation in Samoa. **Endemic.** TU, OL, OF, TA.

**Ficus obliqua** Forst. f. aoa

Large banyan tree occasional to common in lowland to montane forest, reported from 30 to 1080 m elevation in Samoa. Indigenous, ranging from Australia and Celebes to Samoa. TU, AU, OF, OL, TA.

**Ficus prolixa** Forst. f. aoa

Large banyan tree occasional to common in lowland to foothill forest, reported from 20 to 400 m elevation. Indigenous, ranging from New Caledonia to the Marquesas. TU, TA.

**Ficus scabra** Forst. f.

Small to medium-sized tree common from littoral shrubland to coastal forest and farther inland, reported from near sea level to 700 m elevation. Indigenous, ranging from New Caledonia to Niue. TU, AU, OF, OL, TA.

**Ficus tinctoria** Forst. f. mati

Small tree common in lowland to montane forest, reported from 30 to 600 m elevation. Indigenous, ranging from India to the Marquesas. TU, AU, OF, OL, TA, SW.

**Ficus uniauriculata** Warb.

Small to medium-sized tree occasional in coastal to montane forest, reported from near sea level to 960 m elevation. **Endemic.** TU.

**Streblus anthropophagorum** (Seem.) Corner

Small to medium-sized tree occasional in foothill to montane forest, reported from 310 to 1600 m elevation in Samoa. Indigenous, ranging from Fiji to the Society Islands. TA.

## MYRISTICACEAE

**Myristica fatua** Houtt. 'atone

Medium-sized tree common to abundant in lowland to montane forest, reported from 10 to 600 m elevation. Indigenous, ranging from Vanuatu to Samoa. TU, OF, OL, TA.

**Myristica hypargyrea** A. Gray 'atone; 'atone 'ulu

Medium-sized tree common to abundant in lowland to montane forest, reported from 10 to 1000 m elevation in Samoa. Indigenous, also found on Futuna, Alofi, and possibly Rotuma. TU.

## MYRSINACEAE

### ***Embelia vaupelii* Mez**

Liana occasional in lowland to montane forest, reported from near sea level to 1750 m elevation in Samoa. Indigenous, also found in Tonga. TU, OF, OL, TA.

### ***Maesa tabacifolia* Mez**

Shrub occasional in lowland to montane forest, reported from near sea level to 1100 m elevation in Samoa. Indigenous, also found in Tonga and Fiji. TU, OF, OL, TA.

### ***Rapanea myricifolia* (A. Gray) Mez**

Small tree occasional in coastal to montane forest, reported from 5 to 1500 m elevation in Samoa. Indigenous, also found in Fiji. TU.

## MYRTACEAE

### ***Decaspermum fruticosum* Forst.**

nu'anu'a

Shrub or small tree uncommon in sunny lowland places and montane scrub, reported from 100 to 650 m elevation. Indigenous, ranging from Futuna to the Society Islands. TU, OF, OL.

### ***Eugenia reinwardtiana* (Bl.) DC.**

unuoi?

Shrub or small tree rare in littoral and coastal forest, reported from near sea level to ca. 100 m elevation. Indigenous, ranging from Micronesia and Fiji to Hawai'i. TU, AU.

### ***Metrosideros collina* A. Gray**

Medium-sized to large tree occasional to common in montane scrub and lowland (rarely) to montane forest, reported from 100 to 1500 m elevation in Samoa. Indigenous, ranging from Vanuatu to eastern Polynesia. TU.

### ***Psidium guajava* L.**

ku'ava

Small tree occasional in pastures and other disturbed places, reported from near sea level to 650 m elevation. A modern introduction, native to tropical America. TU, AU, OF, TA.

### ***Syzygium brevifolium* (A. Gray) C. Muell.**

Medium-sized tree rare overall, but uncommon in montane scrub and forest, reported from 235 to 1300 m elevation in Samoa. **Endemic.** TU.

### ***Syzygium carolinense* (Koidz.) Hosokawa**

Small to medium-sized tree occasional in lowland to montane forest, reported from 100 to 700 m elevation. Indigenous, ranging from Micronesia to Samoa. TU, OL, TA.

### ***Syzygium clusiifolium* (A. Gray) C. Muell.**

asi vai

Medium-sized tree common to abundant in coastal to montane (rarely) forest, reported from near sea level to 450 m elevation. Indigenous, also found in Tonga, Niue, Wallis, and the Horne

Islands. TU, OF, OL, TA.

**Syzygium dealatum** (Burkill) A. C. Smith

Medium-sized tree occasional in coastal to foothill forest, reported from near sea level to 310 m elevation. Indigenous, also found in Tonga, Niue, and Uvea. TU, AU, OF, OL, TA.

**Syzygium inophylloides** (A. Gray) C. Muell.

asi toa

Large tree common in lowland to montane forest, reported from near sea level to 1120 m elevation in Samoa. Indigenous, also found on Niue and Futuna. TU, OF, OL, TA.

**Syzygium neurocalyx** (A. Gray) Christoph.

oli; fena

Small tree rare in montane forest up to 650 m elevation, and rarely cultivated nowadays. A Polynesian introduction or perhaps indigenous, also found in Tonga, Futuna, and Fiji. TU.

**Syzygium samarangense** (Bl.) Merr. & Perry

nonu vao

Small to medium-sized tree common in coastal to montane forest, reported from 20 to 740 m elevation. Probably a modern introduction and naturalized as it is on Niue, native to Malaysia. TU, OF, OL, TA.

**Syzygium samoense** (Burkill) Whistler

fena vao?

Medium-sized tree occasional to common in montane forest (rarely down to lowland forest), reported from 180 to 1200 m elevation in Samoa. **Endemic.** TU, OF, OL, TA.

NYCTAGINACEAE

**Boerhavia albiflora** Fosb.

Prostrate herb rare in littoral rock strand, reported only near sea level. Indigenous, widespread in the Pacific. TU.

**Boerhavia repens** L.

ufi viole, ufi atuli

Prostrate herb occasional as a weed in coastal areas and uncommon in littoral habitats but mostly in villages, reported only near sea level. Probably a Polynesian introduction, or perhaps indigenous, widespread in the Pacific. TU, OF, OL, TA.

**Boerhavia tetrandra** Forst.

Prostrate herb rare overall, but locally common on sandy beaches of atolls, reported only near sea level. Indigenous, widespread in the Pacific. SW, RO.

**Pisonia grandis** R. Br.

pu'a vai

Large tree common on undisturbed sandy shores, reported only near sea level. Indigenous, ranging from Madagascar to Hawai'i. TU, AU, OF, OL, TA, SW, RO.

**Pisonia umbellifera** (Forst.) Seem.



Small tree occasional to common in lowland to montane forest, reported from near sea level to 900 m elevation. Indigenous, ranging from Madagascar to Hawai'i. TU, OF, OL, TA.

#### OLACACEAE

**Anacolosa insularis** Christoph.

Small tree rare in American Samoa in lowland to montane forest, reported from near sea level to 450 m elevation. **Endemic.** TU.

**Ximenia americana** L.

moli tai

Thorny shrub rare in American Samoa at the seaward margin of littoral forest, reported only near sea level. Indigenous, ranging from India to the Tuamotus. TU.

#### OLEACEAE

**Chionanthus vitiensis** (Seem.) A. C. Smith

Medium-sized tree rare in coastal and montane forest, reported from near sea level to 400 m elevation. Indigenous, also found in Fiji, Tonga, and Niue. TU, OF.

**Jasminum betchei** F. Muell.

Climbing vine uncommon in coastal to montane forest, reported from near sea level to 450 m elevation. Indigenous, also found in Fiji, Tonga, and Niue. TU, AU, OF.

**Jasminum didymum** Forst. f.

Climbing vine occasional in coastal to montane forest, reported from near sea level to 1500 m elevation in Samoa. Indigenous, ranging from Australia to the Society Islands. TU, AU, OF, OL, TA.

#### ONAGRACEAE

**Ludwigia hyssopifolia** (G. Don) Exell

Herb occasional in wet disturbed places, reported from near sea level to 870 m elevation. A modern introduction, now pantropical in distribution. TU, AU, TA.

**Ludwigia octovalvis** (Jacq.) Raven

Herb common in wet, disturbed places, reported from near sea level to 1060 m elevation in Samoa. A modern introduction, now pantropical in distribution. TU, AU, OF, TA, SW.

#### OXALIDACEAE

**Oxalis barrelieri** L.

Herb uncommon in disturbed places, reported from near sea level to 900 m elevation. A modern introduction, native to tropical America. TU, TA.

**Oxalis corniculata** L.

Herb occasional in lawns, pastures, and other sunny, disturbed places, reported from near sea level to 550 m elevation. A Polynesian introduction, cosmopolitan in distribution. TU, OF, OL, TA.

## PASSIFLORACEAE

### ***Passiflora aurantia* Forst. f.**

Climbing herbaceous vine rare in montane forest, reported at 450 m elevation in American Samoa. Indigenous, ranging from eastern Australia to Niue. OF. A new record for American Samoa.

### ***Passiflora foetida* L.**

pasio vao

Vine common in disturbed places, reported from near sea level to 850 m elevation. A modern introduction, native to tropical America. TU, AU, OF, TA.

### ***Passiflora maliformis* L.**

Vine rare in secondary forest, reported from near sea level to 670 m elevation. A modern introduction, native to tropical America. TU.

### ***Passiflora quadrangularis* L.**

Vine rare in disturbed places, reported from 300 to 500 m elevation. A modern introduction, native to tropical America. TU.

## PIPERACEAE

### ***Macropiper puberulum* Benth.**

'ava'avaaitu

Shrub occasional in lowland to montane forest, reported from 20 to 1500 m elevation in Samoa. Indigenous, ranging from Fiji to Rapa. TU, OF, OL, TA.

### ***Macropiper timothianum* A. C. Smith**

'ava'avaaitu

Shrub common in montane forest, reported from 550 to 1550 m elevation in Samoa. Indigenous, also found in Fiji. TA.

### ***Peperomia leptostachya* Hooker & Arnott**

Herb rare on rocks in coastal and lowland forest, reported from near sea level to 300 m or more elevation. Indigenous, widespread from Australia to Hawai'i. TU, OL, TA.

### ***Peperomia lonchophylla* C. DC.**

Epiphytic herb occasional in lowland to montane forest, often on rocks, reported from 40 to 1500 m elevation in Samoa. Endemic or perhaps also found in Tonga. TU, OF, OL, TA.

### ***Peperomia pellucida* (L.) Kunth**

vao vai

Herb occasional in croplands and disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, TA.

### ***Peperomia reineckei* C. DC.**

Epiphytic fleshy herb occasional in montane forest, reported from 400 to 1875 m elevation in Samoa. **Endemic.** TA.

**Piper graeffei** Warb.

fue manogi; 'ava'ava aitu sosolo

Climbing vine common to abundant in coastal to montane forest, reported from 20 to 920 m elevation. Indigenous, also found on Futuna. TU, AU, OF, OL, TA.

PLANTAGINACEAE

**Plantago major** L.

Rosette herb uncommon on roadsides and in other disturbed places, reported only from the lowlands. A modern introduction, native to the Old World. TU.

PLUMBAGINACEAE

**Plumbago zeylanica** L.

Sprawling subshrub rare in open places, reported from near sea level to ca. 200 m elevation. Possibly indigenous, widespread in the Old World tropics. OF, OL.

POLYGALACEAE

**Polygala paniculata** L.

pulunamulole

Herb occasional in disturbed places, reported from near sea level to 870 m elevation. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

PORTULACACEAE

**Portulaca lutea** Sol. ex Forst. f.

tamole

Prostrate succulent herb occasional on coastal rocks, reported only near sea level. Indigenous, ranging from New Caledonia to Pitcairn Island. TU, OF, OL, TA, RO.

**Portulaca oleracea** L.

tamole

Succulent herb common on rocky and sandy shores, and as a weed, reported only from the lowlands. A Polynesian or early European introduction, cosmopolitan as a weed. TU, AU, OF, OL, TA, SW.

**Portulaca quadrifida** L.

Prostrate herb now rare in sunny littoral habitats and occasionally weedy, reported only from the lowlands. Probably a Polynesian introduction, pantropical in distribution. TU, AU, TA.

**Portulaca samoensis** Poelln.

Succulent prostrate herb occasional on coastal rocks, reported only near sea level. Indigenous, widespread in the South Pacific. TU, AU, OF, OL, TA.

RHAMNACEAE

**Alphitonia zizyphoides** (Spreng.) A. Gray

toi

Large tree common in secondary forest and lowland to montane forest, reported from near sea level to 1060 m elevation in Samoa. Indigenous, ranging from Southeast Asia to eastern Polynesia. TU, AU, OF, OL, TA.

**Colubrina asiatica** (L.) Brongn.

fisoa

Spreading shrub occasional to common on the seaward margins of littoral forest, reported from near sea level to 100 m elevation. Indigenous, ranging from tropical eastern Africa to the Marquesas. TU, AU, OF, OL, TA.

RHIZOPHORACEAE

**Bruguiera gymnorrhiza** (L.) Lam.

togo

Large tree locally abundant in mangrove swamps, reported only at sea level. Indigenous, ranging from tropical Asia to American Samoa. TU, AU.

**Crossostylis biflora** Forst.

saitamu?

Medium-sized tree occasional in foothill to montane, reported from 200 to 1300 m elevation in Samoa. Indigenous, ranging from Tahiti to the Marquesas. TU.

**Rhizophora mangle** L.

togo

Small to medium-sized tree common to locally abundant in estuaries and mangrove swamps, reported only at sea level. Indigenous, native to the New World tropics, New Caledonia, Fiji, Tonga, and Samoa. The Samoan population is sometimes called var. *samoensis* Hochreut. TU, AU.

RUBIACEAE

**Aidia cochinchinensis** Lour.

aso, ola mea

Shrub or small tree rare in coastal to foothill forest, reported from near sea level to 400 m elevation. Indigenous, ranging from tropical Asia to western Polynesia. TU, AU.

**Calycosia sessilis** A. Gray

Shrub occasional in foothill to montane forest, reported from 300 to 1300 m elevation in Samoa. **Endemic.** TU.

**Canthium merrillii** (Setchell) Christoph.

ola sina

Medium-sized tree occasional in coastal to montane forest, reported from 20 to 700 m elevation. Indigenous, also found in Tonga (Niua). TU, OF, OL (Guest), TA.

**Cyclophyllum barbatum** (Forst. f.) Halle & Florence

Small tree uncommon in ridge forests, reported from near sea level to 500 m elevation. Indigenous, ranging from Fiji to the Marquesas. TU.

**Gardenia taitensis** DC. pua Samoa  
Shrub rare in coastal forest and on coastal rocks, formerly commonly cultivated, reported only near sea level. Probably a Polynesian introduction, ranging from Vanuatu to Hawaii. TU, AU.

**Geophila repens** (L.) I. M. Johnston togo  
Prostrate herb occasional in coastal to montane forest, reported from 10 to 700 m elevation. Indigenous, pantropical in distribution. TU, OF, TA.

**Guettarda speciosa** L. puapua  
Medium-sized tree common in littoral and coastal forest, reported only near sea level. Indigenous, ranging from eastern Africa to the Marquesas. TU, AU, OF, OL, TA, SW.

**Gynochtodes epiphytica** (Rechinger) A. C. Smith & S. Darwin  
Liana uncommon in coastal to foothill forest, reported from 20 to 400 m elevation. Indigenous, also found in Fiji, Niue, and Tonga. TU, OF, OL, TA.

**Hedyotis biflora** (L.) Lam.  
Small herb occasional on coastal rocks and inland in streambeds, reported from near sea level to 370 m elevation. Indigenous, ranging from Mauritius to the Cook Islands. TU, OF, OL, TA.

**Hedyotis corymbosa** (L.) Lam.  
Small herb uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to Africa. TU, OL, TA.

**Hedyotis foetida** (Forst. f.) J. E. Smith  
Subshrub uncommon to occasional on coastal rocks, reported only near sea level. Indigenous, ranging from New Caledonia to the Australs. OF, OL, TA.

**Hedyotis romanzoffiensis** (Cham. & Schlecht.) Fosb. kautokikaveka  
Subshrub rare in littoral habitats, reported only near sea. Indigenous, ranging from Tuvalu to the Society Islands. SW.

**Ixora samoensis** A. Gray filofloa  
Shrub occasional in coastal to montane forest, reported from near sea level to 1320 m elevation in Samoa. **Endemic.** TU, OF, OL.

**Morinda citrifolia** L. nonu  
Shrub or small tree common in coastal forest and disturbed places, reported from near sea level to 500 m elevation. Probably a Polynesian introduction, ranging from India to Hawaii. TU, AU, OF, OL, TA, SW.

**Morinda myrtifolia** A. Gray

Liana rare or perhaps uncommon in coastal to lowland forest, reported from near sea level to 200 m elevation. Indigenous, ranging from New Caledonia to the Marquesas. TU, TA.

**Mussaenda raiateensis** J. W. Moore

aloalo vao

Terrestrial or epiphytic shrub occasional in sunny places in lowland to montane forest, reported from near sea level to 700 m elevation. Indigenous, ranging from Vanuatu to the Society Islands. TU, OF, TA.

**Neonauclea forsteri** (Seem. ex Havil.) Merr.

afa

Large tree common in lowland to montane forest, reported from 15 to 1060 m elevation in Samoa. Indigenous, ranging from the Solomon Islands to Tahiti. TU, OF, OL, TA.

**Psychotria forsteriana** A. Gray

Small tree uncommon in lowland to montane forest, reported from near sea level to 1000 m elevation in Samoa. Indigenous, also found in Fiji. TU.

**Psychotria garberiana** Christoph.

Small tree common in foothill to montane forest and summit scrub, reported from 300 to 960 m elevation. **Endemic to Manu'a.** OF, OL, TA.

**Psychotria insularum** A. Gray

matalafi

Small tree common in coastal to montane forest, reported from near sea level to 1400 m elevation in Samoa. Indigenous, also found in Tonga, Futuna, 'Uvea, Rotuma, and Niue. TU, AU, OF, OL, TA.

**Sarcopygme pacifica** (Reinecke) Setchell & Christoph.

u'unu

Small to medium-sized, unbranched tree common in lowland to montane forest, reported from 50 to 1400 m elevation in Samoa. **Endemic.** TU, OF, OL, TA.

**Spermacoce assurgens** Ruiz and Pavon

Herb common in croplands and disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

**Spermacoce mauritiana** Gideon

Herb uncommon in lawns and other sunny, disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, OF.

**Tarenna sambucina** (Forst. f.) Durand in Drake

ma'anunu

Small tree occasional in open forest and disturbed places, reported from near sea level to 200 m elevation. Indigenous, ranging from the Vanuatu to the Marquesas. TU, OF, OL, TA.

RUTACEAE

**Citrus macroptera** Montr.

moli u'u

Small tree uncommon in coastal to foothill forest, reported from near sea level to ca. 300 m elevation. A Polynesian introduction, widespread in the western Pacific. TU, OF, TA.

**Euodia hortensis** Forst.

usi

Shrub uncommon in disturbed places, mostly as a relict of cultivation, and perhaps not truly naturalized, reported from near sea level to 330 m elevation. A Polynesian introduction, native to Melanesia. TU, OF, OL.

**Melicope latifolia** (DC.) T. Hartley

so'opine

Small tree occasional in lowland to montane forest, reported from near sea level to 580 m elevation. Indigenous, also found in the Solomon Islands. TU, OF, OL, TA.

**Melicope retusa** (A. Gray) T. Hartley

Shrub or small tree rare in coastal to lowland forest, reported from near sea level to 180 m elevation. Indigenous, also found on Alofi, Niue, and in Tonga. OL, OL, TA.

**Melicope richii** (A. Gray) T. Hartley

Shrub or small tree rare overall, but occasional in montane scrub forest reported from 450 to ca. 650 m elevation. **Endemic to Tutuila.** TU.

**Melicope vatiana** (Setchell) T. Hartley

Shrub or small tree occasional in lowland to montane forest, reported from 100 to 900 m elevation. **Endemic to American Samoa.** TU, TA.

**Micromelum minutum** (Forst. f.) Seem.

talafalu

Small tree occasional in coastal to foothill forest, reported from near sea level to 300 m elevation. Indigenous, ranging from the Philippines and Australia to Niue. TU, AU, OF, OL, TA.

SAPINDACEAE

**Allophylus timoriensis** (DC.) Bl.

Small to medium-sized tree uncommon in littoral to montane forest, reported from near sea level to 830 m elevation. Indigenous, ranging from Malaysia to the Marquesas. TU, AU, OF, OL, TA.

**Arytera brackenridgei** (A. Gray) Radlk.

taputo'i

Medium-sized tree uncommon in lowland to montane forest, reported from near sea level to 500 m elevation. Indigenous, also found in Fiji. TU, OF, OL.

**Elattostachys falcata** (A. Gray) Radlk.

taputo'i

Large tree occasional in lowland to montane forest, reported from 30 to 1530 m elevation in Samoa. Indigenous, also found in Vanuatu, Fiji, Tonga, and Niue. TU, OL, TA.

**Guioa rhoifolia** (A. Gray) Radlk.

Medium-sized tree rare in foothill to montane forest, reported from 250 to 750 m elevation. Indigenous, also found in Fiji. TU.

**Pometia pinnata** Forst.

tava

Large tree common to abundant in lowland to montane forest, reported from 10 to 500 m elevation. Indigenous, ranging from Ceylon to Samoa. TU, OF, OL, TA.

**Sapindus vitiensis** A. Gray

Large tree rare in coastal forest to montane forest, reported from near sea level to 450 m elevation. Indigenous, also found in Fiji and Tonga. TU.

SAPOTACEAE

**Manilkara dissecta** (L. f.) Dubard

pani

Medium-sized tree rare in coastal forest, reported only between ca. 20 and ca. 175 m elevation. Indigenous, ranging from Vanuatu to Samoa. TU.

**Palaquium stehlinii** Christoph.

'gasu

Large tree occasional in lowland to montane forest, reported from 150 to 1120 m elevation in Samoa. Endemic. TU, TA.

**Planchonella garberi** Christoph.

'ala'a

Medium-sized to large tree occasional in coastal to montane forest, reported from near sea level to 500 m in elevation. Indigenous, ranging from Fiji to Niue. TU, AU, OF, OL, TA.

**Planchonella grayana** St. John

'ala'a

Large tree uncommon to locally common in littoral to ridge forest, reported from near sea level to 185 m elevation. Indigenous, ranging from Fiji to the Tuamotus (Makatea). TU, AU.

**Planchonella samoensis** H. J. Lam ex Christoph.

mamalava

Large tree common in lowland to montane forest, reported from 20 to 900 m elevation. Indigenous, also found in Niue. TU.

SCROPHULARIACEAE

**Limnophila fragrans** (Forst. f.) Seem.

tamole vai?

Herb rare in wet places such as taro patches, streambeds, and crater lake margins, reported from near sea level to 650 m elevation. Indigenous, ranging from Australia and Melanesia to the Society Islands. TU, OF, TA.

**Limnophila rugosa** (Roth) Merr.



Herb uncommon in wet places, reported from ca. 50 to 350 m elevation. A modern introduction, native to tropical Asia. TU, TA.

**Lindernia antipoda** (L.) Alston in Trimen

Herb rare in disturbed places, reported at 50 m elevation. A modern introduction, native to tropical Asia. TU.

**Lindernia crustacea** (L.) F. Muell.

Small herb uncommon in wet places such as streambeds, reported from near sea level to 600 m elevation. Indigenous, pantropical in distribution. TU, OF, OL?, TA.

SOLANACEAE

**Capsicum frutescens** L.

polo feu

Subshrub occasional in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, OF, TA, SW.

**Physalis angulata** L.

vi vao

Herb common in croplands and other disturbed places, reported only from the lowlands. Apparently a Polynesian introduction, native to tropical America. TU, AU, OF, TA, SW.

**Solanum americanum** Mill.

magalo

Herb uncommon in disturbed places, reported from near sea level to 1750' m elevation in Samoa. A Polynesian introduction, or perhaps indigenous, native to tropical or subtropical America. TU, OF, TA.

**Solanum viride** Forst. f. ex Spreng.

polo iti

Shrub rare in disturbed places and coastal forest, reported only from the lowlands. A naturalized Polynesian introduction, or perhaps indigenous, ranging from Fiji to Hawai'i. TU, OF, TA, SW.

STERCULIACEAE

**Kleinhovia hospita** L.

fu'afu'a

Medium-sized common in disturbed places and secondary forest, reported from near sea level to 500 m elevation. Indigenous, ranging from tropical Asia to western Polynesia. TU, AU, OF, OL, TA.

**Melochia aristata** A. Gray

ma'o

Shrub occasional in disturbed places and secondary forest, reported from near sea level to 700 m elevation. Indigenous, also found in Tonga and the Tuamotus. TU, TA.

**Sterculia fanaiho** Setchell

fana'io

Medium-sized tree occasional in coastal to montane forest, reported from near sea level to 600 m elevation. Indigenous, also found in Tonga, Niue, Rotuma, and Futuna. TU, AU, OF, OL, TA.

#### SURIANACEAE

##### **Suriana maritima** L.

Shrub rare in littoral areas, reported only near sea level and probably no longer found in American Samoa. Indigenous, pantropical in distribution. RO.

#### THEACEAE

##### **Eurya pickeringii** A. Gray.

Shrub occasional in lowland forest to montane scrub, reported from 100 to ca. 600 m elevation. Indigenous, also found on Rapa. TU.

#### THYMELAEACEAE

##### **Phaleria disperma** (Forst. f.) Baill.

sun

Shrub rare in littoral and coastal forest, reported from near sea level to 100 m elevation. Indigenous or a Polynesian introduction, also found in Fiji, Tonga, and the Horn Islands. TU, TA.

##### **Phaleria glabra** (Turrill) Domke

sun vao

Shrub occasional in coastal to montane forest, reported from near sea level to 900 m elevation. Indigenous, also found in Fiji. TU.

##### **Wikstroemia foetida** (L. f.) A. Gray

Shrub occasional in montane scrub, reported from 75 to 1530 m elevation in Samoa. Indigenous, ranging from Fiji to Tahiti. TU.

#### TILIACEAE

##### **Grewia crenata** (Forst.) Schinz & Guillaumin

fau

Small tree occasional to uncommon in coastal forest, reported from near sea level to 80 m elevation. Indigenous, ranging from New Caledonia to Tahiti. TU, AU, OF, OL, TA.

##### **Trichospermum richii** (A. Gray) Seem.

ma'o sina

Medium-sized tree occasional in lowland to montane forest, reported from 100 to 1120 m elevation in Samoa. Indigenous, also found in Fiji. TU, OF, OL, TA.

##### **Triumfetta procumbens** Forst. f.

mautofu tai?

Prostrate shrub uncommon on sandy beaches, reported only near sea level. Indigenous, ranging from Malaysia to the Tuamotus. TU, AU, OF, OL, TA, SW.

##### **Triumfetta rhomboidea** Jacq.

mautofu

Shrub occasional in disturbed places, reported from near sea level to 600 m elevation. A modern introduction, native to the Old World tropics. TU, AU, OF, OL, TA.

#### ULMACEAE

##### ***Celtis harperi* Horne**

Medium-sized tree uncommon in lowland to foothill forest, reported from 250 to 300 m elevation. Indigenous, ranging from Fiji to Niue. OF, TA.

##### ***Trema cannabina* Lour.**

magele

Small tree occasional in disturbed forest and clearings, reported from near sea level to 1080 m elevation in Samoa. Indigenous, ranging from India to Niue and perhaps farther east. TU, OF, TA.

#### URTICACEAE

##### ***Boehmeria virgata* (Forst. f.) Guillemain**

Small tree rare in sunny places in foothill to montane forest, reported from 180 to 1400 m elevation in Samoa. Indigenous, ranging from Vanuatu and Carolines to the Marquesas. TU.

##### ***Cypholophus macrocephalus* Wedd.**

faupata?

Unbranched shrub occasional in foothill to montane forest, reported from 240 to 1120 m elevation in Samoa. Indigenous, ranging from Fiji to the Society Islands. The Samoan population belongs to var. *mollis* (Wedd.) Wedd. TU, TA.

##### ***Dendrocnide harveyi* (Seem.) Chew**

salato

Medium-sized rare in lowland, reported from near sea level to 800 m elevation. Indigenous, ranging from Fiji to Niue. TU, TA.

##### ***Elatostema grandifolium* Reinecke**

Large herb occasional to common in montane forest, reported from 400 to 890 m elevation. Endemic. TU? (Graeffe), OL, TA.

##### ***Elatostema scabriusculum* Setchell**

Small herb uncommon in streambeds and other sunny places, reported from 40 to 600 m elevation. Endemic to American Samoa. Some specimens on Ta'u and 'Olosega look something like a hybrid between this small species and the larger one above, and more work is needed to see if they actually constitute separate species. TU, TA.

##### ***Elatostema tutuilense* Whistler**

Small herb rare in foothill forest, known only from the original collection. Endemic to Tutuila. TU.

##### ***Laportea interrupta* (L.) Chew**

ogoogo

Herb rare or perhaps uncommon in disturbed places, reported from near sea level to 150 m elevation. A Polynesian introduction, possibly native to Southeast Asia. TU, OF, TA.

**Laportea ruderalis** (Forst. f.) Chew

Herb uncommon in disturbed places, reported only near sea level. A Polynesian introduction or indigenous, ranging from Malaysia to eastern Polynesia. SW.

**Leucosyke corymbulosa** (Wedd.) Wedd.

'ala'alatoa

Small tree uncommon in lowland to montane forest, reported from 50 to 650 m elevation. Indigenous, ranging from Vanuatu to the Cook Islands. TU.

**Maoutia australis** Wedd.

Small tree uncommon in foothill to montane forest, reported from 200 to 1060 m elevation in Samoa. Indigenous, ranging from Fiji to the Society Islands. TU, OF, OL, TA.

**Pilea microphylla** (L.) Liebm.

Small prostrate herb occasional in sunny disturbed areas and on rock walls, reported only from the lowlands. A modern introduction, native to tropical America. TU, OF, TA.

**Pipturus argenteus** (Forst. f.) Wedd.

soga; fau soga

Small tree common in disturbed places and early secondary forest, reported from near sea level to 700 m elevation. Indigenous, ranging from Vanuatu to the Marquesas. TU, AU, OF, OL, TA, SW.

**Procris pedunculata** (Forst.) Wedd.

fua lolo

Terrestrial or epiphytic herb occasional in littoral to montane forest, reported from near sea level to 1320 m elevation in Samoa. Indigenous, ranging from Malaysia to the Marquesas. TU, OF, OL, TA, SW.

VERBENACEAE

**Clerodendrum buchananii** (Roxb.) Walp.

Shrub uncommon in plantations and other disturbed places, reported only from the lowlands. A modern introduction, native to Malaysia. The Samoan population belongs to var. *fallax* (Lindl.) Bakh. OF, OL, TA.

**Clerodendrum chinense** (Osbeck) Mabberly

losa Honolulu

Large shrub occasional in plantations and along roadsides, reported only from the lowlands. A modern introduction, native to tropical Asia. TU, OL, TA.

**Clerodendrum inerme** (L.) Gaertn.

aloalo tai

Sprawling shrub common in sunny littoral vegetation, reported only near sea level. Indigenous, ranging from tropical Asia to Niue. TU, AU, OF, OL, TA.

**Faradaya amicornum** Seem.

mamalupe

Liana common in lowland to montane forest, reported from 50 to 1700 m elevation in Samoa. Indigenous, also found in Tonga. TU, AU, OF, OL, TA.

***Premna serratifolia* L.**

aloalo

Shrub or small tree common in littoral strand to montane forest, reported from near sea level to 500 m elevation. Indigenous, ranging from tropical Asia to the Marquesas. TU, AU, OF, OL, TA.

***Stachytarpheta jamaicensis* Vahl**

Subshrub uncommon on roadsides and other disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, TA.

***Stachytarpheta urticaefolia* (Salisb.) Sims**

fua pepe, mautofu

Shrub common in disturbed places, reported from near sea level to 650 m elevation. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

***Vitex trifolia* L.**

namulega

Small tree occasional in littoral strand and occasionally cultivated, reported only near sea level. Indigenous, ranging from tropical eastern Africa to the Marquesas. TU, OF, OL, TA.

**VIOLACEAE**

***Melicytus samoensis* (Christoph.) A. C. Smith**

Small to medium-sized tree occasional in montane forest, reported from 400 to 1600 m elevation in Samoa. Indigenous, also found in Tonga. TA.

**VISCACEAE**

***Korthalsella horneana* V. Tieg.**

Hemiparasitic leafless shrub rare overall, but occasional in foothill to montane forest on the south side of Ta'u, reported from 300 to 600 m elevation. Indigenous, ranging from Fiji to Tahiti. TA.

**MONOCOTYLEDONAE**

**AGAVACEAE**

***Cordyline fruticosa* (L.) Chev.**

ti; lau ti

Shrub common in cultivation and naturalized in lowland to montane forest, reported from near sea level to 1750 m elevation in Samoa. A Polynesian introduction or possibly indigenous, widespread from tropical Asia to Hawai'i. TU, AU, OF, OL, TA.

**AMARYLLIDACEAE**

***Zephryanthes rosea* (Spreng.) Lindl.**

Stemless herb occasional in lawns, reported only from the lowlands. A modern introduction, native to tropical America. TU, TA, SW.

ARACEAE

***Amorphophallus paeoniifolius* (Dennst.) Nicholson**

teve

Stemless herb uncommon in secondary forest and plantations, reported only in the lowlands. A Polynesian introduction, semi-naturalized, widespread from tropical Asia to Hawai'i. TU, AU, OF, TA.

***Epipremnum pinnatum* (L.) Engl.**

fue laufao

Climber common in lowland to foothill forest, reported from near sea level to 700 m elevation. Indigenous, widespread in the Pacific from Southeast Asia to eastern Polynesia. TU, OF, OL, TA.

***Rhapidophora graeffei* Engl.**

tuafaga?; pau tutuga?

Climber common in lowland to montane forest, reported from near sea level to 1400 m elevation in Samoa. **Endemic**, or possibly also found in Tonga. TU.

ARECACEAE

***Cocos nucifera* L.**

niu

Large palm common in coastal areas, mostly cultivated, reported from near sea level to ca. 500 m elevation. Indigenous, originating somewhere in the Old World tropics, but now pantropical in distribution. TU, AU, OF, OL, TA, SW.

CANNACEAE

***Canna indica* L.**

fanamanu

Large herb occasional in disturbed places, especially in wet areas, reported from near sea level to 350 m elevation. A modern introduction, native to tropical America. TU, AU, OF, TA.

COMMELINACEAE

***Aneilima vitiense* Seem.**

Herb rare in coastal to montane forest, reported from near sea level to 750 m elevation. Indigenous, also found in Fiji and Tonga. TU, TA.

***Commelina benghalensis* L.**

Herb uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to tropical Asia. TU.

***Commelina diffusa* Burm. f.**

ma'utoga

Herb common in disturbed places, especially in wet areas, reported from near sea level to 650 m elevation. A Polynesian introduction, native to the Old World tropics. TU, AU, OF, OL, TA, SW.

## CYPERACEAE

### ***Cyperus involucratus* Rottb.**

Robust sedge uncommon in disturbed places, mostly escaping from cultivation, reported only from the lowlands. A modern introduction, native to Madagascar. TA.

### ***Cyperus compressus* L.**

Small sedge occasional in disturbed areas, reported from near sea level to 210 m elevation. A modern introduction, possibly pantropical in distribution. TU, OF, TA, SW.

### ***Cyperus rotundus* L.**

mumuta

Small sedge common in disturbed places, such as pastures, reported only from the lowlands. A modern introduction, native to the Old World tropics and now cosmopolitan. TU, TA, SW.

### ***Cyperus stoloniferus* Retz.**

Sedge common in herbaceous strand vegetation, reported only near sea level. Indigenous, native to the Old World tropics. TU, AU, OF, OL, TA.

### ***Eleocharis dulcis* (Burm. f.) Hens.**

'utu'utu

Leafless sedge locally abundant in coastal and montane marshes, reported from near sea level to 1060 m elevation in Samoa. Indigenous, ranging from western Africa to Samoa. TU, AU, TA.

### ***Eleocharis geniculata* (L.) Roemer & Schultes**

Small leafless sedge rare overall, but locally common in wet places on Swains Island, reported only near sea level. Indigenous or a modern introduction, probably native to tropical America, now found throughout the tropics and subtropics. SW.

### ***Fimbristylis complanata* (Retz.) Link**

Small sedge occasional in disturbed wet places, reported only from the lowlands. A modern introduction, pantropical in distribution. The Samoan population belongs to var. *autumnalis* (L.) Küken. TU.

### ***Fimbristylis cymosa* R. Br.**

Small sedge locally abundant on rocky shores, reported mostly near sea level. Indigenous, ranging from Malaysia to Hawai'i. TU, AU, OF, OL, TA, SW.

### ***Fimbristylis dichotoma* (L.) Vahl**

Sedge common in disturbed places, reported from near sea level to 870 m elevation. A modern introduction, now pantropical in distribution. TU, AU, OF, TA, SW.

### ***Gahnia vitiensis* Rendle**

Tall, erect sedge rare overall, but locally occasional in summit scrub, reported at around 900 m elevation. Indigenous, also found in Fiji. TA.

**Kyllinga brevifolia** Rottb.

Small sedge common in lawns and other sunny, disturbed places, reported from near sea level to 900 m elevation. A modern introduction, now pantropical in distribution. TU, AU, TA, SW.

**Kyllinga nemoralis** (Forst.) Dandy ex Hutch. & Dalziel

Small sedge common in lawns and other sunny, disturbed places, reported only from the lowlands. A Polynesian introduction, native to the Old World tropics. TU, AU, OF, OL, TA, SW.

**Macharina falcata** (Nees) Koyama

Sedge rare overall, but locally common in patches in montane scrub and along streams in montane forest, reported from 450 to 1100 m elevation in Samoa. Indigenous, ranging from the Philippines and Malaysia to Samoa. TU.

**Mapania macrocephala** (Gaud.) K. Schum.

Large sedge occasional in lowland to montane forest, reported from 100 to 800 m elevation. Indigenous, ranging from the Philippines to Samoa. TU, TA.

**Mapania parvibracteata** (C.B. Clarke) T. Koyama

Large sedge rare in montane scrub, reported from 250 to 500 m elevation. Indigenous, also found in Fiji. TU.

**Mariscus cyperinus** (Retz.) Vahl

Sedge uncommon to occasional in disturbed places, reported from near sea level to 650 m elevation. Indigenous or perhaps a Polynesian introduction, originally native to tropical Asia. TU, AU, TA.

**Mariscus javanicus** (Houtt.) Merr. & Metcalfe

selesele

Large sedge occasional on rocky or sandy shores and in coastal taro patches, reported only near sea level. Indigenous, widespread from tropical Africa to Hawai'i. TU, AU, OF, OL, TA, SW.

**Mariscus seemannianus** (Boeck.) Palla

Medium-sized to tall sedge occasional in lowland to montane forest, reported from near sea level to 600 m elevation. Indigenous, ranging from Fiji to the Society Islands. TU, OF, OL, TA.

**Mariscus sumatrensis** (Retz.) Raynal

Medium-sized sedge uncommon to occasional in disturbed places, reported only from the lowlands. Indigenous or perhaps a Polynesian introduction, originally native to the Old World tropics. TU, AU, OF, TA.

**Pycnus polystachyos** (Rottb.) Beauv.



Sedge common on roadsides and disturbed places, reported from near sea level to 870 m elevation. A modern introduction, now pantropical in distribution. TU, AU, TA.

**Rhynchospora corymbosa** (L.) Britten

selesele

Coarse sedge common in coastal and montane marshes, reported from near sea level to 1060 m elevation in Samoa. Indigenous, pantropical in distribution. TU, AU, OL, TA.

**Scirpodendron ghaeri** (Gaertn.) Merr.

Large pandanus-like sedge rare in American Samoa in littoral/mangrove forest, reported only from near sea level in American Samoa (but in montane marshes and swamps up to 400 m elevation in Western Samoa). Indigenous, ranging from Ceylon to Samoa. TU.

**Scleria lithosperma** (L.) Sw.

Medium-sized sedge occasional in coastal to lowland forest, reported from near sea level to 300 m elevation. Indigenous, pantropical in distribution. TU, AU, OF, OL, TA.

**Scleria polycarpa** Boeck.

tafatolu?

Coarse sedge occasional in lowland to montane forest, reported from near sea level to 650 m elevation. Indigenous, ranging from Australia to Samoa. TU, AU, OF, OL, TA.

**Torulinium odoratum** (L.) S. Hooper

Medium-sized sedge occasional in coastal marshes, reported mostly near sea level. Probably indigenous, pantropical in distribution. TU, AU, OF, TA.

DIOSCOREACEAE

**Dioscorea bulbifera** L.

soi

Vine common in disturbed places and secondary forest, reported from near sea level to 400 m elevation. A Polynesian introduction, widespread from Africa to Hawai'i. TU, AU, OF, OL, TA.

**Dioscorea pentaphylla** L.

pilita

Vine uncommon in disturbed places and secondary forest, reported from near sea level to 650 m elevation. A Polynesian introduction, widespread from tropical Asia to Hawai'i. TU, TA.

FLAGELLARIACEAE

**Flagellaria gigantea** Hooker f.

lafo

High-climbing cane occasional in lowland to montane forest, reported from near sea level to 700 m elevation. Indigenous, also found in Fiji and Niue. TU.

HELICONIACEAE

**Heliconia laurfao** Kress

laufao

Banana-like plant occasional in lowland to montane forest, reported from near sea level to 1100 m elevation in Samoa. **Endemic.** TU, TA.

HYDROCHARITACEAE

**Halophila minor** (Zoll.) Den Hartog

limu foe?

Creeping marine herb common on sand in shallow lagoons, reported only below sea level. Indigenous, ranging from eastern Africa to Samoa. TU.

**Halophila ovalis** (R. Br.) Hooker f.

limu foe?

Creeping marine herb locally common on sand in shallow lagoons, reported only below sea level. Indigenous, widespread from Africa to Samoa. TU.

JOINVILLEACEAE

**Joinvillea plicata** (Hooker f.) T. K. Newell & B. C. Stone

Large herb rare in summit scrub, reported from 760 to 1500 m elevation in Samoa. Indigenous, ranging from New Caledonia to Samoa. TA. A new record for American Samoa.

LEMNACEAE

**Lemna perpusilla** Torrey

Tiny floating herb rare in standing water, reported from near sea level to ca. 100 m elevation. A modern introduction to American Samoa, widespread in the tropics. TU.

ORCHIDACEAE

**Agrostophyllum megalurum** Rchb. f.

Coarse epiphytic orchid rare in foothill to montane forest, reported from 200 to 600 m elevation. Indigenous, also found in Fiji. TA.

**Appendicula bracteosa** Rchb. f.

Small epiphytic orchid occasional in foothill to montane forest, reported from 300 to 1200 m elevation in Samoa. Indigenous, also found in Fiji and Vanuatu. TU, OL, TA.

**Beadlea** sp.

Saprophytic terrestrial orchid rare in disturbed places and perhaps no longer found in Samoa, reported from ca. 50 m elevation. Probably a modern introduction, native to South America. TU.

**Bulbophyllum atrorubens** Schltr.

Small epiphytic orchid uncommon in foothill and montane forest, reported from 225 to 700 m elevation. Indigenous, ranging from New Caledonia to Samoa. TU.

***Bulbophyllum betchei* F. Muell.**

Small creeping epiphytic orchid rare in montane forest, reported from 400 to 750 m elevation. Indigenous, ranging from New Caledonia and the Caroline Islands to Samoa. OL, TA.

***Bulbophyllum distichobulbum* Cribb**

Small epiphytic orchid rare in lowland and foothill forest, reported from ca. 150 to 270 m elevation. Indigenous, also found on Niue. TU.

***Bulbophyllum ebulbe* Schltr.**

Small creeping epiphytic orchid occasional to locally common in lowland to montane forest, reported from near sea level to 950 m elevation. Indigenous, ranging from New Caledonia to Samoa. TU.

***Bulbophyllum longiscapum* Rolfe**

Epiphytic orchid occasional in coastal to montane forest, reported from near sea level to 500 m elevation. Indigenous, ranging from the Solomon Islands to Niue. TU, TA.

***Bulbophyllum membranaceum* Teijsm. & Binnend.**

Small epiphytic orchid occasional from mangrove to montane forest, reported from near sea level to 820 m elevation. Indigenous, ranging from Thailand to Tonga and Samoa. TU.

***Bulbophyllum pachyanthum* Schltr.**

Epiphytic orchid uncommon in foothill to montane forest, reported from 300 to 1600 m elevation in Samoa. Indigenous, ranging from New Caledonia to Tonga and Samoa. TU, TA.

***Bulbophyllum samoanum* Schltr.**

Small epiphytic orchid occasional in foothill to montane forest, reported from 300 to 800 m elevation. Indigenous, ranging from New Caledonia to Samoa. TU, OF, OL, TA.

***Bulbophyllum savaiiense* Schltr.**

Tiny epiphytic orchid rare in foothill to montane forest, reported from 300 to 600 m elevation. **Endemic.** OL, TA.

***Calanthe hololeuca* Rchb. f.**

Large ground orchid uncommon in foothill to montane forest, reported from 300 to 1200 m elevation in Samoa. Indigenous, ranging from New Caledonia to Samoa. TU, TA.

***Calanthe triplicata* (Willemet) Ames**

Large ground orchid occasional in lowland to montane forest, reported from near sea level to 1600 m elevation in Samoa. Indigenous, ranging from Madagascar to the Marquesas. TU, OF, OL, TA.

**Coelogyne lycastoides** F. Muell. and Kraenzl.

Large epiphytic orchid occasional in foothill to montane forest, reported from 300 to 1550 m elevation in Samoa. Indigenous, ranging from New Caledonia to Samoa. TU, TA.

**Cryptostylis arachnites** (Bl.) Hassk.

Medium-sized ground orchid rare in montane forest, reported from 500 to 1200 m elevation in Samoa. Indigenous, ranging from India to Fiji and Samoa. TA.

**Dendrobium biflorum** (Forst. f.) Sw.

Epiphytic orchid common in lowland to montane forest, reported from near sea level to 950 m elevation. Indigenous, ranging from Bougainville to the Society Islands. TU, OF, OL, TA.

**Dendrobium calcaratum** A. Rich.

Epiphytic orchid occasional in lowland to montane forest, reported from near sea level to 700 m elevation. Indigenous, ranging from New Britain to Samoa. TU.

**Dendrobium catillare** Rchb. f.

Small epiphytic orchid rare or possibly uncommon in montane forest, reported from 250 to 500 m elevation. Indigenous, also found in Fiji. TU, TA.

**Dendrobium dactylodes** Rchb. f.

Epiphytic orchid common to abundant in lowland to montane forest, reported from near sea level to 800 m elevation. Indigenous, ranging from Vanuatu to Samoa. TU, AU, OF, OL, TA.

**Dendrobium goldfinchii** F. Muell.

Epiphytic orchid uncommon in coastal to foothill forest, reported from near sea level to 300 m elevation. Indigenous, ranging from New Guinea to Samoa. TU.

**Dendrobium lepidochilum** Kraenzl.

Epiphytic orchid occasional in foothill forest, reported from 200 to 300 m elevation. Endemic. TU.

**Dendrobium samoense** Cribb

Epiphytic orchid occasional in lowland to montane forest, reported from near sea level to 600 m elevation. Endemic. TU, OF, TA.

**Dendrobium sladei** J. J. Wood and Cribb

Epiphytic orchid occasional in foothill to montane forest, reported from 360 to 600 m elevation. Indigenous, ranging from Vanuatu to Samoa. TU, TA.

**Didymoplexis micradenia** (Rchb. f.) Hemsley

Leafless saprophytic ground orchid uncommon to occasional in lowland to montane forest, reported from 20 to 450 m elevation. Indigenous, ranging from New Caledonia to Niue. TU, OF, OL, TA.

**Diplocaulobium fililobum** (F. Muell.) Kraenzl.

Epiphytic orchid occasional in montane forest, reported from 400 to 1550 m elevation in Samoa. **Endemic.** TU, OL, TA.

**Epiblastus sciadanthus** (F. Muell.) Schltr.

Epiphytic orchid rare in montane forest, reported from 600 to 1550 m elevation in Samoa. Indigenous, ranging from the Solomon Islands to Samoa. TA.

**Eria robusta** (Bl.) Lindl.

Epiphytic or terrestrial orchid uncommon in mangrove to montane forest, reported from near sea level to 1550 m elevation in Samoa. Indigenous, ranging from India to Samoa. TU.

**Erythroides oxyglossa** Schltr.

Small ground orchid rare in foothill to montane forest, reported from 300 to 1300 m elevation in Samoa. Indigenous, ranging from New Caledonia to Tonga and Samoa. OL, TA.

**Erythroides purpurascens** Schltr.

Small ground orchid occasional in foothill to montane forest, reported from 300 to 890 m elevation. Indigenous, also found in New Guinea and possibly Fiji and Tonga. TU, TA.

**Flickingeria comata** (Bl.) A.D. Hawkes

Epiphytic orchid occasional in lowland to montane forest, reported from sea level to 500 m elevation. Indigenous, ranging from Taiwan and Malaysia to Samoa. TU, OL, TA.

**Glomera montana** Rchb. f.

Epiphytic orchid occasional to locally abundant in foothill forest to summit scrub, reported from 250 to 1200 m elevation in Samoa. Indigenous, ranging from New Guinea to Samoa. TU, OL, TA.

**Goodyera rubicunda** (Bl.) Lindl.

Medium-sized ground orchid rare in foothill to montane forest, reported from 200 to 900 m elevation. Indigenous, ranging from Malaysia to Tonga and Samoa. OF.

**Habenaria monogyne** Schltr.

Medium-sized ground orchid rare in foothill to montane forest, reported from 300 to 900 m elevation in Samoa. **Endemic.** TU.

**Hetaeria oblongifolia** Bl.

Medium-sized ground orchid occasional in foothill to montane forest, reported from 250 to 600 m elevation. Indigenous, ranging from the Philippines to Niue. OF, OL, TA.

**Liparis caespitosa** (Thou.) Lindl.

Tiny epiphytic orchid rare in montane scrub, reported from 500 m. Indigenous, ranging from eastern Africa to the Australs. TU.

**Liparis condylobulbon** Rchb. f.

Medium-sized epiphytic orchid occasional in lowland to montane forest, reported from near sea level to 700 m elevation. Indigenous, ranging from Southeast Asia to Samoa. TU, OF, TA.

**Liparis gibbosa** Finet

Small epiphytic orchid rare in montane scrub, reported from 500 to 620 m elevation. Indigenous, ranging from Southeast Asia to Samoa. TU.

**Liparis layardii** F. Muell.

Small ground orchid uncommon in montane forest, reported from 500 to 1700 m elevation in Samoa. Indigenous, ranging from New Caledonia to Samoa. OL, TA.

**Malaxis reineckeana** (Kraenzl.) Kores

Medium-sized ground orchid occasional in foothill to montane forest, reported from 300 to 750 m elevation. **Endemic.** TU.

**Malaxis resupinata** (Forst. f.) Kuntze

Medium-sized ground orchid occasional in foothill to montane forest, reported from 250 to 500 m elevation. Indigenous, ranging from Vanuatu to Tahiti. TU, OF, OL, TA.

**Malaxis samoensis** (Schltr.) Whistler

Small ground orchid occasional in foothill to montane forest, reported from 300 to 800 m elevation. Indigenous, also found in Fiji. TU, OL, TA.

**Malaxis taurina** (Rchb. f.) Kuntze

Small epiphytic or ground orchid uncommon in foothill to montane forest, reported from 350 to 800 m elevation. Indigenous, ranging from New Caledonia to Samoa. TA.

**Mediocalcar paradoxum** (Kraenzl.) Schltr.

Creeping epiphytic orchid occasional in lowland to montane forest, reported from near sea level to 700 m elevation. Indigenous, ranging from the Solomon Islands to Samoa. TU.

**Moerenhoutia heteromorpha** (Rchb. f.) Benth. & Hooker f. ex Drake

Medium-sized terrestrial orchid uncommon to occasional in foothill to montane forest, reported from 300 to 750 m elevation. **Endemic.** TU, OL, TA.

**Nervilia aragoana** Gaudich.

Small ground orchid rare in lowland to montane forest, reported from 10 to 500 m elevation. Indigenous, ranging from India to eastern Polynesia. TU, OF.

**Oberonia equitans** (Forst. f.) Mutel

Small epiphytic orchid occasional in lowland to montane forest, reported from near sea level to 1550 m elevation in Samoa. Indigenous, ranging from New Caledonia to the Tuamotus. TU, OF, OL.

**Oberonia heliophila** Rchb. f.

Epiphytic orchid occasional in lowland to montane forest, reported from near sea level to 550 m elevation. Indigenous, ranging from the Solomon Islands to Samoa. TU.

**Peristylus tradescantifolius** (Rchb. f.) Kores

Small ground orchid occasional in foothill to montane forest, reported from 200 to 1000 m elevation in Samoa. Indigenous, also found in Fiji and Tonga. TU, OF, OL, TA.

**Peristylus whistlerii** Cribb.

Large ground orchid rare in montane forest, reported from 500 to 800 m elevation.

**Endemic.** TA.

**Phaius tankervilleae** (Banks) Bl.

Large ground orchid occasional in foothill to montane forest, reported from 200 to 700 m elevation. Indigenous but possibly a recent arrival, ranging from southern China to Samoa, and naturalized in Tahiti and Rarotonga. OL, TA.

**Phaius terrestris** (L.) Ormerod

Large ground orchid occasional in lowland to montane forest, reported from 50 to 800 m elevation. Indigenous, ranging from New Guinea to the Cook Islands. TU, OF, OL, TA.

**Phreatia micrantha** (A. Rich.) Schltr.

Epiphytic orchid common in mangrove to montane forest, reported from near sea level to 1060 m elevation in Samoa. Indigenous, also found in Fiji and Tonga. TU, OL, TA.

**Phreatia myosurus** (Forst. f.) Ames

Small epiphytic orchid common in mangrove to montane forest, reported from near sea level to 800 m elevation. Indigenous, ranging from New Ireland to the Society Islands. TU, OF, OL, TA.

**Phreatia paleata** Rchb. f.

Medium-sized epiphytic orchid rare in montane forest, reported from 400 to 740 m elevation. Indigenous, ranging from New Caledonia to Samoa. TU.

**Pseuderia ramosa** L. O. Williams

Epiphytic orchid occasional in montane scrub and montane forest, reported from 270 to 700 m elevation. Indigenous, also found on Futuna. TU, TA.

**Spathoglottis plicata** Bl.

Large ground orchid common in disturbed sunny places and fernlands, reported from near sea level to 1500 m elevation in Samoa. Indigenous, ranging from Vanuatu to Tahiti. TU, AU, OF, OL, TA.

**Taeniophyllum fasciola** (Forst.) Rchb. f.

Tiny leafless and stemless epiphytic orchid common in lowland to foothill forest, reported from near sea level to 300 m elevation. Indigenous, ranging from Guam and New Caledonia to Pitcairn Island. TU, AU, OF, OL, TA.

**Taeniophyllum whistleri** Cribb in Cribb & Whistler

Tiny leafless and stemless epiphytic orchid rare in lowland to foothill forest, reported from 150 to 250 m elevation. **Endemic to American Samoa.** TU, TA.

**Thrixspermum graeffei** Rchb. f.

Small epiphytic orchid rare in montane forest, reported from 400 to 725 m elevation. Indigenous, also found in Fiji. TU, TA.

**Vrydagzenea samoana** Schltr.

Small ground orchid rare in lowland to montane forest, reported from 175 to 650 m elevation. Indigenous, also found in Fiji and Vanuatu. TA.

**Vrydagzenea vitiensis** Rchb. f.

Small ground orchid rare in foothill to montane forest, reported from 250 to 1050 m elevation in Samoa. Indigenous, also found in Vanuatu, Tonga, and Fiji. TU, TA.

**PANDANACEAE**

**Freycinetia reineckei** Warb.

'ie'ie

Coarse climber common in lowland to montane forest, reported from 180 to 1200 m elevation in Samoa. **Endemic.** TU, TA.

**Freycinetia storckii** Seem.

'ie'ie

Coarse climber common to abundant in foothill to montane forest, reported from 300 to 1700 m elevation in Samoa. Indigenous, also found in Fiji. TU, OF, OL, TA.

**Pandanus reineckei** Warb.

fasa

Tree common rare overall, but locally common in montane scrub, reported from 450 to 1000 m elevation in Samoa. **Endemic.** TU.

**Pandanus tectorius** Parkinson

fasa

Tree common on exposed shores and sometimes inland, reported from near sea level to 100 m elevation. Indigenous, widespread throughout the tropical Pacific. TU, AU, OF, OL, TA, SW.

**Pandanus whitmeeanus** Mart.

paogo

Tree common in cultivation, sometimes found in montane scrub, reported from near sea level to 550 m elevation. Probably a Polynesian introduction, or perhaps more recent, ranging from Vanuatu to the Cook Islands. TU.

**Pandanus** sp.

fasa



Tree rare in montane forest, perhaps escaped from cultivation, reported from ca. 300 m elevation on the south side of Ta'u. **Endemic** or indigenous. TA.

## POACEAE

### **Axonopus compressus** (Sw.) Beauv.

Prostrate grass common in lawns and sunny, disturbed places, reported from near sea level to 150 m elevation. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

### **Bothriochloa bladhii** (Retz.) S.T. Blake

Medium-sized to tall grass uncommon in dry, sunny, disturbed places, reported only from the lowlands. A modern introduction, native to Asia. TU, AU.

### **Brachiaria mutica** (Forssk.) Stapf

Large grass common to locally abundant in disturbed areas, particularly in wet places, reported from near sea level to 870 m elevation. A modern introduction, probably native to North Africa, but now pantropical in distribution. TU, TA.

### **Brachiaria paspaloides** (Presl) C. E. Hubb.

Medium-sized grass occasional in disturbed places, reported from near sea level to 200 m elevation. Probably a Polynesian introduction, native to the Old World tropics. TU, AU, OF, OL, TA.

### **Brachiaria subquadrifida** (Trin.) Hitchc.

Low grass occasional in lawns and other sunny, disturbed places, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU, TA.

### **Cenchrus calyculatus** Cav.

Tall grass rare in coastal areas, no elevation reported, and has probably now disappeared from Samoa. Indigenous, ranging from New Caledonia to the Society Islands. TU.

### **Cenchrus echinatus** L.

Medium-sized grass common in disturbed coastal areas, reported only from the lowlands. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

### **Centosteca lappacea** (L.) Desv.

sefa

Medium-sized grass common in shady disturbed places and along forest trails, reported from near sea level to 850 m elevation. Indigenous, or possibly an unintentional Polynesian introduction, ranging from tropical Africa to the Marquesas. TU, AU, OF, OL, TA.

### **Chloris barbata** (L.) Sw.

Medium-sized grass common in dry disturbed places, reported only in coastal areas. A modern introduction, native to tropical America. TU, AU, OF, TA.

### **Chloris radiata** (L.) Sw.

Medium-sized grass rare in pastures, reported only in the lowlands. A modern introduction, native to tropical America. TU.

**Chrysopogon aciculatus (Retz.) Trin.**

Prostrate grass common in lawns, streambeds, and fernlands, reported from near sea level to 100 m elevation. A Polynesian introduction, native to the Old World tropics. TU, AU, TA, SW.

**Coix lacryma-jobi L.**

sanasana

Robust grass occasional to locally common in wet, disturbed places, reported only from the lowlands. A Polynesian introduction, native to Asia. TU, AU, TA.

**Cynodon dactylon (L.) Pers.**

Prostrate grass common in lawns and in sunny disturbed places, reported only near the coast. A modern introduction, possibly native to tropical Africa. TU, OF, TA, SW.

**Cyrtococcum oxyphyllum Stapf**

Medium-sized grass common in shady forest areas and disturbed places, reported from near sea level to 1120 m elevation in Samoa. Indigenous or a Polynesian introduction, ranging from Malaysia to Niue. TU, AU, OF, OL, TA.

**Cyrtococcum trigonum (Retz.) A. Camus**

Small grass common in lawns and other sunny, disturbed places, reported only from the lowlands. A modern introduction, native to Southeast Asia. TU, AU, TA.

**Dactyloctenium aegyptium (L.) Willd.**

Low grass occasional in disturbed places, reported mostly from near sea level, but occasionally up to 240 m elevation. A modern introduction, native to the Old World tropics. TU, AU, OF, TA.

**Digitaria ciliaris (Retz.) Koel.**

Medium-sized to tall grass common in plantations and sunny, disturbed places, reported from near sea level to 900 m elevation. A modern introduction, native to Asia. TU, AU, OF, TA, SW.

**Digitaria henryi Rendle**

Small grass uncommon in disturbed places, reported only near the coast. A modern introduction, native to Southeast Asia. Most current authors include this species in there former, but they are strikingly different and are considered here to be separate. TU, OF, OL, TA.

**Digitaria horizontalis Willd.**

Medium-sized grass occasional in disturbed places, reported from near sea level to 350 m elevation. A modern introduction, native to tropical America. TU, AU, OF, TA.

**Digitaria radicata (Presl) Miq.**

Small grass occasional in disturbed places in coastal areas, reported from near sea level to 300 m elevation. A Polynesian introduction, native to tropical Asia. TU, AU, OF, TA.

***Digitaria setigera* Roth ex Roemer & Schultes**

vao fali

Medium-sized grass common along the coast and in sunny disturbed places, reported from near sea level to 950 m elevation. Indigenous or introduced, ranging from India to Hawai'i. TU, AU, OF, OL, TA.

***Digitaria violascens* Link**

Medium-sized grass uncommon in disturbed places, reported from near sea level to 890 m elevation. A modern introduction, native to tropical Asia. TU.

***Echinochloa colona* (L.) Link**

Medium-sized grass common in sunny, disturbed places, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU, OF, TA.

***Eleusine indica* (L.) Gaertn.**

ta'ata'a

Medium-sized grass common in sunny disturbed places, especially along dirt roads, reported from near sea level to 870 m elevation. A Polynesian introduction, native to the Old World tropics. TU, AU, OF, TA, SW.

***Eragrostis pilosa* L.**

Delicate grass uncommon in disturbed places, reported from near sea level to 200 m elevation. A modern introduction, native to southern Europe. TU.

***Eragrostis tenella* (L.) Beauv. ex Roemer & Schultes**

Delicate grass common in lawns and in sunny, disturbed places, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU, AU, OF, TA, SW.

***Eriochloa procera* (Retz.) C. E. Hubb.**

Narrow grass occasional in disturbed places, reported only from the lowlands. A modern introduction, native to the Old World tropics. TU, AU, OF, TA.

***Imperata conferta* (Presl) Ohwi**

Medium-sized grass locally uncommon in open disturbed places, reported from near sea level to 1500 m elevation in Samoa. Indigenous, ranging from Southeast Asia to Samoa. TU, OF, TA.

***Ischamemum indicum* (Houtt.) Merr.**

Small grass occasional in pastures and sometimes escaping in disturbed places and roadsides, reported only from the lowlands. A modern introduction, native to tropical Asia. TU.

***Ischaemum murinum* Forst. f.**

Small grass occasional on rocky coasts, reported only near sea level. Indigenous, also found in Tonga and Niue. TU, OF, OL, TA.

**Ischaemum stokesii** Brown

Tall grass rare overall, but occasional in montane scrub of Matafao and Le Piao on Tutuila, reported from ca. 450 to 650 m elevation. Indigenous, also found on Rapa TU.

**Lepturopetium** cf. **marshallense** Fosb. & Sachet

Small grass rare on coastal rocks, reported only near sea level. Indigenous, of scattered distribution in the Pacific. TU.

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

Small grass common on rocky and sandy sea coasts, reported only near sea level. Indigenous, ranging from Ceylon to Hawai'i. TU, AU, OF, OL, TA, SW.

**Melinis minutiflora** Beauv.

Tall grass rare in disturbed places, perhaps just escaping from pastures, reported only from the lowlands. A modern introduction, native to Africa. TU.

**Microstegium glabratum** (Brongn.) A. Camus

Small grass occasional in shady or sunny disturbed places, reported from 150 to 900 m elevation. A modern introduction, ranging from the Philippines to Tahiti. TU.

**Miscanthus floridulus** (Labill.) Warb.

Tall grass common in sunny places in the lowlands and on fernlands, reported from near sea level to 600 m elevation. Indigenous, ranging from Micronesia (or farther eastward) to eastern Polynesia. TU, AU, OF, OL, TA.

**Oplismenus compositus** (L.) Beauv.

Medium-sized grass common in disturbed shady places, reported from near sea level to 1750 m elevation in Samoa. Probably a Polynesian introduction, pantropical in distribution. TU, TA.

**Oplismenus hirtellus** (L.) Beauv.

Small grass common in shady lowland and foothill forest and disturbed areas, reported from near sea level to 350 m elevation. Probably a modern introduction, native perhaps from Australia to Southeast Asia. TU, AU, OF, OL, TA.

**Paspalum conjugatum** Bergius

Creeping grass common to abundant in sunny disturbed places, reported from near sea level to 1100 m elevation in Samoa. A modern introduction, native to tropical America. TU, AU, OF, TA, SW.

**Paspalum dilatatum** Poir.

Medium-sized grass uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to South America. TU.

**Paspalum fimbriatum** H.B.K.

Medium-sized grass uncommon in disturbed places, reported only from coastal areas. A modern introduction, native to tropical America. AU, TA.

***Paspalum orbiculare* Forst. f.**

Medium-sized grass common in wet places, reported from near sea level to 1650 m elevation in Samoa. Indigenous, widespread from Southeast Asia to Hawai'i. Called by many current authors *Paspalum scrobiculatum* L. TU, AU, OF, TA.

***Paspalum paniculatum* L.**

Medium-sized grass common to abundant in sunny disturbed places and forest clearings, reported from near sea level to 200 m elevation. A modern introduction, native to tropical America. TU.

***Paspalum setaceum* Michx.**

Small grass uncommon to locally common in lawns and sunny disturbed places. A modern introduction, native to North America. TU, AU, OF, TA.

***Paspalum urvillei* Steud.**

Tall grass uncommon in disturbed places, reported only from the lowlands. A modern introduction, native to tropical America. TU, TA.

***Paspalum vaginatum* Sw.**

Medium-sized grass common to abundant along estuaries and on rocky or sandy shores, reported only near sea level. Probably an early European introduction, pantropical in distribution. TU, AU, OL, TA, SW.

***Pennisetum purpureum* Schumacher**

Robust grass occasional in clumps or thickets in disturbed places, such as roadsides, reported from near sea level to 650 m elevation. A modern introduction, native to tropical Africa. TU, OF.

***Sacciolepis indicus* (L.) Chase**

Small grass occasional in sunny disturbed places mostly away from the coast, reported from 370 to 900 m elevation. A modern introduction, native to the Old World tropics. TU.

***Schizostachyum glaucifolium* (Rupr.) Munro**

'ofe

Tall bamboo uncommon forming clumps in secondary forest in the mountains, and sometimes cultivated, reported from 50 to 800 m elevation. Probably a Polynesian introduction, ranging from Fiji to Hawai'i. AU, OF, OL, TA.

***Setaria pumila* (Poir.) Roemer & Schultes**

Small grass occasional in disturbed places, reported from near sea level to 600 m elevation. A modern introduction, native to the Old World tropics. TU, TA.

***Sorghum sudanense* (Piper) Stapf**

Tall grass occasional to common in sunny, disturbed places, reported only from the lowlands. A modern introduction, native to the Mediterranean area. TU, TA.

**Sporobolus diander** (Retz.) P. Beauv.

Small grass common in lawns and disturbed places, reported from near sea level to 240 m elevation. A modern introduction, native to India. TU, AU, OF, TA.

**Stenotaphrum micranthum** (Desv.) C. E. Hubb.

Medium-sized grass uncommon on sandy shores, reported from near sea level to 260 m elevation. Indigenous, widespread from Southeast Asia to the Society Islands. TU, AU, OF, OL, TA.

**Stenotaphrum secundatum** (Walter) Kuntze

Small grass uncommon in lawns and sunny disturbed places, reported only from coastal areas. A modern introduction, perhaps native to both Africa and tropical America. TU.

**Thuarea involuta** (Forst. f.) Roemer & Schultes

Prostrate grass occasional on sandy shores, reported only near sea level. Indigenous, ranging from Southeast Asia to the Tuamotus. TU, AU, OF, OL, TA.

**Zoysia tenuifolia** Willd. ex Trin.

Mat-forming grass locally common in villages and in littoral habitats, reported only near the coast. A modern introduction, native to the Old World tropics. TU, AU, OF, TA.

PONTEDERIACEAE

**Eichhornia crassipes** (Mart.) Solms in DC.

Aquatic herb uncommon in wet places in the lowlands. A modern introduction, native to tropical South America. TU, AU.

TACCACEAE

**Tacca leontopetaloides** (L.) Kuntze

masoa

Erect stemless herb common in littoral to foothill forest, reported from near sea level to 350 m elevation. Indigenous or aboriginally introduced, ranging from India to Hawai'i. TU, AU, OF, OL, TA, SW.

ZINGIBERACEAE

**Alpinia samoensis** Reinecke

Tall ginger rare in montane forest, reported from 750 to 1050 m elevation in Samoa. Endemic. TA.

**Etlingera cevuga** (Seem.) R. M. Smith

Tall clump-forming ginger rare in foothill to montane forest, especially along streams, reported from 300 to 800 m elevation. Indigenous, or perhaps a Polynesian introduction, ranging from Fiji to the Society Islands. TU, TA.

**Zingiber zerumbet** (L.) Smith

'avapui

Medium-sized ginger occasional to locally common in secondary forest and plantations, reported from near sea level to 600 m elevation. A Polynesian introduction, widespread from tropical Asia to Hawai'i. TU, AU, OF, OL, TA.

## FERNS ADIANTIACEAE

**Adiantum philippense** L.

Small terrestrial fern uncommon in moist places in lowland to foothill forest, reported from ca. 20 to 300 m elevation. Indigenous, widely distributed in the Old World tropics. TU, AU, TA.

## ANGIOPTERIDACEAE

**Angiopteris evecta** (Forst. f.) Hoffm.

gase

Very large terrestrial fern common in coastal to montane forest, reported from near sea level to 1400 m elevation in Samoa. Indigenous, ranging from Malaysia to eastern Polynesia. TU, OF, OL, TA.

**Angiopteris opaca** Copeland

gase

Very large terrestrial fern uncommon in foothill to montane forest, reported from 50 to 700 m elevation. Indigenous, also found in Fiji. TU, OL, TA.

## ASPIDIACEAE

**Arachniodes aristata** (Forst. f.) Tindale

Medium-sized terrestrial fern occasional in lowland to montane forest, reported from near sea level to 450 m elevation. Indigenous, ranging from southern Africa to Polynesia. TU, OF, OL, TA.

**Ctenitis samoensis** (Christensen) Holttum

Medium-sized terrestrial fern rare in lowland to foothill forest, reported from 75 to 300 m elevation. Indigenous, also found on Rarotonga. TU.

**Dryopteris arborescens** (Baker) Kuntze

Large terrestrial fern occasional in sunny places in montane forest and summit scrub, reported from 750 to 1550 m elevation in Samoa. Indigenous, also probably found on Pohnpei. TA.

**Lastreopsis davalloides** (Brackenridge) Tindale

Large terrestrial fern common in montane forest and summit scrub, reported from 600 to 1300 m elevation in Samoa. Indigenous, ranging from Vanuatu to Tahiti. TU? (H. Christ), TA.

**Pleocnemia cumingiana Presl**

Large terrestrial fern common in clearings in lowland to montane forest, reported from near sea level to 1000 m elevation in Samoa. Indigenous, ranging from New Guinea to Samoa. TU, TA.

**Pleocnemia irregularis (Presl) Holttum**

Large terrestrial fern uncommon in disturbed areas, reported from ca. 350 m elevation. Indigenous, apparently a recent arrival in Samoa, ranging from Indonesia to Samoa. TU. A new record for American Samoa.

**Polystichum aculeatum (L.) Schott**

Medium-sized terrestrial fern rare in montane forest, reported from 700 to 1750 m elevation in Samoa. Indigenous, cosmopolitan in distribution. TA.

**Tectaria decurrens (Presl) Copeland**

Large terrestrial fern occasional in shady lowland to montane forest, reported from 50 to 990 m elevation in Samoa. Indigenous, ranging from India to Polynesia. TU, TA.

**Tectaria dissecta (Forst. f.) Lellinger**

Medium-sized terrestrial fern common in dry lowland forest to montane forest, reported from near sea level to 550 m elevation. Indigenous, ranging from southeastern Polynesia to Fiji. TU, AU, OF, OL, TA.

**Tectaria setchellii Maxon**

Medium-sized terrestrial fern uncommon in coastal to foothill forest, reported from near sea level to 280 m elevation. **Endemic.** TU, OF, OL, TA.

ASPLENIACEAE

**Asplenium australasicum Hooker**

Large epiphytic or sometimes terrestrial fern occasional in foothill to montane forest, reported from 200 to 1060 m elevation in Samoa. Indigenous, widespread in the South Pacific. TU, OF, OL, TA.

**Asplenium cuneatum Lam.**

Medium-sized terrestrial fern occasional in lowland to montane forest, reported from near sea level to 500 m elevation. Indigenous, widespread in the tropics. TU, OF, TA.

**Asplenium excisum Presl**

Medium-sized terrestrial fern rare in foothill to montane forest, reported from 180 to 1080 m elevation in Samoa. Indigenous, ranging from Malaysia to Polynesia. TU.



***Asplenium feejeense* Brackenridge**

Medium-sized terrestrial fern occasional in lowland to montane forest, reported from 30 to 900 m elevation. **Endemic.** TU, TA.

***Asplenium horridum* Kaulf**

Medium-sized to large epiphytic fern common in foothill to montane forest, reported from 300 to 1650 m elevation in Samoa. Indigenous, ranging from Malaysia to Hawai'i. TU, OF, OL, TA.

***Asplenium insititium* Brackenridge**

Medium-sized terrestrial or sometimes epiphytic fern uncommon in montane forest, reported from 600 to 990 m elevation in Samoa. Indigenous, ranging from Fiji to Hawai'i. TA.

***Asplenium laserpitiifolium* Lam.**

Medium-sized to large epiphytic fern occasional to common in coastal to montane forest, reported from near sea level to 750 m elevation. Indigenous, ranging from the Mascarene Islands to Polynesia. TU, TA.

***Asplenium marattioides* (Brackenridge) Christensen**

Medium-sized terrestrial fern occasional in lowland to montane forest, reported from near sea level to 1300 m elevation in Samoa. Indigenous, also found in Fiji. TA.

***Asplenium multifidum* Brackenridge**

Medium-sized terrestrial fern occasional in montane forest and summit scrub, reported from 600 to 1700 m elevation in Samoa. Indigenous, also found in Tahiti. TA.

***Asplenium nidus* L.**

laugapapa

Large epiphytic or terrestrial fern common in lowland to montane forest, reported from near sea level to 1600-m elevation in Samoa. Indigenous, found throughout the Old World tropics. TU, OF, OL, TA.

***Asplenium polyodon* Forst. f.**

Medium-sized epiphytic or sometimes terrestrial fern common in lowland to montane forest, reported from near sea level to 1300 m elevation in Samoa. Indigenous, ranging from Madagascar to Polynesia. TU, AU, OF, TA.

***Asplenium tenerum* Forst. f.**

Medium-sized terrestrial or sometimes epiphytic fern occasional in lowland to montane forest, reported from 30 to 1120 m elevation in Samoa. Indigenous, ranging from Ceylon to Polynesia. TU, TA.

***Asplenium unilaterale* Lam.**

Medium-sized terrestrial fern rare in wet places in foothill to montane forest, reported from 180 to 900 m elevation. Indigenous, ranging from eastern Asia to Polynesia. TU? (Reinecke), TA.

#### ATHYRIACEAE

**Diplazium bulbiferum** Brackenridge

Medium-sized terrestrial fern occasional in forest clearings, reported from 30 to ca. 400 m elevation. Indigenous, ranging from Vanuatu to Samoa. TU, OL? (Reinecke), OF.

**Diplazium dilatatum** Bl.

Large terrestrial fern rare in foothill to montane forest, reported from 270 to 1650 m elevation in Samoa. Indigenous, ranging from India to Polynesia. TU.

**Diplazium harpeodes** Moore

Large terrestrial fern common in lowland to montane forest, reported from near sea level to 1320 m elevation in Samoa. Indigenous, ranging from Fiji to Pitcairn Island. TU, TA.

**Diplazium proliferum** (Lam.) Thouars

Large terrestrial fern common in clearings, reported from near sea level to 990 m elevation in Samoa. Indigenous, ranging from tropical Africa to Samoa. TU, OF, OL, TA.

**Lunathyrium japonicum** (Thunb.) Kurata

Medium-sized terrestrial fern uncommon in sunny wet places, reported from 50 to 1650 m elevation in Samoa. Indigenous, ranging from Japan and Southeast Asia to Polynesia. TU, TA.

#### BLECHNACEAE

**Blechnum orientale** L.

Large terrestrial fern occasional in clearings, reported from 50 to 1550 m elevation in Samoa. Indigenous, ranging from tropical Asia to the Austral Islands. TU, OF, OL, TA.

**Blechnum vulcanicum** (Bl.) Kuhn

Medium-sized terrestrial fern common in montane forest, reported from 400 to 1600 m elevation in Samoa. Indigenous, ranging from Malaysia and New Zealand to the Marquesas. TU, OL, TA.

#### CULCITACEAE

**Culcita straminea** (Labill.) Maxon

Large terrestrial fern locally common in clearings, reported from 300 to 600 m elevation. Indigenous, ranging from Vanuatu to central Polynesia. TU.

#### CYATHEACEAE

**Cyathea decurrens** (Hooker) Copeland olioli

Large tree fern occasional in the foothill to montane forest, reported from 350 to 1320 m elevation in Samoa. Indigenous, ranging from New Guinea to Rarotonga. TU, OL, TA.

**Cyathea lunulata** (Forst. f.) Copeland olioli

Large tree fern common in lowland to montane forest, reported from near sea level to 1120 m elevation in Samoa. Indigenous, ranging from the Marianas to Samoa. TU, OF, OL, TA.

**Cyathea medullaris** (Forst. f.) Sw. olioli

Tall tree fern occasional in montane forest and summit scrub, reported from 820 to 1700 m elevation in Samoa. Indigenous, ranging from New Zealand to Pitcairn Island. TA.

**Cyathea truncata** (Brackenridge) Copeland olioli

Small tree fern occasional in montane forest and scrub, reported from 480 to 1320 m elevation in Samoa. Indigenous, ranging from the Solomon Islands to Samoa. TU.

**Cyathea vaupelii** Copeland olioli

Small tree fern common in lowland to montane forest, reported from 40 to 1060 m elevation in Samoa. **Endemic.** TU, OF, OL, TA.

#### DAVALLIACEAE

**Davallia epiphylla** (Forst. f.) Spreng.

Medium-sized epiphytic or rarely terrestrial fern common in lowland to montane forest, reported from near sea level to 650 m elevation. Indigenous, ranging from Fiji to Tahiti. TU, TA.

**Davallia graeffei** Luerksen

Medium-sized epiphytic fern occasional to common in foothill to montane forest, reported from 390 to 1100 m elevation in Samoa. **Endemic.** TU, OL, TA.

**Davallia solida** (Forst. f.) Sw.

Medium-sized epiphytic fern common in coastal to montane forest, reported from near sea level to 1400 m elevation in Samoa. Indigenous, ranging from Malaysia to eastern Polynesia. TU, OF, OL, TA.

**Humata heterophylla** (Smith) Desv.

Small epiphytic fern common in coastal to montane forest, reported from near sea level to 900 m elevation. Indigenous, ranging from Sumatra to Polynesia. TU, OL, TA.

**Humata polypodioides** Brackenridge

Small epiphytic fern common in coastal to montane forest, reported from near sea level to 700 m elevation. Indigenous, also found in Fiji and Vanuatu, and possibly New Guinea. TU, OF, TA.

***Leucostegia pallida* (Mett.) Copeland**

Medium-sized epiphytic fern occasional in montane forest, reported from 550 to 1000 m elevation in Samoa. Indigenous, ranging from Malaysia to Tahiti. TU, OL, TA.

DENNSTAEDTIACEAE

***Microlepia speluncae* (L.) Moore**

Large terrestrial fern occasional in coastal to montane forest, reported from near sea level to 600 m elevation. Indigenous, pantropical in distribution. TU, OF, TA.

***Orthiopteris tenuis* (Brackenridge) Brownlie**

Large terrestrial fern rare in foothill to montane forest, reported from 350 to 1120 m elevation in Samoa. Indigenous, also found eastward to Indonesia, according to Christensen (1943). TU.

DICKSONIACEAE

***Dicksonia brackenridgei* Mett.**

Small tree fern occasional in foothill to montane forest, reported from 460 to 1300 m elevation in Samoa. Indigenous, also found in Fiji. TU, OL, TA.

DIPTERIDACEAE

***Dipteris conjugata* Reinwardt**

Large terrestrial fern uncommon but locally common in montane scrub, reported from 480 to 650 m elevation. Indigenous, ranging from Thailand to Samoa. TU.

ELAPHOGLOSSACEAE

***Elaphoglossum feejeense* Brackenridge**

Medium-sized epiphytic fern occasional in foothill to montane forest, reported from 235 to 620 m elevation. Indigenous, also found in Fiji. TU.

***Elaphoglossum reineckei* Hier.**

Medium-sized epiphytic fern occasional in foothill to montane forest, reported from 370 to 760 m elevation. Endemic. TA.

GLEICHENIACEAE

**Dicranopteris linearis** (Burm.) Underwood

saua

Large terrestrial fern locally abundant in fernlands, marshes, and open forest, reported from near sea level to 1550 m elevation in Samoa. Indigenous, widely distributed in the Old World tropics and subtropics. TU, OF, OL, TA.

GRAMMITIDACEAE

**Calymmodon latealatus** Copeland

Small epiphytic fern rare in montane forest and summit scrub, reported from ca. 700 to 900 m elevation. Indigenous, also found in Fiji. TA. A new record for American Samoa.

**Ctenopteris blechnoides** (Greville) Wagner & Grether

Small epiphytic fern common in coastal to montane forest, reported from near sea level to 990 m elevation in Samoa. Indigenous, ranging from the Admiralty Islands to Tahiti. TU, OL, TA.

**Ctenopteris seemannii** (J. Smith) Copeland

Small epiphytic fern common in montane forest, reported from 450 to 930 m elevation. Indigenous, also found in Fiji. TU, OL? (Reinecke).

**Ctenopteris tenuisecta** (Bl.) S. Smith

Small epiphytic fern occasional in montane forest and summit scrub, reported from 750 to 1650 m elevation in Samoa. Indigenous, ranging from Malaysia to Samoa. TA.

**Grammitis conformis** (Brackenridge) Copeland

Tiny epiphytic fern uncommon in montane forest and summit scrub, reported from 600 to 1200 m elevation in Samoa. **Endemic.** TA.

**Grammitis graminella** (Christensen) Sledge

Small epiphytic fern uncommon in montane forest and summit scrub, reported from 700 to 1200 m elevation in Samoa. **Endemic.** TA. A new record for American Samoa.

**Grammitis hookeri** (Brackenridge) Copeland

Small epiphytic fern occasional in montane forest and summit scrub, reported from 600 to 1500 m elevation in Samoa. Indigenous, also found in Hawai'i and Fiji. TA.

**Grammitis samoensis** (Baker) Ching

Small epiphytic fern rare in montane forest and montane scrub, reported from 450 to 1200 m elevation in Samoa. **Endemic.** TU.

**Prosaptia alata** (Bl.) H. Christ

Medium-sized epiphytic fern common in foothill to montane forest, reported from 270 to 930 m elevation. **Endemic?** TU, OL, TA.

## HEMIONITIDACEAE

### **Pityrogramma brackenridgei** (Carruthers) Maxon

Small terrestrial fern uncommon in open sunny areas, reported from near sea level to 1550 m elevation in Samoa. Possibly **endemic** to Samoa; the genus is not found in Fiji. TU, OF, TA.

## HYMENOPHYLLACEAE

### **Hymenophyllum imbricatum** Bl.

Small epiphytic filmy fern common in montane forest and summit scrub, reported from 480 to 1600 m elevation in Samoa. Indigenous, ranging from Sumatra to Tahiti. TU, OL, TA.

### **Hymenophyllum feejeense** Brackenridge

Small epiphytic filmy fern uncommon in montane forest and summit scrub, reported from 900 to 1000 m elevation in Samoa. Indigenous, also found in Fiji. TA.

### **Hymenophyllum polyanthos** Sw.

Small epiphytic filmy fern common from lowland to montane forest, reported from near sea level to 990 m elevation in Samoa. Indigenous, widely distributed in the wet tropics. TU, OF, TA.

### **Hymenophyllum praetervisum** H. Christ

Small epiphytic filmy fern uncommon in foothill to montane forest, reported from 485 to 1300 m elevation in Samoa. **Endemic**. TU? (Reinecke), TA.

### **Trichomanes apiifolium** Presl

Medium-sized terrestrial filmy fern occasional in montane forest, reported from 450 to 1060 m elevation in Samoa. Indigenous, ranging from the Philippines and Malaya to Samoa. TU, OL, TA.

### **Trichomanes asae-grayi** van den Bosch

Small epiphytic filmy fern uncommon in montane forest, reported from 500 to 1100 m elevation in Samoa. Indigenous, also found in Fiji and Tahiti. TA.

### **Trichomanes assimile** Mett.

Small epiphytic filmy fern occasional in foothill to montane forest, reported from 350 to 950 m elevation. Indigenous, ranging from New Caledonia to Samoa. TU, TA.

### **Trichomanes bipunctatum** Poiret

Small epiphytic filmy fern common in coastal to montane forest, reported from near sea level to 1100 m elevation in Samoa. Indigenous, ranging from Madagascar to Tahiti. TU, OF, OL, TA.

### **Trichomanes boryanum** Kuntze

Small terrestrial filmy fern common in coastal to montane forest, reported from near sea level to 800 m elevation. Indigenous, ranging from Vanuatu to Samoa. TU, OF, OL, TA.

**Trichomanes dentatum** van den Bosch

Medium-sized terrestrial filmy fern occasional in lowland to montane forest, reported from 150 to 990 m elevation in Samoa. Indigenous, ranging from New Caledonia to Polynesia. TU, OL, TA.

**Trichomanes endlicherianum** Presl

Small epiphytic filmy fern occasional in foothill to montane forest, reported from 500 to 1600 m elevation in Samoa. Indigenous, ranging from Norfolk Island and New Zealand to Tahiti. TU, OF, TA.

**Trichomanes humile** Forst. f.

Small epiphytic filmy fern common in coastal to montane forest, reported from near sea level to 1300 m elevation in Samoa. Indigenous, ranging from Malaya to Tahiti. TU, OF, OL, TA.

**Trichomanes intermedium** van den Bosch

Medium-sized terrestrial filmy fern locally common in coastal to montane forest, reported from near sea level to 670 m elevation. Indigenous, ranging from New Guinea to Samoa. TU, OL, TA.

**Trichomanes saxifragoides** Presl

Tiny epiphytic filmy fern common in coastal to montane forest, reported from near sea level to 1050 m elevation in Samoa. Indigenous, ranging from Africa and Japan to Hawai'i. TU, TA.

**Trichomanes taeniatum** Copeland

Tiny epiphytic filmy fern rare in foothill to montane forest, reported from 400? m elevation. Indigenous, also found in the Cook and Society Islands. TU.

**Trichomanes tahitense** Nadeaud

Tiny epiphytic filmy fern occasional in coastal to montane forest, reported from ca. 20 to 1080 m elevation in Samoa. Indigenous, ranging from Java to eastern Polynesia. TU, OF.

**HYPOLEPIDACEAE**

**Histiopteris incisa** (Thunb.) J. Smith

Large, often scrambling terrestrial fern uncommon in foothill to montane forest, reported from 300 to 1700 m elevation in Samoa. Indigenous, widely distributed in the Southern Hemisphere tropics and temperate zone. TU, OL.

**Hypolepis elegans** Carruth. ex Seem.

Large terrestrial fern locally common in lowland to montane forest, reported from 50 to 1650 m elevation in Samoa. Indigenous, ranging from Australia to Rapa. This genus needs further study to see if more than one species is found in American Samoa. TU, TA.

#### LINDSAEACEAE

**Lindsaea ensifolia** Sw.

Small to medium-sized terrestrial fern occasional in open areas on poor soil, reported from near sea level to 600 m elevation. Indigenous, ranging from Australia and the Marianas to Tonga. The Samoan population belongs to ssp. *agatii* (Brackenridge) Kramer. TU.

**Lindsaea harveyi** Carruthers ex Seem.

Medium-sized terrestrial fern common in lowland to montane forest, reported from 150 to 1000 m elevation in Samoa. Indigenous, ranging from New Caledonia to Tonga or Tahiti. TU, OL, TA.

**Lindsaea pulchra** (Brackenridge) Carruthers ex Seem.

Medium-sized epiphytic fern uncommon in foothill to montane forest, reported from 320 to 1650 m elevation in Samoa. Indigenous, ranging from the Bismarck Archipelago to Samoa. TU, OF? (Reinecke), TA.

**Lindsaea repens** (Bory) Thwaites

Medium-sized epiphytic fern rare in montane forest, reported at 600 m elevation. Indigenous, ranging from the Bismarck Archipelago to Samoa. TA

**Lindsaea tetragona** Kramer

Medium-sized terrestrial fern rare in foothill forest, reported from 300 to 500 m elevation. Indigenous, ranging from Celebes to Tahiti. TU.

**Sphenomeris chinensis** (L.) Maxon

Medium-sized terrestrial fern rare in foothill to montane forest, reported from 200 to 900 m elevation. Indigenous, ranging from Madagascar to Hawai'i. OL? (Reinecke), TA.

#### LOMARIOPSIDACEAE

**Bolbitis palustris** (Brackenridge) Hennisman

Medium-sized terrestrial fern common in shady lowland to montane forest, reported from near sea level to 1120 m elevation in Samoa. Indigenous, ranging from Australia to Rapa. TU, OL? (Reinecke), TA.

**Lomagramma cordipinna** Holttum

Medium-sized terrestrial and epiphytic fern common to abundant in moist, shady coastal to montane forest, reported from near sea level to 800 m elevation. Indigenous, also found in Fiji. TU, OF, OL, TA.



**Lomariopsis setchellii** (Maxon) Holttum

Large terrestrial or climbing fern uncommon in foothill to montane forest, reported from 80 to 1050 m elevation in Samoa. Indigenous, also found in Tahiti. TU, TA.

MARATTIACEAE

**Marattia smithii** Mett.

Large terrestrial fern uncommon in montane forest, reported from 400 to 1320 m elevation in Samoa. Indigenous, ranging from Vanuatu to Samoa. TU, OL, TA.

NEPHROLEPIDACEAE

**Arthropteris repens** (Brackenridge) Christensen

Small terrestrial fern common in coastal to montane forest, reported from near sea level to 1080 m elevation in Samoa. Indigenous, ranging from Borneo to Samoa. TU, OF, TA.

**Nephrolepis biserrata** (Sw.) Schott

Large epiphytic or sometimes terrestrial fern common to abundant in coastal to montane forest, reported from near sea level to 1080 m elevation in Samoa. Indigenous, pantropical in distribution. TU, OF, OL, TA.

**Nephrolepis hirsutula** (Forst. f.) Presl

Large terrestrial fern common to abundant from coastal to montane forest, reported from near sea level to 1550 m elevation in Samoa. Indigenous, ranging from tropical Asia to Polynesia. TU, AU, OF, OL, TA.

OLEANDRACEAE

**Oleandra neriiformis** Cav.

Medium-sized epiphytic fern common in foothill to montane forest, reported from 300 to 1080 m elevation in Samoa. Indigenous, ranging from tropical Asia to Samoa. TU, OL, TA.

OPHIOGLOSSACEAE

**Ophioglossum pendulum** L.

Medium-sized epiphytic fern occasional in lowland to montane forest, reported from near sea level to 550 m elevation. Indigenous, ranging from Madagascar to Hawai'i. TU, OF, OL, TA.

**Ophioglossum reticulatum** L.

Tiny terrestrial fern rare in sunny places such as streambeds, reported from 300 to 1700 m elevation in Samoa. Indigenous, ranging from tropical Asia to Polynesia. TU, TA.

POLYPODIACEAE

**Lemmaphyllum accedens** (Bl.) Donk

Small epiphytic fern occasional in foothill to montane forest, reported from 200 to 1100 m elevation in Samoa. Indigenous, ranging from Malaysia to Samoa. TU, OF, OL, TA.

**Phymatosorus commutatus** (Bl) Pichi Serm.

Large terrestrial or epiphytic fern common in lowland to montane forest, reported from 25 to 1060 m elevation in Samoa. Indigenous, widespread in the Pacific. TU, OL, TA.

**Phymatosorus grossus** (Langsd. & Fischer) Brownlie

lau magamaga, lau auta

Medium-sized to large, terrestrial and epiphytic fern common to abundant in littoral to montane forest, reported from near sea level to 650 m elevation. Indigenous, ranging from Fiji to Tahiti. TU, AU, OF, OL, TA.

**Phymatosorus nigrescens** (Bl.) Pichi Serm.

Large epiphytic fern occasional in lowland to montane forest, reported from 30 to 1120 m elevation in Samoa. Indigenous, ranging from Fiji to Tahiti. TU, OF, TA.

**Polypodium subauriculatum** Bl.

Medium-sized to large epiphytic fern occasional in foothill to montane forest, reported from 250 to 1060 m elevation in Samoa. Indigenous, ranging from tropical Asia to Polynesia. TU, OL, TA.

**Pyrrosia lanceolata** (L.) Farwell

lau tasi

Tiny epiphytic fern common in coastal to montane forest, reported from near sea level to 540 m elevation. Indigenous, ranging from India to Polynesia. TU, AU, OF, OL, TA.

PTERIDACEAE

**Acrostichum aureum** L.

sa'ato

Tall, clump-forming terrestrial fern common in coastal marshes and occasional on coastal rocks, reported only near sea level. Indigenous, pantropical in distribution. TU, AU, OF, OL, TA.

**Pteris ensiformis** Burm.

Medium-sized terrestrial fern occasional in coastal and lowland forest, reported from 50 to 260 m elevation. Indigenous, ranging from India to Polynesia. TU, OF, OL, TA.

**Pteris littoralis** Rechanger

Medium-sized terrestrial fern occasional in coastal shrubland and littoral to lowland forest, reported from near sea level to 80 m elevation. Indigenous, also found in Fiji. TU, OL, TA.

**Pteris pacifica** Hier.

Medium-sized to large terrestrial fern occasional to common in lowland to montane forest, reported from near sea level to 1300 m elevation in Samoa. Indigenous, ranging from the Solomon Islands to Polynesia. TU, OF, TA

***Pteris tripartita* Sw.**

Large terrestrial fern occasional in forest clearings, reported from near sea level to 220 m elevation. Indigenous, ranging from Africa to Tahiti. TU, OF, TA.

***Pteris vaupelii* Hier.**

Large terrestrial fern uncommon in lowland to montane forest, reported from near sea level to 1700 m elevation in Samoa. **Endemic.** TU, OF, TA.

**SCHIZAEACEAE**

***Schizaea dichotoma* (L.) Smith**

Delicate terrestrial fern occasional in lowland to montane forest, reported from 30 to 580 m elevation. Indigenous, ranging from Madagascar to Polynesia. TU, OF, OL, TA.

**SINOPTERIDACEAE**

***Doryopteris concolor* (Langs. & Fischer) Kuhn**

Small terrestrial fern rare in open sunny places in the lowlands and coastal areas, reported from near sea level to 170 m elevation. Indigenous, pantropical in distribution. TA

**THELYPTERIDACEAE**

***Christella dentata* (Forssk.) Brownsey & Jermy**

Large terrestrial fern occasional in coastal to montane forest, reported from near sea level to 890 m elevation. Indigenous, widespread throughout the Old World tropics and subtropics. TU, OF (Reinecke), OL (Reinecke), TA.

***Christella harveyi* (Mett.) Holttum**

Large terrestrial fern common in coastal to lowland forest, reported from near sea level to 530 m elevation. Indigenous, widespread from the Bismarck Archipelago to Tonga. TU, AU, OF, OL, TA.

***Christella pacifica* Holttum**

Medium-sized terrestrial fern rare in lowland forest, reported from ca. 200 m elevation. Indigenous, also found in Fiji and New Caledonia. TU.

***Christella parasitica* (L.) Leveille**

Medium-sized terrestrial fern occasional in coastal to montane forest, reported from near sea level to 550 m or more elevation. Indigenous, ranging from tropical Asia to Polynesia? TU, OF? (Reinecke).

**Christella subjuncta** (Baker) Holttum

Large terrestrial fern uncommon in lowland forest, reported from ca. 120 m elevation. This family and genus are very difficult to work with, and it may be that this species is more common than is apparent. **Endemic.** TU.

**Coryphopteris pubirachis** (Baker) Holttum

Medium-sized terrestrial fern uncommon in montane forest and summit scrub, reported from 900 to 1700 m elevation in Samoa. **Endemic.** TA. A new record for American Samoa.

**Cyclosorus interruptus** (Willd.) H. Ito

Medium-sized terrestrial fern locally abundant in coastal marshes, reported from near sea level to 800 m elevation. Indigenous, widespread in the Pacific from Hawai'i to New Zealand. TU, AU, TA.

**Macrothelypteris polypodioides** (Hooker) Holttum

Large terrestrial fern occasional in sunny places such as roadbanks, reported from near sea level to 300 m or more elevation. Indigenous, ranging from Thailand to Tahiti. TU, TA.

**Macrothelypteris torresiana** (Gaudich.) Ching

Large terrestrial fern occasional in sunny places, reported from near sea level to 820 m elevation. Indigenous, ranging from Madagascar to Hawai'i. TU, OF, TA.

**Plesioneuron attenuatum** (Brackenridge) Holttum

Large terrestrial fern occasional in lowland to montane forest, reported from 40 to 650 m elevation. Indigenous, ranging from the Bismarck Archipelago to Tahiti. TU.

**Pneumatopteris bryanii** (Christensen) Holttum

Large, mostly glabrous terrestrial fern occasional in coastal to montane forest, reported from near sea level to 700 m elevation. **Endemic.** TU, TA.

**Pneumatopteris costata** (Brackenridge) Holttum

Medium-sized to large terrestrial fern rare in foothill to montane forest on stream rocks and banks, reported from 200 to 960 m elevation. Indigenous, ranging from Bali to Tahiti. TA.

**Pneumatopteris glandulifera** (Brackenridge) Holttum

Large terrestrial fern occasional in coastal to montane forest, reported from near sea level to 1600 m elevation in Samoa. Indigenous, ranging from the Solomon Islands to Rarotonga. TU, OL, TA.

**Pneumatopteris rodigasiana** (T. Moore) Holttum

Large terrestrial fern rare in lowland to montane forest, reported from 50 to 600 m elevation. Indigenous, ranging from the Solomon Islands to Niue. TU, TA? ("Manua", Reinecke).

***Pneumatopteris transversaria* (Brackenridge) Holttum**

Large terrestrial fern uncommon in lowland to montane forest, reported from 150 to 700 m elevation. Indigenous, also found in Fiji. TU? (USEE s.n.; McMullin 10).

***Sphaerostephanos heterocarpus* (Bl.) Holttum**

Large terrestrial fern occasional in foothill to montane forest, reported from 300 to 500 m elevation. Indigenous, ranging from Thailand to Samoa. TU, OL, TA.

***Sphaerostephanos invisus* (Forst. f.) Holttum**

Large terrestrial fern occasional in disturbed places, reported only in the lowlands. Indigenous, ranging from New Guinea to Hawai'i. TA.

***Sphaerostephanos pycnosorus* (Christensen) Holttum**

Medium-sized terrestrial fern uncommon in foothill to montane forest, especially in stream beds, reported from 300 to 800 m elevation. **Endemic.** TA.

***Sphaerostephanos reineckei* (Christensen) Holttum**

Large terrestrial fern occasional in foothill to montane forest, reported from 390 to 1320 m elevation in Samoa. **Endemic.** TU, OF? (Reinecke). TA.

***Sphaerostephanos unitus* (L.) Holttum**

Large terrestrial fern common in sunny disturbed places, reported from 20 to 620 m elevation. Indigenous, ranging from eastern Africa to Samoa. TU.

VITTARIACEAE

***Antrophyum alatum* Brackenridge**

Medium-sized epiphytic fern common in lowland to montane forest, reported from near sea level to 990 m elevation in Samoa. Indigenous, ranging from New Caledonia to Tahiti. TU, OF, OL, TA.

***Antrophyum plantagineum* (Cav.) Kaulfuss**

Small epiphytic fern common in coastal to montane forest, reported from near sea level to 810 m elevation. Indigenous, ranging from Malaysia to Polynesia. TU, OF, OL.

***Vaginularia angustissima* (Brackenridge) Mett.**

Tiny epiphytic fern common in lowland to montane forest, reported from 40 to 990 m elevation in Samoa. Indigenous, also found in Fiji and probably Vanuatu. TU, OF, OL, TA.

***Vittaria elongata* Sw.**

Small to medium-sized epiphytic fern common in coastal to montane forest, reported from near sea level to 1550 m elevation in Samoa. Indigenous, ranging from tropical Asia to Polynesia. TU, TA.

**Vittaria scolopendrina** (Bory) Thwaites

Medium-sized epiphytic fern uncommon in foothill to montane forest, reported from 300 to 990 m elevation in Samoa. Indigenous, ranging from Madagascar to Polynesia. TU, TA.

**FERN ALLIES**  
**LYCOPODIACEAE**

**Lycopodium carinatum** Desv.

Small epiphytic fern ally occasional in coastal to montane forest, reported from near sea level to 1400 m elevation in Samoa. Indigenous, ranging from India to Polynesia. TU, OL, TA.

**Lycopodium cernuum** L.

Large terrestrial fern ally occasional in fernlands and sometimes in marshes, reported from near sea level to 1650 m elevation in Samoa. Indigenous, found throughout temperate and tropical regions. TU, TA.

**Lycopodium phlegmaria** L.

Small epiphytic fern ally common in coastal to montane forest, reported from near sea level to 1300 m elevation in Samoa. Indigenous, ranging throughout the Old World tropics. TU, OL, TA.

**Lycopodium squarrosum** Forst. f.

Medium-sized epiphytic or sometimes terrestrial fern ally occasional in coastal to montane forest, reported from near sea level to 1550 m elevation in Samoa. Indigenous, ranging from tropical Asia to Polynesia. TU, TA.

**Lycopodium verticillatum** L.

Medium-sized epiphytic fern ally uncommon in montane forest, reported from 400 to 1700 m elevation in Samoa. Indigenous, widespread in the tropics. OL, TA.

**PSILOTACEAE**

**Psilotum complanatum** Sw.

Medium-sized epiphytic fern ally uncommon in lowland to montane forest, reported from near sea level to 950 m elevation. Indigenous, widespread in the tropics. TU, TA.

**Psilotum nudum** (L.) Grisebach

Small to medium-sized terrestrial fern ally rare in sunny places, reported from near sea level to 600 m elevation. Indigenous, widespread in the tropics. OF.

**SELAGINACEAE**

**Selaginella laxa** Spring

Tiny, prostrate terrestrial fern ally occasional in moist sunny places, reported from near sea level to 500 m elevation. Indigenous, ranging from Fiji to Tahiti. TU, TA.

**Selaginella whitmeei** Baker

Medium-sized fern ally common in lowland to montane forest, reported from 150 to 1650 m elevation in Samoa. **Endemic.** TU, OL, OF, TA.

**EXCLUDED SPECIES**

The following seven species have been excluded from the flora of American Samoa since their inclusion in it appears to be based on erroneous or questionable information.

**Psychotria pacifica** K. Schum. (Rubiaceae)

A small tree reported from Tutuila based on a possibly mislabeled Graeffe specimen, probably not found in American Samoa.

**Zeuxine plantaginea** Schltr. (Orchidaceae)

An orchid reported from American Samoa based on two specimens cited from Olosega (Cribb and Whistler 1996), but one is from Savai'i (and misnumbered) and the other belongs to another species.

**Asplenium lobulatum** Mett. (Aspleniaceae)

A fern reported from 1050 to 1700 m elevation in Western Samoa, but noted by Reinecke (1896) to occur on Tutuila based on Reinecke 37a (as *A. falcatum* in Reinecke) and 76b (noted as collected Savai'i in Christensen 1943). Because of the elevational disparity and the confusion of numbers, these specimens were probably not collected on Tutuila.

**Blechnum doodioides** (Brackenridge) Brownlie (Blechnaceae)

A fern reported from 750 to 1750 m elevation in Western Samoa, but Christensen (1943) lists Reinecke 145a as being collected on Tutuila. Because of this elevational disparity, and because there seems to be a number of problems with Reinecke's specimens reportedly collected in American Samoa, this fern probably does not occur in the Territory.

**Davallia plumosa** Baker (Davalliaceae)

A fern reported from 900 to 1650 m elevation in Western Samoa, but noted on a Reinecke specimen (s.n.) as collected on Tutuila. Christensen does not list this from American Samoa, and because of the elevational disparity (Tutuila only goes to 650 m elevation), the location notation is probably incorrect and the plant is unlikely to occur in the Territory.

**Trichomanes caudatum** Brackenridge (Hymenophyllaceae)

A fern reported by Christensen (1943) as occurring on Tutuila based on Veitch s.n. and Whitmee s.n., but perhaps both are wrongly labeled.

**Trichomanes pallidum** Bl. (Hymenophyllaceae)

A fern reported by Christensen (1943) from Manu'a based on Nightingale s.n., but no other specimens collected by Nightingale are known from Samoa.

## APPENDIX B. RARE PLANTS OF CONCERN IN AMERICAN SAMOA

A total of 111 plants are considered by this study to be rare in American Samoa, for reasons that are explained in the text. Of these, 51 are sensitive species that are of concern since they may not be common elsewhere over their range. The other 60, although rare in American Samoa, are more common elsewhere, and are discussed in Appendix C. The former category, plants of concern in American Samoa, are divided here into two categories: Rare Native Plants of Concern, which includes 36 species, and Rare Polynesian Introductions of Concern, which includes 16 species).

The species are listed in alphabetical order by scientific names, which are in *bold italics*. Included for each species is the taxonomic family to which it belongs, status (indigenous or endemic), range, specimens collected (by island), occurrence during the present survey, habitat, Samoan name (if any) in **bold**, and general information (where needed). Voucher specimens collected during the present survey are in *bold italics*.

### Rare Native Plant Species of Concern

*Achyranthes velutina* Hooker & Arnott  
Amaranthaceae

Indigenous, ranging from Tokelau to the Tuamotu Islands. **SWAINS**: Whistler 3420. This shrub, called **tamatama** in Tokelau (adjacent to Swains Island), is a Polynesian endemic and is probably uncommon or rare throughout most of its range. Not found during the present survey, but Swains Island was not visited. Occurs in sunny littoral habitats. Some authors consider this to be just an atoll variety (var. *velutina*) of *Achryanthes aspera* L.

*Blumea milnei* Seem.  
Asteraceae

Indigenous, ranging from New Guinea to Samoa. **OLOSEGA**: Reinecke 468. A questionable American Samoa record from 1895, not found during the present survey. This species has probably disappeared from the whole archipelago and is rare in Tonga, where it was only recently reported (Kao and Tofua), but may be more common to the islands to west (the principal investigator has seen it in once in Fiji and once in Vanuatu). Probably occurred in forest clearings, no elevation data reported.

*Bulbophyllum distichobulbum* Cribb  
Orchidaceae

Indigenous, also found on Niue. **TUTUILA**: Whistler 3757, 8714, 9348. This small epiphytic orchid is known in Samoa only from the forests on the north and south slopes of Alava Ridge, but is more frequent on Niue. Not found during the present survey. Occurs in lowland forest, reported from ca. 150 to 270 m elevation.



*Cenchrus calyculatus* Cav.

Poaceae

Indigenous, ranging from New Caledonia to the Society Islands. TUTUILA: Powell s.n. This tall burr grass is known in American Samoa only from a single collection from Tutuila over a century ago, and has not been collected in Western Samoa since 1905. It is may be rare throughout it range, and has probably disappeared from American Samoa. Not found during the present survey. Occurs in coastal areas, with no elevation reported.

*Christella pacifica* Holttum

Thelypteridaceae

Indigenous, also found in Fiji and New Caledonia. TUTUILA: Yuncker 9346. This terrestrial fern is known in Samoa from a single collection from Tutuila, but the taxonomy of this genus and family is difficult and the species may have been misidentified in the field as other related, similar looking species. Not found during the present survey. Occurs in lowland forest, reported at ca. 200 m elevation.

*Crateva religiosa* Forst. f. (pupu elo?)

Capparidaceae

Indigenous, ranging from India to the Tuamotus. OFU: Garber 983; Trail s. n.; Whistler 8770, 10372. OLOSEGA: Whistler 10449. This small tree is rare throughout its Polynesian range, but may be common elsewhere (and is cultivated in some Micronesian islands for its edible fruit). Found twice during the present survey, one of them a new island record for Olosega. Occurs in coastal forest, reported from near sea level to 40 m elevation. Prior to this year, it was known elsewhere in Samoa only from a 1905 'Upolu record, but was subsequently found on Savai'i.

*Cryptostylis arachnites* (Bl.) Hassk.

Orchidaceae

Indigenous, ranging from India to Fiji and Samoa. TAU: Whistler 3199, 3728. This terrestrial orchid is known in American Samoa from only two collections from Ta'u in 1976, and is equally rare in Western Samoa where it has been collected only once during this century (1931). Not found during the present survey. Occurs in montane to cloud forest, reported from 500 to 1200 m elevation in Samoa.

*Ctenitis samoensis* (Christensen) Holttum

Aspidiaceae

Indigenous, also found on Rarotonga. TUTUILA: Reinecke 927; Sledge 1829; Whistler 8555, 8591, 10521. This terrestrial fern is rare in both Western Samoa, where it is known from only a one recent collection (and several older ones), and American Samoa. Found once during the present survey. Occurs in lowland to foothill forest, reported from 75 to 300 m elevation.

*Cyrtandra geminata* Reinecke  
Gesneriaceae

**Endemic to Tutuila.** TUTUILA: Reinecke 477; Setchell 548; Christophersen 1041, 3563; Long 3069; Whistler 3669, 9068. This shrub is restricted to Matafao and Le Pioa mountains on Tutuila. Not found during the present survey. Occurs in montane scrub, reported from 450 to 600 m elevation.

*Dioclea wilsonii* Standl.  
Fabaceae

Indigenous, widespread but rare in the Pacific, also reportedly found in Central America. This vine is known in Samoa only from the summit of Mt. Tau, Tutuila, and is apparently also rare elsewhere in Polynesia (Hawaii, Tahiti, and the Austral Islands where it is questionably native) and possibly Fiji ("*Dioclea* sp."). It is apparently native primarily to coastal forests of Honduras, but its seeds spread by oceanic drift. There is no plausible explanation as to how this vine got to the top of Mt. Tau and no place else in Samoa. TUTUILA: Whistler 3351, **10516**. Found once during the present survey in its only known locality (Mt. Tau) in Samoa. Occurs in montane scrub, reported at 350 m.

*Doryopteris concolor* (Langs. & Fischer) Kuhn  
Sinopteridaceae

Indigenous, pantropical in distribution. TAU: USEE s.n. (Manua); Whistler 7591, **11091**. This tiny terrestrial fern is known in American Samoa from only three collections from Ta'u, the last two, at least, on rocks in the village of Fitiuta. Found once during the present survey. Occurs on shady rocks near the coast, reported from near sea level to 170 m elevation.

*Elatostema tutuilense* Whistler  
Urticaceae

**Endemic to Tutuila.** TUTUILA: Reinecke 590. This prostrate herb is known only from its original collection at "Utumoa Stream" (above Pago Pago Village) on Tutuila in 1895. Not found during the present survey, even though its type locality was searched. It may now be extinct. Probably occurs along mountain streams, no elevation reported.

*Gahnia vitiensis* Rendle  
Cyperaceae

Indigenous, also found in Fiji. TAU: Whistler 7835, 7860, **11022**. Restricted in Samoa to the summit area of Ta'u, where it is locally occasional, but it may be more common in Fiji. Found once during the present survey. Occurs in summit scrub, reported above 900 m elevation.

*Gossypium hirsutum* L. (vavae)

Malvaceae

Indigenous, widespread from Micronesia to eastern Polynesia (var. *taitense*). TUTUILA: Whistler 8393. AUNUU: Whistler 3277, 3766, 5737, 10931. OFU: (Whistler). ROSE: Freifeld s.n. This small cotton shrub is known from only a few sites in Samoa, and is probably most common in the Territory on the inaccessible cliffs on the south side of Ofu. Apparently rare throughout its range. Found once during the present survey. Occurs in exposed coastal areas, reported from near sea level to about 100 m elevation.

*Guioa rhoifolia* (A. Gray) Radlk.

Sapindaceae

Indigenous, also found in Fiji. TUTUILA: Christophersen 3483; Whistler 9065, 10491, 10536. This medium-sized tree is inconspicuous and perhaps restricted in American Samoa mostly to the areas around Matafao and Le Pioa mountains. Found twice during the present survey. Occurs in lowland to montane forest, reported from 250 to 750 m elevation.

*Gyrocarpus americanus* Jacq. (vili; moa)

Gyrocarpaceae

Indigenous, ranging from tropical America to eastern Africa. AUNUU: Powell 10?. OFU: Garber 1108. Vili is a small tree whose winged fruits children used to throw up in the air and watch flutter or spin (*vili* in Samoan) down like a chicken (*moa* in Samoan). It is known in American Samoa from only two collections, the last one in 1925, and has probably disappeared from the Territory. Rare in Western Samoa and elsewhere in Polynesia. Not found during the present survey. Occurs in coastal forest or possibly in villages, reported at less than 50 m elevation.

*Habenaria monogyne* Schltr.

Orchidaceae

**Endemic.** TUTUILA: Setchell 547. This medium-sized terrestrial orchid is known in American Samoa from a single collection on Tutuila in 1920. Not found during the present survey. It is known in Western Samoa from five collections, but none of these were made after 1931, and it may now have disappeared from American Samoa (and, perhaps, Western Samoa) for unknown reasons. Occurs in lowland to montane forest, reported from 300 to 900 m elevation.

*Hedyotis romanzoffiensis* (Cham. & Schlecht.) Fosb.

Rubiaceae

Indigenous to Samoa (Swains), ranging from Tuvalu to the Tuamotu Islands. SWAINS: USEE s.n.; Lister s.n. This subshrub, called **kautokiaveka** in Tokelau (adjacent to Swains Island), is a Polynesian endemic and is probably uncommon or rare over most of its range. Not

found during the present survey, or during the last botanical visit to the island (1976), and may have disappeared from the territory. Occurs in sunny littoral habitats.

*Ischaemum stokesii* Brown

Poaceae

Indigenous, also found in Rapa. TUTUILA: Setchell 405?; Christophersen 3545; Whistler 5704, 9182, **10484**. This large grass is restricted in Samoa to Matafao and Le Pioa mountains, and was reported by Setchell, almost certainly incorrectly, to have been introduced by Mrs. Robert Louis Stevenson. Found twice (collected once) during the present survey. Occurs in montane scrub, reported from ca. 450 to 650 m elevation.

*Lepturopetium* cf. *marshallense* Fosb. & Sachet

Poaceae

Indigenous, widespread in the Pacific. TUTUILA: Whistler 5728, 8395, **10519**. This prostrate grass, which is apparently a highly unusual hybrid between grasses in two other genera (*Lepturus* and *Chloris*), is known in Samoa only from the lava rocks on the eastern tip of Tutuila. Also rare in the Pacific, where it is recorded from several scattered islands (Kwajalein, Majuro, Tuvalu, Cocos Island, and one of the northern Cook Islands). Found once during the present survey. Occurs on coastal rocks, reported only near sea level.

*Limnophila fragrans* (Forst. f.) Seem. (**tamole vai**)

Scrophulariaceae

Indigenous, ranging from Australia and Melanesia to the Society Islands. TUTUILA: USEE s.n.; Setchell 370; Whistler 8044, 9034, **10950**. OFU: Whistler 8024. TAU: Whistler 1317, 3305, 7968. This small herb, which was apparently once known as **tamole vai**, may have been used in traditional medicines, but it, its name, and its uses have been virtually forgotten in Samoa. It is reported in American Samoa only from four localities--three of them coastal marshes (Vatia on Tutuila, Va'oto on Ofu, and Ta'u Village). Found once during the present survey (at Vatia), but not found in two other previously known localities that were checked. Occurs in wet places such as taro patches, streambeds, and crater lake margins (in Western Samoa), reported from near sea level to 650 m elevation.

*Lindasea repens* (Bory) Thwaites

Lindaeaceae

Indigenous, ranging from the Bismarck Archipelago to Samoa. OLOSEGA: Whistler **10411**. TAU: Powell 156. This small epiphytic fern is known in American Samoa from only two collections in Manu'a, and in Western Samoa it has been collected only twice, neither in this century. Found once during the present survey. Occurs in montane and cloud forest, reported at 600 m elevation.

*Lindsaea tetragona* Kramer  
Lindaeaceae

Indigenous, ranging from Celebes to Tahiti. **TUTUILA:** USEE s.n.; Tetens s.n.; Graeffe s.n.; Whistler 9340. This terrestrial fern is known in American Samoa from four collections, only one of which is from this century (Tutuila in 1993), and the other three records are questionable. Not found during the present survey. Occurs in foothill forest, reported from 300 to 500 m elevation.

*Liparis caespitosa* (Thou.) Lindl.  
Orchidaceae

Indigenous, ranging from eastern Africa to the Austral Islands. **TUTUILA:** Christophersen 1182, 1200. This tiny epiphytic orchid is known in Samoa from only two collections (made on the same day) from Le Pioa on Tutuila. Not found during the present survey. Occurs in montane scrub, reported from 500 m.

*Liparis gibbosa* Finet  
Orchidaceae

Indigenous, ranging from Southeast Asia to Samoa. **TUTUILA:** Christophersen 1062, 1187, 1191; Whistler 10898. This tiny epiphytic orchid is known in American Samoa only from Matafao and Le Pioa mountains on Tutuila, and is equally rare in Western Samoa, where it is known from a single recent collection. Found once during the present survey. Occurs in montane scrub, reported from 500 to 620 m elevation.

*Manilkara dissecta* (L. f.) Dubard (pani)  
Sapotaceae

Indigenous, ranging from Vanuatu to Samoa. **TUTUILA:** Guest s. n.; Whistler 8466, 8679, 10508, 10959. **Pani** is a small tree whose bark was formerly used as a dye, and the wood was used for various artifacts. It is restricted in American Samoa to the area between Masefau and Vatia on the north coast of Tutuila, and is rare in Western Samoa (where it is reported only from the east end of 'Upolu and one offshore island there). Found twice during the present survey. Occurs in coastal forest, reported only between ca. 20 and 175 m elevation.

*Mapania parvibracteata* (C. B. Clarke) T. Koyama  
Cyperaceae

Indigenous, also found in Fiji. **TUTUILA:** Christophersen 1209, 3484; Whistler 10512. A small sedge rare in American Samoa, where it is restricted to Le Pioa and Mt. Tau, but is likely to be present on Matafao as well. Found once during the present survey. Occurs in montane scrub, reported from 200 to 500 m elevation.

*Melicope richii* A. Gray  
Rutaceae

**Endemic.** TUTUILA: Christophersen 1052, 1066, 3532, 3556; Whistler 3664, **10485**, **11142**. This shrub or small tree is restricted to Matafao and Le Pioa Mountains of Tutuila, where it is locally common. Found twice during the present survey. Occurs in montane scrub forest, reported from 450 to 650 m elevation.

*Ophioglossum reticulatum* L.  
Ophioglossaceae

Indigenous, ranging from tropical Asia to Polynesia. TUTUILA: Powell 127. TAU: Whistler 3179a, 3582, 7941, **11080**. This tiny terrestrial fern with a single heart-shaped leaf is known from a single old record from Tutuila (on the peak at the head of Malaeimi Valley) and from four recent collections from dry streambeds on the south coast of Ta'u. Found once during the present survey. Occurs in foothill to montane forest, reported from 300 to 1700 m elevation in Samoa.

*Pandanus* sp. (*fasa*)  
Pandanaceae

The status of this unidentified species of screwpine is not known, since the single collection does not match any other *Pandanus* species found in the archipelago. TAU: Whistler **11082**. It is similar to the Samoan endemic *Pandanus reineckeii* in that it has a unilocular fruit with one stigma per locule, but the surface of the fruit is flat and the shape is distinctly ovoid rather than round. Found in montane forest on Li'u Bench, where only a single individual was seen. Probably a new record for American Samoa.

*Sapindus vitiensis* A. Gray  
Sapindaceae

Indigenous, also found in Fiji and Tonga. TUTUILA: Whistler 8066, 9056, **10507**. This medium-sized tree is rare in American Samoa, but is perhaps more frequent in Western Samoa, Fiji, and Tonga. Found once during the present survey. Occurs in coastal forest, reported from near sea level to 450 m elevation.

*Scirpodendron ghaeri* (Gaertn.) Merr.  
Cyperaceae

Indigenous, ranging from Ceylon to Samoa. TUTUILA: USEE s.n.; Whistler 8056, 8506. This pandanus-like sedge is restricted in American Samoa to one area of Pala Lagoon, but is more common in marshes of Western Samoa and elsewhere. Found once (but not collected) during the present survey. Occurs in littoral/mangrove forest at Tafuna, reported near sea level (and in Western Samoa in montane crater marshes at up to 400 m elevation).

*Taeniophyllum whistleri* Cribb in Cribb & Whistler  
Orchidaceae

**Endemic to American Samoa.** TUTUILA: Yuncker 9309a; Whistler 3117, 9102. TAU: Garber 641 (in part). This tiny, leafless, epiphytic orchid is rare in American Samoa, but is easily mistaken for another species of the same genus present there. Not found during the present survey. Occurs in lowland forest, reported from 150 to 250 m elevation. It was mistakenly attributed to Savai'i in Cribb and Whistler (1996).

*Trichomanes taeniatum* Copeland  
Hymenophyllaceae

Indigenous, also found in the Cook and Society Islands. TUTUILA: Sledge 1824. This tiny fern is known in American Samoa from a single recent collection, but is inconspicuous and easily missed by anyone other than an expert on filmy ferns (ferns in the Hymenophyllaceae family). It is also rare or rarely collected in Western Samoa, where it has been found only once in this century. Not found during the present survey. Occurs in foothill to montane forest, reported from 400? m elevation.

*Ximenia americana* L. (moli tai)  
Olacaceae

Indigenous, ranging from India to the Tuamotus. TUTUILA: Whistler 4661, 8074, **10915**. This thorny, small tree or shrub is known in American Samoa only from the Pala Lagoon area of Tutuila, but is somewhat more frequent in Western Samoa and is a widespread littoral species. Found once during the present survey. Occurs at the seaward margin of littoral forest, reported only near sea level.

*Xylocarpus moluccensis* (Lam.) Roemer (le'ile'i)  
Meliaceae

Indigenous, ranging from Madagascar to Samoa. TUTUILA: Setchell 439; Garber 1118; Christophersen 1177; Yuncker 9380; Uhe 111; Whistler 2810, 2811, **10916**. AUNUU: Whistler 3256, 5744. **Le'ile'i**, called puzzlenut tree, may have had minor uses for timber and medicine. It is known in Samoa from only a few localities, including two in American Samoa--Pala Lagoon and 'Aunu'u. Most of the latter population was wiped out recently during construction of a church. Found once during the present survey, but not at the 'Aunu'u locality (although it has subsequently been reported to still be there). Occurs in littoral forest and mangrove swamp margins.

**Polynesian Introductions of Concern**  
**(1) Intentional Introductions**

*Atuna racemosa* Raf. (ifiifi)  
Chrysobalanaceae

A Polynesian introduction, ranging from tropical Asia to western Polynesia. **TUTUILA:** Setchell 325; Garber 892; Spence 480; Whistler 10525. **OFU:** (Guest). **TAU:** (Guest). **Ifiifi** is a medium-sized tree that produces a large, hard-shelled seed, the pulp of which has been used to scent coconut oil and to caulk canoes. The tree is now rare, and its uses and even its name have nearly been forgotten in Samoa. Found once during the present survey. Occurs in lowland to montane forest, reported from near sea level to 450 m elevation.

*Benincasa hispida* (Thunb.) Cogn. (fagu)  
Cucurbitaceae

A Polynesian introduction, ranging from Tahiti to Melanesia or farther westward. **TUTUILA:** Whistler 10911, 11123. **Fagu** is a vine with a small gourdlike fruit that was formerly used as a bottle for scented coconut oil. When Europeans arrived with their much more functional glass bottles, the cultivation of this plant became unnecessary, and the plant, its Samoan name, and its use have now been virtually forgotten in Samoa. Found twice on Tutuila during the present survey (a new American Samoa record). Occurs in disturbed areas of the lowlands, not known in the Territory far from Malaeimi Valley.

*Cordia aspera* Forst. f. (tou)  
Boraginaceae

A Polynesian introduction or possibly indigenous, ranging from Tonga to the Philippines. **TUTUILA:** Webb s. n.; Whistler 3112, 3113, 9347. **OFU:** Whistler 10436. **TAU:** Whistler 9315. **Tou** is a small tree with white fruits that were once used as a glue for pasting together layers of tapa cloth (*siapo*), but it is now rare and its use and even its name have been virtually forgotten in Samoa. Found three times (collected twice) during the present survey, with the collection from Ofu being a new island record. Occurs in lowland and disturbed forest, reported from 30 to 365 m elevation.

*Cucumis melo* L. ('atiu)  
Cucurbitaceae

A Polynesian introduction, native to the Old World tropics. **TUTUILA:** Wilder 42; Wisner 92. **OFU:** Whistler 8025. **TAU:** Garber 702; Yuncker 9284; Whistler 7529, 7925. **'Atiu** is the Polynesian variety of cantaloupe, from which it differs most obviously in having only walnut-sized fruits. It was formerly used for making fragrant fruit leis and possibly as a minor food source, but now the plant, its Samoan name, and its uses have been virtually forgotten in Samoa. It is known in recent times only from the periphery of the Ofu and Ta'u airports, but was not found during the present survey. Occurs in heavily disturbed places, reported only near sea level.



*Parinari insularum* A. Gray (sea)  
Chrysobalanaceae

A Polynesian introduction, also found in Fiji, Tonga, and Wallis Island. **TUTUILA**: Setchell 560. **OFU**: Reinecke 469. **OLOSEGA**: (Guest). **TAU**: (Guest). **Sea**, a name which nowadays is usually mistaken for *seasea* (*Syzygium corynocarpum*) or *sea* (a sea cucumber), is a medium-sized tree with a large odoriferous fruit that was formerly used for making a fragrant fruit lei. The tree has probably now disappeared from Samoa, along with the knowledge of its name and its uses. Not found during the present survey, last collected in American Samoa in 1920. Occurs in secondary forest and plantations, probably as a relict of former cultivation.

*Phaleria disperma* (Forst. f.) Baill. (suni)  
Thymelaeaceae

A Polynesian introduction or possibly indigenous, also found in Fiji, Tonga, and the Horne Islands. **TUTUILA**: Whistler 2848, 3856, 8434, 11121. **OFU**: Whistler 10361. **TAU**: Garber 772. Found twice during the present survey (one of them a new island record for Ofu). Occurs in littoral and coastal forest, reported from near sea level to 100 m elevation.

*Solanum viride* Forst. f. ex Spreng. (polo iti)  
Solanaceae

A Polynesian introduction, or perhaps indigenous, ranging from Fiji to Hawaii. **TUTUILA**: Wilder 20?; Meebold 8236; Whistler 8067. **OFU**: Garber 1107. **TAU**: Whistler 9304. **SWAINS**: Schultz 12. **Polo iti** is a subshrub with fruits that were formerly a minor source of food and an element in colorful fruit leis, but the plant, its Samoan name, and its uses have now been virtually forgotten. Not found during the present survey, even though the only two recent collection sites were visited. Occurs in disturbed places and coastal forest, reported only near sea level.

*Syzygium neurocalyx* (A. Gray) Christoph. ('oli, fena)  
Myrtaceae

A Polynesian introduction or perhaps indigenous, also found in Fiji, Tonga, and Futuna. **TUTUILA**: Setchell 295, 298b, 514; Mitchell 562. **'Oli** is a small tree with a large fruit that was formerly used to make fragrant fruit leis, but the plant, its Samoan name, and its use are now virtually forgotten in Samoa. Not found during the present survey, and it has possibly disappeared from American Samoa. Occurs in plantations and villages, reported in forest up to 650 m elevation in Western Samoa, but in American Samoa was known only from cultivation.

*Tephrosia purpurea* (L.) Pers. ('avasa)  
Fabaceae

A Polynesian introduction or possibly indigenous, ranging from tropical Africa to Hawaii. **AUNUU**: Diefenderfer 1236. **OFU**: Garber 988; Yuncker 9490; Whistler 8029, 10367. **OLOSEGA**:

(Whistler). TAU: Yuncker 9229. 'Avasa is a small shrub that was formerly grated and used as a fish poison, but the plant, its Samoan name, and its use have been virtually forgotten in Samoa. Found once during the present survey--a small population on a rock outcrop on top of Nu'utele Islet, Ofu. Occurs in rocky places near the coast, reported from near sea level to 200 m elevation.

## (2) Unintentional Polynesian Introductions

### *Cyathula prostrata* (L.) Bl. Amaranthaceae

Probably an unintentional Polynesian introduction, native to the Old World tropics. TUTUILA: Setchell 215, 326. TAU: Garber 592, 669; Yuncker 9170; Harris 215 (not seen), 373; Whistler 7942, 11081, 11087. This herb has no Samoan name and no reported uses. Found twice during the present survey. Occurs in disturbed places including secondary forest, reported from near sea level to 900 m elevation.

### *Laportea interrupta* (L.) Chew (ogoogo) Urticaceae

A Polynesian introduction, possibly native to Southeast Asia. TUTUILA: Setchell 145, 533; Whistler 8487, 9703. OFU: Garber 1001, 1013. TAU: Garber 576; Harris 261, 320; Whistler 7682, 7725, 9307. Ogoogo is a small herb sometimes used in herbal medicine, and has hairs with mildly stinging properties. Not found during the present survey. Occurs in disturbed places, reported from near sea level to 150 m elevation.

### *Portulaca quadrifida* L. (tamole?) Portulacaceae

A Polynesian introduction or possibly indigenous, pantropical in distribution. TUTUILA: Garber 816, 822; Whistler 2947. AUNUU: Whistler 8043. TAU: Harris 77, 98; Whistler 7593. This prostrate succulent herb has no reported Samoan name (although tamole may refer to the whole genus) or uses. Not found during the present survey. Occurs in sunny littoral habitats and weedy in disturbed plants, reported only from coastal areas.

### *Senna sophora* (L.) Roxb. (lau matui) Fabaceae

A Polynesian introduction, native to the Old World tropics. TUTUILA: Setchell 293. Lau matui is a subshrub that may have possibly been used medicinally (for treating ringworm), but the plant, its name, and its possible use have now been virtually forgotten in Samoa. Not found during the present survey, known in American Samoa only from its original collection in 1920 and it has probably disappeared from the archipelago. Occurs in disturbed places, reported only from the lowlands.

*Sida samoensis* Rechinger

Malvaceae

Possibly a Polynesian introduction, native to Fiji and western Polynesia. TUTUILA: Powell 89. AUNUU: Whistler 3281. OFU: Whistler 3445. TAU: Yuncker 9167. This prostrate herb has no reported Samoa name or uses. Not found during the present survey. Occurs in coastal villages and sunny disturbed places, reported only near the coast.

*Uraria lagopodoides* (L.) Desv. ex DC.

Fabaceae

A Polynesian introduction, native to southern Asia. TUTUILA: Setchell 350; Wilder 11. AUNUU: Whistler 8041, 10932. OFU: Reinecke 578? ("Manua"). TAU: Garber 645b. This low-growing woody herb has no Samoan name or uses. Found once during the present survey. Occurs in lawns and other disturbed places, reported only from the lowlands.

## APPENDIX C. OTHER RARE NATIVE PLANT SPECIES

The native plant species included in this appendix are rare or uncommon in American Samoa, but common elsewhere in their range, especially in Western Samoa. They are included here for general information, but will not be further considered during any discussion of plants that are proposed for listing as threatened or endangered in American Samoa. This appendix includes 60 species listed in alphabetical order by scientific names, which are in ***bold italics***. Included for each species is the taxonomic family to which it belongs, as well as the status (indigenous or endemic), range, specimens collected (by island), whether or not it was collected during the present survey, habitat, Samoan name (if any, in **bold**), and general information (where needed).

Four other species should be mentioned in passing. *Halophila minor* (Zoll.) Den Hartog, a seagrass in the Hydrocharitaceae and possibly called **limu foe**, is probably locally common in American Samoa, but this habitat was not visited during the present survey. *Ploecnemia irregularis* (Presl) Holttum, a fern in the Aspidiaceae, was recorded as a new record from American Samoa during the present survey, but is probably a recent arrival from Western Samoa, where it also appears to be a recent arrival (first collected there in 1955). *Suriana maritima* L., a widespread littoral shrub in the Surianaceae, was recorded from Rose Island in 1975, but was not found there during previous or subsequent visits. It was probably a natural arrival that died out after a short time. *Beadlea* sp. (listed as *Stereosandra javanica* in Cribb and Whistler 1996) in the orchid family Orchidaceae was collected in a disturbed area near Malaeimi in 1975 (Sykes 36), but not since. It is apparently native to tropical America and appears to be an unintentional recent introduction to Samoa that is not known from elsewhere in the Pacific.

### ***Adenostemma viscosum* Forst.**

Asteraceae

Indigenous or an unintentional Polynesian introduction, ranging from Africa to eastern Polynesia. TAU: Garber 593. SWAINS: Bryan 931; Whistler 3357. This somewhat weedy herb has not been collected on the main islands of American Samoa since 1921, but has been found more recently on Swains, and is more common at high elevations in Western Samoa. Not found during the present survey. Occurs in montane forest clearings and along forest trails, reported from 150 to 1700 m elevation in Samoa.

### ***Agrostophyllum megalurum* Rchb. f.**

Orchidaceae

Indigenous, also found in Fiji. TAU: Yuncker 9246. This epiphytic orchid is known in American Samoa from a single collection in 1939, but is probably more frequent in Western Samoa. Not found during the present survey. Occurs in montane forest, reported from 200 to 600 m elevation.

*Aidia cochinchinensis* Lour. (ola mea)

Rubiaceae

Indigenous, ranging from tropical Asia to western Polynesia. TUTUILA: (Rechinger); Whistler 8459, 10506. AUNUU: Whistler 10942. Olamea is a small tree whose stems were formerly used in making the roofing of traditional Samoan houses. It is rare in American Samoa, but is much more common in Western Samoa. Found twice during the present survey, one of them ('Aunu'u) a new island record. Occurs in coastal to lowland forest, reported from near sea level to 400 m elevation.

*Alpinia samoensis* Reinecke

Zingiberaceae

**Endemic.** TAU: Solek 1. This tall ginger is known in American Samoa only from a single recent collection on Ta'u, but it is more common in Western Samoa. Not found during the present survey. Occurs in the upper montane to cloud forest, reported from 750 to 1050 m elevation in Samoa.

*Anacolosa insularis* Christoph.

Olacaceae

**Endemic.** TUTUILA: Whistler 3348, 10518. This small tree is known in American Samoa only from the area around Pala Lagoon, Tutuila, but is more common in Western Samoa. Found once during the present survey. Occurs in lowland to montane forest, reported from near sea level to 450 m elevation.

*Aneilima vitiense* Seem.

Commelinaceae

Indigenous, also found in Fiji and Tonga. TUTUILA: Whistler 9920, 11094. TAU: Garber 588; Yuncker 9230, 9274; Bartley 369; Whistler 7960. This small herb is uncommon in American Samoa, but somewhat more frequent in Western Samoa and elsewhere. Found once during the present survey. Occurs in coastal to montane forest, reported from near sea level to 750 m elevation.

*Asplenium excisum* Presl

Aspleniaceae

Indigenous, ranging from Malaysia to Polynesia. TUTUILA: Whistler 9073. This small terrestrial fern is known from only a single collection on Tutuila in 1992, but is widespread if not common on the islands to the west and several recent collections are known from Western Samoa. Not found during the present survey. Occurs in foothill to montane forest, reported from 180 to 1080 m elevation in Samoa.

*Asplenium unilaterale* Lam.

Aspleniaceae

Indigenous, ranging from eastern Asia to Polynesia. **TUTUILA:** Reinecke 35b, 35f. **TAU:** Garber 681; Whistler 11037. This small terrestrial fern is known in American Samoa from only four collected specimens, two of them with questionable (the two Reinecke specimens cited from Tutuila), but the species is probably more common in the islands to the west, including Western Samoa where three recent collections are known. Found once during the present survey. Occurs in wet places in foothill to montane forest, reported from 180 to 900 m elevation.

*Boehmeria virgata* (Forst. f.) Guillemín  
Urticaceae

Indigenous, ranging from Vanuatu and the Caroline Islands to the Marquesas. **TUTUILA:** Christophersen 987; Whistler 9080, 10925. This shrub has been collected only three times in American Samoa, all of them on Tutuila, but it is more frequent in the montane forest of Western Samoa. Found once during the present survey. Uncommon in disturbed forests and clearings, reported from 180 to 930+ m elevation.

*Boerhavia albiflora* Fosb.  
Nyctaginaceae

Indigenous, widespread in the Pacific. **TUTUILA:** Whistler 8909, 9026. This prostrate herb is known in Samoa from only two specimens collected in American Samoa and three in Western Samoa, but may be more common since it is inconspicuous and is often found in inaccessible areas. Not found during the present survey, but the known collection sites were not visited. Occurs in littoral rock strand, reported only near sea level.

*Boerhavia tetrandra* Forst.  
Nyctaginaceae

Indigenous, widespread in the Pacific. **ROSE:** Setchell 51; Bryan 1389; Harris 303, 304; Orth s.n.; Kuruc 83; Herbst 6562. **SWAINS:** Whistler 3382. This prostrate herb is found in American Samoa only on Swains and Rose, but is widespread and common on atolls of Polynesia and Micronesia. Not found during the present survey since neither island was visited.

*Bulbophyllum betchei* F. Muell.  
Orchidaceae

Indigenous, ranging from New Caledonia and the Caroline Islands to Samoa. **OLOSEGA:** Whistler 3817. **TAU:** Whistler 3727. This tiny epiphytic orchid is known in American Samoa from only two specimens collected in Manu'a in 1976, but is more common in Western Samoa. Not found during the present survey. Occurs in montane forest, reported from 400 to 750 m elevation.

*Bulbophyllum savaiiense* Schltr.  
Orchidaceae

**Endemic.** OLOSEGA: Whistler 3816. TAU: Yuncker 9272; Whistler 3735. This tiny orchid is apparently rare in American Samoa, but is more common in Western Samoa. Not found during the present survey. Occurs in montane forest, reported from 300 to 600 m elevation.

*Caesalpinia bonduc* (L.) Roxb. ('anoso; se'u pe'a)  
Fabaceae

Indigenous, widespread in the Pacific. AUNUU: Whistler 3767, 5736, **10930**. 'Anoso is a thorny scrambling shrub with stems formerly used to make a snare for flying foxes and seeds used for marbles and seed leis. It is apparently restricted to a single locality in American Samoa, but is common elsewhere in the Pacific, including parts of Savai'i, Western Samoa. It is very similar and hard to distinguish from *Caesalpinia major*, which is a little more common in American Samoa. Found once during the present survey in its only known locality in American Samoa. Occurs in littoral shrubland, reported up to 60 m elevation.

*Calymmodon latealatus* Copeland  
Grammitidaceae

Indigenous, also found in Fiji. TAU: Whistler 10991. The collection of this fern on Ta'u during the present study is a new record for American Samoa. It may be more frequent that its collection data would suggest, but is a tiny, inconspicuous epiphytic fern growing in the inaccessible interior of Ta'u. Found once during the present survey, on trees in summit scrub vegetation, reported at 700 to 950 m elevation.

*Canavalia sericea* A. Gray  
Fabaceae

Indigenous, widespread in the Pacific. OLOSEGA: Whistler 3058, 8027, 9218, **10373**. This silvery-leafed vine is restricted in American Samoa to the southwest slopes of Olosega, where it is locally common, but is also common elsewhere in the tropical Pacific. Found once during the present survey. Occurs in littoral strand and littoral shrubland, reported from near sea level to ca. 50 m elevation.

*Chionanthus vitiensis* (Seem.) A. C. Smith  
Oleaceae

Indigenous, also found in Fiji, Tonga, and Niue. TUTUILA: Whistler 8680. OFU: Whistler 8829. This medium-sized tree has been collected only twice in American Samoa and twice in Western Samoa, but is more common on other islands. Not found during the present survey. Occurs in coastal and lowland forest, reported from near sea level to 400 m elevation.

*Dendrobium catillare* Rchb. f.  
Orchidaceae

Indigenous, also found in Fiji. TUTUILA: Whistler 2903, 8945. TAU: Whistler 3183a, 7985. This epiphytic orchid is probably more common than collected specimens would indicate, because it is hard to distinguish from two other more common orchids in the same genus. Not found during the present survey. Occurs in montane forest, reported from 250 to 500 m elevation.

*Dendrocnide harveyi* (Seem.) Chew (salato)  
Urticaceae

Indigenous, ranging from Fiji to Niue. TUTUILA: Christophersen 3583; Whistler 8065, 9169; Lualua *s.n.* TAU: Garber 780; Whistler 3854, 7965. Salato, or stinging nettle tree, is known from only two locations in American Samoa--Tafuna on Tutuila and Amouli on Ta'u, but it is common in Western Samoa and elsewhere. A Samoan tradition notes it as being introduced to Ta'u from Western Samoa. Found once during the present survey by another collector on Tutuila, but the Ta'u locality was not visited. Occurs in secondary forest, reported from near sea level to 800 m elevation.

*Diplazium dilatatum* Bl.  
Athyriaceae

Indigenous, ranging from India to Polynesia. TUTUILA: Whistler 3601. A terrestrial fern known from American Samoa from only a single specimen collected in 1976, but more common in Western Samoa and elsewhere. Not found during the present survey. Occurs in foothill to montane forest, reported from 270 to 1650 m elevation in Samoa.

*Eleocharis geniculata* (L.) Roemer & Schultes  
Cyperaceae

Probably indigenous, found throughout the tropics. SWAINS: Whistler 3352A. This small sedge is weedy in many places in the Pacific (e.g., in Hawaii, where it was first recorded in 1909), but is apparently native to Swains Island. Not found during the present survey, since Swains Island was not visited. Occurs in wet places in the lowlands.

*Epiblastus sciadanthus* (F. Muell.) Schltr.  
Orchidaceae

Indigenous, ranging from the Solomon Islands to Samoa. TAU: Whistler 3693, 7950. This epiphytic orchid is known in American Samoa only from the montane forest of Ta'u, but is more common in Western Samoa. Not found during the present survey. Occurs in montane to cloud forest, reported from 600 to 1550 m elevation in Samoa.

*Erythrina fusca* Lour. (lalapa)  
Fabaceae



Indigenous or a modern introduction, pantropic in distribution. **TUTUILA:** Christophersen 1035; Whistler 8061. This red-flowered coral tree may be an introduction to Samoa, and is currently restricted in American Samoa to the Malaeloa swamp. It is however, more common on 'Upolu in Western Samoa and on islands farther westward. Not found during the present survey, but its only known locality in American Samoa was not visited. Occurs in swampy coastal places.

*Erythodes oxyglossa* Schltr.  
Orchidaceae

Indigenous, ranging from New Caledonia to Tonga and Samoa. **OLOSEGA:** Whistler 3100. **TAU:** Whistler 7799, 8012. This small terrestrial orchid is known in American Samoa only from the montane forest of Manu'a, but is more common in Western Samoa. Not found during the present survey. Occurs in montane to cloud forest, reported from 300 to 1300 m elevation in Samoa.

*Etlingera cevuga* (Seem.) R. M. Smith  
Zingiberaceae

Indigenous or a Polynesian introduction to Samoa, ranging from Fiji to the Society Islands. **TUTUILA:** Christophersen 1124. **TAU:** Whistler 7935. This tall ginger is rare in American Samoa, but where it is found it forms large clumps. Found once (but not collected) during the present survey, but much more common in Western Samoa. Occurs in montane forest, especially along streams, reported from 300 to 800 m elevation.

*Eugenia reinwardtiana* (Bl.) DC. (unuoi)  
Myrtaceae

Indigenous, ranging from Micronesia and Fiji to Hawaii. **TUTUILA:** Powell s.n.; Whistler 3353, 8401, 9645, 10507. **AUNUU:** Whistler 3770, 10943. **Unuoi** is a shrub or small tree that may have had uses for its small but strong timber. Found twice during the present survey. Occurs in littoral and coastal forest, reported from near sea level to ca. 100 m elevation.

*Euphorbia reineckei* Pax  
Euphorbiaceae

**Endemic.** **TUTUILA:** Whistler 3673. This subshrub is known in American Samoa from a single collection in 1976, but is not uncommon in montane areas of Western Samoa. Not found during the present survey. Occurs in montane to cloud forest, reported from 200 to 1700 m elevation in Samoa.

*Goodyera rubicunda* (Bl.) Lindl.  
Orchidaceae

Indigenous, ranging from Malaysia to Tonga and Samoa. OFU: Whistler 3021, 10422. This medium-sized terrestrial orchid is known in American Samoa only from the montane forest of Ofu, but is more common in Western Samoa. Found once during the present survey. Occurs in lowland to montane forest, reported from 200 to 900 m elevation.

***Grammitis samoensis* (Baker) Ching**  
Grammitidaceae

**Endemic. TUTUILA:** sine coll. s.n.; Christophersen 3543. This tiny epiphytic fern has not been collected in American Samoa since perhaps 1931. Not found during the present survey, but is probably more common in the montane forests of Western Samoa. Occurs in montane forest, reported from ca. 450 to 1200 m elevation.

***Joinvillea plicata* (Hook. f.) T. K. Newell & B. C. Stone.**  
Joinvilleaceae

Indigenous, ranging from New Caledonia to Samoa. TAU: Whistler 11034. This tall herb is rare in American Samoa, where it is restricted to the summit of Ta'u. Found once during the present survey, a new record for American Samoa, and more common in Western Samoa. Occurs in montane scrub, reported from 760 to 1700 m elevation in Samoa.

***Korthalsella horneana* V. Tieg.**  
Loranthaceae

Indigenous, ranging from Fiji to Tahiti. TAU: Kuruc 14; Whistler 3597. This parasitic, leafless shrub is restricted in American Samoa to the lowland forest on the south side of Ta'u, where it may be more common than apparent (but hard to see in the canopy). Found once (but not collected) during the present survey. Occurs in montane forest, reported from 300 to 600 m elevation.

***Leucas decemdentata* (Forst. f.) Sm.**  
Lamiaceae

Indigenous or a Polynesian introduction, ranging from tropical Asia to the Society Islands. OFU: Whistler 3831, 9258. TAU: Garber 594; Yuncker 9028; Harris 36, 93, 378; Whistler 7705, 7910. This small herb was probably widespread as a weed prior to the European era, but apparently is not able to compete with the more recently introduced weeds. It has disappeared from Western Samoa and is uncommon to rare over most of the rest of its Polynesian range, but perhaps more common in Asia. Not found during the present survey in known recent collection sites. Occurs in rocky coastal areas and along streams, reported from near sea level to 150 m elevation.

***Macharina falcata* (Nees) Koyama**  
Cyperaceae

Indigenous, ranging from the Philippines and Malaysia to Samoa. **TUTUILA:** Setchell 379; Christophersen 1023, 3490; Whistler 2972, 3668, **10486**, **10894**. This large sedge is restricted in American Samoa to Matafao and Le Pioa on Tutuila, where it forms large patches in places. Found three times (collected twice) during the present survey, but more common elsewhere in its range. Occurs in montane scrub on Matafao and Pioa mountains, reported from 450 to 1100 m elevation in Samoa.

*Melicope retusa* (A. Gray) T. Hartley  
Rutaceae

Indigenous, also found on Tonga, Niue, and Alofi. **OLOSEGA:** Whistler 3804, **10375**. **TAU:** Whistler 3225, 3689, 7550, 7575. This small tree is rare in American Samoa, but is more frequent in Western Samoa. Found once during the present survey. Occurs in coastal to lowland forest, reported from near sea level to 180 m elevation. Listed as a plant of concern by the USFWS (1998).

*Morinda myrtifolia* A. Gray  
Rubiaceae

Indigenous, ranging from New Caledonia to the Marquesas. **TUTUILA:** Whistler 3670, 8541. **TAU:** Whistler 7630. This vine is inconspicuous and perhaps more common than the record would indicate, but it was not found during the present survey, although it is more common in Western Samoa. Occurs in coastal to lowland forest, reported from near sea level to 200 m elevation.

*Mucuna glabra* (Rein.) Wilmot-Dear (**fue inu**)  
Fabaceae

Indigenous, probably also found in Tonga. **TAU:** Whistler 3157. This liana is known in American Samoa only from its original collection on Ta'u in 1976, but it could easily be misidentified in the field (especially when lacking flowers or fruits) as the common *Mucuna gigantea*. It is much more common in Western Samoa. Not found during the present survey. Occurs in lowland to cloud forest, reported from 300 to 930+ m elevation.

*Neisosperma oppositifolium* (Lam.) Fosb. & Sachet (**fao**)  
Apocynaceae

Indigenous, ranging from the Seychelle Islands to the Marquesas. **SWAINS:** Whistler 3424. A medium-sized tree common in the Pacific, but uncommon in Western Samoa. Not found during present survey, but Swains Island was not visited. Occurs in littoral forests, reported only near sea level.

*Nervilia aragoana* Gaudich.  
Orchidaceae

Indigenous, ranging from India to eastern Polynesia. **TUTUILA:** Whistler 3776. **OFU:** Whistler 3024, 3478. This terrestrial orchid is known in American Samoa from only three collected specimens, and is also infrequent in Western Samoa. It is sometimes difficult to spot since it loses its leaves when it flowers. Not found during the present survey, but more common in some places in its range. Occurs in lowland to montane forest, reported from 10 to 500 m elevation.

*Orthiopteris tenuis* (Brackenridge) Brownlie  
Dennstaedtiaceae

Indigenous, also probably found eastward to New Guinea. **TUTUILA:** Whistler 9050, **11139**. This large terrestrial fern is mostly restricted in American Samoa to Le Pioa. Found once during the present survey, but more common in Western Samoa. Occurs in foothill to montane forest, reported from 350 to 1120 m elevation.

*Passiflora aurantia* Forst. f.  
Passifloraceae

Indigenous, widespread from eastern Australia to Niue. **OFU:** Whistler **10421**. This passionfruit vine is known in American Samoa from only a single collection on Ofu, but is more common in the mountains of Western Samoa. Found once during the present survey, a new record for American Samoa. Occurs in montane forest, reported from 400 m in American Samoa.

*Pemphis acidula* Forst.  
Lythraceae

Indigenous, ranging from tropical eastern Africa to eastern Polynesia. **SWAINS:** Diefenderfer s.n.; Whistler 3354. This shrub is a widespread and often dominant species throughout Polynesia, but is nearly always found on littoral limestone rocks and coral sand, which is a habitat poorly represented in Samoa. Not found during the present survey, since Swains Island was not visited.

*Peperomia leptostachya* Hooker & Arn.  
Piperaceae

Indigenous, widespread from Australia to Hawaii. **TUTUILA:** Setchell 288; Whistler 2950, **11107**. **OLOSEGA:** Whistler 3340. **TAU:** Garber 596, 599. This inconspicuous herb is uncommon in both Samoas, but is widespread in the tropical Pacific. Found once during the present survey. Occurs in coastal forest, reported mostly near sea level.

*Peristylus whistleri* Cribb

Orchidaceae

**Endemic.** TAU: Whistler 3729. This medium-sized terrestrial orchid is known in American Samoa only from a single collection on Ta'u in 1976. Not found during the present survey, but known from several recent collections in Western Samoa. Occurs in montane to cloud forest, reported from 500 to 800 m elevation.

*Phreatia paleata* Rchb. f.  
Orchidaceae

Indigenous, ranging from New Caledonia to Samoa. TUTUILA: Whistler 9000, 10540. This epiphytic orchid, which was first collected in American Samoa in 1992, is uncommon, but is more frequent in Western Samoa. Found twice (but collected only once) during the present survey. Occurs in montane forest, reported from 400 to 740 m elevation.

*Phyllanthus virgatus* Forst. f.  
Euphorbiaceae

Indigenous or a Polynesian introduction, ranging from Asia to eastern Polynesia. TUTUILA: Setchell 330; Whistler 8694, **10524**. OLOSEGA: Garber 1074. TAU: Garber 693; Yuncker 9133; Whistler 7632. This small herb is apparently now uncommon to rare over most of its Polynesian range. Found once during the present survey. Occurs in sunny or disturbed places in the forest, reported from 40 to 260 m elevation.

*Plumbago zeylanica* L.  
Plumbaginaceae

Indigenous, widespread in the Old World tropics. OFU: Whistler **10443**. OLOSEGA: Garber 987; Whistler 3101, **10413**. The herb is known in Samoa only from the northwest part of Olosega and the south and eastern part of Ofu, but is widespread elsewhere in the Pacific, including Hawaii. Found twice during the present survey, one of them (Ofu) a new island record. Occurs in open places and coastal forest, reported from near sea level to ca. 200 m elevation.

*Pneumatopteris costata* (Brackenridge) Holttum  
Thelypteridaceae

Indigenous, ranging from Bali to Tahiti. TAU: Whistler 7627, 9310. This large terrestrial fern is known in American Samoa from only two specimens collected on Ta'u. However, the taxonomy of this genus and family is difficult and the species may have been misidentified in the field as other similar looking, related species. Not found during the present survey. Occurs in foothill to montane forest on stream rocks and banks, reported from 200 to 930+ m elevation.

*Pneumatopteris rodigasiana* (T. Moore) Holttum

## Thelypteridaceae

Indigenous, ranging from the Solomon Islands to Niue. TUTUILA: Setchell 519. TAU: Reinecke 22? ("Manua"). This large terrestrial fern is known in American Samoa from only a single collection on Tutuila and a questionable one in 1895 from "Manua." The taxonomy of this genus and family is difficult and the species may have been misidentified in the field as other related, similar looking species. Not found during the present survey. Occurs in lowland to montane forest, reported from 50 to 600 m elevation.

### *Polyscias reineckei* Harms Araliaceae

**Endemic.** TUTUILA: Whistler 10901, 10983. This small tree is a new record for American Samoa, but in the past may have been mistaken for the more common *Polyscias samoensis* (*tagitagi vao*), especially when lacking fruits or flowers. Found twice during the present survey. Occasional in Western Samoa. Occurs in the foothill forest, reported from ca. 200 to 350 m elevation.

### *Polystichum aculeatum* (L.) Schott Aspidiaceae

Indigenous, cosmopolitan in distribution. TAU: Powell 220; Whistler 11067. This terrestrial fern is rare in American Samoa, where it is known from only two specimens collected on Ta'u, but is more common in the montane regions of Savai'i in Western Samoa. Found once during the present survey. Occurs in montane to cloud forest, reported from 340 to 1750 m elevation in Samoa.

### *Pongamia pinnata* (L.) Merr. Fabaceae

Indigenous, ranging from the Seychelle Islands to Samoa. TUTUILA: Setchell 311; Whistler 10913. TAU: Bartley 368; Whistler 9316, 11052. This tree is rare in Samoa, and in American is known from only two localities--the shores of Pala Lagoon, Tutuila (where it is rare) and on a roadside slope on the north coast of Ta'u (where it is locally common). Found twice during the present survey. Occurs in littoral to coastal forest, reported near sea level to ca. 100 m elevation.

### *Psilotum nudum* (L.) Grisebach Psilotaceae

Indigenous, widespread in the tropics. OFU: Powell 49 (on an islet). This leafless fern-ally is known in American from only a single collection, listed as a small islet off the island of Ofu. Not found during the present survey. Occurs on rocks or as an epiphyte in coastal to foothill forest, reported from near sea level to 600 m elevation.

### *Sphenomeris chinensis* (L.) Maxon

Lindaeaceae

Indigenous, ranging from Madagascar to Hawaii. **OLOSEGA**: Reinecke 178. **TAU**: Whistler 7629. This terrestrial fern is known from American Samoa by one specimen from Ta'u and another old, questionable record from Olosega. It is common elsewhere in the Pacific, including Hawaii. Not found during the present survey. Occurs in foothill to montane forest, reported from 200 to 900 m elevation.

*Sophora tomentosa* L.

Fabaceae

Indigenous, pantropical in distribution. **TUTUILA**: Setchell 127; Whistler 3531. **AUNUU**: Whistler 3258. **OFU**: Garber 985; Yuncker 9496; Whistler 3048, **10369**. This littoral shrub is restricted to three localities in American Samoa (and one in Western Samoa)--Pala Lagoon (Tutuila), 'Aunu'u, and Va'oto (Ofu)--but is common elsewhere in the tropics. Found twice (collected once) during the present survey. Occurs on sandy beaches and spits, reported only near sea level.

*Syzygium brevifolium* (A. Gray) C. Muell.

Myrtaceae

**Endemic**. **TUTUILA**: USEE s.n.; Christophersen 1025, 1051, 1071; Whistler 3850, 8620, **10483, 11144**. This tree is known in American Samoa only from Matafao and Le Pioa mountains on Tutuila, but is more common in montane forest of Western Samoa. Found twice during the present survey. Occurs in montane scrub, reported from 235 to 1300 m elevation in Samoa.

*Thrixspermum graeffei* Rchb. f.

Orchidaceae

Indigenous, also found in Fiji. **TUTUILA**: Christophersen 1180, 1192; Whistler 3749, 3852, **10538**. **TAU**: Yuncker 9271. This small epiphytic orchid is uncommon in American Samoa, but is more frequent in Western Samoa. Found once during the present survey. Occurs in montane forest, reported from 400 to 725 m elevation.

*Urena lobata* L. (**mautofu**)

Malvaceae

A Polynesian introduction, probably native to tropical Asia. **TUTUILA**: Garber 897; Diefenderfer 19; Whistler 3235. **OFU**: Yuncker 9492; Whistler 3458. **TAU**: Garber 545; Yuncker 9142; Whistler 7722. This **mautofu** (a name applied to several shrubby weeds) has no reported uses. Not found during the present survey, but more common elsewhere over its range. Occurs in disturbed places, reported only from the lowlands.

*Vrydagzenea samoana* Schltr.

Orchidaceae

Indigenous, also found in Fiji and Vanuatu. TAU: Garber 630; Whistler 11060. This small terrestrial orchid is known in American Samoa from a single collection on Ta'u in 1921, and another one during the current survey. Occurs in montane forest, reported from 175 to 650 m elevation.

*Vrydagzenea vitiensis* Rchb. f.  
Orchidaceae

Indigenous, also found in Vanuatu, Tonga, and Fiji. TUTUILA: USEE s.n.; Lister s.n. TAU: Yuncker 9269; Whistler 3553, 11060. Found once during the present survey. Occurs in lowland to montane forest, reported from 250 to 1050 m elevation in Samoa.

*Vigna adenantha* (G. F. W. Meyer) Maréchal, Mascherpa, & Stainier  
Fabaceae

Probably indigenous, pantropic in distribution. TUTUILA: Mitchell 538; Wisner 91; Whistler 308, 8733, **10929**. OFU: Whistler 2991, 8806. TAU: Whistler 9203. This vine is found in scattered localities in American Samoa, but is not readily visible when lacking flowers. Found once during the present survey. Occurs in coastal areas, marshes, and plantations, reported only from the lowlands.



# **APPENDIX D. RARE AMERICAN SAMOA PLANT SPECIES NOT FOUND DURING THE SURVEY.**

These species taken from the 112 species included in Appendix B and C are ones that are considered rare in American Samoa, but which were not found during the present survey. They are listed in two groups, those that are recorded from the main islands of American Samoa (Tutuila, 'Aunu'u, Ofu, Olosega, and/or Ta'u) and those restricted to the atolls (Swains Island and Rose Atoll), which were not visited during the survey. They are arranged in alphabetical order by scientific name within the two groups. The year the plant was last collected, how many times it has been collected in American Samoa, and the islands where it occurs are also included.

Species	Family	Last Date	Times	Islands
<b>Species Recorded on the Main Islands of American Samoa</b>				
<i>Adenostemma viscosum</i> Forst.	Asteraceae	1921	(2)	TA, SW
<i>Agrostophyllum megalurum</i> Rchb. f.	Orchidaceae	1939	(1)	TA
<i>Alpinia samoensis</i> Reinecke	Zingiberaceae	1996?	(1)	TA
<i>Asplenium excisum</i> Presl	Aspleniaceae	1992	(1)	TU
<i>Atuna racemosa</i> Raf.	Chrysobalanaceae	1920	(2)	TU
<i>Blumea milnei</i> Seem.	Asteraceae	1895	(1)	OL
<i>Boerhavia albiflora</i> Fosb.	Nyctaginaceae	1992	(2)	TU
<i>Bulbophyllum betchei</i> F. Muell.	Orchidaceae	1976	(2)	OL, TA
<i>Bulbophyllum distichobulbum</i> Cribb	Orchidaceae	1992?	(3)	TU
<i>Bulbophyllum savaiiense</i> Schltr.	Orchidaceae	1976	(3)	OL, TA
<i>Cenchrus calyculatus</i> Cav.	Poaceae	1850s	(1)	TU
<i>Chionanthus vitiensis</i> (Seem.) A. C. Smith	Oleaceae	1992?	(2)	TU, OF
<i>Christella pacifica</i> Holttum	Thelypteridaceae	1939	(1)	TU
<i>Cryptostylis arachnites</i> (Bl.) Hassk.	Orchidaceae	1976	(2)	TA
<i>Cucumis melo</i> L.	Cucurbitaceae	1991	(8)	TU, OF, TA
<i>Cyrtandra geminata</i> Reinecke	Gesneriaceae	1992	(7)	TU
<i>Dendrobium catillare</i> Rchb. f.	Orchidaceae	1992	(4)	TU, TA
<i>Diplazium dilatatum</i> Bl.	Athyriaceae	1976	(1)	TU
<i>Elatostema tutuilense</i> Whistler	Urticaceae	1895	(1)	TU
<i>Epiblastus sciadanthus</i> (F. Muell.) Schltr.	Orchidaceae	1991	(2)	TA
<i>Erythrina fusca</i> Lour.	Fabaceae	1991	(2)	TU
<i>Erythroides oxyglossa</i> Schltr.	Orchidaceae	1991	(3)	OL, TA
<i>Euphorbia reineckeii</i> Pax	Euphorbiaceae	1976	(1)	TU
<i>Gyrocarpus americanus</i> Jacq.	Gyrocarpaceae	1925	(2)	AU, OF
<i>Habenaria monogyne</i> Schltr.	Orchidaceae	1920	(1)	TU

Species	Family	Last Date	Times	Islands
<i>Laportea interrupta</i> (L.) Chew	Urticaceae	1994	(13)	TU, OF, TA
<i>Leucas decemdentata</i> (Forst. f.) Sm.	Lamiaceae	1992?	(9)	OF, TA
<i>Lindsaea tetragona</i> Kramer	Lindaeaceae	1992?	(4)	TU
<i>Liparis caespitosa</i> (Thou.) Lindl.	Orchidaceae	1929	(2)	TU
<i>Morinda myrtifolia</i> A. Gray	Rubiaceae	1992	(3)	TU, TA
<i>Mucuna glabra</i> (Rein.) Wilmot-Dear	Fabaceae	1976	(1)	TA
<i>Nervilia aragoana</i> Gaudich.	Orchidaceae	1976	(3)	TU, OF
<i>Peristylus whistleri</i> Cribb	Orchidaceae	1976	(1)	TA
<i>Pneumatopteris costata</i> (Brackenridge) Holttum	Thelypteridaceae	1992?	(2)	TA
<i>Pneumatopteris rodigasiana</i> (T. Moore) Holttum	Thelypteridaceae	1920	(2)	TU, TA?
<i>Portulaca quadrifida</i> L.	Portulacaceae	1991	(7)	TU, AU, TA
<i>Sphenomeris chinensis</i> (L.) Maxon	Lindaeaceae	1990	(2)	OL, TA
<i>Parinari insularum</i> A. Gray	Chrysobalanaceae	1920	(2)	OF
<i>Senna sophora</i> (L.) Roxb.	Fabaceae	1920	(1)	TU
<i>Sida samoensis</i> Rechinger	Malvaceae	1976	(4)	TU, AU, OF, TA
<i>Solanum viride</i> Forst. f. ex Spreng.	Solanaceae	1992?	(6)	TU, OF, TA, SW
<i>Syzygium neurocalyx</i> (A. Gray) Christoph.	Myrtaceae	1931?	(4)	TU
<i>Taeniophyllum whistleri</i> Cribb	Orchidaceae	1992	(4)	TU, TA
<i>Trichomanes taeniatum</i> Copeland	Hymenophyllaceae	1965	(1)	TU
<i>Urena lobata</i> L.	Malvaceae	1990	(8)	TU, OF, TA

#### Species Restricted in American Samoa to Swains Island and Rose Atoll

<i>Achyranthes velutina</i> Hooker & Arnott	Amaranthaceae	1976	(1)	SW
<i>Boerhavia tetrandra</i> Forst.	Nyctaginaceae	1990?	(8)	SW, RO
<i>Eleocharis geniculata</i> (L.) Roemer & Schultes	Cyperaceae	1996	(1)	SW
<i>Hedyotis romanzoffiensis</i> (Cham. & Schlecht.) Fosb.	Rubiaceae	1879?	(2)	SW
<i>Neisosperma oppositifolium</i> (Lam.) Fosb. & Sachet	Apocynaceae	1976	(1)	SW
<i>Pemphis acidula</i> Forst.	Lythraceae	1976	(2)	SW