

THE FLORA AND VEGETATION OF SWAINS ISLAND

by W.A. Whistler¹

INTRODUCTION

Swains Island is an isolated atoll lying about 270 km north of Samoa. Although geographically and floristically a part of the Tokelau Islands 160 km to the northwest, it belongs politically to the Territory of American Samoa. The island lies at a latitude of 11°03' S and a longitude of 171°03' W. It has an area of 210 ha and a maximum elevation of less than 6 m (Fig. 1).

The island is a ring-shaped atoll with a large, completely enclosed, brackish water lagoon in the center (Fig. 2). In prehistoric times the lagoon was connected to the sea, but it is now completely landlocked. It is shallow, but in spots reaches a maximum depth of 15 m. The water of the lagoon is not potable, but is used for bathing and washing clothes. Drinking water is obtained from a well, and from water catchment. The rainfall on Swains Island is probably about 250 cm/year, since the Tokelau Islands to the northwest have an average annual rainfall of over 250 cm (Parham, 1971).

Although the lagoon is nearly devoid of fish life, it is rich in algae; one particular blue-green alga species (or mixture of species) forms conspicuous, irregular chunks which make the shallow lagoon water appear like a thick vegetable soup (Fig. 3). Buried deposits of a white bivalve shell are found in the lagoon, but this mollusc species apparently disappeared after the lagoon became landlocked. The pretty shells are used by the Swains islanders to make unique leis.

Landing on Swains Island is made on the west side at Taulaga, the only village on the island. Besides a small number of thatched, Samoan-style huts ("fale"), Taulaga has a small white church and a large, barn-like copra shed. Leading from the copra shed to the nearby beach are old railway tracks which were once used to transport copra from the shed to the beach for transfer to cargo vessels. Nearby is a large cleared area that may one day be made into an airport runway to link Swains Island by air to Tutuila, the main island of American Samoa. At the present time supplies are brought in by boat from Tutuila several times a year.

East of Taulaga, one third of the way around Swains along the jeep road that circles the palm-covered island, is Etena (=Eden), the former residence of the Jennings family, the owners of the island. The imposing colonial-style house now stands abandoned in a state of disre-

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Manuscript received January 1980--Eds.

pair. Nearby are several well-kept graves, a final resting place for some of the original settlers of the island.

The Swains islanders are a mixture of Tokelauans and Samoans, mostly the former, with a bit of American and Portuguese heritage as well. At the time of the author's visit, the population was less than fifty. The language usually spoken is Tokelauan, but most of the islanders are also conversant in Samoan and some in English as well. The original Tokelauan name of the island is "Olosega", but this name is no longer used. The name has led to some confusion, since there is another island with the same name in the nearby Manu'a Islands of American Samoa.

The original inhabitants of Swains Island were Tokelauan, but when it was "discovered" by the Western world, it was uninhabited. Its discovery is erroneously attributed to Quiros in 1606, but the island discovered by this Spanish explorer is apparently Manihiki in the Northern Cooks. The credit for the discovery goes to an American whaling captain named W.C. Swain in or around 1839. It was visited by the U.S.S. Peacock of the United States Exploring Expedition in 1840. Later, title to the island was obtained by Eli Jennings, an American living on Upolu (now a part of Western Samoa). With his Samoan wife, Malia, and his family, he settled on the island in 1856, and the ownership of the island has remained in the Jennings family ever since. The current head of the family is Wallace Jennings who resides on the island.

BOTANICAL HISTORY

The first botanical information about Swains Island was gathered by the U.S. Exploring Expedition during the aforementioned visit of the U.S.S. Peacock in 1840. Although plant specimens were collected, they, along with specimens from the Tokelau Islands, were subsequently lost. Pickering (1876) stated, "Lists of plants growing up on them were communicated to me by Mr. Rich; after the loss of his specimens by shipwreck." Pickering's list of Swains Island plants included twelve species--Hedyotis romanzoffiensis ("Petesia"), Guettarda speciosa, Cordia subcordata, Messerschmidia argentea, Boerhavia tetrandra, Procris pedunculata, Pandanus tectorius, Cocos nucifera, Christella dentata ("Aspidium"), Asplenium nidus, Microsorium scolopendria ("Polypodium"), and Psilotum sp.

The next collector to visit Swains was apparently J. Lister in 1891. No listing of his collections were published, but they are deposited at Kew and Cambridge University. One of his specimens--Hedyotis romanzoffiensis--was cited by Fosberg in his revision of the genus (1943). Other unpublished collections were made between 1929 and 1939 by P. Diefenderfer, E. Bryan, and L. Schultz. Diefenderfer, an anthropologist working for the Department of Education of American Samoa, collected about 14 species during trips to Swains in 1929 and 1930, but no field notes are known to exist. Bryan collected on Swains during

visits in 1935 and 1938. Approximately 82 specimens were collected (nos. 912-55, 1345-74, and some unnumbered ones), the data for which is found in field books stored at the Bishop Museum in Honolulu. The specimens of Diefenderfer and Bryan are also deposited at the Bishop Museum. Schultz, an ichthyologist, visited Swains in 1939 and made a small collection of about 10 specimens, and these are deposited at the Smithsonian Institution.

In 1966-67 R.B. Clapp, an ornithologist, visited Swains a number of times and recorded the bird life of the island (Clapp, 1968). Although he did not directly discuss the vegetation or flora of the island, he did mention the presence of Cocos, Pisonia, Pandanus, Messerschmidia, and Scaevola. He apparently did not collect any plant specimens.

In 1971 B. Parham published a study of the vegetation of the nearby Tokelau Islands, based on his own work and the work of others. It includes a checklist of the flora of Nukuono from specimens collected by K. Wodzicki in 1966-68. The flora of the Tokelau Islands is very similar to that of Swains, but based on Parham's checklist of the flora of the largest of the three atolls, it may be smaller than that of Swains. Parham's paper included the Tokelauan names for the plants; these names were very useful when questioning the Swains islanders about their island's plants.

The first and only comprehensive collection of the flora of Swains was made by the author from the 18th to the 21st of May 1976. The four day visit was part of an inventory of the flora and fauna being carried out for the USFWS (1978), and this report, which is as yet unpublished, contains much biological information about Swains. Up until that time, only 56 species of vascular plants had been collected or recorded from Swains, but now this number is 95. Only three of the previously reported species were not found during the author's visit--Solanum nigrum, Hedyotis romanzoffiense, and Annona muricata. Approximately 88 specimens were collected during this visit (nos. W 3352A to W 3439), and these will be deposited at the Smithsonian Institution and the Bishop Museum.

THE VEGETATION

The vegetation of Swains Island is greatly disturbed and nearly the whole island is covered with coconut palms. It is doubtful if any of the original forest vegetation remains. Due to the short duration of the author's visit, no quantitative work could be done. However, based on the observations made, the vegetation of Swains can be divided as follows:

Native vegetation

- Sand strand
- Littoral shrubland

Littoral forest
Coastal marsh

Disturbed vegetation

Coconut plantation
Village land

Each of these types of vegetation is discussed below.

Sand strand

The sand strand or "Pes-caprae" formation as it is often called, consists of a small band of herbaceous plants on the seaward margin of the littoral forest (Fig. 4). This vegetation type is poorly developed on Swains, particularly because the most characteristic plant--Ipomoea pes-caprae--is absent. Another characteristic plant of the sand strand--Vigna marina--is apparently only a recent introduction and was found in only one small patch at Taulaga.

The dominant species of the sand strand of Swains Island are Lepturus repens, Fimbristylis cymosa, Boerhavia tetrandra, and Triumfetta procumbens. The first two are common in scattered clumps on the exposed sandy shore above the hightide mark, while the latter two are in less exposed areas.

Littoral shrubland

The littoral shrubland is the shrub-dominated vegetation on the seaward margin of the littoral forest. In Samoa, this vegetation is dominated by Scaevola taccada, Wedelia biflora, Ficus scabra, and Clerodendrum inerme (Whistler, 1980), but only the first of these species is found on Swains.

In addition to the shrubland on the edge of the littoral forest, northeast of Etena there is a large inland area of this vegetation dominated by Scaevola taccada (Fig. 5). The reason for this patch of shrubland in the midst of the coconut groves was not determined, but it probably resulted from some disturbance by the islanders.

Other less common plants found in the littoral shrubland are Pemphis acidula, Messerschmidia argentea, Ipomoea macrantha, Cassytha filiformis, and Achyranthes velutina.

Littoral forest

Originally, most of the island was covered by littoral forest. That which remains today is found along the shores and in scattered patches in the coconut plantation (Figs. 6 and 7). Probably all of the existing littoral forest is secondary and has developed when parts of the coconut plantation were neglected and coconut palms were gradually replaced by littoral forest species.

The dominant littoral tree on Swains is Hernandia sonora, and there are some small patches of nearly pure Hernandia forest away from the immediate coast. The forest floor in these patches is very open, with only scattered Bryophyllum pinnatum, Asplenium nidus, and Microsorium scolopendria on the ground (Fig. 8). Other common littoral forest trees are Pisonia grandis, Neisosperma oppositifolia, Pandanus tectorius, Guettarda speciosa, and Messerschmidia argentea. The latter species is limited to sunny areas, mostly on the forest margins.

Less common are Hibiscus tiliaceus, Cordia subcordata, Calophyllum inophyllum, and Barringtonia asiatica. The latter species may have been more common in the past, but only two individuals were seen during the visit. Wallace Jennings reported that he had others cut down because he doesn't like this tree, perhaps because of its potential use as a fish poison. Epiphytes in the littoral forest are few, consisting only of Procris pedunculata, Vittaria rigida, Psilotum nudum, and Psilotum complanatum.

Coastal marsh

The herbaceous vegetation growing along the margins of the lagoon can be classed as a coastal marsh. Where disturbed, the vegetation is dominated by Ludwigia octovalvis, Cyperus javanicus, and Paspalum distichum.

On the north shore of the lagoon there is a small peninsula extending out into the water (Fig. 2). It is covered by undisturbed coastal marsh vegetation dominated by Eleocharis geniculata and Paspalum distichum, with some scattered Pemphis acidula in higher, drier areas. This is the first record of this species of Eleocharis in Samoa or Tokelau. A specimen of this rush collected by E. Graeffe in 1870 was listed as being collected in "Samoa", but this is probably a mistaken locality, and it may have been collected in Fiji instead.

Similar coastal marsh vegetation in Samoa is dominated by Eleocharis dulcis, Cyclosorus interruptus, and Acrostichum aureum, but none of these species is found on Swains.

Coconut plantation

Most of Swains Island is covered with coconut plantation (Fig. 9). The plantation is in a state of neglect, since copra is no longer exported. Patches of littoral forest species are scattered throughout the coconut palms, and it is apparent that if left undisturbed, most of the palms would be eliminated by other more aggressive littoral forest species.

Underneath the coconut palms is a thick, almost impenetrable growth of young coconut palms and the "bird's-nest fern", Asplenium nidus, which exclude nearly all other species from becoming established.

Village land

The village land consists of areas cleared for houses, roads, and for crops other than coconut. These disturbed areas are dominated by introduced weedy species. The large grassy village green ("malae") at Taulaga (Fig. 10) and grassy areas at Etena are dominated by grasses, sedges, and other herbaceous weeds. The dominant weedy species are Euphorbia hirta, Phyllanthus amarus, Sida rhombifolia, Portulaca oleracea, Boerhavia tetrandra, Spermacoce assurgens, Physalis angulata, Stachytarpheta urticaefolia, Cyperus kyllingia, Cyperus rotundus, Fimbristylis dichotoma, Cenchrus echinatus, Chrysopogon aciculatus, Axonopus compressus, Cynodon dactylon, Eleusine indica, Eragrostis tenella, Lepturus repens, and Paspalum conjugatum. In wet areas, Ludwigia octovalvis is the dominant weedy species.

The crops grown for food on Swains Island are Musa paradisiaca, Ipomoea batatas, Carica papaya, Pandanus tectorius (a cultivar), Mangifera indica, Citrus aurantium, Citrus medica, and Artocarpus altilis. These grow around houses and on the edges of the village. West of Taulaga, there is a swampy area where the large aroid Cyrtosperma chamissonis is grown. Alocasia macrorrhiza and Colocasia esculenta are also grown, but to a lesser extent.

In addition to the crop plants, some ornamentals are grown, but except for some remnants at Etena, these are mostly in the vicinity of houses at Taulaga.

THE FLORA

The following is an annotated checklist of the vascular flora of Swains Island. The species are listed in alphabetical order by family under Pteridophyta, Dicotyledonae, and Monocotyledonae. Following the species name is the collection number of the author which is always preceded by a "W", while those of the other collectors are preceded by their names. The native names for the species, which are usually the same as in Samoa or the Tokelau Islands, are also given.

Pteridophyta

ASPLENIACEAE

Asplenium nidus L.

"Laumea", which is the Tokelauan name. In Samoa it is called "laugapāpā." The bird's-nest fern is very common as an epiphyte or growing on the ground in the forest. The young stems are cooked and eaten. W 3397, Bryan 919.

DAVALLIACEAE

Nephrolepis hirsutula (Forst.f.) Presl

A very common fern of the forest and particularly in sunny disturbed places. Parham lists the Tokelauan name as "laumailekimoa." W 3399, Bryan 940, 941, 942, and 1352.

POLYPODIACEAE

Christella dentata (Forssk.) Brownsey & Jermy in Brit.

A large ground fern common in disturbed places. This was previously referred to as Dryopteris nymphalis (Forst.f.) Copeland. W 3398, Bryan 943.

Microsorium scolopendria (Burm.f.) Copeland

"Laumaile", which is the Tokelauan name. In Samoa it is called "Lau autā." A common epiphyte or ground fern of the forest. It is also known as Polypodium scolopendria Burm. f. and Phymatodes scolopendria (Burm.f.) Ching. W 3401, Bryan 913, 914, 915, 939, 1353, & 1359.

PSILOTACEAE

Psilotum complanatum Sw.

An epiphyte growing on the trunks of coconut palms. W 3433, Bryan 1367.

Psilotum nudum (L.) Beauv.

"Moegaotekimoa" (bed of the rat), according to Mr. Jennings. Parham lists the Tokelauan name as "faleotekimoa" (house of the rat). An epiphyte occasional on forest trees and coconut palms. W 3359, Bryan 1366.

VITTARIACEAE

Vittaria rigida Kaulf. var. samoensis (Luerrs.) C. Chr.

A small unbranched epiphytic fern, occasional on forest trees. W 3425 and W 3396.

AngiospermaeDICOTYLEDONAE

ACANTHACEAE

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

"Suipi." Not seen, but reported by a reliable islander to be

growing there. A purple-leafed prostrate herb occasionally cultivated in Samoa.

AMARANTHACEAE

Achyranthes velutina H. & A.

No name was given, but this is called "tamatama" in Tokelau (a closely related species, Achyranthes aspera, is called "lau tamatama" in Samoa). It was found in only one locality, on the coast north of Taulaga. It was not previously recorded from American Samoa. W 3420.

ANACARDIACEAE

Mangifera indica L.

"Mago." The mango was not seen, but it was reported by a reliable islander to be growing in at least one locality.

ANNONACEAE

Annona muricata L.

"Sasalapa", according to Bryan. This is the same as the Samoan name for the soursop. It is cultivated, or at least it was when Bryan visited the island. Bryan 916.

APOCYNACEAE

Catharanthus roseus (L.)G. Don

A garden escape found around houses and grave sites. W 3374.

Neisosperma oppositifolia (Lam.)Fosb. & Sacht

"Pulu fao." A small to medium-sized tree occasional in the forest. In Samoa the name is "fao", and "pulu" refers to the milky sap of the tree. This species has not previously been recorded from American Samoa. W 3424.

Plumeria rubra L.

"Pua." The frangipani tree is commonly cultivated around houses. Both the red variety (var. rubra) and the white one (var. acuminata) were seen, but only the later was collected. W 3388

ARALIACEAE

Polyscias guilfoylei (Bull.)L.H.Bailey

"Tagitagi." A cultivated shrub found at Etena. It is a common

hedge plant in Samoa. W 3391.

BORAGINACEAE

Cordia subcordata Lam.

"Tauanave." A large tree scattered over the island. In Tokelau it is called "kanava." On Swains Island the wood is called "taiuli" and is excellent for posts and carvings, since it is strong and durable. W 3406, Bryan 920.

Messerschmidia argentea (L.f.)Johnst.

"Tausuni." The common "tree heliotrope" is known as "tauhunu" in the Tokelau Islands, and is common along the shore and in sunny disturbed areas. It is also commonly known as Tournefortia argentea L.f., but is probably most correctly called Argusia argentea (L.f.) Heine. W 3392.

CARICACEAE

Carica papaya L.

"Esi." The papaya is commonly cultivated and sometimes grows wild. Two varieties occur on the island--one called simply "esi" and the other "esi loa." The male flowered tree is called "esi tane." Seen, but not collected.

COMPOSITAE

Adenostemma lanceolatum Miq.

A weed with white flowers, found in wet, shady places. The same or a similar species is found as a trailside weed in mountain forests of Samoa. W 3357, Bryan 931.

Synedrella nodiflora (L.)Gaertn.

A yellow-flowered weed common in disturbed places. W 3437.

Vernonia cinerea (L.)Less.

A lavender-flowered weed occasional in disturbed places. W 3380, Schultz 11, Bryan 931A and 1371.

CONVOLVULACEAE

Ipomoea batatas (L.) Lam.

"Umala." The sweet potato is occasionally cultivated on the island. W 3418.

Ipomoea macrantha R. & S.

"Fue itulā." A white flowered morning-glory vine common in the littoral forest. The word "itulā" means hour, perhaps referring to the short time while the flower is open in the morning before wilting. The name has not previously been recorded from the Tokelau Islands or Samoa, so it is probably just a local name. W 3393, Bryan 1374.

CRUCIFERAE

Nasturtium sarmentosum (Forst.f.)Schultz

A small weed of shady disturbed places such as in dirt roads and trails. W 3378.

CRASSULACEAE

Bryophyllum pinnatum (Lam.)Kurz

"Pagi." A common weed of disturbed places and naturalized in the forest. Children call this plant "mimiti"(to suck), which refers to their method of obtaining a sweet juice from the flower. It is also known as Kalanchoe pinnata (Lam.)Pers. W 3410, Bryan 928 and 1360, Diefenderfer 9, 15, and s.n.

EUPHORBIACEAE

Codiaeum variegatum (L.)Bl.

The croton is a common hedge plant in Samoa. At least two varieties are found on Swains. W 3384 and 3430, Bryan 937 and 1357.

Euphorbia hirta L.

This spurge is common in disturbed gravel and grassy areas around houses. W 3366, Bryan 1373.

Euphorbia prostrata Ait.

A small, prostrate weed found in the village in gravel and on rock walls. W 3413.

Phyllanthus amarus Sch. & Thon.

A common weed of disturbed places. Elsewhere incorrectly referred to as Phyllanthus niruri L. W 3402, Bryan 1372, Schultz 12.

* GOODENIACEAE

Scaevola taccada (Gaertn.)Roxb.

"To'ito'i." This shrub is common on the coast and in sunny

disturbed places inland. The name in Tokelau is "gahu." "To'ito'i" is used on Swains, but this term apparently more correctly refers to the pith of the stems. W 3389, Schultz 13, Diefenderfer s.n.

GUTTIFERAE

Calophyllum inophyllum L.

"Fetau." This widespread Pacific tree is found scattered in the forest, often reaching a very large size. In Tokelau it is called "hetau." W 3407, Bryan 917 and 1354, and Schultz 5.

HERNANDIACEAE

Hernandia sonora L.

"Pu'a." This is the second most common tree on Swains Island (second to Cocos). It is called "puka" or "pukavaka" in the Tokelau Islands. W 3395, Bryan 926 and 1368, Diefenderfer s.n.

LABIATAE

Coleus scutellarioides (L.) Benth.

"Fāteine." Coleus is a cultivated shrub with showy leaves. The Samoan name is "patiale", and since Coleus is not reported from Tokelau, "fāteine" may be a local name. W 3385, Bryan 936.

Ocimum sanctum L.

"Militini." The basil is a garden escape that is occasionally found around dwellings, particularly at Etena. It is used to scent coconut oil. W 3372, Bryan 1356.

LAURACEAE

Cassytha filiformis L.

"Fetai." This is a leafless parasitic vine common growing on shrubs and small trees in disturbed areas and in coastal vegetation. W 3367, Bryan 921 and 1345, Schultz 16.

LECYTHIDACEAE

Barringtonia asiatica (L.) Kurz

"Futu." A common coastal tree of the Pacific, but only two mature trees were found during the visit. They may have previously been more common, but Mr. Jennings reported he has had them cut down. The Tokelauan name is "hutu". W 3423.

LEGUMINOSAE

Adenanthera pavonina L.

"Lopā." A tree cultivated for its edible seeds. Occasional in village areas and along roads. W 3386.

Delonix regia (Bojer)Raf.

"Elefane." The poinciana tree is found cultivated in several places on the island. The name appears to be a local one. W 3383, Bryan 922 and 1358.

Vigna marina (Burm.)Merr.

A coastal vine widespread in the Pacific, but seen in only one small patch near Taulaga. Mr. Jennings reported it was a very recent arrival. W 3426.

LYTHRACEAE

Pemphis acidula J.R.& G.Forst.

"Gagie." A shrub growing on the shore and along the lagoon. It is reported to be the hardest wood on Swains Island, and is used to attach the canoe outrigger. It has not been previously reported from American Samoa, and is rare in Western Samoa. W 3354, Diefenderfer s.n.

MALVACEAE

Hibiscus rosa-sinensis L.

"'Aute." A cultivated shrub with showy red flowers, not seen, but reported by a reliable islander to be growing on the island.

Hibiscus tiliaceus L.

"Fau." The beach hibiscus is scattered in disturbed areas on the island. The Tokelauan name is "hau." W 3405, Bryan 933 and 1359.

Sida rhombifolia L.

"Mautofu." A shrub with salmon-colored flowers, common as a weed in disturbed areas. W 3365, Bryan 930 and 1370, Schultz 9.

MORACEAE

Artocarpus altilis (Park.)Fosb.

"'Ulu." Several varieties of breadfruit are cultivated on Swains, and some of the trees are over 50' high. Varietal names include

"māfala", 'ulu Elise", and "puou", all of which are also known in Samoa. W 3434.

Ficus tinctoria Forst.f.

"Mati." Not seen but reported by the islanders to be present. The small orange fruits are eaten. This small tree is also found in Samoa and the Tokelau Islands, and in both places it is also called "mati."

NYCTAGINACEAE

Boerhavia tetrandra J.R. & G. Forst.

"Nuna." A pink-flowered prostrate herb growing in disturbed places on the island. It is a widespread littoral species in the Pacific. W 3382.

Mirabilis jalapa L.

A shrub with white flowers, cultivated near Taulaga. W 3422.

Pisonia grandis R.Br.

"Pu'avai." A tree with sticky fruits, found in scattered patches in the coconut-dominated secondary forest. The leaves are used to feed pigs and the wood is used for posts. The Tokelauan name is "pukavai" or "pukakakai." W 3409.

ONAGRACEAE

Ludwigia octovalvis (Jacq.) Raven

An erect yellow-flowered herb, common as a weed in wet places. W 3415, Bryan 927, Diefenderfer 10.

POLYGALACEAE

Polygala paniculata L.

A weed with tiny white flowers and an aromatic root, uncommon growing in disturbed places. Only a single individual was seen. W 3358.

PORTULACACEAE

Portulaca oleracea L.

"Tamole." A prostrate, succulent, yellow-flowered herb growing as a weed in sunny disturbed places. W 3371.

RUBIACEAE

Gardenia taitensis DC.

"Tiale tiale." A white flowered shrub or small tree cultivated around houses. Although this is native to the region, it was probably introduced to Swains. W 3435, Bryan 1355, Diefenderfer s.n.

Guettarda speciosa L.

"Puapua." A medium to large littoral forest tree with white flowers, common in the forest. W 3394, Bryan 924 and 935.

Hedyotis romanzoffiensis (Cham.& Schlecht.) Fosb.

"Kautokiaveka", the Tokelauan name for it. This small shrub was first reported from the island by the U.S. Exploring Expedition and was later collected there by Lister in 1891. However, it was not seen during the most recent visit. One knowledgeable islander said he has not seen the plant growing on the island, but only its fruits which have washed up on the beach. Perhaps, then, it no longer occurs on Swains, but a more detailed search would be needed to verify this.

Morinda citrifolia L.

"Nonu." A small tree growing in the forest and in disturbed places. This is probably an aboriginal introduction, since in Polynesia it is known for its uses as a medicine, in preparing dyes, and as an emergency food in times of famine. W 3419, Diefenderfer 8.

Spermacoce assurgens R. & P.

A small white-flowered weed common in disturbed places. It has also been commonly known as Borreria laevis (Lam.) Griseb. W 3376, Bryan s.n.

RUTACEAE

Citrus aurantium L.

"Moli." A cultivated species of orange tree found at Taulaga. W 3431.

Citrus medica L.

"Tipolo." The cultivated citron with a thick, rough peel, growing at Etena. Seen, but not collected.

SOLANACEAE

Capsicum frutescens L.

"Polo." The cultivated red pepper, growing at Taulaga. W 3421, Diefenderfer s.n.

Physalis angulata L.

"Vivao." A common weedy herb with whitish flowers. It has a small edible fruit. W 3439.

Solanum uporo Dun.

"Polo." Not seen, but said by an islander to be growing in the forest. A specimen collected by Schultz was verified by F.R.Fosberg to belong to this species. Parham, however, records Solanum viride R.Br. from Tokelau, but this is possibly a mistaken identification. Schultz 8. This species was misidentified in the USFWS inventory.

TILIACEAE

Triumfetta procumbens Forst.f.

"Totolo." A woody, prostrate, creeping shrub with yellow flowers, common on beaches and sometimes in disturbed sunny places inland. W 3403, Bryan 934, Diefenderfer s.n., Schultz 15.

URTICACEAE

Laportea ruderalis (Forst.f.)Chew

A weed of shady disturbed places. It does not occur in Samoa, but a related species, Laportea interrupta L., does. W 3377, Bryan s.n.

Pipturus argenteus (Forst.f.)Wedd.

"Fau vine" or "vine." A silvery-leaved tree with white succulent fruit, occasional in disturbed places. In Samoa it is called "fau sogā" and in Tokelau it is "hau sogā." The bast fiber is used to make fishing lines, nets, and lashings. One islander reported that the trees occurring in Tokelau have a sweet-tasting fruit unlike those in Samoa. W 3404, Bryan 918 and 1369.

Procris pedunculata (Forst.f.)Wedd.

"Matavao." An epiphytic herb with red edible fruit. The Tokelau name is "gahevao", while in Samoa it is usually called "fua lole", so the name is probably a local one. W 3355, Bryan 932.

VERBENACEAE

Stachytarpheta urticaefolia Sims

"Mautofu." A shrub with purplish-flowers, common in sunny disturbed places. W 3364.

MONOCOTYLEDONAEAMARYLLIDACEAECrinum asiaticum L.

"Lautalotalo." A large, white-flowered lily cultivated around houses. W 3387, Bryan 929 and 1365.

Zephyranthes rosea (Spreng.)Lindl.

"Lili." Bryan records the name "suisana", but both of these names appear to be local. A pink-flowered garden escape growing in grassy areas around houses. W 3375, Bryan 955 and 1363.

ARACEAEAlocasia macrorrhiza (L.)Schott

"Ta'amu." A large aroid occasionally cultivated on Swains. Seen, but not collected.

Colocasia esculenta (L.)Schott

"Talo." Taro is cultivated in swampy areas. The variety on Swains is called "talo Niue" which is the common one in Samoa. Bryan 1364, Diefenderfer s.n.

Cyrtosperma chamissonis (Schott)Merr.

"Pula'a." A large aroid commonly cultivated in swampy areas. In Tokelau it is called "pulaka." Seen, but not collected.

COMMELINACEAECommelina diffusa Burm.f.

A blue-flowered herb common as a weed in wet places such as in the taro and Cyrtosperma patches. W 3428, Diefenderfer ll.

CYPERACEAECyperus brevifolius (Rottb.)Hassk.

A small sedge with green bracts, common as a weed in grassy village areas. W 3414.

Cyperus compressus L.

A low weedy sedge occasional in disturbed areas. W 3412.

Cyperus javanicus Houtt.

A coarse sedge growing in wet places along the edge of the lagoon. This is a widespread littoral species which is called "selesele" in Samoa. W 3416.

Cyperus kyllingia Endl.

"Mutia." A white-bracted sedge growing as a weed in grassy areas. W 3368, Bryan 951.

Cyperus rotundus L.

"Mumuta." This nut grass is a weed of disturbed and grassy areas. Its tubers are used to scent coconut oil. W 3429.

Eleocharis geniculata (L.)R.& S.

A low, clumped sedge growing in marshy areas along the edge of the lagoon, mostly on a peninsula on the northeast corner. It was reportedly collected in Samoa by Graeffe in 1871, but since it is otherwise unknown from Samoa or the Tokelau Islands, this may be in error. It does, however, occur in Fiji. W 3352A.

Fimbristylis cymosa R.Br.

"Tuisē." An indigenous sedge common in sunny littoral areas and also as a weed in open village areas. W 3360 and W 3417, Bryan 952, 954, and 1350, Diefenderfer s.n., Schultz 16.

Fimbristylis dichotoma (L.)Vahl

An erect weedy sedge common in open village areas. W 3361, Bryan 953.

GRAMINEAE

Axonopus compressus (Sw.)Beauv.

A prostrate grass common in open village areas. W 3412

Cenchrus echinatus L.

"Vao tuitui." The sand burr is a common weed of sandy and grassy village areas. W 3370, Bryan 945 and s.n.

Chrysopogon aciculatus (Retz.)Trin.

A clump-forming weedy grass of open village areas. W 3369.

Cynodon dactylon L.

An occasional weedy grass of open village areas and disturbed places. W 3436, Bryan 946.

Digitaria ciliaris (Retz.)Coel.

A small grass with digitate racemes, occasional in disturbed areas. W 3438.

Eleusine indica (L.) Gaertn.

A coarse grass with digitate racemes, common in disturbed areas. It is called "ta'ata'a" in Samoa. W 3362, Bryan 949 and 1362.

Eragrostis tenella (L.) Beauv. ex R. & S.

A small delicate grass occasional in open village areas. W 3363, Bryan 950 and 1361.

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

A clump-forming grass with an unbranched inflorescence that breaks up into one-seeded segments, common on coastal sands and also as a weed in disturbed places. W 3379 and 3390, Bryan 944 and 948.

Paspalum conjugatum Berg.

"Vaolima." A weedy grass with a t-shaped inflorescence, common in disturbed places. W 3381, Bryan 947.

Paspalum distichum L. (usually known as P. vaginatum Sw.)

A clump-forming grass growing in large patches in marshy areas along the edge of the lagoon. W 3353A, Bryan 938.

Saccharum officinarum L.

"Tolo." Sugar cane was reported to be cultivated, at least until recently, but it was not seen during the visit.

MUSACEAE

Musa paradisiaca L.

Two varieties of banana are growing on Swains Island, but no specimens were collected during the visit. Diefenderfer 18.

PALMAE

Cocos nucifera L.

"Niu." A number of varieties of coconut are grown on Swains Island, including one which in the young stage has an edible husk. Seen, but not collected.

PANDANACEAE

Pandanus tectorius Park.

"Falavao." Wild screwpine is common in secondary forest and the neglected coconut plantation, as well as along the seashore. W 3408,

Bryan 912 and 1346, Schultz 10.

Pandanus tectorius Park. var. ---?

"Falakai" or "fala Elise.". This cultivated screwpine is grown for its edible fruit. The bases of the phlanges are chewed uncooked. W 3432.

TACCACEAE

Tacca leontopetaloides (L.) O.K.

"Masoā." The Polynesian arrowroot is cultivated and is somewhat naturalized. In the Tokelau Islands it is called "mahoā." W 3373, Bryan 923, 1323, and 1351, Diefenderfer s.n.

ACKNOWLEDGEMENTS

The author wishes to thank Dr. F. Raymond Fosberg and Dr. Marie-Hélène Sachet of the Smithsonian Institution for their help in identifying the plant specimens collected on Swains Island. I also wish to thank my colleagues, A. Binion Amerson, Jr., Terry Schwanner, and Warren Pulich for their help while on the island, and the owner of Swains Island, Wallace Jennings, for his information on the native names and uses for the plants, and for his family's Polynesian hospitality afforded us during the stay on the island.

The visit by the author was made during the USFWS inventory of the wildlife and wildlife habitats of the Islands of American Samoa, conducted by Environment Consultants, Inc. (contract, no. 11-16-0001-5782FA of the Interior Department). For further details of the study of the biota of Swains Island, see this report (1978, mimeograph copy).

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Ed. note. -- A collection of plants was made on Swains Island and Manihiki some years back and sent to the Smithsonian Institution by Mr. Wm. S. Blankley, but no data were received with the specimens nor supplied later.

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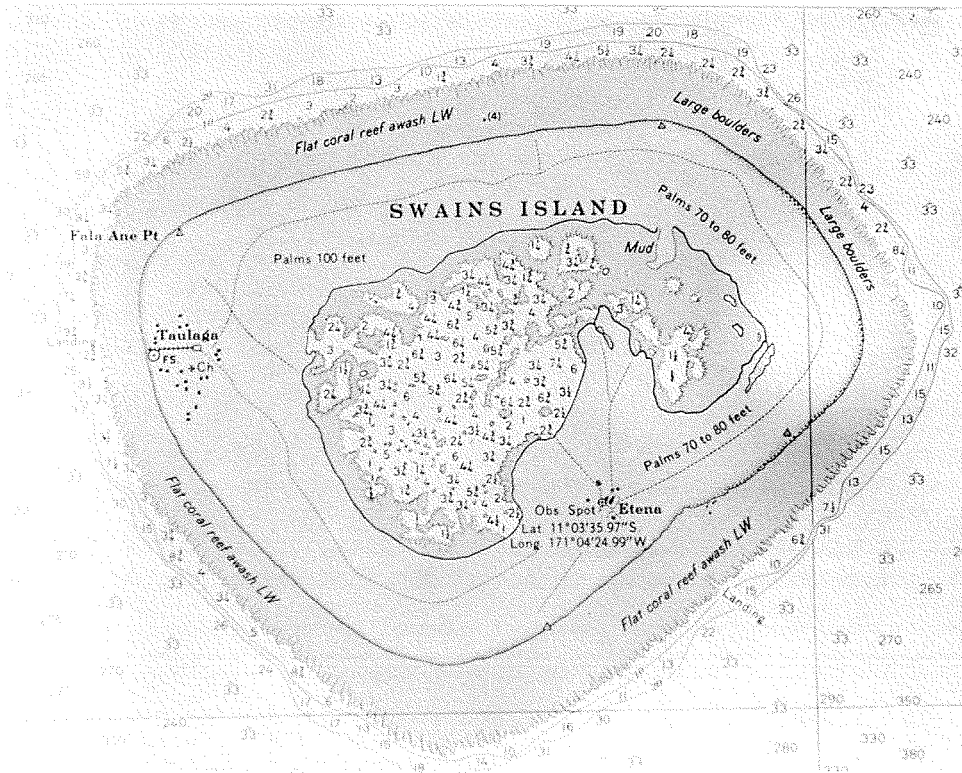


Figure 1. DMAHC nautical chart of Swains Island.



Figure 2. The central, brackish water lagoon of Swains Island.

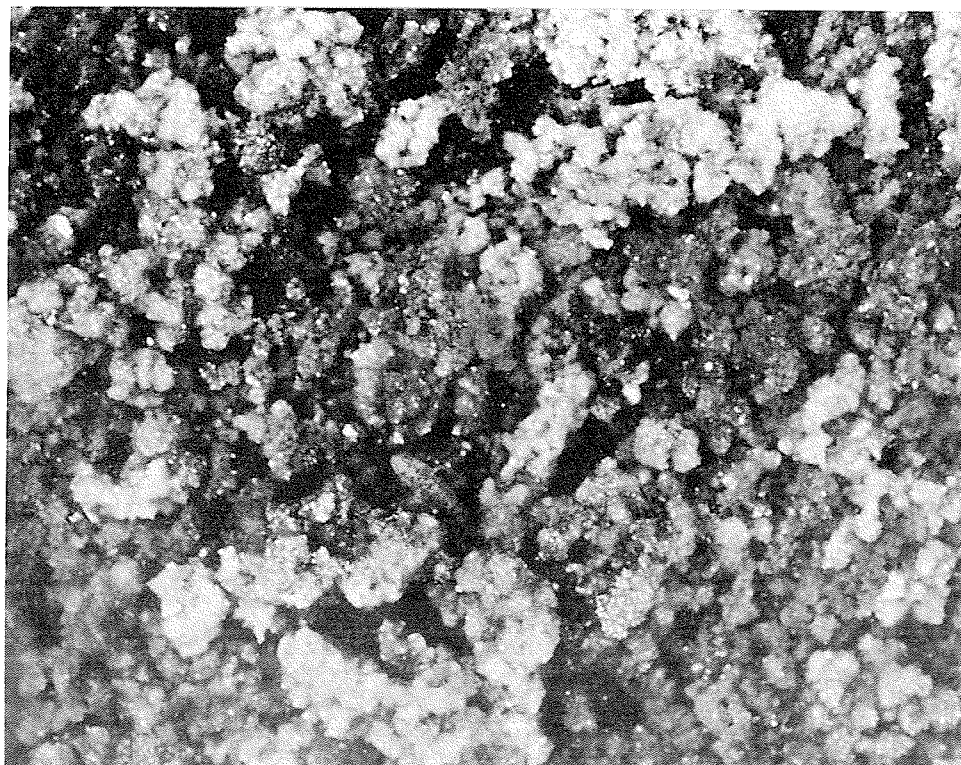


Figure 3. Large, irregular chunks of algae floating in shallow water of the lagoon of Swains Island.



Figure 4. Sparse sand strand vegetation near Taulaga.



Figure 5. Scaevola-dominated shrubland near Etena.

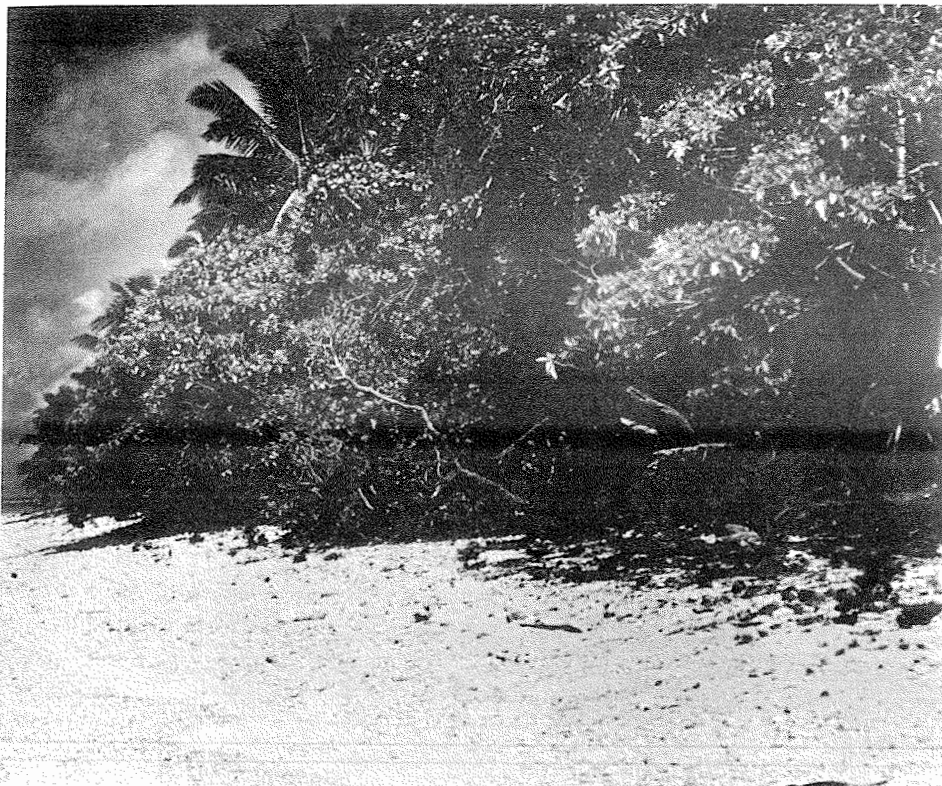


Figure 6. Littoral forest on the south shore of Swains Island.



Figure 7. Forest on Swains Island dominated by Pandanus tectorius.



Figure 8. Open forest floor in littoral forest dominated by Hernandia sonora.



Figure 9. Coconut palms on the lagoon shore of Swains Island.

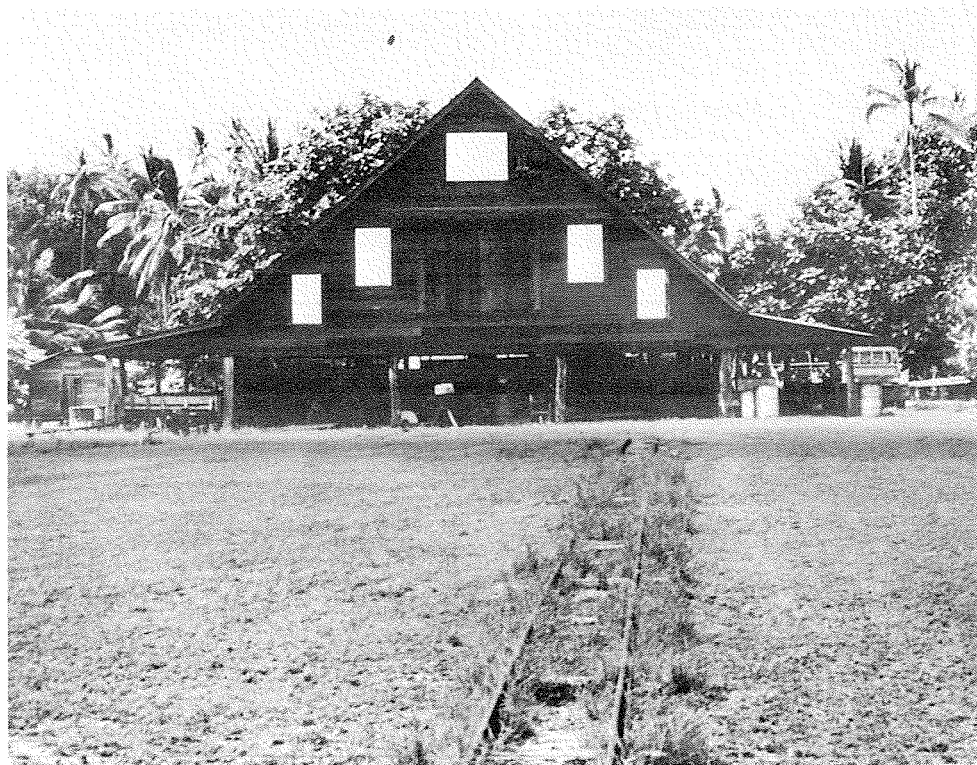


Figure 10. The grassy village green at Taulaga, with railroad tracks leading up to the copra shed.