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**THE FLORA OF NAURU**

**BY**

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## **DEDICATION**

**We dedicate this Flora of Nauru to Joseph Detsimea Audoa, his family and the people of the Republic of Nauru who have had their precious island and its flora destroyed and degraded as a result of wars and exploitation beyond their control.**

## ACKNOWLEDGEMENTS

The authors would like to acknowledge, in particular, the late Honorable Joseph Detsimea Audoa, the Minister of Health and Education at the time of the commencement of the study and later Minister of Justice in the Government of Nauru, who, because of his vision and commitment to the culture and environment of Nauru, initiated and provided the financial support for the study of the flora of Nauru. He was particularly concerned that the plants of Nauru and their cultural uses be recorded before such knowledge was lost.

We also acknowledge Mr. Lisle Newby, the then Director of Education, who, along with Joe Audoa, were the main supporters of the project, and who provided valuable logistical support throughout. Special thanks are also given to our main local informants and assistants, the Reverend James Aingimea and the late Henry Michael Heine; and to Daphne Fotu, Jacob Gabwinare, Katarina Satto, Kenia Raidinen, Reynold Capelle, Eda Adam and Montiba Star, our main informants in relation to the cultural uses and Nauruan names of plants.

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Finally, we wish to express our heartfelt thanks to the people of Nauru whose warmth and hospitality made our work on their beautiful but damaged island so enjoyable and worthwhile.

To all of you, *TUBWA KOR*,

R.R Thaman, F.R. Fosberg, H.I. Manner and D.C. Hassall  
Suva, Fiji  
June 1993



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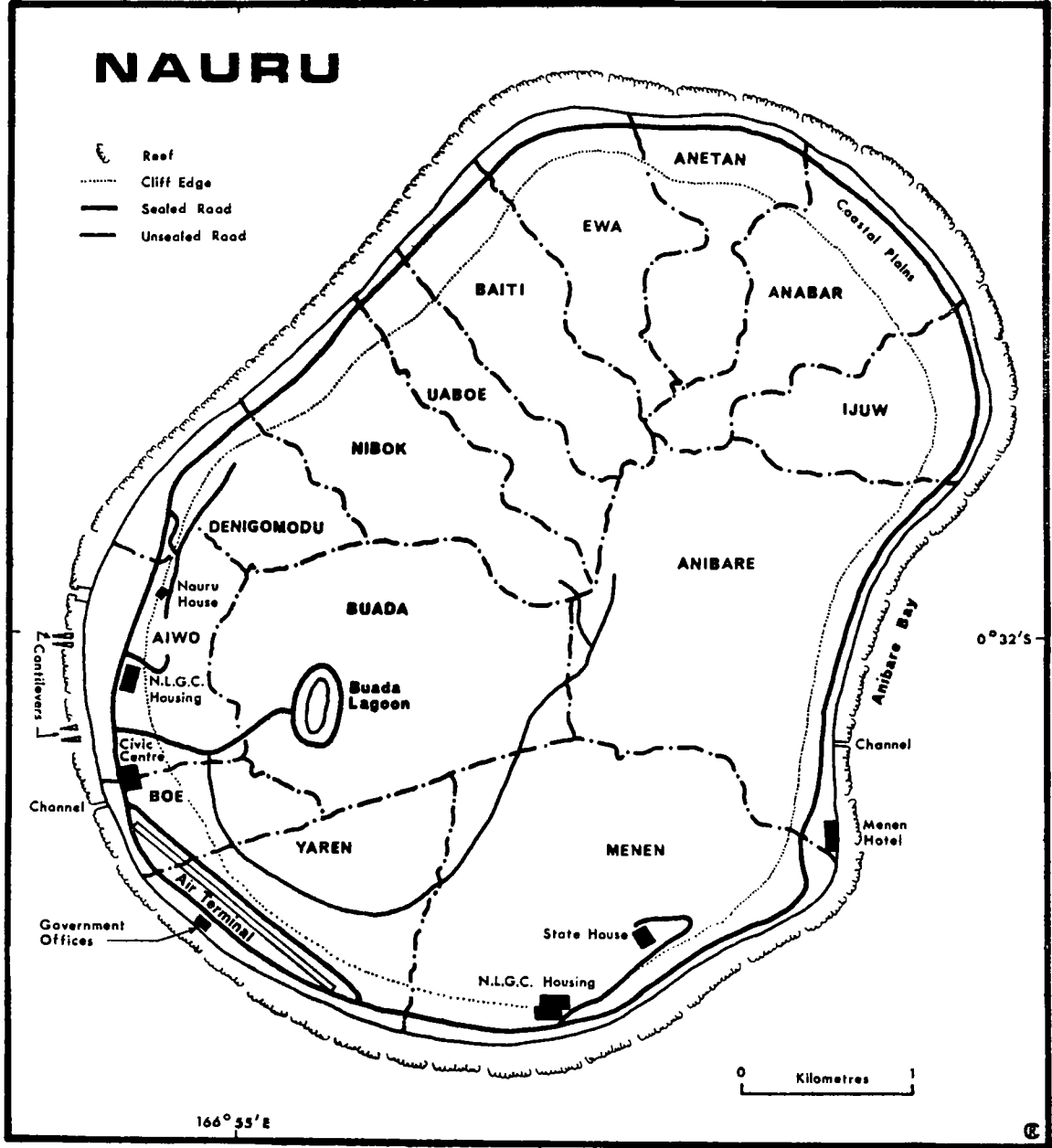
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# NAURU

- Reef
- Cliff Edge
- Sealed Road
- Unsealed Road



166° 55' E

0° 32' S

0 Kilometres 1

©

**THE FLORA OF NAURU**  
**A COMPILATION AND ANALYSIS OF THE VEGETATION AND FLORA OF**  
**THE EQUATORIAL PACIFIC OCEAN ISLAND OF NAURU**

BY

R.R. THAMAN<sup>1</sup>, F.R. FOSBERG<sup>2</sup>, H.I. MANNER<sup>3</sup> AND D.C. HASSALL<sup>4</sup>

**PART I.**

**INTRODUCTION AND ANALYSIS OF THE VEGETATION AND  
FLORA**

**INTRODUCTION**

The recorded flora of the raised phosphatic limestone island of Nauru in the equatorial Pacific Ocean consists of approximately 493 species. Only 59 are possibly indigenous, none of which are endemic. The balance is composed of ornamentals, weedy exotics, food plants, and a limited number of other useful cultigens. Twelve of the recorded species are either extinct or were never successfully established on Nauru. Long human settlement, expansion of coconut monoculture during the colonial period, widespread destruction during World War II, and almost a century of open-cast phosphate mining, have led to serious vegetation degradation, disturbance, and displacement

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of the indigenous flora. Although greatly outnumbered by exotics, indigenous species still dominate some of the most disturbed habitats, as well as constituting the most culturally-utilitarian and ecologically-important species.

The flora is in two parts. PART I: INTRODUCTION AND ANALYSIS OF THE VEGETATION AND FLORA, includes a brief discussion of: 1) previous studies and the current study; 2) the physical environment, people, development history and contemporary economy of Nauru; 3) the nature of the existing flora and vegetation associations of Nauru; and, 4) an analysis of the ecological and cultural importance of the flora in the context of modern small-island development.

PART II: A COMPILATION OF THE VASCULAR FLORA OF NAURU, consists of a listing of all vascular plants reported to have been present on Nauru, along with relevant information on each species. Although a number of persons have collected plants on Nauru over the past century, this constitutes the first extensive flora the of vascular plants of the island. The plants are listed in alphabetical order by family and species within families, starting with the ferns and gymnosperms and then angiosperms, with monocotyledons listed first. Information on each species, variety or subspecies includes: 1) scientific (Latin) name and synonyms; 2) common (mainly English) name (s); 3) Nauruan, Kiribati, Tuvaluan, Chinese (Cantonese), Filipino and Solomon Island names, when available; 4) origin; 5) antiquity status (i.e., whether a species is indigenous to Nauru, an aboriginal introduction, an early post-European-contact introduction or a recent post-World War II introduction; 6) its status in terms of abundance (i.e., whether it is abundant, common, rare, extinct, etc); 7) a detailed botanical description; 8) its habitat or distribution on Nauru; and 9) its cultural or ethnobotanical importance.

## PREVIOUS STUDIES

Although collections and observations of the flora have been made on Nauru by Finch prior to 1900; Burges in 1933; Fosberg in 1980; Scully in 1980; Thaman, Hassall and Manner in 1980 and 1981; Thaman and Manner in 1987; Swarbrick in 1988; and Raulerson in the early 1980s, little has been published. The only substantial publications on Nauru's vegetation include studies by Manner, Thaman and Hassall (1984 and 1985) on vegetation changes induced by phosphate mining; a list of Nauruan plant names by Thaman, Manner and Hassall (1985); and the "Vegetation of Nauru and the Gilbert Islands" by Thaman (1992). Fosberg, Sachet and Oliver's "A geographical checklist of Micronesian Dicotyledonae" (1979); "Geographical checklist of Micronesian Pteridophyta and gymnosperms" (1982); and "A geographical checklist of the Micronesian Monocotyledonae" (1987), are also important and list most of the species cited and specimens examined prior to 1980.



## **CURRENT STUDY**

The current study is based on an in-depth analysis of the above sources; five-weeks fieldwork, including two visits by R.R. Thaman, H.I. Manner and D.C. Hassall of The University of the South Pacific, Suva, Fiji in Nauru in 1980, 1981; one week each by Thaman and Hassall in 1987; and a three-day visit by F.R. Fosberg of the Botany Department of the Smithsonian Institution, Washington, D.C. in 1987. During these visits herbarium specimens were collected and identified and the Latin and vernacular names of all plant species recorded and listed alphabetically. These lists were then cross-checked, consolidated, amended and augmented, both during and after the field studies, using lists and names from previous studies. Information was also collected on the cultural uses (ethnobotany) of the flora.

## **BACKGROUND ON NAURU**

### **Physical Environment**

The Republic of Nauru is an isolated, uplifted limestone island located 41 km south of the equator at 166 deg 56 min E longitude, some 2000 km east-northeast of Papua New Guinea, 4450 km south-southeast of the Philippines and an equal distance to the southwest of Hawaii. The nearest island is Banaba (Ocean Island), 300 km due east, which is part of the Republic of Kiribati. The Gilbert Islands, the main islands of Kiribati, lie a further 400 km to the east.

The island, with an area of only 22 km<sup>2</sup>, consists of a narrow coastal plain, ranging from 50 to 300 m wide, encircling a limestone escarpment rising some 30 m to the central plateau (See map of Nauru). The escarpment ranges in gradient from vertical cliffs to gradually-sloping areas of colluvial soil interspersed with limestone outcrops and pinnacles. The plateau, with a maximum elevation of 70 m, consists of a matrix of coral-limestone pinnacles and limestone outcrops, between which lie extensive deposits of soil and high-grade tricalcic phosphate rock (Viviani 1970, Tyrer 1963). Buada Lagoon, a landlocked brackish lake, and its associated fertile depression (about 12 ha in size), is located in the low-lying southwest-central portion of the island.

Apart from Buada Lagoon, there are no surface freshwater resources on Nauru, although there are a few brackish ponds on the northeast of the island and an underground lake in Moqua Cave in the southeast (Viviani 1970:4). The only significant permanent freshwater resource is groundwater in the form of a "lens" of often slightly brackish freshwater, hydrostatically "floating" on higher density saltwater beneath it. The height of the freshwater lens above sea level and the level of salinity vary in relation to the elevation, geology, texture and shape of the island, and with the amount of water use and rainfall. Replenishment or recharge of the lens is dependent on rainfall.

Climatically, Nauru is located in the dry belt of the equatorial oceanic zone, with mean daily temperatures ranging from 26 to 32°C. Annual rainfall is extremely variable, averaging 1500 mm per year with a range of 300 to 4572 mm. Severe prolonged droughts are common and place severe stress on even the most hardy coastal strand species, lead to the death of non-coastal exotics (such as breadfruit), and severely restrict the production of even coconut palms (Catala 1957). For example, in 1917 and 1918, during an unprecedented drought, when only 465 and 483 mm of rain fell, "thousands of coconuts and other fruit trees died" (Griffiths 1923).

The coastal soils of Nauru are among the poorest in the world. They are shallow, alkaline, coarse-textured and have carbonatic mineralogy. They are composed of a variable layer of organic matter and coral sand and fragments, which overlay a limestone platform. The coastal soils are only about 25 cm deep, and contain more coral gravel than sand in the lower horizons. Potassium levels are often extremely low, and pH values of up to 8.2 to 8.9 and high CaCO<sub>3</sub> levels make scarce trace elements, particularly iron (Fe), manganese (Mn), copper (Cu) and zinc (Zn), unavailable to plants. Fertility is, therefore, highly dependent on organic matter for the concentration and recycling of plant nutrients, lowering soil pH, and for soil water retention in the excessively well-drained soils. Although levels of organic matter can be relatively high in undisturbed soils under natural vegetation, it can decrease dramatically as a result of clearance by fire or replacement by coconuts and other introduced plants (Morrison 1987ab).

The plateau soils of Nauru vary from shallow soils, on the tops of limestone pinnacles, composed primarily of organic material and sand or dolomite, with very little phosphate, to deep phosphatic soils and sandy phosphatic rock, up to over 2 m deep between the pinnacles. Topsoils range from 10 to 25 or 30 cm in depth, overlaying a deeper material which is frequently reddish yellow and between 25 and 75 cm deep, changing to pinkish grey at greater depth. Undisturbed plateau soils have a high level of organic material and are generally fertile. Calcium dominates the exchange complex and exchangeable magnesium is also high. Exchangeable potassium is low, while extractable phosphate values are generally high and sulphate moderate. The trace elements manganese, copper, cobalt and molybdenum levels are very low, and these, plus iron and zinc, are rendered unavailable to plants under pH values >6.5 (Morrison 1987b).

Around Buada Lagoon and in some poorly drained swampy areas near the base of the escarpment on Nauru, there are poorly developed, but relatively fertile, wet soils.

## **The People**

The indigenous people of Nauru are Micronesians, who have probably inhabited the island for up to 3000 years or more. There is some evidence of Melanesian, and possibly Polynesian, influence. The Nauruan language is quite distinct from all other Pacific languages, reportedly a fusion of elements from the Gilbert, Caroline, Marshall and Solomon Islands. Early this century there was evidence of distinct racial types or

groups of mixed origin. The people were divided into twelve distinct, originally totemic, matrilineal clans, most of which spoke different dialects, some of which were still in evidence when trying to obtain vernacular plant names in the early 1980s. However, most dialects have become obsolete, having been replaced by the principle dialect, which was used for Bible translation by European missionaries early this century (Viviani 1970:4-7).

The traditional subsistence economy of Nauru was based on coconut and pandanus as the main staples, a limited range of wild terrestrial food products, sea birds, such as the black noddy tern (*Anous tenuirostris*) and a very wide range of fish and other marine foods. Milkfish or *ibija* (*Chanos chanos*) fry, collected from the reef at low tide, were farmed in family-owned divisions of Buada Lagoon to provide fish for special occasions and when other supplies failed. Their housing, tools, clothing, medicines, fuel, fishing equipment, canoes, dyes, ornamentation, perfumes, toys and other material and many of their non-material needs were satisfied from their environment, especially from plants.

The Nauruan population suffered from introduced diseases against which they had no natural resistance, and from incessant tribal warfare, with Nauruans numbering only 1250 in 1910, a decline of 150 from the total of 1400 in 1840 and 300 less than recorded in the German census in 1905 (Viviani 1970:37).

The estimated population of Nauru in the most recent census in 1983 was 8042, of whom 4964 were Nauruan, with the balance comprised mainly of I-Kiribati (people of Kiribati, formerly the Gilbert Islands of the British Gilbert and Ellice Islands Colony), Tuvaluan, Chinese, Filipino or Solomon Island contract workers in the phosphate industry. There are also European, Indian and Pacific island expatriates working mainly for the Nauruan Government. The Nauruans live on the coastal strip and around Buada Lagoon, the phosphate workers in the Nauru Phosphate Company dormitory accommodation at Location near the phosphate loading cantilevers, and the expatriate civil servants in residential areas on the escarpment. The town center is located between the airport and Location near the cantilevers (Figure 1), with most government offices near the airport.

## Development History

After the first recorded European sightings of Nauru by John Fearn of the British Ship *Hunter* in 1798 who named it "Pleasant Island", there was little regular contact with the island until the 1830s when British and American whalers made regular stops for water and food, and beachcombers arrived. The beachcombers, with the introduction of new weaponry, intensified a period of almost incessant clan warfare. At the time of the beginning of formal colonial influence when Nauru was incorporated into Germany's Marshall Islands Protectorate in 1888, the island "had the appearance of a battlefield" (Viviani 1970:22). In 1919, after World War I, Nauru became a League of Nations mandate of Great Britain, Australia and New Zealand, administered by Australia. Nauru became independent in 1968.

Apart from the provisioning of whaling vessels, mainly with fish, pigs and coconuts, the first regular non-traditional economic activity was a sporadic copra trade established in the 1880s. By the late 1880s Nauru produced about one million pounds of copra annually, one of the main reasons that Germany, on the recommendation of resident German traders, annexed the island in 1888. In the 1890s, due to drought and infrequency of ships, the copra trade failed to reach its potential with Nauruans refusing to make more copra than needed to pay their taxes (Viviani 1970; Carter 1984).

The strategic and economic importance of Nauru increased dramatically with the discovery, in 1900, of high grade phosphate rock, containing up to 78 per cent tricalcic phosphate. The mining of phosphate, without approval of the indigenous inhabitants, began in 1907. Caroline Islanders and Chinese contract-laborers were recruited to mine the deposits. Since then, I-Kiribati, Tuvaluan, Filipino and Solomon Islands contract workers have been recruited to work in the phosphate industry. The deposits have been mined continuously since 1907, except for disruptions during World War I and again during World War II. Copra production continued to fluctuate, with over 300 tons having been exported the year before the phosphate trade began in 1906, 277 tons in 1916, and falling to only 10 tons in 1918 due to a prolonged drought (Viviani, 1970: 22-38).

With the beginning of the phosphate trade, the whole pattern of Nauruan life began to change. Although barter continued, money became the medium of exchange, and trade stores with their array of goods, further encouraged the trend. As Viviani (1970:38) argues:

Old crafts such as mat making began to be forgotten as woven materials become available. Rites and customs were debased. Faced on all sides by the white man's attempt to dominate their environment and the disintegration of their culture, the Nauruans sought a new orientation for their lives. They could no longer follow the old ways completely and so settled for a combination of the basic elements of the old culture, clinging strongly to their family life, and some of the advantages of Western civilisation. They were able to achieve this because, although royalties were low - only about 230 Pounds Sterling per annum at this time for the whole population - this money, together with land rents and some return from copra, freed them from the necessity of working on the phosphate fields to pay their taxes.

The most disruptive period for Nauru was World War II, during which the island was continuously bombed by Japanese and Americans planes. Beginning in 1940, five phosphate vessels were sunk off Nauru and the island shelled by German warships. Nauru was again bombed by Japanese planes in 1941 and 1942 prior to Japanese occupation of the island. After a Japanese military airstrip was completed in 1943, the island was bombed almost continuously by Allied planes. By the end of 1943, due to the

importation of at least 3000 Japanese marines, some 1500 Japanese and Korean laborers, and the relocation of 700 Banabans to Nauru, the food situation became so serious that 1201 Nauruans, seven Chinese and two priests were deported to Truk. Malnutrition and dysentery were widespread. Allied bombings increased considerably until the Japanese surrender to an Australian occupation force in 1945. At this time, of nearly 5200 people, only 591 were Nauruan, and the destruction of the phosphate works and buildings on Nauru was almost total. The 737 Nauruans who had not died under the harsh conditions imposed by the Japanese in Truk returned home in 1946 (Viviani 1970; Carter 1984). As argued by Viviani (1970:85):

The Japanese had destroyed the Nauruan's homes, schools, and churches, placed them on a semi-starvation level and destroyed much of what was left of their old way of life. The deportation of two-thirds of the Nauruans and the death of nearly 500, mostly the old and the young, left the society after the war with a gap in generations and a disruption of family life. Again the Nauruan population had fallen well below the 1,500 level which the Nauruans themselves regarded as a minimum for survival.

### **Contemporary Economy**

Nauru's sole export continues to be phosphate, with the sporadic export of copra having ceased in the 1950s. Phosphate earnings have made Nauru among the wealthiest nations in the world in terms of per capita income, although the distribution of wealth is uneven due to unequal land rights to phosphate deposits. Nauru is considered totally urbanized, with Nauruans having almost completely abandoned subsistence production, except for the harvest of coconuts and pandanus fruit for consumption; pandanus leaves for plaited ware; the acquisition of fish and other seafood; and the hunting of noddy terns, which are considered a delicacy of chiefly status, and the capture and caring for of frigate birds as pets, both traditional pastimes. Most of the limited subsistence agricultural production is in the hands of immigrant communities.

The establishment of its own heavily subsidized international airline, Air Nauru, in 1970, which flies to Asia, Australia, New Zealand and other Pacific islands, and the extension of the runway over the reef have accelerated the processes of urbanization and an increasing dependence on imported products. Of concern is the impact that the destruction of the traditional subsistence food system, rapid urbanisation and the almost total dependence on nutritionally-poor imported food and drink, including extremely high rates of alcohol consumption, have had on the health of Nauruans, which have the among highest or most rapidly increasing rates in the world of obesity, dental disease, alcoholism and nutrition-related non-communicable diseases such as diabetes, cardiovascular disease, gout and hyperuricemia and liver cancer. All are causes of premature

mortality (Zimmet *et al.* 1977, 1978; Speake *et al.* 1979; Taylor 1983; Coyne 1984; Thaman 1982, 1983, 1985, 1988a).

In terms of Nauru's economic future, the phosphate deposits on Nauru are projected to be depleted shortly after the turn of the century. Fortunately, a significant proportion of recent phosphate returns have been wisely invested in overseas properties, businesses and investment funds to provide income in post-phosphate-mining Nauru. A further source of income is derived from Nauru's status as a "financial center" or "tax haven" for overseas companies wishing to register there. Finally, negotiations and litigation arising out of a recent Commission of Inquiry into the Rehabilitation of the Worked-out Phosphate Lands in Nauru to determine culpability and the extent of damages to the Nauruan culture and environment are currently in process and could lead to substantial payments to Nauru and the development of plans for the rehabilitation of the island.

### **Impact on the Flora**

Due to environmental factors described above - extreme isolation from major plant source regions, small island size, extremely poor soils, and climatic and physiological drought - the indigenous flora of Nauru is among the poorest and most restricted on earth. Moreover, the long settlement history, widespread destruction during World War II, monocultural expansion of coconut palms as the sole cash crop, increasing urbanization and contact with, and importation of plants from the outside world, and over 75 years of open-cast phosphate mining (in Nauru and Banaba), have all played a role in the serious degradation, disturbance, and displacement of the indigenous flora and vegetation.

### **VEGETATION TYPES**

The terrestrial primary vegetation types of Nauru are limited to:

1. coastal strand vegetation;
2. limited areas of mangroves and coastal marsh vegetation;
3. relict stands of inland forest; and,
4. limestone escarpment or pinnacle vegetation.

Secondary and cultural vegetation types include:

1. coconut-palm-dominated lands under various degrees of maintenance;

2. houseyard gardens and urban vegetation;
3. extensive and variable areas of ruderal vegetation; and,
4. three-quarters of the entire island under severely-modified disclimax vegetation in various stages of succession after some 80 years of open-cast phosphate mining.

These vegetation types will each be described in turn.

### Coastal Strand Vegetation

The coastal strand vegetation of Nauru has been severely modified as a result of: 1) thousands of years of human habitation and selective removal of indigenous species for construction, boatbuilding, firewood and other purposes; 2) the expansion of monocultural coconut groves for export production of copra; 3) the expansion of coastal settlements which occupy most of the coastal plain; and, 4) the widespread practice of allowing pigs to forage freely along beach flats (Viviani 1970).

The dominant species in the outer coastal zone in Nauru include the herbaceous species *Lepturus repens*, *Cyperus javanicus*, *Ipomoea pes-caprae* and *Vigna marina*; the woody species, *Scaevola taccada*, *Tournefortia argentea* and *Morinda citrifolia*, plus the aboriginal introduction, *Cocos nucifera*. Species common on rocky limestone outcrops along the coast include the same species plus *Polypodium scolopendria*, *Capparis cordifolia*, *Clerodendrum inerme*, *Terminalia catappa* and *Calophyllum inophyllum*. Species present on non-rocky, somewhat disturbed inland coastal sites between the strand and the base of the escarpment include *Hibiscus tiliaceus*, *Cocos nucifera*, *Premna serratifolia*, *Calophyllum inophyllum*, *Pandanus tectorius*, *Morinda citrifolia*, *Terminalia catappa*, *Ochrosia elliptica*, and isolated specimens of *Barringtonia asiatica*, *Thespesia populnea* and *Hernandia nymphaeifolia*. Shrubby species include *Scaevola taccada*, *Colubrina asiatica*, *Abutilon indicum* and *Phyllanthus societatis*; herbaceous species include *Cyperus javanicus*, *Digitaria setigera*, *Vigna marina*, *Ipomoea macrantha* and the ferns, *Polypodium scolopendria* and *Nephrolepis biserrata*. *Caesalpinia bonduc*, *Euphorbia chamissonis*, *Sida fallax* and *Triumfetta procumbens* are scarce, but were probably more abundant in the past.

### Mangroves and Coastal Marsh Vegetation

Shallow-water habitats with muddy bottoms and protected from strong wave action are extremely limited on Nauru. Although reportedly present in the past around Buada Lagoon, Nauru's single mangrove species, *Bruguiera gymnorhiza*, is now restricted to a system of landlocked brackish ponds or small lagoons near the base of the escarpment in Menen, Anabar and Anetan Districts. The largest concentration is found around Araro

Lake in Anetan. Fosberg (c.1972) also reports the occurrence of *B. gymnorhiza* in similar landlocked ponds, sink-holes and small inland swamps in Palau.

Other species commonly associated with mangroves and present in Nauru include *Derris trifolia*, encountered on limestone outcrops, and *Vitex negundo*, which is present in depressions near the base of the escarpment in Menen District.

The swampy areas surrounding Buada lagoon and near the base of the escarpment on Nauru are dominated by *Cyperus javanicus* and *C. compressus*, with one specimen of *Ludwigia octovalvis* collected from a coastal depression.

### Relict Stands of Inland Forest

In terms of relict stands of primary inland forest on Nauru, there seem to be two distinct types: 1) plateau forest, which probably covered up to 90 per cent of the island before the onset of phosphate mining, and 2) escarpment forest, including forest on unmined limestone outcrops or pinnacles on the plateau.

The former, four-fifths of which has been removed during phosphate mining, is dominated almost entirely by 16 m-tall *Calophyllum inophyllum*. Infrequent canopy trees include *Guettarda speciosa*, *Premna serratifolia* and *Terminalia catappa*, with the understorey dominated by *Scaevola taccada*, *Morinda citrifolia* and *Dodonea viscosa*, the parasite *Cassytha filiformis*, *Psilotum nudum*, and the ferns, *Polypodium scolopendria* and *Nephrolepis biserrata*. Also occasional in open sites is *Phyllanthus societatis*. Exotic species dominant in disturbed sites include *Psidium guajava*, *Lantana camara* and two herbaceous species, *Euphorbia hirta* and *Desmodium triflorum* (Manner et al. 1984, 1985).

### Limestone Escarpment or Pinnacle Vegetation

The dominant species on the limestone cliffs of the escarpment and on emergent pinnacles on Nauru is *Ficus prolixa*, with *Terminalia catappa*, *Ochrosia elliptica* and *Guettarda speciosa* constituting important second stratum species (Manner et al. 1985). Isolated relict stands of *Barringtonia asiatica* and *Pisonia grandis* are also found along the crest of the escarpment above Anibare Bay. The ferns, *Nephrolepis biserrata* and *Polypodium scolopendria*, and the liana, *Ipomoea macrantha*, are locally abundant, and the herb, *Laportea ruderalis*, is found in moist shady habitats at the base of the escarpment. On the more gradually-sloping colluvial portions of the escarpment almost impenetrable thickets of ~~*Hibiscus tiliaceus*~~ are found. Understorey species include *Colubrina asiatica* and *Tacca leontopetaloides*. In Anetan District, in the north (Figure 1), *Clerodendrum inerme* festoons limestone outcrops and cliffs. In some areas the exotic



fruit trees, soursop and sweetsop (*Annona muricata* and *A. squamosa*) have become naturalised and constitute the dominant understorey species.

### **Coconut-Palm- and Pandanus-Dominated Agricultural Lands**

As stressed above, coconuts and pandanus were the two most important staple crops in pre-European-contact Nauru. Coconut groves, although far less important today than in the past when copra was the main export, are still found in a number of sites on Nauru's coastal strip. In most cases, the plantations are comprised of randomly scattered trees of varying heights and ages. In poorly-maintained groves, coconut seedlings and fallen leaves and husks dominate the understorey.

Planted groves of edible *Pandanus tectorius* cultivars in forest clearings, both on the plateau and on the more gradually sloping areas of the escarpment, were also once a prominent feature of Nauru's traditional agricultural vegetation. Today, they are restricted to a few relict groves, some of which were found to be present in the unmined areas of Anibar District in 1980.

### **Houseyard Gardens and Urban Vegetation**

Although indigenous and aboriginally introduced species are important components, most houseyard gardens and urban vegetation are dominated by recently introduced exotic species. The high diversity of recently introduced exotics in Nauru is due mainly to the almost complete destruction of the subsistence economy, urbanization and increasing air transport contact with overseas sources of non-quarantined planting materials.

In indigenous Nauruan houseyard gardens the dominance of recently introduced ornamental species is very pronounced, with some 118 of 140 species being classified as recent introductions. Indigenous species include *Abutilon indicum*, *Barringtonia asiatica*, *Calophyllum inophyllum*, *Cerbera manghas*, *Clerodendrum inerme*, *Cordia subcordata*, *Ficus prolixa*, *Guettarda speciosa*, *Morinda citrifolia*, *Ochrosia elliptica*, *Premna serratifolia* and *Terminalia catappa*, which in some cases, such as with *Cerbera manghas* and *Cordia subcordata*, are only present today in Nauru in houseyard gardens. Common food plants include, in order of importance, coconut, breadfruit, bananas, pandanus, papaya, *Citrus* spp. and guava. Common ornamentals, found in at least four of 16 sample gardens, include *Acalypha amentacea* vars., *Bougainvillea* spp., *Caesalpinia pulcherrima*, *Caladium bicolor*, *Casuarina equisetifolia*, *Catharanthus roseus*, *Codiaeum variegatum*, *Cordyline fruticosa*, *Crinum* spp., *Delonix regia*, *Dieffenbachia* spp., *Hibiscus rosa-sinensis*, *Hosta plantaginea*, *Hymenocallis littoralis*, *Ixora* spp., *Jasminum sambac*, *Jatropha integerrima*, *Nerium oleander*, *Pentas* spp., *Plumeria* spp., *Polyscias* spp., *Pseuderanthemum carruthersii*, *Sansevieria trifasciata*, *Tabernaemontana divaricata*, *Tecoma stans* and *Thunbergia erecta*.

The houseyard gardens of I-Kiribati, Tuvaluan, Chinese and Filipino contract workers, and in the European and Indian expatriate communities of Nauru, are very different. Each reflect distinctive preferences in food and ornamental plants, and are commonly dominated by food plants. I-Kiribati and Tuvaluan gardens at Location, where there is very little space for planting, usually consist of a single banana, coconut, papaya or breadfruit tree, or a few cassava, sweet potato, taro, tannia (*Xanthosoma sagittifolium*), pineapple, sugarcane, hibiscus spinach (*Hibiscus manihot*), or chilli (*Capsicum frutescens*) plants. All are often grown in boxed or fenced areas filled with imported soil or mulch. Chinese gardens at Location focus more on short-term vegetable plants, such as Chinese cabbages (*Brassica* spp.), onions and garlic (*Allium* spp.), amaranth spinach (*Amaranthus* spp.), coriander (*Coriandrum sativum*), long beans (*Vigna sesquipedalis*) and a range of cucurbits. Filipino workers plant sweet potato, hyacinth bean (*Dolichos lablab*) and horseradish or drumstick tree (*Moringa oleifera*). European expatriates plant tomatoes, lettuce and parsley, whereas the expanding Indian expatriate community has planted eggplant (*Solanum melongena*), okra (*Hibiscus esculentus*), horseradish tree (*Moringa oleifera*) and bilimbi (*Averrhoa bilimbi*). A similar range of food species are cultivated behind the workshops on Topside, although the areas under crops are greater, with some gardeners growing taro, tannia and giant swamp taro, employing the traditional intensive mulching systems of Kiribati and Tuvalu (Thaman 1987a, 1988b).

The balance of the "urban vegetation" is composed of many the same species which are occasionally planted as roadside trees or around government and Nauru Phosphate Corporation buildings and parking lots. The remaining area of extensive urban vegetation is the golf course in Aiwo District which is lined with trees, including *Hibiscus tiliaceus*, *Thespesia populnea*, but dominated by banyan trees (*Ficus* spp.).

### Ruderal Vegetation

Extensive areas of highly disturbed ruderal vegetation in settlements, waste places, along roadsides and airstrips, and in areas associated with pre-mining vegetation clearance are found in Nauru. The dominant species in most areas are pioneering grasses, annuals and shrubby weedy species.

Common species include; 1) the grasses, *Cenchrus echinatus*, *Chloris inflata*, *Cynodon dactylon*, *Dactyloctenium aegyptium*, *Digitaria* spp., *Eleusine indica*, *Eragrostis amabilis*, *Lepturus repens* and *Tricholaena rosea*; 2) the sedges, *Cyperus javanicus*, *C. rotundus* and *Fimbristylis cymosa* (which, along with *Digitaria setigera* and *Lepturus repens*, are probably indigenous); and, 3) the herbaceous species, *Ageratum conyzoides*, *Alysicarpus vaginalis*, *Amaranthus dubius*, *A. viridis*, *Bidens pilosa*, *Cassia occidentalis*, *Cleome ruidosperma*, *C. viscosa*, *Crotalaria goreensis*, *C. spectabilis*, *Desmodium tortuosum*, *Euphorbia* spp., *Hedyotis corymbosa*, *Indigofera hirsuta*, *Malvastrum coromandelianum*, *Passiflora foetida*, *Phyllanthus amarus*, *Physalis* spp., *Portulaca oleracea*, *Sida rhombifolia*, *Spermacoce assurgens*, *Stachytarpheta urticifolia*, *Synedrella*

*nodiflora*, *Tridax procumbens* and *Vernonia cinerea*, plus the indigenous species, *Phyllanthus societatis* and the parasitic *Cassytha filiformis*.

A few tree or tree-like species have become naturalized in dense stands in Nauru. *Mangifera indica* is dominant in dense forests behind residences in the Buada Lagoon depression; *Annona muricata* and *A. squamosa*, as mentioned above, form dense stands on gradually sloping areas of the escarpment; *Adenantha pavonina*, *Lantana camara* var. *aculeata*, *Leucaena leucocephala* and *Psidium guajava* form dense stands or thickets between Buada Lagoon and the decalcination plant on the coastal strip in Aiwo District; and *Casuarina equisetifolia* and *Muntingia calabura* have colonized roadside areas and portions of the phosphate-mined area. Of particular interest, is the almost monospecific colonization of the large topsoil stockpile on Topside by the cucurbit, *Luffa cylindrica* var. *insularum*.

### Phosphate-Mined Lands

As a result of almost 80 years of open-cast phosphate mining, some three-quarters of Nauru is under severely-modified disclimax vegetation in various stages of succession. Prior to mining the vegetation is removed by bulldozer and the topsoil removed to expose the phosphate deposits which lie between coral-limestone pinnacles. The extraction of phosphate then causes dramatic changes in local relief, which varies between 4 and 8 m from the top of the pinnacles to the pit bottoms, with about three to four pinnacles occurring within each 100 m<sup>2</sup>. Because mining is only about 20 per cent efficient, unconsolidated phosphate deposits remain in the pit bottoms and on the saddles and scree slopes between the pinnacles. These deposits (which might be mined at a later date) and the pinnacle surfaces, constitute the main sites for recolonization (Manner *et al.* 1984, 1985).

Although there is widespread evidence that exotics commonly replace indigenous species in highly disturbed habitats, the Nauru study by Manner, Thaman and Hassall (1984, 1985) supports the conclusion of Mueller-Dombois (1975) that indigenous (pioneer) species are often better adapted to edaphically harsh environments, given the cessation of human disturbance. Their study shows a very rapid colonization of mined areas by indigenous ferns and exotic herbs, followed by a fairly rapid replacement by native, primarily coastal strand, species.

Early pioneer species include the non-woody exotics, *Alysicarpus vaginalis*, *Cleome rutidosperma*, *Crotalaria goreensis*, *Emilia sonchifolia*, *Eragrostis amabilis*, *Euphorbia cyathophora*, *E. hirta*, *E. prostrata*, *Hedyotis corymbosa*, *Synedrella nodiflora*, *Tricholaena rosea*, *Tridax procumbens* and *Vernonia cinerea*, plus the indigenous ferns, *Nephrolepis biserrata* and *Polypodium scolopendria*. Of these, only the two ferns species, and *Euphorbia hirta*, *E. prostrata*, *Tricholaena rosea*, *Tridax procumbens* and *Vernonia cinerea* remain significant components of the flora in the later stages of succession, usually in open disturbed sites.

Species entering the succession early and remaining dominants in the 40- to 80-year-old sites include: the trees, *Calophyllum inophyllum*, *Dodonea viscosa*, *Ficus prolixa*, *Guettarda speciosa*, *Morinda citrifolia* and *Premna serratifolia*; the shrubs, *Phyllanthus societatis* and *Scaevola taccada*; the grasses and sedges, *Lepturus repens*, *Fimbristylis cymosa* and *Cyperus javanicus*; the parasite, *Cassytha filiformis*; and the diminutive fern, *Ophioglossum petiolatum*. All are indigenous. Larger exotics found in the later stages of succession in more open habitats include *Lantana camara*, *Psidium guajava* and *Stachytarpheta urticifolia*.

The study suggests that the potential natural disclimax vegetation of the open-cast mined plateau will probably be dominated by *Calophyllum inophyllum* and *Guettarda speciosa*, with the epiphytic *Ficus prolixa* dominating the more ecologically severe pinnacle habitats. *Morinda citrifolia*, *Premna serratifolia* and the exotics, *Lantana camara* and *Psidium guajava*, could become important components of the subcanopy. The exotics, *Casuarina equisetifolia* (which is native to limestone habitats on other Pacific islands) and *Muntingia calabura*, both now locally abundant in some mined areas, could enter into the succession as well.

As argued by Manner *et al.* (1985), given no deliberate human intervention, the succession to a disclimax vegetation association capable of sustaining human life will probably take "many thousands of years". It is stressed that it is ironic that Nauru's central plateau, from which Nauruans formerly obtained some of the necessities of life, will be a "topographic jungle" stripped of its natural vegetation, before the next century, in order to provide the phosphate needed to revive phosphate-poor soils to fuel the development of Australia and New Zealand.

## THE FLORA

Like the extremely limited, degraded and displaced vegetation types, the indigenous terrestrial flora of Nauru exhibits extreme poverty and current numerical domination by exotics. Of a total of 493 species or hybrid cultivars reported to have been present on Nauru, only 59 (12%) are possibly indigenous (Tables 1 and 2). There are no reported endemics, reflecting the lack of habitat diversity and the predominance of ubiquitous, easily-dispersed pantropical or paleotropical coastal species. Two species (*Achyranthes canescens* and *Tarennia sambucina* are presumably now extinct, *Aidia cochinchinensis* possibly now extinct, and half (28) of the remaining 56 species are severely restricted in distribution, endangered or possibly extinct, due to removal and severe habitat modification or limitation (Table 2). The high number of recent introductions in Nauru reflects its increasing contact with the outside world via its national airline, Air Nauru, increasing urbanization and the total absence of quarantine regulations.

Table 1. Antiquity status of the flora of Nauru in terms of whether species are presumed to be indigenous to Nauru; aboriginal or recent post-European-contact introductions; or now extinct.

Class/Genera	Indigenous	Aboriginal	Recent	Extinct	Total
Pteridophytes	8	-	3	-	11
Gymnosperms	-	-	2	-	2
Monocotyledons	6	2	137	-	145
Dicotyledons	45	3	278	9	335
Total	59	5	420	9	493

In terms of diversity at the family level, only 97 vascular plant families are represented on Nauru (Appendix I). Of these, only 33 are represented by indigenous species.

The pteridophytes and gymnosperms are represented by six families, all of which are represented by an indigenous species. The Gymnosperms are represented by only two families, none of which are indigenous.

The 145 monocotyledons fall into 18 families, only three of which, Cyperaceae, Pandanaceae and Poaceae, are indigenous. Araceae, Liliaceae and Poaceae are the only families with over ten separate species (26, 34 and 26 respectively). Other monocotyledon families represented by five or more species include Arecaceae, Commelinaceae, Cyperaceae, Marantaceae, Orchidaceae and Zingiberaceae. The majority of species from these families are cultivated ornamentals, or in the case of Poaceae, weedy grasses.

The dicotyledons are represented by 71 families, 25 of which are possibly indigenous. Families represented by two or more indigenous species each are Apocynaceae, Boraginaceae, Capparidaceae, Convolvulaceae, Euphorbiaceae, Fabaceae, Malvaceae, Rubiaceae and Verbenaceae (see Part II and Appendix I).

Table 2. Species indigenous or possibly indigenous to Nauru (? = status uncertain, possibly an aboriginal or recent introduction; E = possibly extinct; e = endangered or rare).

Type/Species	Status
<b>PTERIDOPHYTES</b>	
<i>Asplenium nidus</i>	+e?
<i>Nephrolepis biserrata</i>	+
<i>Nephrolepis hirsutula</i>	+
<i>Ophioglossum petiolatum</i>	+
<i>Polypodium scolopendria</i>	+
<i>Psilotum nudum</i>	+
<i>Pteris tripartita</i>	+
<i>Pyrrosia adnascens</i>	+e
Subtotal	8
<b>HERBS</b>	
<i>Achyranthes canescens</i>	E?
<i>Heliotropium procumbens</i>	+e
<i>Laportea ruderalis</i>	+e
<i>Triumfetta procumbens</i>	+
Subtotal	3 (1E)
<b>GRASSES AND SEDGES</b>	
<i>Cyperus javanicus</i>	+?
<i>Digitaria setigera</i>	+?
<i>Fimbristylis cymosa</i>	+
<i>Lepturus repens</i>	+
<i>Stenotaphrum micranthrum</i>	+e
Subtotal	5

## VINES AND LIANAS

<i>Canavalia cathartica</i>	+e
<i>Canavalia rosea</i>	+e
<i>Capparis quiniflora</i>	+e
<i>Cassytha filiformis</i>	+
<i>Derris trifoliata</i>	+e
<i>Ipomoea littoralis</i>	+e
<i>Ipomoea macrantha</i>	+
<i>Ipomoea pes-caprae</i>	+
<i>Vigna marina</i>	+
Subtotal	9

## SHRUBS

<i>Abutilon asiaticum</i> var. <i>albescens</i>	+e
<i>Caesalpinia bonduc</i>	+e
<i>Capparis cordifolia</i>	+
<i>Clerodendrum inerme</i>	+
<i>Colubrina asiatica</i>	+
<i>Dodonaea viscosa</i>	+
<i>Euphorbia chamissonis</i>	+e
<i>Phyllanthus societatis</i>	+
<i>Scaevola taccada</i>	+
<i>Sida fallax</i>	+e
<i>Suriana maritima</i>	+e
Subtotal	11

## TREES

<i>Aidia cochinchinensis</i>	+e
<i>Barringtonia asiatica</i>	+e
<i>Bruguiera gymnorrhiza</i>	+e
<i>Calophyllum inophyllum</i>	+
<i>Cerbera manghas</i>	+e
<i>Cordia subcordata</i>	+e
<i>Erythrina variegata</i>	+e
<i>Fagraea berteriana</i>	E?
<i>Ficus prolixa</i>	+
<i>Guettarda speciosa</i>	+

<i>Hernandia nymphaeifolia</i>	+e
<i>Hibiscus tiliaceus</i>	+
<i>Morinda citrifolia</i>	+
<i>Ochrosia elliptica</i>	+e
<i>Pandanus tectorius</i>	+
<i>Pisonia grandis</i>	+e
<i>Premna serratifolia</i>	+
<i>Tarennia sambucina</i>	E?
<i>Terminalia catappa</i>	+?
<i>Thespesia populnea</i>	+e
<i>Tournefortia argentea</i>	+
<i>Vitex negundo</i>	+e
Subtotal	20 (2E)
TOTAL SPECIES	56 (3E)

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Sources: An extensive review of the available literature and personal records and observations by the authors; see in particular Thaman 1992; Manner, Thaman and Hassall 1984, 1985.

### Nature of Indigenous Species

Of the indigenous species, eight are widespread pantropical or paleotropical pteridophytes, including *Psilotum nudum*, *Polypodium scolopendria*, *Ophioglossum petiolatum*, *Pteris tripartita* and *Nephrolepis* spp., with *Pyrrosia adnascens*, a common epiphyte, also present on Nauru (Table 2). *Asplenium nidus*, although almost certainly indigenous, was found only as an ornamental in houseyard gardens during the current study.

There are no indigenous gymnosperms, although the widespread *Cycas circinalis* is found in cultivation.

Indigenous monocotyledons are restricted to *Pandanus tectorius*, some cultivars of which are undoubtedly aboriginal introductions, and a small range of sedges and grasses (Cyperaceae and Poaceae), some of which might be aboriginal or recent introductions. The coconut palm (*Cocos nucifera*) is classified as an aboriginal introduction. The grass *Stenotaphrum micranthrum* (reported present by Fosberg *et al.* 1987) is considered to be endangered or now absent.



The dicotyledons are comprised almost exclusively of salt-tolerant, widely-dispersed, pantropical coastal species. Of the 42 herbaceous and woody dicotyledons, half (21) are endangered or rare (Table 1). Species such as *Heliotropium procumbens*, *Laportia ruderalis*, *Triumfetta procumbens*, *Abutilon asiaticum*, *Caesalpinia bonduc*, *Euphorbia chamissonis*, *Sida fallax*, *Suriana maritima*, *Aidia cochinchinensis*, *Barringtonia asiatica*, *Cerbera manghas*, *Erythrina variegata*, *Hernandia nymphaeifolia*, *Pisonia grandis*, *Thespesia populnea* and *Vitex negundo* are represented by only a few remaining individuals, often in houseyard gardens, or by localized relict communities. Prior to widespread disturbance, Nauru would have undoubtedly had more species than it has at present.

### Comparison with Other Island Floras

The extreme poverty of the indigenous flora of Nauru becomes more obvious when compared with estimates of the indigenous floras of island groups which are larger or closer to the Asian plant source region. The estimated number of indigenous species for the following island groups are: Malaya (c. 20,000), Philippines (10,000), Bismarck Archipelago (700), Vanuatu (750), Fiji (more than 1,100), Tonga (257), Samoa (548) and French Polynesia (600). Only extremely isolated small islands such as Easter Island and the three small atolls of Tokelau, with indigenous floras of 32 and 33 species respectively, have poorer floras than Nauru (Good 1947 in Manner 1987, Parham 1971). When taken individually, the floras of Pacific atolls range from as few as three to perhaps 150 indigenous species, compared to some Indian Ocean atolls, nearer to continental areas, which have close to 300 indigenous species (Fosberg 1952).

The floristic poverty of Nauru becomes even more pronounced based on a comparison of the frequency occurrence of 142 widespread coastal species in eleven Pacific island groups (see Appendix II and Thaman 1992). All of the species considered have the ability to cope successfully in environments characterized by loose shifting sands, wave action, soil-less limestone and volcanic terraces and rock outcrops, high salinity, strong sunlight, strong winds, seaspray and associated physiological drought (Fosberg 1952, 1960) and, in some cases, periodic inundation and waterlogging, all conditions common in Nauru.

The island groups analyzed ranged from large, geographically-older high island groups such as Fiji, composed of over 300 islands with a total area of 18,376 km<sup>2</sup>, to the three small isolated atolls of Tokelau with a total land area of only 12.2 km<sup>2</sup>. Also included in the comparison were high island groups with diverse habitats, such as Guam, a volcanic island with extensive areas of limestone and an area of 549 km<sup>2</sup>; Samoa and Hawaii, recent basaltic volcanic island groups, with little or no limestone; Palau, a group of some 340 volcanic and uplifted limestone islands, including an atoll, Kayangel, and the raised phosphate island of Angaur, located only 850 km to the east of the Philippines; Tonga, a group of about 150 uplifted limestone and some volcanic islands, with a total area of 697 km<sup>2</sup>; Niue, an isolated uplifted limestone island, like Nauru, but with an area

of 258 km<sup>2</sup>, and few beaches; and Makatea, an uplifted phosphatic island about the same area as Nauru, and like Nauru, with no protective barrier reefs or coastal lagoons (Thaman 1992).

Although these comparisons are strongly biased by the size and geologic age of the islands, their distance from plant source areas and the unavailability of information on other analogous islands such as Banaba (Ocean Island), the poverty of the coastal floras of the two small phosphate islands of Nauru and Makatea (in the Tuamotu Archipelago of French Polynesia) is clearly apparent, both with only 55 of the 142 widespread coastal species each. The Gilberts and Tokelau, both groups of low-lying atolls, have only 74 and 34 species each. All other island groups, including Hawaii and Niue, have at least two-thirds of the 142 species present as indigenous or long-established introductions, an indication of greater habitat diversity and/or less habitat degradation (Thaman 1992). Of interest is that 55 of Nauru's 59 indigenous species are among the 142 widespread coastal or mangrove species listed in Appendix I.

As atoll groups, the Gilbert and the Tokelau Islands, have the fewest ferns, although Nauru has the fewest widespread coastal herbs. It could be assumed that the fern, *Davallia solida*, and widespread herbaceous species, such as *Boerhavia*, *Hedyotis* and *Portulaca* spp. and *Sesuvium portulacastrum*, were all originally present on Nauru, but eliminated due to widespread destruction of coastal habitats. In terms of coastal grasses and sedges, Nauru, the small atolls of Tokelau, and Makatea have the fewest species, possibly due to the combination of widespread habitat destruction and a relative absence of marsh or wetland environments. The widespread destruction of the areas around Buada Lagoon for cultivation by the Japanese during World War II may have destroyed many natural wetland environments. Species which might have been present include the grasses *Paspalum distichum* and *Thuarea involuta*. Whether a given sedge species arrived naturally or was introduced deliberately due to its cultural utility is uncertain.

Coastal vines and lianas are noticeably fewer on Makatea and Nauru, with only three and eight out of the 14 widespread species. Noticeably absent on Nauru are *Abrus precatorius*, *Entada phaseoloides* and *Mucuna gigantea*.

With the exception of the Tokelau Islands (with only three species), Nauru and Makatea have the poorest shrub flora, with only 10 and 11 species respectively, out of a possible 27 species. Similarly, the Tokelaus have only 16 of 62 common coastal tree species, with Nauru and Makatea having only 23 and 21 species respectively. Conspicuously absent on Nauru are the shrubs, *Allophylus timoriensis*, *Pemphis acidula*, *Sophora tomentosa* and *Wollastonia biflora*; and the trees, *Ficus tinctoria*, *Neisosperma oppositifolia*, *Pipturus argenteus* and *Terminalia samoensis*, most of which are present on the smaller elevated phosphate-rich island of Fais and the coral-limestone island of Satawal in the western Caroline islands (Fosberg and Evans 1969).

There are other widespread non-coastal species which might have been present in the past on Nauru, which were present in 1932 (before mining, which ceased in 1966, almost completely destroyed the island's inland vegetation) on the analogous phosphate island of Makatea, which is located much further from the centers of plant diversity than Nauru. These include: the fern, *Ophioglossum pendulum*; orchids, such as *Oberonia* and *Taeniophyllum* spp.; the herb, *Procris pedunculata*; the vines, *Abrus precatorius* (mentioned above) and *Dioscorea bulbifera* (the most widespread of all yam species and present, in many cases probably as an aboriginal introduction, from East Africa to Micronesia and eastern Polynesia)(Stone 1970); and the shrubs and trees, *Alyxia* sp., *Canthium barbatum*, *Celtis paniculata*, *Glochidion ramiflorum*, *Ixora* sp., *Melochia odorata*, *Planchonella (Pouteria)* sp., and *Timonius* sp. (Wilder 1934). *Tarenna sambucina*, also present on Makatea, was reported present on Nauru by Burges in 1933, but is now considered to be extinct.

Makatea has one presumably endemic species, *Euprichardia vuylstekeana*, and it might be expected, given the diversity of pre-mining microhabitats and the isolation of Nauru, that there could have been endemic species there also. Interestingly, the one plant that was thought to be possibly endemic on Nauru turned out to be *Phyllanthus societatis*, "a common plant among coral rocks" on Makatea in 1933 (Wilder 1934).

A similar comparison with the relatively undisturbed flora of Henderson Island, a remote raised limestone island with a similar limestone plateau and pinnacle topography, provides further insight into some of the plant species that might have existed in the past on Nauru. Because it was unsuitable for permanent habitation and had no economic phosphate deposits, Henderson has survived successive Polynesian and European impacts, with only five known introduced plant species. Species of widespread genera found on Henderson, but not on Nauru include: the fern, *Davallia solida*; the herbs, *Boerhavia tetrandra*, *Euphorbia sparrmannii*, *Lepidium bidentatum*, *Peperomia hendersonensis*, *Portulaca lutea*, *Procris pedunculata* and *Sesuvium portulacastrum*; the shrubs, *Allophylus* sp., *Alyxia* sp., *Canthium barbatum* and *C. odoratum*, *Glochidion pitcairnense*, *Ixora fragrans*, *Jasminum didymum*, *Eugenia reinwardtiana (Eugenia rariflora)*, *Morinda umbellata* var. *forsteri*, *Pemphis acidula*, *Timonius polygamus* and *Xylosma suaveolens* var. *haroldii*; and the trees, *Celtis paniculata* var. *viridis*, *Geniostoma hendersonense*, *Meryta brachypoda*, *Pittosporum arborescens*, *Sesbania coccinea* and *Santalum hendersonense*. Nine species or varieties are presently recognized as endemic, all of which are found in the interior. These are the very areas on Nauru that have been so devastated by phosphate mining, long settlement and devastation and scavenging for food and firewood during the Second World War. Not present on Henderson, but present on Nauru are *Calophyllum inophyllum* and *Barringtonia asiatica* (Paulay and Spencer 1989, Fosberg et al. 1983, Fosberg et al. 1989).

### Nature of Exotic Species

Exotic species, which constitute 88 per cent (434 out of a total of 493 reported species) of the flora of Nauru, dominate ruderal, houseyard and urban vegetation. Exotic species include a wide range of ornamentals, weedy species, food plants and a number of other useful species.

Ornamentals, which are normally confined to houseyard and village gardens, comprise some 59 per cent (257) of the 434 exotic species. On Nauru, introductions by travellers from Australia, Fiji and other areas with highly developed ornamental gardening traditions; the absence of quarantine restrictions; and the almost total breakdown in the subsistence economy, seem to be the main reasons for the disproportionate importance of ornamental plants. Some of these ornamental, of course, have other uses such as living fencing or for the preparation of medicines or garlands.

The proportions of the exotic flora composed of weedy species is 18 per cent (80 of 434 species), an indication of both the poverty of the competitive indigenous flora and the highly disturbed nature of the vegetation.

Although food plants represent 16 per cent of the exotic flora, due to the harsh environment, limited land area and limited focus on food production in Nauru, many of these species are restricted in numbers or utility and are often represented by experimental attempts to diversify food production or by individual, often immature specimens of a given species. Exotic food plants of particular importance on Nauru include numerous edible pandanus cultivars (*Pandanus tectorius*), some of which are undoubtedly aboriginal introductions, and the coconut (*Cocos nucifera*), also an aboriginal introduction. Recent introductions of more localized importance, or of particular importance to contract worker communities on Nauru include: the vegetables, hibiscus spinach (*Hibiscus manihot*), Chinese cabbage cultivars (*Brassica* spp.), long beans (*Vigna sesquipedalis*), amaranthus spinach (*Amaranthus* spp.) and pumpkin (*Cucurbita pepo*); the staple root crops, taro (*Colocasia esculenta*), tannia (*Xanthosoma sagittifolium*), sweet potato (*Ipomoea batatas*) and cassava (*Manihot esculenta*); a range of banana and plantain cultivars (*Musa* cultivars); and the tree crops, lime (*Citrus aurantifolia*), guava (*Psidium guajava*), mango (*Mangifera indica*), soursop (*Annona muricata*) and the horseradish or drumstick tree (*Moringa oleifera*), all of which seem to do well in Nauru's harsh environment. Important emergency or pig foods include Polynesian arrowroot (*Tacca leontopetaloides*) and purslane (*Portulaca* spp.), both of which are found as naturalised plants in the coastal vegetation of in ruderal sites.

Other useful exotic species include kapok (*Ceiba pentandra*), cotton (*Gossypium barbadense*), tobacco (*Nicotiana tabacum*), and bamboo (*Bambusa vulgaris*), which were all reportedly more abundant in the past. As suggested above, some larger weedy exotics, such as *Adenantha pavonina*, *Annona* spp., *Casuarina equisetifolia*, *Lantana camara*, *Leucaena leucocephala*, *Mangifera indica*, *Muntingia calabura* and *Psidium guajava*, some which are classified as ornamentals, food plants or other useful plants, have

become naturalized and competitive with the indigenous species in some disturbed and relatively undisturbed sites.

## ECOLOGICAL AND CULTURAL UTILITY OF EXISTING FLORAS

Although highly disturbed, outnumbered and, in some ways, "enriched" by introduced exotics, the vegetation and flora of Nauru still constitute a critical ecological and cultural resource to the people of Nauru. This is particularly true for the indigenous species, virtually all of which had wide cultural utility within the traditional subsistence economy.

In terms of the more specific ecological attributes of Nauru's plant resources, the most important functions include the provision of shade and animal and plant habitats, protection from wind, erosion, flood and saltwater incursion, land stabilization, protection from the desiccating effects of salt spray, soil improvement and mulching.

In terms of more strictly cultural utility, preliminary analyses indicate 169 purposes or use categories for 39 indigenous species, an average of 4.3 uses per species. There are 434 uses for 354 exotic species, an average of 1.2 uses per species (Table 3). This gives a combined total of 603 use/purpose categories for 393 species (1.5 uses per species). Twenty (20) indigenous and 80 exotic species had no reported uses. The relative importance of the indigenous flora would undoubtedly be much more pronounced if: 1) a more systematic in-depth survey of the cultural utility of each indigenous species had been conducted; 2) Nauru had not experienced such widespread devastation of its population, traditional economy, traditional education system and its indigenous flora (and associated ethnobotanical knowledge) over the past 100 years; and 3) planted ornamentals, by far the most widespread use of exotic species, were excluded from the analysis of indigenous species.

Table 3. Frequency of use for specified purposes of plant species present in Nauru (Note: Introduced includes both aboriginal introductions such as coconut and recent post-European-contact introductions).

Purpose/Use	Indigenous x/59	Introduced x/434	Total x/493
Cultivated Ornamentals	9	257	266
Food Plants	2	64	66
Body Ornamentation	16	23	39
Medicinal/Health	17	13	30
Staple Foods	1	13	14

General Construction	11	2	13
Scenting Oil/Perfumery	6	7	13
Firewood/Fuel	6	4	10
Emergency/Famine Foods	3	6	9
Tools/Utensils	7	1	8
Boat/Canoe Building	8	-	8
Handicrafts	7	1	8
Games/Toys	6	1	7
Food Parcelization	5	2	7
Living Fences/Hedges	1	6	7
Cordage/Fibre	3	3	6
Hair Conditioner	6	-	6
Woodcarving	5	-	5
Adhesive/Glue/Caulking	1	4	5
Earth Oven Cover	5	-	5
Magic/Sorcery	4	-	4
Drinks/Beverage	-	4	4
Fishing Equipment	2	2	4
Clothing	3	1	4
Animal Feed	2	2	4
Plaited Ware	3	1	4
Legends/Mythology	2	1	3
Furniture	3	-	3
Animal Cages/Roosts	1	2	3
Fish Poisons	2	-	2
Fire by Friction	1	1	2
Strainers/Filters	1	1	2
Thatching/Roofing	1	1	2
Dyes/Pigments	2	-	2
Nets/Traps	2	-	2
Fans	-	1	1 2
Chewing Gum/Masticants	-	2	2
Oils/Lubricants	1	1	2
Corks/Stoppers	1	1	2
Other Uses*	12	6	18
<hr/>			
TOTAL	169	434	603
<hr/>			
NO USES	20	80	100
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\* Other uses include aphrodisiacs, appetite stimulants, brushes, toilet paper, illumination, soap/shampoo, containers, deodorants/air fresheners, fishnet floats, green

manure, groundcover, meat tenderizer, insect repellents/fumigants, love potions, wild animal food, fishing bait, cigarette wrappers and tobacco.

Moreover, if distinct uses within use/purpose categories (e.g., tools with distinct functions, different types of fishing equipment, foods or ornamentation for different occasions or purposes, medicines for different ailments, or plants used for specific parts of boats or houses) are counted (see individual uses for each species as detailed in Part II), the economic and cultural utility of plants becomes even more pronounced. The coconut (*Cocos nucifera*) palm, for example, has 33 reported uses in Nauru (Table 4), almost undoubtedly a gross underestimate, in light of at least 128 reported uses (many of which are almost ubiquitous) for the coconut palm throughout the Pacific Islands (Thaman 1992). Next in order of importance, are 19 species, all with 5 or more reported uses. These include, in order of importance, *Hibiscus tiliaceus*, *Pandanus tectorius*, *Scaevola taccada*, *Morinda citrifolia*, *Guettarda speciosa*, *Calophyllum inophyllum*, *Cordia subcordata*, *Terminalia catappa*, *Artocarpus altilis*, *Thespesia populnea*, *Tournefortia argentea*, *Premna serratifolia*, *Triumfetta procumbens*, *Vitex negundo*, *Ochrosia elliptica*, *Cassytha filiformis*, *Musa* ABB Group, *Bambusa vulgaris* and *Carica papaya*. Of these 20 species, only *Cocos nucifera*, *Artocarpus altilis*, *Musa* ABB Group, *Bambusa vulgaris* and *Carica papaya*, are aboriginal or recent introductions. The rest are probably indigenous or very early aboriginal introductions (e.g., some authorities suggest that species such as *Hibiscus tiliaceus*, *Morinda citrifolia*, *Cordia subcordata* and *Terminalia catappa* might have been aboriginal introductions into some Pacific islands because of their cultural utility.

Another 13 species, 7 of which are indigenous (*Dodonea viscosa*, *Hernandia nymphaeifolia*, *Plumeria rubra*, *Psidium guajava*, *Erythrina variegata*, *Bruguiera gymnorhiza*, *Barringtonia asiatica*, *Vigna marina*, *Clerodendrum inerme*, *Gardenia taitensis*, *Jasminum sambac*, *Crinum asiaticum* and *Hibiscus rosa-sinensis*), have at least 3 uses each. Another 22 species have at least two reported uses each (Table 4). There is some usage overlap between categories, such as supplementary and emergency foods, medicinal, magical, ceremonial and body ornamentation plants, or plants used for handicrafts, woodcarving, cordage and clothing. Conversely, the categories could be further broken down to yield an even greater list of uses. Moreover, the list does not include the more strictly ecological functions of coastal plants, such as shade, protection from wind, sand and salt spray, erosion and flood control, coastal reclamation, animal and plant habitats, and soil improvement, all of importance, particularly on an ecologically devastated post-mining Nauru.

Table 4. Species of particular cultural utility on Nauru based on an analysis of different individual uses listed under each species in Part II (Notes: 1) uses do not include a wide range of ecological functions or uses; A = probably an aboriginal introduction; R = recent post-European-contact introduction; all undesignated species are possibly indigenous).

Latin Name	Uses
<i>Cocos nucifera</i> (A)	33
<i>Hibiscus tiliaceus</i>	12
<i>Pandanus tectorius</i>	12
<i>Scaevola taccada</i>	11
<i>Morinda citrifolia</i>	10
<i>Guettarda speciosa</i>	9
<i>Calophyllum inophyllum</i>	8
<i>Cordia subcordata</i>	6
<i>Terminalia catappa</i>	6
<i>Artocarpus altilis</i>	6
<i>Thespesia populnea</i>	5
<i>Tournefortia argentea</i>	5
<i>Premna serratifolia</i>	5
<i>Triumfetta procumbens</i>	5
<i>Vitex</i> spp.	5
<i>Ochrosia elliptica</i>	5
<i>Cassytha filiformis</i>	5
<i>Musa</i> ABB Group (R)	5
<i>Bambusa vulgaris</i> (R)	5
<i>Carica papaya</i> (R)	5
<i>Dodonea viscosa</i>	4
<i>Hernandia nymphaeifolia</i>	4
<i>Plumeria rubra</i> (R)	4
<i>Psidium guajava</i> (R)	4
<i>Erythrina variegata</i>	3
<i>Bruguiera gymnorhiza</i>	3
<i>Barringtonia asiatica</i>	3
<i>Vigna marina</i>	3
<i>Clerodendrum inerme</i>	3
<i>Gardenia taitensis</i> (R)	3
<i>Jasminum sambac</i> (R)	3
<i>Crinum asiaticum</i> (R)	3
<i>Hibiscus rosa-sinensis</i> (R)	3



**Note:** Species with two (2) recorded uses each: *Polypodium scolopendria*, *Cyperus javanicus*, *Abutilon asiaticum*, *Ficus prolixa*, *Pisonia grandis*, *Sida fallax*, *Ipomoea pes-caprae*, *Spondias dulcis* (A), *Ageratum conyzoides* (R), *Asclepias curassavica* (R), *Bougainvillea* spp. (R), *Cassia occidentalis* (R), *Catharanthus roseus* (R), *Citrus aurantifolia* (R), *Delonix regia* (R), *Ixora casei* (R), *Lantana camara* (R), *Mangifera indica* (R), *Mirabilis jalapa* (R), *Ocimum basilicum* and *O. sanctum* (R).

In terms of specific uses, cultivated ornamentals and food plants are by far the most common. If, however, only indigenous plants are considered, the most widely reported uses are for medicine, body ornamentation, general construction, cultivated ornamentation, boat or canoe building, tools or utensils, handicrafts, scenting coconut oil or perfumery, firewood or fuel, games and toys, hair conditioners, food parcelization, woodcarving, covering or insulating the earthen oven, magic or sorcery, emergency or famine foods, cordage or fibre, clothing, plaited ware and furniture.

It must be stressed that the analyses are based on traditional uses, many of which have lapsed or are only employed in emergency, because modern technology has preempted them. Modern medicine, clothing, fishing lines, matches, crockery, plastic bags, soap, and emergency food rations (food aid) have, for example, replaced traditional plant-derived products in Nauru. Moreover, many of the current generation, schooled in the modern educational system and living in the cash economy, often know few of the traditional uses of plants, let alone their vernacular names . . . a state which could be referred to as "devegetation of the mind" . . . and which has undoubtedly contributed to the degradation of the indigenous and long-established aboriginal vegetation in Nauru.

Of particular note is the importance of traditional food and beverage crops, the abandonment of which, for highly imported foods such as sugar, white rice and flour, cabin biscuits, noodles canned fish, soft drinks, alcohol and tea, has led, as stressed above, to dangerous levels of food dependency and some of the highest, or most rapidly increasing, incidences in the world of vitamin and mineral deficiency and nutrition related diseases. Diseases such as iron-deficiency anemia, vitamin-A-deficiency-induced night blindness, diabetes, cardiovascular disease, hypertension and stroke, gout and hyperuricemia, some forms of cancer and dental disease, which were rarely encountered in the past are now serious causes of morbidity and mortality in Nauru, and among other Pacific island populations (Speake *et al.* 1979; Coyne 1984; Taylor 1983; Zimmet *et al.* 1977, 1978; Thaman 1982, 1983, 1988a).

## CONCLUSION

The vegetation and flora of Nauru are among the most impoverished, degraded, disturbed and displaced in the Pacific islands. Long habitation, almost a century of open-cast phosphate mining, continuous bombing, destruction and displacement of the people during World War II, rapid urbanization and the abandonment of agriculture and

subsistence activities have arguably produced one of the most severely modified natural and cultural floras on earth.

Although both the vegetation and limited indigenous flora of Nauru has been severely degraded and outnumbered by exotic species, many of the native species are still present, unfortunately often in an endangered state. The indigenous flora also still dominates most habitats, including the later stages of the phosphate-mined pit and pinnacle topography of Nauru. Even in ruderal habitats and in houseyard gardens and villages, where they are outnumbered by exotics, indigenous species constitute important components.

It is argued that, while floristic degradation in Nauru appears to be among the most severe in the Pacific, the current flora still constitutes an important ecological and cultural resource that must be protected as part of the development process, and NOT as an afterthought. Even in the case of Nauru, it may not be too late.

## PART II

### A COMPILATION OF THE VASCULAR FLORA OF NAURU

Part II, "A Compilation of the Vascular Flora of Nauru", consists of a listing of, and relevant information on, the 493 vascular plant species or distinct cultivars and six widely recognised varieties of common species reported to have been present at some time on Nauru.

It begins with Pteridophyta (ferns and fern allies), followed by Gymnosperms and then Angiosperms. Within Angiosperms, Monocotyledons precede Dicotyledons. Under these headings individual families are listed in alphabetical order (e.g. Acanthaceae, Amaranthaceae, Anacardiaceae . . .), with individual species being listed in alphabetical order by genus within each family (e.g. *Asystasia gangetica*, *Barleria cristata*, *Barleria prionitis*, *Blechnum brownei* . . .).

#### KEY

Under each species/entry the types of information and order of presentation is as follows: 1) Latin or scientific name; 2) common name (s); 3) local vernacular names used by the main ethnic groups in Nauru; 4) synonyms for the Latin or scientific name; 5) antiquity status of the species, i.e., whether it is indigenous to Nauru, an aboriginal introduction or a recent introduction to Nauru; 6) geographical origin of the species; 7) abundance or frequency of occurrence; 8) habitat or distribution in Nauru; 9) uses or cultural utility; and 10) an indication of the persons who have recorded or collected a given species, including numbers corresponding to herbarium specimens. This information, its organization and the symbols used under each category are explained below.

#### Latin/Scientific Names

1. The first name listed in **bold print** is what the authors consider to be the currently most widely accepted published Latin binomial for a given species (usually the earliest published name or basionym). All names follow the *International Code of Botanical Nomenclature*.
2. The Latin names provided in italics after the common and the vernacular names include Latin binomial synonyms (syns.) or older names no longer in use for the species, and, in some cases, incorrect names commonly applied to the species, which are indicated by *sensu auct. non*.

4. The name (s) or the abbreviation of the name (s) of the authority or authorities (persons responsible for describing and publishing a given species name) are provided after each species name, e.g., (L.) Anders.

### Family

1. Family names (e.g., **POLYPODIACEAE**, **ACANTHACEAE** or **RUBIACEAE**) are centered in bold capitals immediately before the first species entry in each family.
2. Where a family is known by two different names or a species placed in either of two families, both are listed (e.g., **FABACEAE OR LEGUMINOSAE**, **POACEAE OR GRAMINAE** or **CLUSIACEAE OR GUTTIFERAE**)

### Common Names

1. English or common names for a species, and other widely-used names, are included in quotation marks, e.g., "coconut", immediately to the far right of the Latin name.

### Vernacular Names

1. The vernacular names include the Nauruan names and other names used by the dominant ethnic communities of Nauru. These are found on the second line, after the common English names.
2. The letter (B) after a Nauruan name indicates names listed by Burges (1933). All other names were collected by Thaman, Manner and Hassall as part of the current study.
3. N, K, T, C, SI, Philippines and Hindi, are used in parentheses to indicate the Nauruan, Kiribati, Tuvaluan, Chinese (Cantonese), Solomon Island, Filipino and Hindi names, respectively.
4. The question mark (?) designates unverified or doubtful names.
5. In terms of pronunciation, the Nauruan phonetics are difficult to match with the accepted sounds and orthography of the Latin alphabet. The closest approximations of the correct Nauruan pronunciation of a given name are provided instead of resorting to the use of strange combinations of letters or special phonetic symbols.
6. In the cases of other vernacular languages used in Nauru, the 'g' in Tuvaluan is pronounced as if it were like 'ng' as in the word 'sing'; in Kiribati the t, when

followed by an i, is pronounced like an s, and when ti falls at the end of a word, the i remains silent, e.g., 'roti' is pronounced as if it were 'rose'.

### **Antiquity Status**

Antiquity status indicates whether a given species is presumed to be indigenous to Nauru; an aboriginal introduction by Nauruans or other indigenous Pacific Islanders before European contact; or a post-European-contact introduction. In some cases it is suggested that a species may have been successfully introduced prior to European contact, but either not successfully established or brought to extinction before botanical collections or observations of the flora were made. In the case of recent introductions, some species are categorized as to whether they are assumed to be pre- or post-World War II introductions. This is based on information received from informants and/or whether a species was reported present before World War II by Burges in 1933. The ? indicates that the true status of a species is in doubt (e.g., whether it is really indigenous or an aboriginal introduction).

### **Geographical Origin**

Geographical origin refers to what seems to be the original natural distribution of a given species before humans began to act as dispersal agents for plants. In many cases it is difficult to be sure what the original pre-human or pre-European-contact range of a given species was because species introduced either deliberately or accidentally by the Pacific Island colonizers of the islands have often become naturalized and integral components of what now seems to be indigenous vegetation.

With respect to terminology, Malesia (sometimes spelled Malayasia) is a biogeographical term referring to an area encompassing insular southeast Asia, the Indonesia, Philippines and the island of New Guinea; Indomalaysia refers to an area encompassing the Indian Ocean and Malesia; Indopacific refers to an area extending from the Indian Ocean to the Pacific Islands; Paleotropics refers to the Old World tropics including tropical Africa, Asia and the tropical Pacific Islands; pantropical indicates that a species is found throughout the Old and New World tropics; and cosmopolitan indicates that a species is found almost worldwide. In some cases (usually in the cases of easily dispersed weedy pioneer species) information is provided on both the assumed original distribution and whether a species is now more widespread (e.g., pantropical).

### **Abundance or Frequency Occurrence**

The estimates of abundance or frequency occurrence or whether a given species is now endangered or extinct are based on in-the field observations by Thaman, Manner and Hassall from 1979 through 1987, plus information included in herbarium vouchers of

other collectors. In-the field data included in-depth analysis of all vegetation associations, transects at ten locations around the coastal plain, transects across the entire island and extensive sampling using 100 m<sup>2</sup> quadrats in areas where open-cast phosphate mining had occurred.

### **Species Description**

Descriptions of individual species (and selection of the most widely accepted scientific names and authorities) were based on the analysis of living plants in Nauru, herbarium specimens and a synthesis of the best existing descriptions in the works listed in the Bibliography. Works of particular value included Fosberg, Sachet and Oliver 1979, 1982, 1987; Haselwood and Motter 1976; Hay, McQuown, Beckett and Beckett 1974; Henderson and Hancock 1989; Henty and Pritchard 1973; Herklots 1972; Macoboy 1969, 1979; Neal 1965; B.E.V. Parham 1972; J.W. Parham 1972; Purseglove 1972, 1974; Rotar 1968; St. John 1973; Smith 1979, 1981, 1985, 1988, 1991; Stemmermann 1981; Stone 1970; Sykes 1970; Whistler 1980, 1983, 1992; Wilder 1934; Wright, Minter and Carter 1984; and Yuncker 1959.

### **Uses and Cultural Utility**

Ethnobotanical information (including vernacular names) on uses or cultural utility of the individual plant species was obtained through in-depth interviews with elderly person known for their knowledge of the traditional uses of Nauru's plants; other respondents, whenever possible; and from information in available documents and publications. Main informants included Joseph D. Audoa, James Aingimea, Henry Michael Heine, Daphne Fotu, Jacob Gabwinare, Katarina Satto, Kenia Raidinen, Reynold Capelle, Eda Adam and Montiba Star.

### **Collectors and Herbarium Specimens**

The numbers listed at the end of the information on each species indicate which collectors or observers collected or recorded that species as being present on Nauru; the numbers in parentheses identify the numbers of the herbarium vouchers or specimens collected by each collector (s), e.g., 2, 3(58802), 4(168N), 5(92), 6, 7(27812).

The numbers and the collectors/observers are as follows:

**1** refers to citations by persons such as Finch prior to 1900, about which there is very little information;

**2** refers to citations by Alan Burges of Sydney University who collected in 1933 and most of whose specimens are lodged at Kew Botanical Gardens, London;

**3** refers to citations by F.R. Fosberg of the National Museum of Natural History of the Smithsonian Institution, Washington D.C. in 1980, whose specimens are lodged with the Smithsonian Institution;

**4** refers to Brian Scully of the University of California at Riverside who also collected in 1980 and most of whose specimens are also lodged with the Smithsonian Institution;

**5 and 6** refer R. R. Thaman, H.I. Manner and D.C Hassall of The University of the South Pacific, Suva, Fiji who collected over two 2-week periods in November 1980 and July 1981, respectively, and whose specimens are lodged with the South Pacific Regional Herbarium at The University of the South Pacific, Suva;

**7** refers to Thaman and Manner (then with the University of Guam) who collected again in July-August 1987 and whose specimens are also lodged at the South Pacific Regional Herbarium; and,

**8** refers to John Swarbrick, of the University of Queensland, Gatton College who collected weedy species on Nauru in June 1988, and whose specimens are lodged in Queensland with duplicates at the South Pacific Regional Herbarium..

When possible, F.R. Fosberg of the Smithsonian Institution examined and verified the identifications of all herbarium specimens. These include some specimens collected in the early 1980s by Dr. Lynn Raulerson of the University of Guam.

## VASCULAR PLANTS OF NAURU

### PTERIDOPHYTA (Ferns and Fern Allies)

#### ASPLENIACEAE

##### **Asplenium nidus** L.

"bird's-nest fern"

laulu, laukatafa, laukatapa (T)

syns. *Neottopteris nidus* (L.) Sm.; *N. curtisorus* (Christ) Hosok.; *Asplenium curtisorum* Christ; *A. phyllitidis* D. Don; *Neottopteris phyllitidis* (D. Don) J. Sm.

Indigenous? Paleotropical. Rare. Large epiphytic fern with a short creeping rhizome; fronds, up to 1 m or more long and 15 cm wide, simple, bright green, elongated, swordlike, with prominent midribs, forming a rosette-like cluster; sori numerous, linear, borne on distal parts of fronds, reaching nearly to the margin. Reported by Burgess as an epiphyte on *Calophyllum inophyllum* in 1935, but seen only as a ornamental by Thaman, Hassall, and Manner in 1980 and 1981. 2, 5, 6, 7(27813).

#### DAVALLIACEAE

##### **Nephrolepis biserrata** (Sw.) Schott

"sword fern"

dakeang, dageang (N); te keang, te keang ni Makin (K); sulufe (T)

syns. *Aspidium biserratum* (Sw.); *Nephrodium biserratum* (Sw.) Gaud.; *N. splendens* (Willd.) Gaud.; *Aspidium splendens* Willd.

Indigenous. Pantropical. Abundant. Terrestrial tufted fern with short scaly creeping to erect rhizome; stipes, up to 30 cm or longer, clustered; fronds, up to 2 m or longer and 30 cm wide, oblong-elliptic in outline, pinnate; pinnae up to 15 cm or longer and 2 cm wide, margins usually serrate, apex acuminate; sori, large, in a row at a distance from the margin (submarginal). Found in colonies and dense populations in unmined areas and in pits between pinnacles in mined areas; one of first plants to colonize mined areas; occasional as an ornamental. Leaves used occasionally in garlands. 3(58600), 4(136N), 5(44), 6, 7.



**Nephrolepis exaltata** (L.) Schott  
syn. *Polypodium exaltatum* L.

"Boston fern"

Recent introduction. Pantropical. Occasional. Fern with graceful spreading fronds. Ornamental pot plant. 3, 5(86), 6(181).

**Nephrolepis hirsutula** (Forst.f.) Presl "sword fern", "fishtail fern"  
dakeang, dageang (N); te keang (K); sulufe (T)  
syns. *Polypodium hirsutulum* Forst.f.; *Nephrodium gibbosum* (Willd.) Gaud.;  
*Aspidium gibbosum* Willd.

Indigenous. Indopacific. Occasional. Terrestrial fern with a creeping rhizome; stipes, clustered, scaly; fronds, up to 50 cm or more long, pinnate; pinnae, up to 10 cm or more long and 1 cm wide, sessile, oblong-lanceolate, serrulate, obtuse or acutish, pubescent; sori, large, round, submarginal. "Abundant amongst moist rocks." 8 (9586).

#### OPHIOGLOSSACEAE (Adder's Tongue Fern Family)

**Ophioglossum petiolatum** Hook.

"adder's tongue fern"

Indigenous. Pantropical. Occasional. Diminutive erect terrestrial fern, about 6 cm high, with creeping rhizomes; fronds, ovate to rhombic, 2.5 to 6 cm long. Found as scattered individuals in sandy open and partly shaded areas, primarily in older strip-mined areas on floors of pits between pinnacles. No reported use. 5(151), 6.

#### POLYPODIACEAE

**Polypodium scolopendria** Burm.f.

"lawai fern" (Hawaii)

dakeang, dageang (N); te keang (K); maile (T)

syns. *Phymatodes scolopendria* (Burm.) Ching; *Polypodium phymatodes* L.;  
*Phymatodes phymatodes* (L.) Maxon; *Tectaria phymatodes* (L.) Cav.;  
*Polypodium grossum* Langsd. & Fisch.; *P. hemionitis* Cav.; *Microsorium scolopendria* (Burm.f.) Copel.

Indigenous. Paleotropical. Very abundant. Terrestrial and epiphytic fern with a stout creeping rhizome; stipes, up to 30 cm or longer; fronds, up to 40 cm or more long, broadly triangular-ovate in outline, simple but deeply and broadly divided into lanceolate acute lobes; sori, large, commonly in two rows on lower surface of lobes. Found in

colonies and dense populations in unmined areas, in pits between pinnacles in mined areas, and on escarpment and cliffs below the plateau. Fragrant fronds used for making garlands, leis, and other ornamentation and boiled in coconut oil to scent it. 3(58594), 4(121N), 5(43), 6, 7(27811), 8(9578A).

**Pyrrrosia lanceolata** (L.) Farw.

syns. *Arostichum lanceolatum* L.; *Pyrrrosia adnascens* (Sw.) Ching; *Cyclophorus lanceolatus* (L.) Alst.; *C. adnascens* (Sw.) Desv.; *Polypodium adnascens* Sw.; *Niphobolus varius* Kaulf.; *Cyclophorus varius* (Kaulf.) Gaud.; *Pyrrrosia varia* (Kaulf.) Farw.

Indigenous. Trop. Asia to Polynesia. Rare. Small inconspicuous epiphytic dimorphic fern with a long creeping slender rhizome; fronds at intervals along slender rhizomes; sterile fronds, 4 to 10 cm long and 1 to 1.5 cm wide, simple, oblong-elliptic or oblanceolate; fertile fronds, up to 15 cm or longer and about 7 mm to 1 cm wide; sori, small, densely packed together on lower surface. Growing on tree. 6(173).

## PSILOACEAE

**Psilotum nudum** (L.) Beauv.

"psilotum", "reed fern"

ibiribir (N); te kimarawa (K)

Indigenous. Tropics and subtropics. Occasional. Small erect terrestrial perennial herb, up to about 30 cm or higher, arising from a stout rhizome, with many successively two-forked green 3-angled, longitudinally-ribbed branches, about 2 mm in diameter; leaves, minute, scale-like; sporangia, about 1 mm in diameter. axillary, subglobose, three-lobed. Found as scattered individuals and small clusters in shady areas under unmined vegetation on the central plateau and uncommon under trees and shrubs on escarpment. No reported use. 2(53.5), 3(58764, 58596), 5(102), 6, 7(22314).

## PTERIDACEAE

**Adiantum** sp.

"maiden-hair fern"

Recent introduction. Occasional. Fern with finely-dissected fronds and wiry black stalks. Small ornamental fern grown as a pot plant. 5, 6.

**Pteris ensiformis** Burm.f.

"sword brake"

Recent introduction. Tropical and subtropical Asia to Polynesia. Small dimorphic fern, 15 to 50 cm high, with a brown scaly rhizome; stipes, up to 30 cm or longer straw-colored; sterile fronds, 6 to 10 cm long, blades lanceolate, smooth, bipinnate, pinnules variable in size and shape, mostly oblong to linear-lanceolate, sharply serrate; fertile fronds, 15 to 25 cm long, pinnate or bipinnate, pinnules, up to 15 cm long and 7 to 10 mm wide, widely-spaced, linear; sori, marginal, near serrate. Rare. Ornamental pot plant. 6(172).

**Pteris tripartita** Sw.

"sword brake"

dakeang, dageang (N)

syn. *P. marginata* Bory

Indigenous. Paleotropical. Occasional. Large terrestrial fern with a short rhizome; stipes, up to 60 cm or longer, smooth, brown; fronds, up to 1 m or longer, tripartite, deltoid, each part divided into lanceolate pinnae; sori forming a continuous row along margins of pinnae. Found as individuals or isolated clusters at base of limestone cliffs of escarpment and in waste places near cliff base; occasionally a planted ornamental. 4(135N), 5(55), 6, 7(27815).

## GYMNOSPERMAE (Gymnosperms)

### ARAUCARIACEAE (Araucaria Family)

**Araucaria heterophylla** (Salisb.) Franco

"Norfolk Island pine"

syn. *A. excelsa* (Lamb.) R. Br.

Recent introduction. Norfolk Island. Infrequent. Stately symmetrical tree with about 5 horizontal or drooping branches, each with many branchlets, radiating from each tier; leaves, up to about 1.2 cm or longer, evergreen, stiff awl- or scale-shaped, narrowly-triangular, overlapping, borne on branchlets; cones, 7.5 to 10 cm in diameter, ovoid, woody; pollen borne in catkins, about 5 cm long, which develop singly at the ends of branchlets. Planted immature ornamental trees in home gardens near airport. 5, 6, 7.

## CYCADACEAE (Cycad Family)

**Cycas circinalis** L. "cycad", "sago palm"  
 te bam (K); laupama, laukimoa (T)  
 syn. *C. rumphii* Miq.; *C. seemannii* (A. Br.) Schuster; *C. undulata* Desf.

Recent introduction. Trop. Asia, Australia, and the Pacific islands. Occasional. Small dioecious palm-like rarely-branching plant, up to 2 m or taller, with a sturdy brown-ringed trunk; leaves, up to 1 m or longer and 30 cm or more wide, clustered in a rosette at the crown, frondlike, smooth, pinnate; pinnae, up to 30 cm long and 1 to 2 cm wide, narrowly lanceolate, with prominent midribs; male inflorescence, up to about 50 cm by 10 cm or more, borne in center of leaves, brown, cone-shaped, consisting of pollen-bearing scales; female inflorescence and fruit borne on edges of modified brown, woolly leaves, up to 30 cm long; fruit, up to 5 cm long, ovoid, somewhat compressed, with a thin fleshy orange-brown covering and nutlike seeds, with poisonous kernels. Planted ornamental. No reported use in Nauru; seed kernels processed into flour as a famine or ceremonial food in areas of Melanesia, Polynesia and Micronesia. 3, 5(46), 6, 7.

## ANGIOSPERMAE (Angiosperms or Flowering Plants)

### MONOCOTYLEDONAE

#### ARACEAE (Arum or Taro Family)

**Aglaonema commutatum** Schott "aglaonema"

Recent introduction. Indonesia to Pacific Is. Rare. Perennial herb, up to 1.5 m; leaf blades, 8 to 20 cm long and 3 to 10 cm wide, elliptic- to oblong-lanceolate, dark green with silver markings and 4 to 5 pairs of primary side veins; petioles, 5 to 15 cm long. Ornamental pot plant. 5, 6(274), 7.

**Aglaonema costatum** N.E. Br. "aglaonema"

Recent introduction. S. E. Asia. Rare. Perennial herb, up to 1 m; leaf blade, about 12.5 by 7.5 cm, stiff, ovate to heart-shaped, dark green with white markings and 5 to 10 pairs of primary side veins. Ornamental pot plant. 6(273), 7.

**Aglaonema marantifolium** Bl.

"aglaonema"

Recent introduction. S. E. Asia. Occasional. Perennial herb, up to 1 m; leaf blade, 15 to 35 cm long and 7.5 to 12.5 cm wide, oblong, pointed, dark green with light green markings along main and side veins. Ornamental pot plant. 5, 6(271), 7.

**Aglaonema** cv. "Pseudobracteata"

"Chinese evergreen", "aglaonema"

Recent introduction. S. E. Asia? Occasional. Perennial herb, up to 80 cm; leaf blades, 15 to 35 cm long and 7.5 to 12.5 cm wide, dark green with large white and light and dark green markings; petioles white. Ornamental pot plant cultivar. 5, 6(272).

**Alocasia cucullata** (Lour.) G. Don  
syn. *Arum cucullatum* Lour.

"Chinese taro"

Recent introduction. India. Occasional. Perennial herb, up to 1.5 m; leaves, up to 30 cm or more in diameter, dark green, long-stalked, rounded heart-shaped; petiole, long. Ornamental pot plant. 5, 6.

**Alocasia lowii** Hook.f.

Recent introduction. Malaysia. Rare. Perennial herb, up to 2 m; leaves, 30 cm or longer, metallic green, heart- or arrow-shaped, with silver-white veins and edges, edges entire or somewhat wavy; petioles rose colored, up to 30 cm or longer. Ornamental pot plant. 6.

**Alocasia macrorrhiza** (L.) Schott  
te kabe (K); taamu (Tuvalu)

"giant taro", "elephant ears"

syns. *Arum macrorrhizon* L.; *Alocasia indica* (Roxb.) Spach; *Colocasia gigantea* Hook.f.; *Colocasia macrorrhiza* (L.) Schott

Recent introduction. Trop. Asia. Occasional. Tall thick-stemmed (up to 15 cm in diameter) herbaceous plant, up to 2 m tall; leaves, up to 1 m long and 60 cm wide, broadly arrow-shaped, leathery, entire or wavy margins; petiole, up to 1 m long. Possibly an aboriginal introduction into Nauru, which was either never adopted as a food plant or was not used at the time of European contact. No reported Nauruan name. Planted ornamental and rare Tuvaluan food plant at Location and in food gardens near Topside Workshops, where a large specimen had been planted and mulched in a plaited pandanus-leaf basket set in the ground. Important staple food plant in Samoa and Tonga and an important supplementary staple food plant in Fiji, eastern Polynesia and on some

atolls in Tuvalu and the Tuamotu and Caroline Islands. Swollen tuberous stem cooked as a staple vegetable. Wild or naturalized, ornamental (often variegated), and edible varieties or cultivars exist in many countries, some of which are used only as a famine or emergency food. 5, 6, 7.

**Alocasia sandariana** Bull.

"alocasia", "kris plant"

Recent introduction. Philippines. Occasional. Perennial herb, up to 1.5 m; leaves, 30 cm or longer, heart- or arrow-shaped, dark green with silver-white veins and edges, reddish below, deeply-lobed edges; petioles up, to 25 to 30 cm long. Ornamental pot plant. 5, 6, 7.

**Alocasia** cv. "Amazonica"

Recent introduction. Rare. Potplant. Hybrid cross with *A. sandariana*. 6(185).

**Anthurium andraeanum** Lind.

"anthurium"

Recent introduction. Trop. America. Rare. Erect perennial, up to 1 m tall; leaves, 15 to 20 cm long and 7.5 to 12 cm wide, oblong, heart-shaped; petiole, longer than blade; flowers subtended by a plastic-like, bright red or orange-pink, heart-shaped spathe, 10 to 12 cm long, flowers borne on a yellow or white spadix, up to 15 cm long. Ornamental pot plant. 6.

**Caladium bicolor** (Ait.) Vent  
syn. *Arum bicolor* Ait.

"artist's pallet", "caladium"

Recent introduction. Brazil. Occasional. Perennial herb, up to 35 cm tall; leaf blade, 10 to 30 cm long, attractive, heart-shaped, variegated, patterned with green pink, red or white spots; leaf stalks, 3 to 6 times longer than blade. Ornamental pot plant. 3(58717, 58793), 5, 6, 7.

**Colocasia esculenta** (L.) Schott

"taro", "dasheen"

detaro (N); te taroro (K); talo (T)  
syns. *C. antiquorum* Schott; *Caladium esculentum* Vent.

Pre-World War I introduction; possibly originally an unsuccessful aboriginal introduction. Trop. Asia. Occasional. Large perennial herb rising on petioles, up to 1 m, from an underground tuber; leaves, 25 to 50 cm long and 15 to 30 cm wide, clustered, green, heart-shaped or ovate-cordate, peltate, tips pointing down; petioles, up to 1 m;

inflorescence shorter than leaves, spathe yellow, spadix shorter, cylindrical; tuber or corm, up to 30 cm long and 15 cm in diameter, often with up to 2 to 15 side tubers or cormels. Possibly an aboriginal introduction into Nauru, which was either never adopted as a food plant or was not used at the time of European contact. Food plant in Tuvaluan, I-Kiribati, and Chinese gardens at Location and Topside workshops; occasionally planted and mulched in plaited pandanus-leaf baskets. Very important, often dominant staple in other Pacific countries, although recently becoming less important in western Melanesia because of widespread infestations of taro leaf blight (*Phytophthora colocasiae*) and Alomae and Bobone viruses. Corms cooked as a staple food and the tender green leaves, and sometime the petioles, as a spinach or green vegetable. 5, 6, 7(27825).

**Cyrtosperma chamissonis** (Schott) Merr. "giant swamp taro"  
 dababai (N); te babai (K); pulaka (T)  
 syn. *Arisacontis chamissonis* Schott; *Cyrtosperma edule* Schott; *C. merkusii* (Hassk.) Schott; *Caladium cordifolium* Hartzer

Pre-World War I introduction from other areas of Micronesia; possibly originally an unsuccessful aboriginal introduction. New Guinea and western Pacific Is. Uncommon. Large massive perennial tuber-forming herb, up to 3 m high, rising from a large corm; leaf blades, up to 2 m long, but usually less, dark olive-green, erect, ovate-sagittate (arrow-shaped), only very slightly peltate, tip pointing upward, basal lobes rather pointed, sinus deep; petiole, up to 2.5 m or more, but usually less, erect, spiny on the lower part. Immature food plant at Location; small patch in poorly-drained area surrounding Buada Lagoon and six plants cultivated in moist area in mulched plaited pandanus-leaf baskets in Topside Workshop food gardens in 1987. Very important staple root crop and ceremonial food in Tuvalu and Kiribati and other low-lying atoll countries of Micronesia, but evidently not traditionally important in Nauru. Corms cooked as a staple vegetable. 5, 6, 7(27826).

**Dieffenbachia leonii** Hort. "dumb cane"

Recent introduction. Colombia. Rare. Perennial herb, up to about 70 cm high; leaves, variable in shape, green with more or less regular white areas; probably a horticultural hybrid between *D. maculata* and *D. seguine*. Ornamental pot plant. 6.

**Dieffenbachia maculata** (Lodd.) Bunt. "dumb cane"  
 syn. *D. picta* Schott

Recent introduction. Brazil. Common. Thick-stemmed erect perennial herb, less than 1 m tall, with a ringed, cane-like stem; leaves, up to 30 cm long and 15 cm wide, narrowly ovate-oblong but variable, green with many irregular ivory-white flecked

markings, midrib strong with 15 to 20 pairs of curved-ascending lateral veins; petiole, about 12 cm long, broadly grooved. Ornamental pot plant; occasionally planted in gardens. Sap causes dermatitis when applied externally and causes mouth paralysis and severe pain when taken in mouth. 3(58677, 58774), 5, 6, 7.

**Dieffenbachia seguine** (Jacq.) Schott

"dumb cane"

Recent introduction. N. S. America and Caribbean. Occasional. Thick-stemmed erect perennial herb, up to 1 m, with a ringed, cane-like stem; leaves variable, narrowly oblong or ovate-oblong but variable, dark-green with irregular white spots and 9 to 15 side veins; petiole, not, or only narrowly grooved. Ornamental pot plant. Exhibits same properties as described for *D. maculata*. 3(58677), 6, 7.

**Epipremnum aureum** (Lind. ex Andre) Bunt.

"taro vine", "pothos aureus"

syns. *Rhaphidophora aurea* (Lind. ex Andre) Birds.; *Scindapsus aureus* (Lind. ex Andre) Engl.; *Pothos aureus* Lind. ex Andre; *Epipremnum pinnatum* cv. "Aureum".

Recent introduction. Solomon Is. Occasional. Branched high climbing vine with thick rope-like stems with adventitious rootlets; leaf blades, up to 50 cm long and 35 cm wide, ovate-subcordate, deeply-lobed, petiolate, variegated green and cream or pale-yellow with irregularly-spaced bands on each side of the midrib, lateral veins slightly ascending. Planted ornamental. 3(58724), 5, 6, 7.

**Monstera deliciosa** Liebm.

"monstera", "fruit salad plant", "taro vine", "ceriman"

Pre-World War II introduction. C. America and Mexico. Rare. Perennial epiphytic stout-stemmed herbaceous vine, nodes often with long hanging aerial roots; leaf blades, up to 80 m long, thick, dark-green, heart-shaped, pinnately-lobed or parted, grooved, often conspicuously perforated; petioles, up to 90 cm long; inflorescence with stalk, up to 15 cm long, spathe rather thick, up to 24 cm long, pale-yellowish, spadix up to 20 cm long and 5 cm wide, cone-shaped; fruit, edible berries, up to 1 cm long, numerous, yellowish-green to purplish, edible, borne on spadix. Pot plant and planted ornamental. 3(58727), 5, 6, 7.

**Philodendron hastatum** C. Koch & Sellow

"philodendron"

Recent introduction. Brazil. Rare. Perennial herbaceous climbing vine; leaf blades, up to 25 cm long, oblong heart-shaped to sagittate or hastate, medium-green, shiny; petiole, 15 cm or longer. Ornamental pot plant. 6, 7.



**Philodendron scandens** C. Koch & Sellow ssp. **oxicardium** (Schott) Bunt. "philodendron"  
syn. *P. oxycardium* Schott

Recent introduction. Trop. America. Rare. Perennial herbaceous climbing, twining vine; leaf blades, up to 30 long and 20 cm wide, shiny green, heart-shaped, tapering to a fine point; petioles 10 to 20 cm long. Ornamental pot plant. 6(238), 7.

**Philodendron** sp. "philodendron"

Recent introduction. Trop. America. Rare. Ornamental pot plant. 5 (238), 7.

**Scindapsus pictus** Hassk. var. **argyraeus** (Engl.) Engl. "silver vine"

Recent introduction. Indomalaya. Rare. Tall fleshy perennial herbaceous vine; leaves, up to 30 cm or longer, thick, leathery, oval to heart-shaped, pointed tips curved to one side, dark green with silver dots or marbling. Ornamental pot plant. 6(225).

**Spathiphyllum** cv. "Clevelandii" "spathiphyllum", "white sails"

Recent introduction. Rare. Hybrid perennial herb, up to 80 cm; leaf blade, up to 25 cm by 10 cm, dark green, narrow ovate or oblong; flowers, arising on long slender flower stems from the base to above the leaf tops, bearing attractive white flower bracts or spathes and white spikes or spadices, 5 to 10 cm long. Ornamental pot plant. 6, 7.

**Syngonium angustatum** Schott "syngonium"  
syn. *S. podophyllum* sensu Souder non Schott

Recent introduction. Mexico. Occasional to common. Climbing or creeping perennial herb; leaf blades, up to 20 cm long, shining green, palmate, deeply three- to nine-parted, held erect on rigid stems. Pot plant and planted ornamental. 3(58722), 5, 6, 7.

**Xanthosoma lindenii** (Andre) Engl.

Recent introduction. Colombia. Rare. Perennial erect herb; leaf blades, up to 30 cm long and 7.5 cm wide, spear-shaped, green, principal midrib and side veins white, under surface green; petioles green, up to 30 cm long. Ornamental pot plant. 6.

**Xanthosoma sagittifolium** (L.) Schott "tannia", "yautia", "cocoyam", "American taro"  
detaro (N); te taororo (K); talo Palagi (T)  
syn. *Arum sagittifolium* L.

Pre-World War II introduction. W. Indies. Occasional. Large taro-like tuberous perennial herb, up to 2 m or higher; leaf blades, up to 50 cm or longer and 40 cm wide, thick, sagittate (arrow-shaped), glaucous, green to purple-green; petioles, up to 1 m long, arising from a central tuber or corm with up to 10 or more lateral tubers or cormels, each 15 to 25 cm long. Food plant in home gardens at Location and near Nauruan home at Buada; occasionally planted and mulched in pandanus-leaf baskets at Topside workshops; found primarily in Tuvaluan gardens. Important staple food crop throughout Melanesia and Polynesia. Possibly introduced into Nauru in the late 19th or early 20th century, but never becoming as important as in other areas of the Pacific. Side cormels cooked as a staple and tender young leaves cooked as a green vegetable or spinach. 5, 6, 7.

#### ARECACEAE/PALMAE (Palm Family)

**Caryota urens** L. "fishtail palm", "wine palm", "toddy palm"

Recent introduction. Trop. Asia. Rare. Erect single-stemmed palm, up to 10 m; fronds, up to 5 to 6 m long, drooping, bipinnate, with wedge-shaped fishtail-like leaflets, irregularly and jaggedly toothed; flowers, numerous, grouped in threes, one female between two male flowers, hanging in clustered panicles, each produced successively lower on the trunk from the leaf (frond) nodes, until the lowest node flowers and produces seed, after which the plant dies; fruit, ovoid, red, juicy, surrounding a kidney shaped seed. Planted ornamental. 6.

**Chrysalidocarpus lutescens** H. Wendl. "golden cane palm", "golden-fruited palm"

Recent introduction. Madagascar. Rare. Small erect many-trunked clump-forming palm, up to 5 m or more high, with smooth bamboo-like ringed trunks; fronds, arching, light green, turning yellow-orange with age, deeply divided into long narrow forked segments, each about 2.5 cm wide; flowers, borne in clusters among the leaves, male and female flowers separate in the same cluster; fruit, yellow, date-like. Planted ornamental. 5, 6.

**Cocos nucifera L.**

"coconut palm"

ini (N); te ni (K); niu (T)

Aboriginal introduction. S. Asia and Indian Ocean Islands. Abundant. Tall erect single-stemmed palm with a slender, more or less curved or inclined, trunk, up to 30 m tall; leaves, up to 4 m or longer, clustered at top of trunk, frond-like, pinnate, with numerous narrow oblong-lanceolate leaflets (pinnae), 25 to 90 cm long; flowers, in clusters on a simple-branched spadix, up to 1.2 m or longer, which originates in the axils between the leaves, with female flowers at the base of the branchlets and small male flowers near the tips and over the remainder of the branchlets; each spadix subtended by a stout woody, boat-shaped, beaked bract or spathe; fruit, 15 to 30 cm long, subglobose to ovoid or ellipsoid, one-seeded, with a thick fibrous husk surrounding a hard nut filled with hard white oily edible pulp and, when young, with sweet water. Planted extensively on coastal strip, around Buada Lagoon, near roads in strip-mined areas; occasional on plateau and escarpment; common along strand; common in Nauruan home gardens and occasionally planted around contract workers quarters at Location and Topside workshops. Cultivars include *inur*, *ito*, *ita*, *inamaro* and *ini*. Formerly important for copra production for export; trunks used in house construction and for animal pens; midrib of frond used for flooring and walls of houses; young fronds used for weaving baskets, food containers and parcels, mats, housing thatch, fans, hats, dividers for communal fish farming in Buada Lagoon, and other plaited ware and for making skirts (*ridi*); old and young fronds used for roofing; coir and dry leaves important as tinder in making fire by friction and carrying fire; midrib of leaflets or pinnules used in brooms and in weaving; soft endosperm (meat) and water (milk) of young, green nuts (*ini*) consumed; meat of mature nuts (*eanikiwi*) grated and eaten in a variety of ways and squeezed and boiled, usually with flowers or leaves, to make perfumed coconut oil; coconut endosperm ("meat") has been an important staple throughout the small-island Pacific and in coastal areas of larger islands, with some people receiving up to 70% of their dietary calories from this source; it was also undoubtedly the main staple plant food of Nauruans in the past and a major food for chickens and pigs; coir or husk of both green and mature nuts used to make strong fibre and cordage (sennit) for strainers, affixing tool handles, boat and house lashings, fishnets and lines, belts, canoe caulking, corks or stoppers, slings; dried fronds, husks, and shells used as fuel for cooking; shells used for making charcoal, one of the main uses being to fuel hand irons in the past; shells used to make drinking cups in the past; sap from flower spathe tapped to make toddy (*karawai*) and then often boiled down to make a molasses-like syrup (*kamaimai*); toddy often allowed to ferment to become alcoholic "sour" toddy; loose burlap-like tissue (*inini*) at the base of the fronds used to strain coconut milk; dust or pollen collected on lower ends of fronds used as a blood coagulant and disinfectant; coconut oil use to treat tinea; inside of very small immature nuts used in post-natal medicine; very young leaves, without the midrib, chewed and used as a medicine for fever and infantile beriberi. 2, 3, 5, 6, 7.

**Livistonia chinensis** (Jacq.) R. Br.  
syn. *Latania chinensis* Jacq.

"Chinese fan palm", "fountain palm"

Recent introduction. China, Ryukyu and Bonin Islands. Rare. Attractive single-stemmed erect palm, up to 10 m tall, but normally less than 5 m, with a ringed gray trunk; fronds, rounded or palmate, fan-like, about 1.5 m or more in diameter, pleated in middle and divided radially into 70 to 90 leaflets, about 4 cm wide, each with yellow-green midribs and split (bifid) drooping tips; petioles, up to 2 m long and 15 cm wide, with stout tooth-like spines, up to about 1.5 cm long, on the lower part; flowers, borne in large numbers in clusters on branchlets of long branched inflorescences; fruit, up to 2 cm long, dull bluish-green, olive-like. Ornamental pot plant and planted ornamental. 6, 7.

**Phoenix** sp.

"date palm"

Recent introduction. Rare. Erect single-stemmed palm with feather-like pinnate fronds. Planted ornamental on Command Ridge. 5, 6(61).

**Pritchardia pacifica** Seem. & Wendl.  
dabam (N); te bam (K)

"Pacific fan palm", "Fiji fan palm"

syn. *Eupritchardia pacifica* (Seem. & Wendl.) O. Ktze.

Recent introduction. Fiji, Tonga, and Samoa. Rare to occasional. Erect single-stemmed spineless palm up to 10 m tall; fronds, 1 m long and 1.2 m wide, spreading from the crown, wedge- or fan-shaped, pleated or folded in middle, when young, and divided radially into numerous leaflets with forked, scarcely drooping tips; petioles, about 1.5 m long, stout; flowers, numerous brownish, borne in clusters on branched axillary panicles; fruit, about 1.2 cm in diameter, ovoid, green to blackish, 1 seeded. Planted ornamental at the Meneng Hotel. Small edible fruit consumed in Fiji, Tonga and elsewhere in the Pacific but reportedly not eaten in Nauru. 3, 5, 6, 7.

**Roystonea elata** (Bartr.) Harper  
dabam (N)

"royal palm"

syns. *Palma elata* Bartr.; *Roystonea regia* (HBK.) O.F. Cook; *Oreodoxa regia* HBK.

Recent introduction. Cuba and Florida. Rare. Erect single-stemmed symmetrical palm, up to 15 m or taller, with a smooth greenish-grey to whitish trunk; fronds, up to 3 m long, pinnate, arching from crown and radiating from a long green cylinder of leaf sheaths which looks like an extension of the trunk; leaflets, nearly 1 m long, diverging at various angles; inflorescence, up to 1 m long, borne below the leaves, many-branched, with a long, slender boat-shaped spathe; flowers, usually in groups of 3, of which 2 are

staminate and 1 pistillate, cream-colored with violet stamens; fruit, less than 2 cm long, ovoid, purplish, one-seeded. Planted ornamental. 5(137), 6, 7.

### BROMELIACEAE (Pineapple Family)

**Ananas comosus (L.) Merrill** "pineapple"  
 te bainaboro (K); fara, painapolo (T)  
 syns. *Bromelia comosa* L.; *B. ananas* L.; *Ananas sativus* Schult.f.; *A. ananas* (L.) Karst.

Pre-World War I post-European contact introduction. Brazil. Rare. Green to bluish-grey short-stemmed perennial herb, up to 1 m high; leaves, sword-shaped, succulent, pointed and sometimes armed (spiny), arranged in a bushy rosette; inflorescence, terminal, many-flowered head with small blue flowers; fruit, a pinecone-shaped or globose syncarp, 15 to 30 cm long, yellow-brown to green, surmounted by a crown of small leaves, which is composed of many 6-sided berries arranged spirally and embedded in yellow pulp. Food plant in home gardens at Location and Topside Workshops and occasionally in expatriate home gardens. Fruit edible. 3, 5, 6.

**Nidularium innocenti** Lem.

Recent introduction. Brazil. Rare. Perennial rosette-forming herb, up to 50 cm of higher; leaves, strap-shaped, finely-toothed, radiating from a rosette, overlapping bases forming water-holding reservoirs; flowers, central, small, white with showy red-orange bracts. Ornamental pot plant. 6.

**Tillandsia usneoides** L. "Spanish moss", "Florida moss", "long moss"

Recent introduction. Trop. America. Rare. Pendulous, rootless epiphyte with slender, wiry stems, up to 4 m or longer; leaves, 2.5 to 7.5 cm long, grey, narrow, curved, threadlike, scattered at regular intervals along stem; flowers, nearly 12 mm long, axillary, inconspicuous, single, yellowish. Planted ornamental. 6.

**Vriesia** sp. "vriesia"

Recent introduction. Trop. America. Rare. Perennial herb with stiff smooth-edged variegated leaves arranged in a rosette. Ornamental pot plant. 6.

## CANNACEAE (Canna Family)

**Canna indica** L.

"Indian shot", "canna"

Recent introduction. W. Indies. Rare. Perennial herb, to over 1 m high; leaves, 15 to 50 cm long and 10 to 25 cm wide, oval to narrow, rather fleshy, borne on long slender erect green stems, up to 1 to 1.5 m long; flowers, orchid-like, red, yellow or speckled (variegated), in loose erect clusters; fruit, warty, black, capsular, nearly globose, containing a variable number of round black seeds. Planted ornamental. Most ornamental specimens are showy hybrids or selections. 6(189), 7.

## COMMELINACEAE (Dayflower Family)

**Dichorisandra thyrisiflora** Mikan

"blue ginger"

Recent introduction. Brazil. Rare. Perennial herb up to 1 m tall; leaves, shiny-green, spirally arranged; flowers, terminal, blue to violet-blue and white, borne on a stalk in a cone-shaped flower panicle. Planted ornamental. 6.

**Rhoeo spathacea** (Sw.) Stearn

"tradescantia", "oyster plant", "Moses in a boat"

syns. *Tradescantia spathacea* Sw.; *T. discolor* L.'Her.; *R. discolor* (L'Her.) Hance

Recent introduction. Mexico and W. Indies. Occasional. Perennial short-stemmed herb, up to 40 cm high; leaves, up to 20 to 30 cm long and 4 to 6 cm wide, lance- or sword-shaped, stiff, succulent, shining green above, purplish beneath, borne in crowded rosettes; flowers, small, white, in axillary clusters within boat-shaped purple bracts; fruit, capsular, 3-valved. Pot plant and planted ornamental; planted along borders in ornamental gardens. 3(58703), 5, 6, 7.

**Setcreasia purpurea** B. K. Boom

"purple tradescantia", "purple heart"

Recent introduction. Mexico. Rare. Perennial smooth-stemmed trailing herb, up to 30 cm high; leaves, up to 15 cm long and 3.5 cm wide, ovate-acuminate, black-purple above and purple beneath, with woolly hairs along margins; long purple flowering stems, up to 30 cm, bearing purple bracts and rose-pink flowers in dense clusters. Ornamental pot plant. 3(56779), 6, 7.

**Tradescantia fluminensis** Vell.

"wandering Jew"

Recent introduction. S. America. Rare. A trailing perennial herb with green or purplish wiry stems; leaves, 2.5 to 7.5 cm long, oblong, bright green or white-striped, sometimes purplish beneath; flowers, small rose-purple to whitish, each with two leafy bracts. Ornamental pot plant. 6.

**Zebrina pendula** Schnizl.

"purple wandering Jew"

Recent introduction. Mexico. Occasional. A fleshy trailing perennial herb; leaves, up to 6 cm long, ovate, reddish-purple beneath and silver-green with purple bands down the middle and around the edges above; flowers, 3-petaled, pink to rose-purple, borne in bract-like leaves near stem tips. Ornamental pot plant. 3(56780), 5, 6, 7.

#### CYPERACEAE (Sedge Family)

**Cyperus alternifolius** L.

"umbrella plant", "umbrella sedge"

Recent introduction. Madagascar. Rare. Tufted sedge with many stout dark green flowering stems, up to 120 cm or higher; basal leaves reduced to lanceolate, acuminate sheaths, 10 to 20 cm long; flower heads, terminal, umbel-like, composed of arching leaf-like bracts, up to 25 cm long and 1 cm wide, borne at the end of stems, and umbel-like inflorescences, 7 cm across, on rays, up to 10 cm long, with numerous spikelets, up to 3 cm long, crowded at the tips; fruit, 3-angled achene, less than 1 mm long. Planted ornamental. 6, 7.

**Cyperus compressus** L.

"sedge"

Recent introduction? Pantropical. Occasional. Tufted sedge with erect to spreading thin triangular stems, up to 40 cm long; leaves, 1.5 to 3 mm wide, threadlike, shorter than sheathing stems, which are up to 3 cm long, and often reddish; spikelets, 1 to 2.5 cm long and 3 to 5 mm wide, green, 12 or more borne in umbellate clusters subtended by 3 or more leaf-like bracts, each about 3 mm long; fruit, a 3-angled, obovoid achene, sides slightly concave, brown to almost black. Weed growing in rather dense populations in low ground near Buada Lagoon and swampy area near bottom of escarpment. 3(58644), 6.

**Cyperus iria** L.

"sedge"

Recent introduction. Sedge up to 40 cm high; leaves, few, shorter than culms; inflorescence, branched spikes, about 2.5 cm long, 12- to 20-flowered, spikelets about 6 mm long, bracts longer than inflorescences; fruit, a 3-angled, narrowly ovoid, yellow-brown achene. Rare weed. 5(90a).

**Cyperus javanicus** Houtt

"sedge", "marsh cypress"

reyenbangabanga (N); te ritanin (K); mouku (T)

syns. *C. canescens* Vahl; *C. pennatus* Lam.; *C. stuppeus* Forst.f.; *Mariscus javanicus* (Houtt.) Merr.; *M. albescens* Gaud.; *M. pennatus* (Lam.) Domin; *M. stuppeus* (Forst.f.) Merr.

Indigenous? Paleotropical. Abundant. Large perennial tufted sedge, up to 1 m high, with triangular stems; leaves, 7 mm or more wide, are often longer than flowering stems, firm, rough, serrulate; inflorescence, compound umbrella-like flower clusters, to about 15 cm across, with branched rays, up to 10 cm long, bearing spikes, to nearly 2.5 cm to 3.5 cm long, and crowded green to brownish spikelets, about 4 to 8 mm long; fruit, 1.5 mm long, 3-angled, ellipsoid, dark-brown or black achene. Found growing wild in isolated clusters and tufts and in colonies or dense populations in moist habitats on the coastal strip, surrounding Buada Lagoon, on the inner border of the coastal strand, and occasionally in mined areas. Stems used as stringers for garlands and for stringing fish; swollen bottoms eaten occasionally in the past. The name "reyenbangabanga" means literally the "surrounding border", referring to the way in which *C. javanicus* surrounds parts of Buada Lagoon. 3(53634), 4(160N), 5(90), 6(218), 7(27824), 8(9576).

**Cyperus papyrus** L.

"papyrus", "Egyptian paper"

Recent introduction. Africa and Mediterranean. Rare. Tall perennial clump-forming green-stemmed sedge, 1 to 4 m high; leaves, basal ones reduced to bladeless sheaths, the involucreal leaves much shorter than inflorescence; inflorescence, umbel-like flower cluster of tufted yellow-green flower heads on drooping threadlike rays, 10 to 40 cm long, with linear spikelets, 6 to 10 mm long and 1 mm across, bearing 6 to 20 scales; fruit, an oblong, 3-angled achene. Planted ornamental. 5, 6.

**Cyperus rotundus** L.

"nut sedge", "nut grass"

ibugibugi (N); te mutemute (K); mouku (T)

syn. *C. hexastachyos* Rottb.

Pre-World War II introduction? Cosmopolitan. Common. Perennial tufted erect sedge, 10 to 50 cm high, with hard, scaly brown-black tubers borne on underground runners or rhizomes; leaves, 5 to 15 cm long and 2 to 5 mm wide, grass-like, folded



along the midrib; inflorescence, reddish-brown flower spikelets, 1 to 2 cm long, and 2 to 4 leaf-like bracts, 1 to 12 cm long, borne on unequal rays, to 6 cm long, in loose terminal umbels borne at the top of three-angled flowering stems (culms), 10 to 40 cm tall; fruit, about 1.5 mm long, brown, oblong, 3-sided achene. Weed in gardens; growing in extensive stands as lawns; in swamps in Meneng. 3(58686), 4(149N), 5(89), 6, 7, 8.

**Eleocharis ochrostachys** Steud.

"sedge"

syn. *E. laxiflora* (Thw.) H. Pfeiff.

Recent introduction. Asia. Rare. Erect perennial sedge, 35 to 70 cm tall, with pithy stems; leaves, reduced to basal sheaths; inflorescence, a cylindrical spikelet, 10 to 20 cm long and 3 to 4 mm across, with numerous green to yellowish-brown scales, 4 to 5 mm long, and 5 to 7 bristles; fruit, 1.5 to 2 mm long, 2-sided, obovate, shiny brown to gray achene. Planted ornamental. 6(210).

**Fimbristylis cymosa** R. Br.

"sedge", "beach sedge"

ibugibugi, ibiugbiugi; te uteute ni mane (K); mouku (T)

syns. *F. spathacea* Roth; *F. pyncnocephala* Hillebr.; *F. glomerata* (Retz.) Nees ex K. Schum. non (Schrad.) Nees; *F. atollensis* St. John; *F. wightiana* Nees

Indigenous. Pantropical. Abundant. Perennial tufted sedge, 10 to 50 cm high, with erect 3-angled stems; leaves, 5 to 30 cm long and 1.5 to 4 mm wide, numerous, stiff, linear, densely-clumped; inflorescence, a head or simple umbel with 3 to 8 primary rays, 1 to 4 cm long, and single or clustered brown spikelets, 1 to 4 mm long, in globose heads, 5 to 10 mm in diameter, borne on 3-angled flowering stems (culms), 10 to 60 cm high; fruit, less than 1 mm long, 2- to 3-sided, obovate, brown-black achene. Found growing in clusters or tufts in open and semi-open places on the coastal strip and in mined areas on the plateau. No reported use on Nauru. 2, 3(58613, 58670), 5, 6(210), 7.

**DIOSCOREACEAE (Yam Family)**

**Dioscorea alata** L.

"yam", "greater yam", "winged yam"

te iam (K); 'ufi (T)

Pre-World War II introduction. S. E. Asia. Rare. Herbaceous or shrubby, twining, high-climbing tuberous vine with square, more or less winged, unarmed, four-angled stems; leaves, up to 12 to 25 cm or longer and 8 to 15 cm wide, opposite, ovate or heart-shaped (cordate), palmately 5- to 11-nerved; petiole, nearly half, to nearly as long as blade; flowers, rarely-seen, small, greenish, in narrow terminal axillary panicles,

up to 30 cm or more long; tubers, large, up to 10 kg or more in weight, variable-sized, globose, cylindrical or lobed, black- to brown-skinned, with white to purplish flesh. Food plant in home gardens at Location and Denigomodu. Important staple food crop in many parts of Melanesia, Polynesia and Pohnpei (Ponape), Yap and other high islands in Micronesia, where numerous named cultivars are recognized, but insignificant in Nauru. Tuber cooked as a staple vegetable. 5, 6.

**Dioscorea esculenta** (Lour.) Burkill "lesser yam", "sweet yam", "Goa yam"  
syns. *Oncus esculentus* Lour.; *Dioscorea fasciculata* Roxb.

Pre-World War II introduction. S. E. Asia. Rare. Herbaceous or woody, twining, high-climbing tuberous vine with cylindrical thorny or armed stems; leaves, 10 to 15 cm long and wide, alternate, heart-shaped or orbicular, woolly-pubescent; petioles as long as the blades; flowers, 4 to 5 mm wide, rarely-seen, small, green, borne in slender axillary panicles, up to 40 cm long; tubers, 15 to 20 cm long, clustered, ovoid, potato-like, with thin brownish skin and white, slightly sweet flesh. Food plant in home gardens at Location and Meneng. Important staple in parts of Papua New Guinea and Solomon Islands and a supplementary staple crop in many areas of Melanesia, Polynesia and Micronesia. Tuber cooked as a staple vegetable. 5, 6.

#### IRIDACEAE (Iris Family)

**Gladiolus** sp. "gladiolus"

Recent introduction. S. Africa. Rare. Erect herbaceous bulbed annual, up to 1 m or higher, of which many hybrid cultivars exist; leaves, up to over 60 cm long and 2 to 3 cm wide, erect, strap- or sword-shaped; flowers, 5 cm or more in diameter, few to many, showy, white, yellow, red or purplish, often variegated, with curved funnel-shaped tubes and oblong segments, born in 1-sided spikes on flowering stems which are longer than the leaves. Planted ornamental. 5, 6, 7.

**Iris** sp. "iris"

Recent introduction. Origin? Rare. Erect herbaceous rhizomatous perennial, up to 60 cm or higher, of which many hybrid cultivars exist; leaves, several, flat, narrow, forming a fan-shaped cluster at the base of an erect flower stem; flowers, blue to purplish-blue. Planted ornamental. 5, 6(100).

**Tigrida pavonina** (L.f.) Ker-Gawl.

"tiger flower"

Recent introduction. Mexico and Guatemala. Rare. Erect herbaceous bulbed perennial, up to 75 cm tall; leaves, about 30 cm long, stiff, narrow, almost pleated; inflorescence, a branched or unbranched flower stem, up to 60 cm or more, bearing three-lobed, red, orange, yellow or white, often spotted, flowers, 7 to 15 cm in diameter, which appear one after another from bracts, 7 to 12 cm long. Planted ornamental. 6.

### LILIACEAE (Including Agavaceae and Amaryllidaceae)(Lily Family)

**Agapanthus africanus** (L.) Hoffmannsegg

"African lily", "lily of the Nile"

Recent introduction. S. Africa. Rare. Erect perennial herb, up to 60 cm tall; leaves, strap-shaped, evergreen; inflorescence, tall flowering stems bearing showy flower heads with many blue, violet-blue or white funnel-shaped flowers, each about 5 cm long. Planted ornamental. 6.

**Agave americana** L.

"century plant", "malina"

Recent introduction. Mexico. Rare. Large stemless erect perennial succulent herb, up to 2 m or higher; leaves, 80 to 160 cm long and 15 to 20 cm wide, thick, fleshy, pointed and spined, variegated with yellow to white margins, borne in a massive rosette of 30 to 60 leaves; flowers, 7.5 cm long, yellow-green, borne in clusters on a tall pole-like branching stem, up to 6 to 10 m high, arising from the center of the rosette. Planted ornamental. 5(68), 6.

**Agave rigida** Mill.

"sisal", "sisal hemp", "malina", "agave"

te robu (K)

syn. *A. sisalana* Perr.

Pre-World War II introduction? Mexico. Occasional. Large stemless perennial succulent herb, up to 2 m or higher; leaves, up to 150 cm long and 10 to 15 cm wide, thick, stiff, fleshy, spine-tipped, bluish, arranged in a large rosette; flowers, up to 5 cm long, shortly-tubular, yellow-green, borne in panicles on a tall branching stem, up to 8 m high, arising from the center of the rosette. Established locally, especially along edges of old strip-mined area. Grown for export in some tropical areas for the fibre from its leaves which is made into rope and other products. 3(58739), 5, 6(215), 7.

**Allium ascalonicum** L. "shallot"  
te anian (K); ts'ung (C)

Pre-World War II introduction. Palestine. Occasional. Small erect green herb, up to 35 cm; leaves, 20 to 35 cm long and 5 to 15 mm wide, narrow, strap-shaped, growing from many clustered individual white to reddish bulbs, surrounding a single planted bulb, which separate into segments or "cloves". Cultivated in Chinese food gardens in beds and containers at Location and Topside workshops. Pungent bulbs and tender leaves eaten raw or cooked as a spice or vegetable. 5, 6, 7.

**Allium cepa** L. "bulb onion", "common onion"  
te anian (K)

Recent introduction. Persia. Rare. Herb with hollow flattened tubular leaves and a well-developed white or light-green, generally single, bulb with white to yellow-brown skin. Single immature plant in Chinese food garden at Location. 6.

**Allium fistulosum** L. "green onion", "spring onion", "Welsh onion",  
"Japanese bunching onion" te anian (K); ts'ung (C)

Pre-World War II introduction. E. Asia. Occasional. Erect green herb, up to 50 cm tall; leaves, 25 to 50 cm long and 1 to 2 cm wide, green, round, tubular, clustered, with white, slightly swollen stems which produce no bulbs. Cultivated food plant in Chinese gardens at Location. Pungent tender leaves and stems eaten raw or cooked as a spice or vegetable. 5, 6.

**Allium porrum** L. "leek"

Recent introduction. Eurasia. Rare. Herb with long flattened and folded leaves, up to 70 cm long, a long white neck below the leaves, and a small white bulb. Single plant growing in food garden at Location. 6.

**Allium sativum** L. "garlic"  
suen, suen t'au (C)

Pre-World War II introduction. S. Asia. Occasional. Erect green herb, up to 30 cm high; leaves, 10 to 30 cm long and 1 to 2 cm wide, flat, strap-shaped, with a well-developed segmented bulb with a strong persistent odor, which separates into several segments or "cloves". Plant in Chinese gardens at Location. Grown from bulbs, mainly for its pungent edible green leaves which are used as a spice or green vegetable in Chinese cooking. 5, 6.

**Allium schoenoprasum** L. "chives"

Recent introduction. N. hemisphere. Rare. Erect herb, up to 25 cm high, forming grass-like clumps; leaves, 10 to 25 cm long and 1.5 to 3 mm wide, fine, tubular, with a poorly developed bulb. Pot herb cultivated in container at Cliff Lodge. Tender green leaves used as a spice by European residents. 5, 6.

**Allium tuberosum** Rottler ex Sprengle "Chinese chives"  
sai ts'ung (C)

Pre-World War II introduction. E. Asia. Common. Erect herb, up to 30 cm high; leaves, 20 to 30 cm long and 3 to 4 mm wide, flat, ribbon-like, with a poorly developed bulb. Cultivated in Chinese food gardens at Location and Topside workshops for its edible green leaves. 5, 6, 7.

**Asparagus aethiopicus** L. "asparagus fern", "Sprenger asparagus"  
syns. *A. densiflorus* (Kunth) Jessup; *A. sprengeri* Reg.

Recent introduction. S. Africa. Occasional. A much-branched arching wiry-stemmed perennial, up to 1 m, bearing open whorled fern-like leaf clusters; "leaves", up to 2 to 2.5 cm long, shiny, flat, narrow, pale-green, lanceolate; flowers, small, fragrant, pinkish; fruit, small, red, 1- to 3-seeded berries, about 8 mm in diameter. Ornamental pot plant. 3(58711), 5, 6(167, 180).

**Asparagus setaceus** (Kunth) Jessup "asparagus fern"  
syns. *Asparagopsis setacea* Kunth; *Asparagus plumosus* Baker

Recent introduction. S. Africa. Rare. Slightly woody and spiny climbing, many-branched perennial, up to 1 m, forming flat horizontal fern-like sprays; "leaves", up to 8 mm long, fine, fern-like or needle-like; flowers, minute, white; fruit, small, blackish, 1- to 3-seeded berries. Ornamental pot plant. 6(169), 7.

**Chlorophytum capense** (L.) Voss "spider plant", "ribbon plant", "bracket plant"  
syns. *C. comosum* (Thunb.) Jacq.; *C. elatum* R. Br.

Recent introduction. Africa. Rare. Evergreen perennial herb, up to 30 cm or higher, with tuberous rhizomes; leaves, 15 to 30 cm long and 1.5 to 2.5 cm wide, rosetted or tufted, grass-like, arching, variegated with mid-green and white or yellow

longitudinal bands; flowers, small, starry-white, 6-parted, borne in loose clusters on flower stems, up to 1.5 m long, and tipped with leafy offshoots or plantlets; fruit, a leathery 3-angled capsule with flat seeds. Ornamental pot plant. 3(58690), 6.

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

"cordyline", "ti-plant" (Hawaii)

te rauti (K); ti (T)

syns. *Convallaria fruticosa* L.; *Cordyline terminalis* (L.) Kunth; *Taetsia fruticosa* (L.) Merr.; *T. terminalis* (L.) W. F. Wight

Recent introduction. Trop. Asia or Australasia? Occasional. Woody erect shrub or tree-like branched or unbranched perennial, up to 2 m or taller; leaves, up to 60 cm long and 15 cm wide, lanceolate or oblong, smooth, tough, shiny dark-green to rust or red, borne in rosettes clustered in spirals near the tips of the branches; petioles, 5 to 15 cm long; flowers, numerous, white to lilac-tinted, borne on large branching terminal panicles, about 30 cm long; fruit, globose, about 5 mm in diameter, thinly fleshy, red, purplish, or yellowish; seeds, obovoid, black, glossy; some cultivars with a large edible tuberous root. Planted ornamental and pot plant. Very important ceremonial and magico-religious plant, a traditionally important supplementary food plant and famine food, and important decorative plant, with numerous other cultural uses in Melanesia and Polynesia, where numerous named cultivars and hybrids exist. The large sweet white tubers of some cultivars are baked for days in earthen ovens to be consumed as food, sweets or confectionery, or, in Hawaii, made into an alcoholic beverage known as *okolehao*; leaves important for parcelling food and dancing skirts and body ornamentation. Apparently a recent introduction into Nauru with no reported non-ornamental local uses. 3(58676), 5, 6(186), 7.

***Crinum asiaticum* L.**

"spider lily", "crinum lily", "grand crinum"

dagiebu, dagibu (N); te kiebu (K); tapua, talotalo (T)

syns. *C. pedunculatum* R. Br.; *C. procerum* Bak.

Recent introduction. Trop. Asia. Occasional. Perennial erect bulbous herb, up to 1.5 m or taller; leaves, up to 1.5 m long and 20 cm wide, many, arching, fleshy, strap-shaped, green to yellow, rising from a whitish stalk; inflorescence, an umbel-like flowerhead bearing 10 or more spider-like, 6-parted, fragrant, white flowers, with flowering tubes, up to 10 cm long, white filaments and purplish styles, borne on a flattened fleshy flowering stem (scape); fruit, subglobose, beaked, 1- to 2-seeded; seeds, large, fleshy. Planted ornamental. Flowers used in garlands; roots crushed for the treatment of filariasis. 3, 5(122), 6(216), 7.

**Crinum augustum** Roxb. "crinum lily", "Queen Emma lily"  
dagiebu, dagibu (N); te kiebu (K)

Pre-world War II Introduction? Mauritius and Seychelles. Large perennial erect bulbous herb, up to over 1 m tall; leaves, up to 1.5 m long and 12 cm wide, stemless, strap-shaped, tapering; flowers, white with dark reddish-purple markings, segments, 15 to 16 cm long by 2 to 2.5 cm wide, filaments and style purple, borne on a flower stalk which divides into numerous short cluster-bearing stalks. Occasional. Planted ornamental; flowers used in garlands. 5, 6, 7(22319).

**Crinum macrantherum** Engl.  
dagiebu, dagibu (N)?  
syn. *C rumphii* Merr.

Pre-World War II introduction. Listed as *C. macrantherum* on Burgesses'(1935) list. Rare? Planted ornamental. 2.

**Crinum moorei** Hook.f. "veld lily"

Recent introduction. S. Africa. Rare. Perennial bulbous herb, up to 1 m high; leaves, 60 to 90 cm long and 7.5 to 10 cm wide, lanceolate, smooth; flowers, fragrant, rose, pink or white, funnel-shaped with curved tubes, up to 10 cm long and 2.5 cm wide, and segments, up to 10 cm long. Planted ornamental. 5(63).

**Dracaena deremensis** Engler "dracaena"  
syn. *Pleomele deremensis* (Engler) N.E. Br.

Recent introduction. Trop. Africa. Rare. Woody palm-like erect shrub, up to 1.5 m or taller; leaves, up to 45 cm by 5 cm, sword-shaped, longitudinally green and white-striped, apetiolate. Ornamental pot plant. 6, 7.

**Dracaena fragrans** (L.) Ker-Gawl. "dracaena", "dragon flower", "pleomele"  
syns. *Alectris fragrans* L.; *Pleomele fragrans* (L.) Salisb.

Recent introduction. Trop. Africa. Rare. Woody palm-like erect shrub, up to 3 m or higher; leaves, up to 90 cm long by 10 cm wide, arching, green or longitudinally green and yellow-striped, apetiolate; flowers, fragrant, greenish-yellow, borne in panicles; fruit, orange-colored, unpleasant-smelling berry. Ornamental pot plant. 5, 6, 7(112).

**Dracaena sanderiana** Sander "dracaena", "ribbon plant"  
syn. *Pleomele sanderiana* (Sander) N.E. Br.

Recent introduction. Trop. Africa. Rare. Erect woody shrub, up 1 m or taller; leaves, to about 17 cm long and 3 cm wide, petiolate, arching, dark green, with white edges, set at intervals along the stem; petioles, 7.5 to 10 cm long. Ornamental pot plant. 7.

**Furcraea foetida** (L.) Haw. "Mauritius hemp"  
syns. *F. gigantea* Vent.; *Agave foetida* L.

Recent introduction. Trop. S. America. Rare. Stemless perennial herb, up to 1.5 m or higher; leaves, 1 to 1.8 m long and 10 to 15 cm wide, stiff, fleshy, sword-shaped, spine-tipped, arranged in a rosette; flowers, strong-scented, greenish-white, borne in terminal panicles on a tall branching stem, up to 7 m high. Found in ruderal sites. May have been confused with *Agave rigida* by Swarbrick. 8.

**Gloriosa superba** L. "climbing lily", "gloriosa", "glory lily"

Recent introduction. Trop. Africa. Occasional. Climbing perennial lily, reaching up to 1.5 m in length; leaves, glossy, twisted, narrow, tapering into tendrils; flowers, up to 7.5 cm long, striking, 6-parted, bright red and yellow, with curled petals which turn inside out and point upwards when fully open. Planted ornamental and pot plant. 5, 6(177).

**Hippaestrum puniceum** (Lam.) Urban "Barbados lily", "amaryllis"  
syns. *Amaryllis punicea* Lam.; *Hippaestrum equestre* (Ait.) Herb.; *Amaryllis equestris* Ait.

Recent introduction. Trop. America. Bulbous herb, up to 60 cm or higher; leaves, 30 to 48 cm by 4 cm, 6 to 8 in number, strap-shaped, dark green, developing after the flowers have died; flowers, 10 to 12 cm across, funnel-shaped, red or salmon-colored with green centers, borne in groups of 2 to 4 on a stout flowering stem, 30 to 60 cm high. Planted ornamental. 3(58718), 6, 7.

**Hosta plantaginea** (Lam.) Asch. "plantain lily", "funkia"

Recent introduction. China and Japan. Rare. Clump-forming herb, up to 50 cm high; leaves, ovate with many oblique grooves or ribs spreading from the midrib; flowers, funnel- or bell-shaped, small, white or blue-lilac, borne in narrow spikes on a flower stalk. Planted ornamental. 5(62), 6.



**Hymenocallis littoralis** (Jacq.) Salisb. "spider lily"  
 lili (N); te ruru ni mane (K); lili (T)  
 syn. *Pancratium littorale* Jacq.

Recent introduction. Trop. America. Occasional. Erect bulbous perennial herb, up to 75 cm or higher; leaves, 45 to 75 cm long and 2 to 7 cm wide, strap-shaped, fleshy; inflorescence, an umbel of 3 to 8 striking, white, funnel-shaped, spider-like, fragrant flowers with narrow tubes, 10 to 17 cm long, and long slender spreading petals, connected at the base by a thin web, borne at the top of a thick, flattened flowering stem, 30 to 75 cm long; fruit, green, smooth, 3-celled. Planted ornamental. 3(58782), 5(129), 6, 7.

**Littonia modesta** Hook "climbing lily"

Recent introduction. S. Africa. Rare. Unusual climbing herb, reaching 60 to 90 cm in length; leaves, narrow, shining, green, spaced along an unbranched stem, each ending in a small tendril; flowers, rich-orange, wide, spreading, bell-shaped, borne singly in the axils of the leaves. Planted ornamental. 6.

**Narcissus** sp. "daffodil", "narcissus"

Recent introduction. Europe. Rare. Bulbous herb, up to about 25 cm; leaves, flat; flowers, fragrant, white to yellow, on individual stalks borne at the top of a flattened stem. Ornamental pot plant. 6.

**Sandersonia aurantiaca** Hook.f. "golden lily of the valley", "Chinese lanterns"

Recent introduction. Natal. Rare. Tuberos perennial herb, up to 45 cm; leaves, stalkless, spear-shaped, tapering to a fine point, borne up the slender stem in decreasing size; flowers, showy, orange, lantern-shaped, borne on long pendant stalks from the axils of the leaves on the upper half of the main stem. Ornamental pot plant. 6.

**Sansevieria trifasciata** Prain "bowstring hemp", "mother-in-law's tongue"

Recent introduction. Trop. W. Africa. Occasional. Erect evergreen perennial, up to 1 m high, with orange turmeric-like rhizomes; leaves, 30 to 90 cm long and 2.5 to 7.5 cm wide, fleshy, erect, sword-shaped, tapering to a sharp subulate point, decorative and cross-banded on both sides with shades of dark green to yellowish to greyish-green, some varieties with creamy-yellow vertical margins; flowers, whitish to yellowish or greenish, tubular, borne in clusters on a flowering stem (scape) which is slightly shorter or as long

as the leaves; fruit, globose, orange with fleshy seeds. Planted ornamental and pot plant. 3(58637), 5, 6, 7.

**Sprekelia formosissima** (L.) Herb.

"Jacobean lily", "Aztec lily"

Recent introduction. C. America. Rare. Bulbous plant, about 30 cm high; leaves, strap-shaped, developing after the flowers; flowers, 7.5 to 10 cm across, striking crimson-red, single, irregularly funnel-shaped, 6-segmented, 3 together forming a lip, 2 curled back at the sides and the sixth held upright at the top of the bloom, borne on a long hollow stem. Ornamental pot plant. 6.

**Yucca gloriosa** L.

"yucca", "Spanish bayonet"

Recent introduction. Trop. America and S.E. United States. Rare. Tree-like perennial shrub, up to 2 m or taller; leaves, about 60 cm long and 5 cm wide, sharp-pointed, green to grey-blue, borne in rosettes on a branched or unbranched stem; flowers, up to 7.5 cm across, many, white to creamy, short-stalked, cup- or bell-shaped, borne in clusters on a much-branched flower stem extending above the leaf rosette. Planted ornamental. 3(58683), 5, 6, 7.

**Zephyranthes candida** (Lindl.) Herb.  
"westwind flower", "storm lily"

"zephyr flower", "white star of Bethlehem",

Recent introduction. Argentina and Uruguay. Rare. Bulbous herb, up to 25 cm high; leaves, seldom over 25 cm, green, fleshy; flowers, 3.5 to 5 cm long, solitary, 6-segmented, white inside, rose-tinged or not outside, borne on erect or bent flowering stems, 10 to 20 cm long; fruit, a 3-valved capsule with flat black seeds. Planted ornamental. 6.

**Zephyranthes rosea** Lindl. "pink lady", "pink star of Bethlehem", "pink zephyr flower"  
susana (T)  
syn. *Atamosco rosea* (Lindl.) Green

Recent introduction. Guatemala and W. Indies. Rare. Bulbous herb, rarely up to 10 cm; leaves, up to 25 cm long, narrow, strap-shaped, downward-curved; flowers, about 2.5 to 3 cm long, solitary, pink to rosy-red, borne on erect or bent flower stems, up to 15 cm long. Planted ornamental. 3(58692), 5, 6, 7.

**MARANTACEAE (Arrowroot Family)**

**Calathea ornata** (Lem.) Koern. "calathea"  
syn. *Maranta ornata* Lem.

Recent introduction. Northern S. America. Occasional. Perennial herb, up to 45 cm or higher; leaves, up to 65 cm long and 22 cm wide, 1 to 7 in number, narrowly oval, green with varied striped markings above, which range from rose to white when young, but to entirely green above and purplish-red below when mature. Ornamental pot plant. 3(58688), 5, 6, 7.

**Calathea wiotiana** Makoy "calathea", "rattlesnake plant"  
syns. *C. insignis* Bull; *C. lanceolata* Boom

Recent introduction. Brazil. Rare. Perennial, low, bushy herb, up to 30 cm or taller; leaves, about 30 cm long, wavy-edged, parallel-sided, velvety green, marked with oblique, dark olive-green blotches above and reddish-purple below. Ornamental pot plant. 6.

**Calathea zebrina** (Sims) Lindl. "calathea"  
syn. *Maranta zebrina* Sims

Recent introduction. Brazil. Rare. Perennial unbranched short-stemmed herb, up to more than 45 cm high; leaves, 30 to 60 cm long and 15 cm wide, oblong, with somewhat wavy edges, as many as 20 in number, spirally-arranged, tufted, velvety, dark-green and light- or yellow-green bands above and purple beneath. Ornamental pot plant. 6.

**Ctenanthe lubbersiana** (Morr.) Eichl. "ctenanthe", "bamburanta"

Recent introduction. Brazil. Rare. Tufted perennial, up to 50 cm high, with slender forking stems; leaves, 15 to 20 cm long, narrowly oblong, long-stalked, variegated, deep green above, lined and mottled with yellow, and paler beneath. Ornamental pot plant. 6.

**Ctenanthe oppenheimiana** (Morr.) K. Schum. "ctenanthe", "never-never plant"

Recent introduction. Brazil. Rare. Clump-forming perennial, up to 75 cm high; leaves, up to 25 cm or longer, lance-shaped, green with silver-grey bands on the upper surface and purple-red beneath. Ornamental pot plant. 6.

**Maranta leuconeura** Morr.

"maranta", "prayer plant", "rabbit tracks"

Recent introduction. Brazil. Rare. Perennial herb, up to 30 cm high; leaves, up to 15 cm long, oblong, stalked, light emerald green with brown-purple patches both sides of the mid-vein, lying almost horizontal by day becoming more vertical at night like hands in prayer; flowers, about 2.7 cm long, white to violet, accompanied by two narrow bracts. Ornamental pot plant. 6, 7.

### MUSACEAE (Banana Family)\*

\*The nomenclature for the genus *Musa* is confused, with most of the common seedless cultivars or clones being triploid crosses of the fertile species *Musa acuminata* Colla and *M. balbisiana* Colla. The Latin binomials *M. nana* Loureiro, *M. sapientum* L., and *M. paradisiaca* L. are commonly used as follows: *M. nana* for the "dwarf Cavendish", and *M. sapientum* for the taller bananas, which are generally eaten ripe, but which are also cooked throughout the Pacific as starchy staples, and *M. paradisiaca* for the starchier bananas or plantains, which are usually eaten cooked as a staple starch, but occasionally eaten ripe as fruit. The nomenclature most widely used by agronomists is that developed by Simmonds, which classifies all cultivars or clones on the basis of their assumed genetic background, eg. *Musa* ABB Group would be a triploid cross of one *M. acuminata* group and two *M. balbisiana* groups. Both nomenclature systems are presented here to more precisely identify the clones that are currently present in Nauru.

**Musa (AAA Group)** Simmonds

"banana", "Robusta", "poyo", "Mons Marie"

dabanana (N); te banana (K); fuamaoluga (T)

syns. *M. sapientum* L.; *M. paradisiaca* L. var. *sapientum* (L.) Kuntze; *M. paradisiaca* L. ssp. *sapientum* (L.) Kuntze; *M. acuminata* Colla cvs

Pre-World War II introduction. S. E. Asia. Occasional. Clump- or stand-forming giant perennial herb, up to 6 m tall, with green pseudostems (trunks) composed of leaf sheaths; leaves, up to 2.5 m long and 75 cm wide, broad-bladed, broadly feather-shaped, bright green, smooth, at first entire, but soon splitting like a feather along parallel side veins, spirally arranged in a terminal crown through which the inflorescence emerges, leaf stems and midribs thick; inflorescence, thick, stalk-like, terminal, and bearing male flowers, in a large budlike tip with dark purplish-red scales, and female flowers along the stalk which turn into large hanging fruit bunches; fruit, seedless, blunt-tipped, medium-thick-skinned, greenish-yellow, turning bright yellow on ripening; new pseudostems sprout from base of old pseudostems which die or are cut after bearing fruit. Food plant in Tuvaluan and I-Kiribati food gardens at Location and Topside workshops; occasional in Nauruan and expatriate home gardens. Important food and export crop in many areas

of the Pacific, especially in Tonga and Western Samoa, where bananas are a major export crop, and in Tuvalu, where bananas are a major staple food. Not a traditional food plant, and of only limited importance on Nauru. 2, 3, 5, 6, 7.

**Musa (AAB Group) Simmonds** "lady's finger banana", "pisang rajah" (Indonesia)  
 dabanana (N); te banana, te oraora (K); tamatamailima, inisi (T)  
 syns. *Musa* × *paradisiaca* L. var. *hort.* "Pisang raja" (*M. acuminata* Colla × *M. balbisiana* Colla)

Pre-World War II introduction. S. India. Occasional. Clump- or stand-forming giant perennial herb, up to 7 m tall, with bronze-green pseudostems (trunks) composed of leaf sheaths; leaves, up to 3 m long and 80 cm wide, broad-bladed, broadly feather-shaped, bright green, smooth, at first entire, but soon splitting like a feather along parallel side veins, spirally arranged in a terminal crown through which the inflorescence emerges, leaf stems and midribs thick; inflorescence, thick, stalk-like, terminal, and bearing male flowers, in a large budlike tip with dark purplish-red scales, and female flowers along the stalk which turn into large hanging fruit bunches; fruit, tightly-packed, light-yellow, short, slightly rounded, plump, very thin-skinned, seedless; new pseudostems sprout from base of old pseudostems which die or are cut after bearing fruit. Food plant in Tuvaluan and I-Kiribati gardens at Location and Topside workshops. Eaten ripe as a fruit throughout much of the Pacific and a very important staple in Samoa, where it is cooked green. Not usually found in Nauruan gardens. 3, 5, 6, 7.

**Musa (ABB Group) Simmonds** "cooking banana", "plantain", "bluggoe"  
 dabanana (N); te banana, te umuumu (K); pata (T)  
 syns. *Musa* × *paradisiaca* L. var. *hort.* "Bluggoe" (*M. acuminata* Colla × *M. balbisiana* Colla )

Pre-World War II introduction? S. E. Asia and Pacific. Common. Clump- or stand-forming giant perennial herb, up to 6 m tall, with pale green pseudostem (trunks) composed of leaf sheaths; leaves, up to 2.5 m long and 75 cm wide, broad-bladed, broadly feather-shaped, bright green, smooth, at first entire, but soon splitting like a feather along parallel side veins, spirally arranged in a terminal crown through which the inflorescence emerges, leaf stems and midribs thick; inflorescence, thick, stalk-like, terminal, and bearing male flowers, in a large budlike tip with dark purplish-red scales, and female flowers along the stalk which turn into large hanging fruit bunches; fruit, light-green, waxy, thick-skinned, angular, with a tapering blunt-tip; new pseudostems sprout from base of old pseudostems which die or are cut after bearing fruit. Food plant in well mulched areas and planting boxes at Location and near Topside workshops in Tuvaluan and I-Kiribati gardens. Important traditional supplementary staple in many areas of the Pacific, where it seems to be an aboriginally introduced cultivar and known as bata or pata in Fiji and Polynesia respectively. The most common banana cultivar in Kiribati, from where it may have been introduced into Nauru. Leaves and pseudostem used

medicinally to wrap sick persons to lower fevers; leaves used to parcel food and to cover earthen oven; green fruit cooked as a staple food and ripe fruit eaten raw. Evidently not a successful aboriginal introduction to Nauru, where *Musa* cultivars do not seem to have been a traditional food crop. 5, 6, 7.

### ORCHIDACEAE (Orchid Family)

**Cattleya sp.** "cattleya orchid"

Recent introduction. Trop. America. Rare. Bulbous or slender-stemmed orchid with thick, slightly-folded leaves and large showy flowers. Ornamental pot plant. 6.

**Dendrobium undulatum R. Br.** "dendrobium orchid"

Recent introduction. Australia. Rare. Orchid with short thick leaves and many showy flowers borne along a flowering stem. Ornamental pot plant. 6.

**Dendrobium sp.** "dendrobium orchid"

Recent introduction. Rare. Orchid with short thick leaves and many showy flowers borne along a flowering stem. Planted ornamental at H.M. De Robert's home. 6.

**Spathoglottis plicata Bl.** "Malayan ground orchid"

Recent introduction. Indomalaysia. Rare. Terrestrial erect perennial herb, up to 60 cm or taller; leaves, 50 cm to 120 cm long and 5 to 20 cm wide, oblong-lanceolate or elliptic-lanceolate, plicate, with numerous parallel veins; flowers, 2 to 3 cm wide, pink to rose-lavender, with some magenta and bright yellow in the center, borne in clusters on a long flowers stalk (scape), up to 150 cm or higher; fruit, a narrow oblong seed-bearing capsule, about 3.7 cm long. Planted ornamental. 5, 6.

**Vanda teres Lindl.** "vanda orchid"

Recent introduction. Burma. Rare. Evergreen orchid with tall climbing stems, up to 2 m; leaves, about 15 cm long, dark green, cylindrical; flowers, 2 to 5 flowers, each 10 cm across, with rounded creamy white to rose-tinted sepals, rounded rose-colored petals, orange or yellow throats with red markings, and the middle lobe purple or rose, borne in clusters on the climbing stems. Planted ornamental. 6.

**Vanda** sp.

"vanda orchid"

Recent introduction. S. E. Asia. Rare. Evergreen orchid with showy flowers. Planted ornamental. 6.

### PANDANACEAE (Pandanus Family)\*

\*The nomenclature for the genus *Pandanus* is, like *Musa*, confused, with some taxonomists classifying many of the common cultivars and wild clones or species, both edible and non-edible, as forms or varieties of *P. tectorius*. Other taxonomists consider them distinct species, often listing numerous species or varieties for a given area. For example, *P. odoratissimus* L.f. has long been thought to be synonymous with *P. tectorius*, but is not considered, by many authorities, to occur east of Malaysia. Similarly, *P. odoratissimus* L.f. var. *pyriformis* Mart. has been used as a synonym for a wild and doubtful variety of *P. tectorius*, whereas Stone (1970) considers *P. fragrans* Gaud. to be the common wild species on Guam, and does not consider *P. tectorius* to be present. Thus, because the fruit of many of the named cultivars or varieties found on Nauru were not collected and identified, the identifications here must be considered provisional, with most named cultivars being grouped under *P. tectorius*. Other widespread forms, such as *P. dubius* Spreng., a widespread edible species; and *P. spurius* Miq. cv. "PUTAT" (syns. *P. tectorius* Warb. var. *laevis* Warb.; *P. odoratissimus* L.f. var. *laevis* (Warb.) Mart., which are widely cultivated for their leaves for use in plated ware, are also possibly present, but not listed here. *P. dubius*, if present, however, is a very different plant, not likely to be confused with *P. tectorius*. It has no edible fleshy tissue, but a large globose fruit, 30 to 40 cm in diameter, composed of many drupes, 8 to 18 cm long, each containing a single seed with edible white endosperm.

**Pandanus tectorius** Warb. var. **pulposus** Warb.

"pandanus", "screw pine"

epo, epuh (N); te kaina (K); fala (T)

syn. *P. pyriformis* Gaud.

Indigenous and probably an aboriginal introduction in the case of some cultivars. Pacific Is. Common. Stout, branching tree, up to 5 m or more tall, with numerous aerial roots and thick forking stems; leaves, seldom over 10 cm wide and 1 to 3 m long, spirally-arranged, pointed, with armed or spiny margins and midribs; male inflorescence, fragrant, pendant, with cream-yellow bracts and white spikes; female inflorescence, similar but smaller, on separate trees; fruit, pineapple-like, ovoid, 20 to 30 cm long and 10 to 20 cm wide, with 50 or more wedge-shaped, yellow to red-orange, 1 to 12-celled woody drupes, each about 4 to 8 cm long. Commonly planted on the coastal strip in home gardens and in open areas and in stands on the unmined portions of the plateau

(Topside); women were formerly responsible for the care and cultivation of pandanus, although men helped in the initial clearing of land. An important staple to the Nauruans and to the I-Kiribati and Tuvaluans on their home islands. Very important fresh fruit and staple in Nauru and other atoll and Micronesian countries. Named cultivars which still exist on Nauru include *enaben* (*enabun*), *erabaite* (*erabwaite*), *eragadibyaw*, *eragomogom* (*eragumugum*), *inaparabei* (*inaporabei*), *inimenoiya*, *irireiab*, and *iriribe*; other named cultivars, which are reportedly now extinct due to mining, bombing during World War II, and failure to replant, include *eraburabur* (*eraburbur*), *eramwimwi*, *erarapaiwa* (*erarapeiwa*, *erarapwiewa*), *erkibwir*, *erokwoi*, *eronubwe*, *erwuro*, *inibiterin*, and *itoidi* (*etoidi*). Some of these cultivars may be *P. dubius* (see above). Ripe fruit of all cultivars eaten in Nauru as a vitamin-A-rich snack food and also cooked or fermented and put on pandanus mats or leaves in the sun to dry to make a "rich man's" food known as *edongo*, which is also a traditional food for the sick; leaves, which are commonly soaked in fresh water or boiled, are plaited into mats (*itubare*), baskets, and other plaited ware, and make the best traditional thatching and roofing; main trunk and stilt roots used in house construction; wood and dried fruit sometimes burned as fuel; thin outside bark of the stilt roots scraped and mixed with coconut juice to cure constipation and poor appetite; I-Kiribati use leaves as cigarette wrappers. According to Wedgewood (1936), during the yearly pandanus harvest (*ineded*), which usually occurred around August or September, people used to leave their homes on the coast to stay in temporary bush huts on the pandanus lands in the interior. 2, 3(58760), 5(64), 6, 7(27814?).

**Pandanus sanderi** Hort. ex Masters

"variegated pandanus"

Recent introduction. Indomalaysia to the Pacific Is. Rare. Perennial shrub with long pointed variegated green leaves with yellow-white margins. Planted ornamental. 6.

## POACEAE OR GRAMINAE (Grass Family)

**Andropogon** sp.

Recent Introduction. Rare. Small perennial grass. Local on strip-mined land. 3(58736).

**Arundo donax** L.

"giant reed"

Recent introduction. Old World. Occasional. Large perennial grass or reed with strong, bamboo-like, erect hollow stems, 2 to 4 cm in diameter, rising in clumps, up to 4 m high; leaves, 50 to 70 cm long and 2 to 6 cm wide, flat, pale bluish-green, smooth; inflorescence, a large feathery flowering panicle, up to 70 cm long, with whitish to



purplish spikelets, 8 to 12 mm long. Planted ornamental and spontaneous in some areas. 3(58742), 3(171N), 5(95), 6, 7(22318).

**Bambusa vulgaris** Schrad. ex Wendl. "common bamboo", "feathery bamboo"  
 ebarabaratu, embarabaraba (B)(N); te kaibaba (K)  
 syn. *Arundo bambos* L.; *Bambos arundinacea* Retz.; *Bambusa arundinaria*  
 Willd. ex Merr. (Sphalm.); *B. arundinacea* (Retz.) Willd.

Pre-World War II post-European contact introduction. Trop. Asia. Rare. Giant perennial clump-forming woody grass with segmented green to yellowish stems (culms), up to 15 m tall and 8 cm wide; leaves, 9 to 30 cm long and 1 to 4 cm wide, feathery, lanceolate, rough below and on the margins; flowers, spikelets, 2 to 3.5 cm long, borne in large leafy clusters at the nodes. Planted on coastal strip. Woody stems used in the construction of perches for pet frigate birds, for fishing rods, net handles for noddy-bird nets and reef and flying-fish nets; splinters used in the past to mend fishing nets; parts used medicinally. 2, 5, 6(217), 7.

**Cenchrus brownii** R. & S. "Brown's burgrass", "Brown's sandbur"  
 eakung, iyakong (N)  
 syn. *C. viridis* Spreng.

Recent introduction. Trop. America. Occasional. Annual grass, up to 50 cm or higher; leaves, 5 to 12 cm long, narrow, slightly hairy; inflorescence, a cylindrical flowering spike bearing many crowded somewhat delicate globose spiny burrs. Weed in open places and ruderal habitats on the coastal strip. 5(35), 6, 7.

**Cenchrus echinatus** L. "burgrass", "sand bur"  
 eakung, iyakong (N); te kateketeke (K); mouku talatala (T)

Pre-World War I introduction. Trop. America. Common. Annual grass, 10 to 60 cm tall, lower parts often prostrate, rooting at the nodes; leaves, 3 to 10 cm long and 3 to 10 mm wide, narrow, slightly hairy on the upper surface near base, smooth on lower surface; inflorescence, a dense cylindrical spike-like raceme, 3 to 8 cm long, bearing 5 to 15 well-spaced (not crowded) spiny burrs, usually bearing 2 to 4 spikelets, 5 to 7 mm long; fruit, a globose bur, 3 to 6 mm in diameter, purplish or straw-colored with age, with numerous irregularly arranged spines, up to 5 mm long. Weed occurring in clusters or tufts in open and ruderal habitats on the coastal strip. 2, 3(58607), 4(146N), 5(34), 6, 7, 8.

**Chloris inflata** Link

"finger grass"

syn. *C. barbata* sensu auct. non (L.) Sw.

Recent introduction. Trop. America. Occasional. Tufted perennial grass, up to 90 cm tall, erect or somewhat bent at the base, rooting at the lower nodes, which are often purplish; leaves, up to 3 to 20 cm long and 2 to 6 mm wide, flat, usually bluish-green, rough on the edges, often hairy near the base on the upper side; inflorescence, flower heads of 2 to 11 conspicuous, purplish, finger-like, feathery terminal flower spikes, 2.5 to 7.5 cm long, with spikelets, about 3 mm long, with 3 slender bristles, borne at the tips of flowering stems (culms), up to 60 to 90 cm high. Weed occurring locally in isolated clusters or tufts in open and ruderal places on the coastal strip. 3(58519), 4(151N), 5(40), 6, 7, 8(9549).

**Chrysopogon aciculatus** (Retz.) Trin. "needle grass", "seed grass", "golden beard grass"syns. *Andropogon aciculatus* Retz.; *Rhaphis aciculatus* (Retz.) Desv.

Recent introduction. S. E. Asia and Pacific Is. Occasional. Perennial grass, up to 60 cm high, usually with prostrate or creeping stems; leaves, 2 to 5 cm long and 3 to 6 mm wide, flat or folded, linear-lanceolate, rough on the edges; inflorescence, a finely-branched flower stem, up to 25 cm long, bent at the base, bearing slender erect clustered purplish panicles, 2.5 to 6 cm long, with awned or barbed, spikelets, 3 to 6 mm long. Weed occurring locally on bare soil, roadsides, waste places, and occasionally in lawns. 3(58625, 58709), 5(82), 6, 7.

**Cynodon dactylon** (L.) Pers.

"Bermuda grass"

ibugibugi (N); te uteute (K); mouku (T)

syns. *Panicum dactylon* L.; *Capriola dactylon* (L.) O. Ktze.

Recent introduction. Old World. Common. Small, low creeping perennial sod-forming grass, rooting at the lower nodes; leaves, 2.5 to 10 cm long and 3 to 6 mm wide, rough on the edges; inflorescence, a somewhat ascending or erect flowering stem (culm), up to 10 to 15 cm, bearing 2 to 6, often 4 to 5, slender, radiating purplish finger-like terminal flower spikes, 2.5 to 7 cm long, and spikelets, up to 3 mm long. Common in open places forming mat or sod and in lawns. 3(58625), 5, 6(270), 7.

**Dactyloctenium aegyptium** (L.) Beauv.

"four-finger grass", "beach wire grass",

"crowfoot grass"

syns. *Cynosurus aegyptius* L.; *Dactyloctenium aegyptiacum* (L.) Willd. (orth. mut.); *Eleusine aegyptiaca* (L.) Desf.

Recent introduction. Paleotropics. Occasional. More or less prostrate annual grass, 15 to 60 cm high, rooting from the lower nodes; leaves, up to 15 cm to 30 cm

long, but mostly shorter, and up to 6.2 mm wide, flat, the edges lined with hairs; inflorescence, an erect flowering stem (culm), up to 50 cm tall, bearing 2 to 6 radiating thick, somewhat purplish, dark-colored terminal flower spikes, each up to nearly 3 to 6 cm long, the rachis pointed and extending beyond the spikelets, the spikelets awned, up to 3 mm long. Weed in clusters or tufts in open and ruderal habitats on the coastal strip. 3(58603, 58606), 4, 5, 6(209), 7, 8(9550).

**Dactyloctenium cteniodes** (Steud.) Besser?

Recent introduction. Africa. Annual grass. Occasional locally in disturbed places. 4(153N).

**Dichanthium** sp.

"blue grass"

Recent introduction. Occasional. Perennial grass with bluish stems (stolons). Occurs locally in open weedy places. 3(58518), 5(85).

**Digitaria bicornis** (Lam.) R. & S.  
syns. *Panicum bicornis* Lam.

"crab grass", "large crab grass"

Recent introduction. Trop. Asia. Occasional? Perennial creeping grass. Weed in open and ruderal sites on the coastal strip. 4(152N).

**Digitaria ciliaris** (Retz.) Koel.

"crab grass", "large crab grass"

syns. *Panicum ciliare* Retz.; *Digitaria adscendens* (HBK) Henr.; *Syntherisma ciliaris* (Retz.) Schrader

Recent introduction. Trop. Asia. Occasional? Perennial creeping and ascending grass, rooting by runners at the lower nodes and forming dense mats, with smooth, usually flattened, ascending stems; leaves, 2 to 13 cm long and 3 to 6 mm wide, flat, green to blue-green, sometimes purplish, slightly hairy on upper surface; inflorescence, a branched raceme, 4 to 9 in number, up to about 17 cm long, with 2 to 4 slender finger-like branches, 2.5 to 8 cm long, remaining close together, forming compact delicate heads; rachis, winged; spikelets, about 3 mm long, narrow, ellipsoid. Weed in garden. 3(59604).

**Digitaria radicata** (Presl) Miq.

"crab grass"

syns. *Panicum radicata* Presl.; *Digitaria borbonica* Desv.; *D. timorensis* (Kunth) Balansa

Recent introduction. Old World tropics. Occasional? Annual erect or ascending grass, up to 60 cm high; leaves, 2 to 10 cm long and 3 to 7 mm wide, sheaths puberulent; inflorescence, a branched raceme, 4 to 10 cm long, usually 2 to 3, rarely 6 to 8, in number, smooth, but puberulent at the axils, with fingerlike, very narrow spikelets, 3 by 0.6 to 0.75 mm, linear-lanceolate, on pedicels, 2.5 to 3.5 mm long. Roadside weed. 3(58608)

**Digitaria setigera** Roth

"crab grass", "slender crab grass"

ibugibugi, ibiugibiugi (N); te uteute (K)

syns. *Panicum pruriens* Fisch. ex Trin.; *Digitaria pruriens* (Fisher ex Trin.)

Buse (in Burgess' list 1935); *D. microbachne* (J. S. Presl) Henr.

Indigenous. S.E. Asia to Polynesia. Occasional. Densely-tufted creeping or ascending grass, up to 60 cm high, with smooth slender stems; leaves, 6 to 20 cm long and 3 to 8 mm wide, smooth hairy, with leaf sheaths at the base; inflorescence, an erect slender raceme, 5 to 15 cm long, 3 or 4, rarely more, somewhat pubescent, with numerous spikelets, about 2.5 to 3 mm long. Weed occurring in clusters or tufts in open and ruderal habitats on the coastal strip. 2, 3, 5(83), 6(156), 7, 8(9551?).

**Digitaria violascens** Link.

"smooth crab grass", "violet crab grass"

syns. *D. argyrostachya* (Steud.) Fern.

Recent introduction. Trop. Asia. Rare. Erect to spreading annual, sometimes perennial, smooth-stemmed grass, up to 60 cm tall, forming dense clumps; leaves, 2 to 9 cm long and 3 to 6 mm wide, flat, slightly reddish, usually smooth, but often slightly rough on the edges and sometimes with a few hairs near the base on the upper side; inflorescence, composed of 2 to 9 slender finger-like branches, 2.5 to 10 cm long, at the tip or along the upper 2.5 to 5 cm of the flowering stem, and very small dark-brown spikelets, up to 2 mm. Weed occurring locally near Buada Lagoon. 3(58786).

**Echinochloa colona** (L.) Link.

"jungle rice"

syns. *Panicum colonum* L.; *Oplismenus colonus* (L.) HBK.

Recent introduction. India. Occasional. Tufted erect to ascendant annual grass, 20 to 80 cm high, often decumbent at the base and rooting at the lower nodes, with flattened often reddish-purple stems; leaves, 2.5 to 15 cm long and 3 to 10 mm wide, flat, tapering, margins smooth or sometimes scabrous; inflorescence, a flowering stem (culm), 20 to 60 cm high, bearing a panicle, 4 to 12 cm long, with very short green or purple-tinged alternating racemes, 1 to 3 cm long, with ovate spikelets, 1 to 3 mm long, crowded in 4 rows on short pedicels. Weed in gardens around buildings. 4(150N), 5(155).

**Eleusine indica** (L.) Gaertn.

"wiregrass", "goosegrass"

ibugibugi (N); te uteute (K); mouku (T)  
syn. *Cynosurus indicus* L.

Pre-World War II introduction. India; long naturalized in Old and New Worlds. Abundant. Ascending tufted annual or perennial grass, usually growing in tufts, with flattened pale green stems, with hairy nodes; leaves, 6 to 30 cm long and 3 to 8 mm wide, mostly glabrous, scabrous on the midvein and upper margins; inflorescence, 2 to 7, flattened, fingerlike terminal branches or spikes, 4 to 12 cm long and 3 to 7 mm wide, radiating from the tip of a flowering stem (culm), up to 30 cm tall, with one or two spikes slightly below the tip; spikelets 3 to 6 mm long; seeds, about 1.5 mm long, dark green to dark-reddish-brown, ridged, crowded in two rows on one side of the spike. Growing in rather dense concentrations or colonies in gardens and waste places. 2, 3(58660), 4(147N, 154N), 5(65), 6, 7, 8(9544).

**Eragrostis amabilis** (L.) Wight & Arn. ex Hook. & Arflove grass", "Japanese lovegrass"

ibugibugi, ibiugibiug, bahibahi (N); te uteute n' aine (K); mouku (T)  
syn. *Poa amabilis* L.; *Eragrostis tenella* (L.) Beauv. ex R. & S.

Recent introduction? Old World. Common. Small, rather delicate, annual grass, usually branched or spreading at the base but sometimes erect, up to 30 cm tall, with delicate wiry stems, 15 to 45 cm long; leaves, 3.5 to 10 cm long and 1.5 to 4 mm wide, slightly rough on the upper surface, smooth on the lower, with tufts of long hairs at the summits of the sheaths; inflorescence, a flowering stem (culm), 5 to 15 cm long, bearing short, rather delicate, branches and numerous, often reddish-purple, 4- to 6-flowered spikelets, about 1 to 1.5 mm long, in open panicles. Weed occurring in scattered clusters around buildings, paths, and other ruderal places. 2(28.5), 3(58626), 4(148N), 5(66), 6, 7, 8(9539).

**Lepturus repens** (Forst.f.) R. Br. var. **subulatus** Fosb"bunchgrass", "beach bunchgrass"

ibugibugi, ibiugibiugi (N); te uteute (K); mouku (T)  
syn. *Rottboellia repens* Forst.f.; *Monoerma repens* (Forst.f.) Beauv.

Indigenous. Pacific Is. Occasional. Freely-branching, creeping grass with stems, up to 40 cm long, rooting at the nodes; leaves, 7 to 20 cm long and 3 to 7 mm wide, narrowly lanceolate to linear, often with inrolled margins; inflorescence, protruding, solitary, long-awned spikelets embedded in a narrow, jointed, cylindrical flowering spike, 6 to 15 cm long and 1 to 2 mm in diameter, which disarticulates at maturity. Occurring in clusters among strand vegetation. 3(58605, 58750), 5(84), 5, 7.

**Oplismenus hirtellus** (L.) Beauv. var.

"basket grass"

syns. *Panicum hirtellum* L.; *Orthopogon imbecillus* R. Br.; *Oplismenus imbecillus* (R. Br.) R & S.; *O. undulatifolius* (Ard.) Beauv.

Recent introduction. Pantropical. Rare. Slender, much-branched creeping or ascending perennial grass, up to 30 cm or higher; leaves, 5 to 10 cm long and 8 to 12 mm wide, lanceolate, with an acute tip and an asymmetrical base, pubescent, especially below, blade wavy; inflorescence, small flower clusters, with purplish bristles, borne on the upper 7 to 15 cm of a erect unbranching flower stem. In open area in Topside forest. 7(22322).

**Panicum subquadriparum** Trin.

syn. *Brachiaria subquadripara* (Trin.) Hitch.

Recent introduction. Trop. Asia. Rare. Perennial creeping grass with stems (culms) 20 to 60 cm long, rooting at the lower nodes; leaves, 2.5 to 12 cm long and up to 4 to 10 mm wide, acuminate, nerves pubescent, with a hairy leaf sheath; inflorescence, an open, slender, elongated panicle, 5 to 15 cm long, with 2 to 10 spike-like, solitary, horizontally spreading racemes, 2 to 10 cm long, bearing lanceolate, sharp-tipped spikelets, 2 to 5 mm long, in 2 rows on one side. Rare around Buada Lagoon. 5(83), 6(155).

**Saccharum officinarum** L.

"sugar cane"

tugage (N)("sugarcane"); te kai tioka, te kai soka ("the sugar tree")(K); kaleve gau, tolo (T)

syn. *S. chinense* Roxb. ex Nees in H & A.

Pre-World War I introduction? New Guinea and Trop. Asia. Occasional. Large clump-forming erect perennial grass with strong thick unbranched stems, 2 to 4 m tall and 2.5 cm or more in diameter, with short conspicuous internodes filled with solid juicy pulp; leaves, 45 cm or more long and 3 cm or more wide, smooth, overlapping, finely-saw-toothed, loosely clustered near the top of stems, with hairy overlapping leaf sheaths; inflorescence, straight wandlike terminal stalk, panicle about 20 to 50 cm or more long, borne at the top of each stem, with numerous densely-branched, feathery, pinkish to silvery-white, many-jointed racemes or flower tassels, with spikelets, 4 to 5 mm long, although most chewing cultivars rarely flower. Food plant in I-Kiribati and Tuvaluan gardens at Location and Topside workshops. An important supplementary food plant throughout most of the Pacific, with the sweet juicy pulp a source of sugar and an important snack food, the leaves widely used for high quality house thatching, and the chewing of the fibrous stems reportedly a main factor in good dental hygiene, which is ironic, given the role of processed sugar in tooth decay. Interspecific hybrids of *S. officinarum* and more fibrous wild canes, such as *S. spontaneum* and *S. robustum*, form

the basis for the export sugar industries of Fiji and Hawaii. Apparently not traditionally important on Nauru. 5, 6, 7.

**Sporobolus diander** (Retz.) Beauv.  
syn. *Agrostis diander* Retz.

"Indian dropseed"

Recent introduction. Southern Asia. Rare. Tufted, smooth, slender, erect perennial grass, 30 to 70 cm high, arising from an abruptly bent base; leaves, 7.5 to 30 cm long and 2 to 6 mm wide; inflorescence, a smooth and sometimes drooping, spike-like, flowering stem or panicle, 10 to 30 cm long and 5 cm wide, bearing numerous open feathery branches, 1.5 to 4 cm long, with dull grey spikelets, 1 to 2 mm long, and brown seeds, less than 1 mm long. Weed in waste place on coastal strip. 6(154).

**Stenotaphrum micranthum** (Desv.) Hubb.

syns. *Ophiurinella micrantha* Desv.; *Stenotaphrum subulatum* Trin.

Indigenous. Mascarene Is. in the Indian Ocean through Malesia to eastern Polynesia and the Marshall Islands in Micronesia. Erect to ascending, tufted, freely branching grass, up to 45 cm high, with prominent nodes and slightly compressed sheaths, rooting at the lower nodes; leaves, 2.5 to 12 cm long and 5 to 12 cm wide, lanceolate, finely pointed, glabrous; inflorescence, 3 to 15 cm long, a slender to rather stout, corky cylindrical raceme; spikelets, 2 to 4 on short branchlets, 1.5 to 3 mm long, oblong to oblong-lanceolate, obtuse, embedded in the rachis. Rare grass, cited by Fosberg *et al.* 1987, but not seen or collected in 1979 or 1980.

**Tricholaena rosea** Nees

"Natal grass", "Natal red top"

syns. *Rhynchelytrum roseum* (Nees) Stapf. & Hubb.; *Rhynchelytrum repens* sensu auct. non (Willd.) Hubb.; *Tricholaena repens* (Willd.) Hitchc.

Recent introduction. S. Africa. Common. Erect perennial grass, 40 to 90 cm high, rooting at the lower nodes, usually much-branched at the base, with green to bluish-green stems, often purplish at the joints; leaves, 5 to 15 cm long and 2 to 6 mm wide, flat bluish-green; inflorescence, a feathery panicle, 8 to 15 cm-long, bearing dark red or purplish flowers, which fade to silver-pink when old, borne on fine ascending branchlets; spikelets, about 5 mm long, clothed with fine silky hairs, about 3 to 5 mm long. Found in clusters in waste places on coastal strip and plateau and occasionally in mined areas. 3(58655), 4(170N), 5(49), 6, 7, 8(9567).

**PONTERIACEAE (Pickerel Weed Family)**

**Eichhornia crassipes** (Mart. & Zucc.) Solms-Laub. "water hyacinth"  
syn. *Pontederia crassipes* Mart. & Zucc.; *Eichhornia speciosa* Kunth

Recent introduction. Trop. and Subtrop. America. Rare. Usually floating, perennial herb, up to 60 cm tall, with masses of fleshy, more or less horizontal, black roots, rooted only at flowering time by long slender roots; leaves, up to 7 to 10 cm wide, rounded or oblong, on bulbous air-filled petioles which act as floats; inflorescence, a flower spike, about 40 cm long, bearing showy 6-petaled pale violet flowers, about 5 cm in diameter, with a blue patch with a spot of bright yellow on the larger upper lobe, about eight to a stem, rising above the leaves; some forms have pink and yellow flowers. Water weed in Buada Lagoon and planted in tubs at Location. Commonly planted as an ornamental; has escaped to become a serious pest in many areas of the world where it clogs rivers and causes flooding and obstructs navigation. All parts are reportedly edible 6(255).

**STRELITZIACEAE (Bird of Paradise Family)**

**Heliconia collinsiana** R.F. Griggs "hanging heliconia", "fish-pole heliconia"  
syn. *H. pendula* Wawra

Recent introduction. Guatemala. Rare. Erect herb, up to 2 m tall; inflorescence, up to 30 cm or more long, hanging, almost plastic-looking, parrot-beak-, or claw-like, with bright red flower bracts, each 5 cm or longer, with yellow and green lower margins, and white waxy powder. Planted ornamental. 5, 6.

**Heliconia humilis** (Aubl.) Jacq. "heliconia", "lobster claw"  
syn. *Musa humilis* Aubl.

Recent introduction. Trop. S. America. Rare. Erect herb, less than 2 m tall; leaves, broad, paddle-shaped, 3 to 6 in number; inflorescence, an erect flowering stalk, up to 120 cm tall, among the leaves, bearing pointed lobster-claw-shaped bright red flower bracts with dark green upper margins, each up to 12 cm long. Planted ornamental. 5, 6(236).



**Heliconia psittacorum L.**

"heliconia"

Recent introduction. Trop. S. America. Occasional. Erect herb, less than 1.5 m tall; leaves, few, 3 to 5 in number; inflorescence, an erect flowering stalk bearing small bright orange flowers with green tips. Planted ornamental. 5, 6, 7.

**Heliconia sp.**

"heliconia"

Recent introduction. Trop. America. Rare. Erect herb. Planted ornamental. 5 (174).

**TACCACEAE (Polynesian Arrowroot Family)****Tacca leontopetaloides (L.) O. Kuntze**

"Polynesian arrowroot"

damagmag, damogmog (N); te makemake (K); masoa, vatia (T)

syns. *Leontice leontopetaloides* L.; *Tacca pinnatifida* Forst.

Aboriginal introduction. Paleotropics. Occasional. Large stemless herb, up to 1 m high; leaves, large, palmately 3-parted, deeply-lobed, on long petioles, 60 cm or more in length, emerging directly from starchy underground tubers resembling potatoes, 20 to 25 cm in diameter; inflorescence, a hollow flower stalk (scape), up to over 1 m high, bearing a terminal umbel or cluster of 10 to 40 hanging green flowers, about 15 mm long, surrounded by 6 leafy bracts, 4 to 5 cm long and 2 cm wide, and numerous hanging green and purplish filaments, up to 25 cm long; fruit, 2 to 2.5 cm in diameter, fleshy, ribbed, globose, which turns yellow when mature, and is crowned with floral parts. Occurring spontaneously in old gardens and in escarpment forest. Tubers grated and washed to eliminate poisonous substances, and made into edible starch in the past, but apparently not used by Nauruans to the extent that it was used in other parts of Micronesia and Polynesia. Paste from tuber used as an adhesive for barkcloth and other handicrafts in Polynesia and Melanesia and the fibers from the flower stem for weaving in parts of Polynesia. 5, 6(119).

**ZINGIBERACEAE (Ginger Family)****Alpinia purpurata (Vieill.) K. Schum.**

"red ginger"

syns. *Guillainia purpurata* Vieill.; *Languas purpurata* (Vieill.) Kaneh.

Recent introduction. Indonesia to Pacific Is. Occasional. Erect herb, 1.2 to 4 m tall, with leafy stems; leaves, up to 30 cm long, lance-like; inflorescence, a flower spike, about 25 to 30 cm long, erect or drooping, with large, open, dark red bracts, each accompanied by a small inconspicuous white ephemeral flower, about 2.5 cm long, with new plantlets, which sprout among the bracts, taking root as the dying flower spike collapses to the ground. Planted ornamental. 3(59710), 5, 6, 7.

**Alpinia zerumbet** (Pers.) Burt & R.M. Smith "shell ginger"  
 syns. *Costus zerumbet* Pers.; *Alpinia nutans* (Andr.) Roscoe; *A. speciosa* (Wendl.) K. Schum.; *Catimbium speciosum* (Wendl.) Holttum.

Recent introduction. S.E. and E. Asia. Rare. Erect herb, up to 2.5 m tall; leaves, 50 to 70 cm long and 7 to 15 cm wide, oblong-lanceolate; inflorescence, an arching flower stem, 1.5 to 3 m long, bearing a somewhat lax or pendant open flower cluster, about 25 cm long, bearing irregularly bell-shaped flowers with waxy white bracts and red-tipped corollas, up to 5 cm long, with yellow lips with reddish lines or veins; fruit, about 2 cm in diameter, globose, ridged, red. Planted ornamental. 6.

**Hedychium coronarium** Koen. "white ginger"

Recent introduction. India. Rare. Erect herb with stems, up to 1 m tall; leaves, about 50 to 60 cm long and 10 cm wide, narrowly oblong or lance-shaped, with short petioles; inflorescence, about 20 cm long, dense, spike-like, terminal, with overlapping bracts, each bearing 2 to 3 fragrant white flowers, 6 to 8 cm long, with slender tubes and a pale green spot on the lip, which turn yellow with age. Planted ornamental and pot plant. 3(59671), 5, 6, 7.

**Nicolaia elatior** (Jack) Horan. "torch ginger"  
 syns. *Alpinia elatior* Jack; *Phaeomeria speciosa* (Bl.) Koord; *P. magnifica* (Roscoe) K. Schum

Recent introduction. Mauritius. Rare. Large clump-forming perennial herb, up to 2 to 5 m high, with arching leaf stems; leaves, 25 to 60 cm long and 10 to 15 cm wide, pointed, numerous, alternating in two rows up the stem; inflorescence, highly ornamental, consisting of numerous red, white-margined bracts, the basal bracts being large, waxy, flowerless and forming a nest for a cone-like flowerhead, about 12 cm long, composed of numerous overlapping bracts, which are spirally arranged and accompanied by small flowers. Planted ornamental. 6.

**Zingiber officinale** Roscoe

"ginger"

keung (C)

syn. *Z. zingiber* Karst.

Pre-World War II introduction. India and China. Rare. Erect smooth herb, up to 90 cm high, arising from edible, thick, hard, often palmately-branched, pale-yellow (within) rootstalks or rhizomes, about 1.5 to 2.5 cm in diameter; leaves, 5 to 30 cm long and 2 to 3 cm wide, annual, lance-shaped, sheathed at the bases; inflorescence, a flowering stem, about 6 to 12 cm high, bearing flower spikes, 4 to 7 cm long and 1.5 to 2.5 cm wide, with bracts, 2 to 3 cm long, and greenish-yellow three-lobed flowers, about 1.5 to 2.5 cm long. Planted in Chinese food garden at Location. Rhizome used as a spice. An increasingly important commercial crop for export and local processing in Fiji. 5, 6.

**Zingiber zerumbet** (L.) Sm.

"wild ginger"

syn. *Amomum zerumbet* L.

Recent introduction; reintroduced recently by Fijian expatriate community Trop. Asia. Rare. Erect perennial herb, up to 1.5 m tall, with leafy stems rising from tuberous aromatic rootstalks or rhizomes; leaves, mostly 15 to 30 cm long, usually shorter, oblong lance-shaped, sheathing at the bases; inflorescence, a spike-like flower stalk (scape), up to 30 cm long, arising from the rhizomes, bearing ovoid to cylindrical reddish or green flower heads, 5 to 20 cm long, with many bracts, 2 to 3 cm long, and inconspicuous three-lobed white to cream flowers, about 5 cm long. Planted ornamental or medicinal plant. An important aboriginal introduction throughout much of Melanesia and Polynesia, where it is an important medicinal plant. 3, 6.

## DICOTYLEDONAE

### ACANTHACEAE (Acanthus Family)

**Asystasia gangetica** (L.) Anders. "asystasia", "Chinese violet"  
 syns. *Justicia gangetica* L.; *Asystasia coromandeliana* Nees

Recent introduction. Paleotropics. Occasional. Perennial trailing herb, or sub-shrubby plant, with ascending stems, up to 30 to 50 cm or longer, especially if climbing among taller vegetation; leaves, opposite, ovate to heart-shaped, up to 4 to 6 cm long; flowers, 6 to 10, tubular or bell-shaped, somewhat narrower or curving upwards at the base, and borne in racemose clusters, up to 15 cm or more long, with a 5-parted calyx, and a light-violet and white, or yellow, in some varieties, corolla, about 2 to 3 cm long, with five broad spreading lobes; fruiting capsule club-shaped, four-seeded. Planted ornamental and naturalized in some ruderal places. 3, 4(127N), 5, 6(231), 7.

**Asystasia** sp.

Recent introduction. Pot plant. 3(58702).

**Barleria cristata** L. "Philippine violet", "bluebell barleria"

Recent introduction. India. Rare. Small erect shrub, 60 cm to 1.2 m or higher, with downy branches; leaves, 2.5 to 10 cm long rough, hairy, short-stemmed, oval and pointed at both ends; flowers, 1 to 3, attractive stemless and funnel-shaped, with a four-parted calyx, about 2 cm long, and a five-lobed violet or white and violet corolla, about 5 to 7 cm long, developing at the leaf axils, each accompanied by 2 spiny-edged green to white narrow lanceolate bracts, about 2 cm long. Planted ornamental. 3(58797), 6.

**Barleria prionitis** L. "porcupine flower"

Recent introduction. Paleotropics. Occasional. Erect shrub, up to 1 m high; leaves, 5 to 6 cm long by about 2 cm wide, elliptic to ovate or obovate, obtuse, acute or even somewhat petiolate, narrowed to base; flowers, up to 3.5 cm long, with yellow corollas and bracts converted into three-forked spines, 1 to 2.5 cm long. Planted

ornamental and naturalized in ruderal sites and on disturbed slope below plateau. 3(58772), 6, 7.

**Blechum brownei** Juss.

syns. *Barleria pyramidatum* Lam.; *Blechum pyramidatum* (Lam.) Urb.

Recent introduction. Peru. Rare. Erect, prostrate or ascending branched shrub, 10 to 50 cm tall, with pubescent stems; leaves, 2 to 7 cm long, simple, ovate to lanceolate, pubescent, pointed at both ends, and on short petioles; flowers borne on terminal spikes, 2 to 5 cm long, with greenish or whitish overlapping ovate bracts, 1 to 1.5 cm long, concealing a white or pale violet funnel-shaped, five-lobed corolla, scarcely longer than the bracts; seed capsule oblong, 5 to 6 mm long. Weed in lawns. 5(60), 6.

**Crossandra infundibuliformis** (L.) Nees

"crossandra"

syns. *Justicia infundibuliformis* L.; *Crossandra undulaefolia* Salisb.

Recent introduction. India. Rare. Shrub, 30 to 90 cm high; leaves, 7.5 to 12.5 cm long, shiny green, narrow, ovate, wavy-margined, and pointed at both ends; flowers borne on long narrow downy spikes, about 10 cm long, with overlapping bracts bearing showy tubular salmon-orange flowers with a five-lobed calyx and a corolla with a narrow tube, about 2 cm long, and one lip which is 2.5 to 5 cm across and has 3 to 5 shallow lobes; fruiting capsule, oblong, containing 4 scaly seeds. Planted ornamental. 6.

**Eranthemum pulchellum** Andr.

"blue eranthemum"

syns. *Justicia nervosa* Vahl; *Eranthemum nervosum* (Vahl) R. Br.

Recent introduction. India. Rare. A smooth shrub, 60 cm to 1.5 m high; leaves, 10 to 20 cm long, oval, pointed at both ends, with prominent veins and shallow-toothed margins; flowers borne on narrow spikes, 2.5 to 7.5 cm or longer, with overlapping whitish, green-veined oval bracts bearing a five-lobed calyx and a narrow-tubular bright-blue corolla, up to 2.5 cm long, the five lobes overlapping spirally in bud, but spreading to a diameter of under 2 cm; fruiting capsule ovoid or oblong, 4-seeded. Planted ornamental. 6.

**Fittonia argyroneura** Coem.

"snail plant", "nerve plant", "silver-net leaf"

syn. *F. verschaffeltii* var. *argyroneura* Nichols.

Recent introduction. Peru. Rare. Perennial creeping herb, up to 30 cm high, rooting at the joints; leaves, 5 to 10 cm long and 2.5 to 6 cm wide, broad, ovate, ornamental, with a network of fine white veins; petioles 0.5 to 3 cm long; inconspicuous flowers borne on spikes, up to 6 cm long, with obovate bracts, less than 1 cm long, with

a calyx about 0.5 cm long and a two-lipped tubular yellow corolla, 1.5 to 2 cm long. Ornamental pot plant. 6.

**Fittonia verschaffeltii** (Hort. ex Lemaire) Coem. "snail plant", "nerve plant",  
"painted net-leaf"

Recent introduction. Peru. Rare. Perennial creeping herb, up to 30 cm high, rooting at the joints; leaves, 6 to 12 cm long and 3 to 8 cm wide, broad, smooth, ovate, ornamental, with a network of fine pink to bright carmine veins; petioles 0.5 to 3 cm long; inconspicuous flowers borne on erect narrow spikes, up to 6 cm long, with overlapping obovate greenish bracts, less than 1 cm long, a calyx about 0.5 cm long, and a tubular yellow two-lipped corolla, 1.5 to 2 cm long. Ornamental pot plant. 6.

**Graptophyllum pictum** (L.) Griff. "caricature plant", "morado"  
syns. *Justicia picta* L.; *Graptophyllum hortense* Nees

Recent introduction. New Guinea. Rare. Erect shrub, up to 2 m high; leaves, 8 to 20 cm long and 3 to 13 cm wide, smooth, leathery, variegated, elliptic-oblong, opposite, with slightly wavy margins, and pointed at both ends, some green, with irregular yellowish blotches or markings in the center and other varieties with red-purple leaves with pinkish to cream-colored blotches along the center; petioles 1 cm long or less; flower spikes with small bracts bearing clusters of flowers with a short 5-small-lobed calyx and a 2-lipped, funnel-shaped crimson-purple corolla, about 4 cm long, the upper lip with 2 short lobes, the lower with 3 long narrow lobes; fruiting capsule 2-seeded. Planted ornamental. 6, 7.

**Hemigraphis alternata** (Burm.f.) T. Anders. "cemetery plant"  
syns. *Ruellia alternata* Burm.f.; *Hemigraphis colorata* (Bl.) Hall.f.; *Ruellia colorata* Bl.

Recent introduction. Java. Rare. Creeping perennial herb, rooting at the joints; leaves, 2 to 8 cm long, ovate to heart-shaped, metallic- to greenish-purple above and reddish-purple beneath, and with sunken veins and scalloped margins; petioles nearly as long as blades; erect flowering spikes, 2 to 3 cm long, with crowded overlapping narrow purple bracts, about 1 cm long, bearing a calyx with 5 narrow lobes, each less than 1 cm long, and a white, purple-lined corolla, about 2 cm long; fruiting capsule slender, 4- to 20-seeded. Planted ornamental ground cover. 6.

**Justicia fulvicoma** Schlecht. & Chamisso "shrimp plant", "red shrimp plant"  
syns. *Beloperone guttata* Brand. non Wallich; *Justicia brandegeana* Wassh. & L. B. Smith; *Drejerella guttata* (Brandeg.) Bremek.

Recent introduction. Mexico. Rare. A weak-stemmed much-branched shrub, 60 cm to 2 m or higher; leaves, 2.5 to 6 cm long, opposite, entire, pointed, ovate to heart-shaped, somewhat shiny-green and hairy; petioles, 1 to 2 cm long; flower spikes, up to 10 cm long, consisting of conspicuous brick-red, heart-shaped overlapping downy bracts, 1 to 1.5 cm long, those near the tip yellow-green with red veins, from which protrude small white flowers with a calyx with five narrow lobes, and a white corolla, 2.5 to 4 cm long, two-lipped to near the middle, with two rows of maroon spots on the lower, shortly three-lobed lip; fruiting capsule, club-shaped and four-seeded. Planted ornamental and pot plant. 3(58720), 5, 6.

**Nicotaba betonica** (L.) Lindau  
syn. *Justicia betonica* L.

"white shrimp plant", "squirrel's tail"

Recent introduction. Trop. Africa to Malaya. Rare. Weak-stemmed shrub, up to 1.5 m or higher; leaves, 7.5 by 3.5 cm or much larger, ovate or narrower, acuminate, smooth, dark green; flower spikes, about 10 cm long, borne at branch tips in erect spikes, with white and lilac flowers, each accompanied by three conspicuous overlapping heart-shaped and ovate pointed bracts which are white with green veins. Planted ornamental. 6, 7.

**Odontonema strictum** (Nees) O. Ktze.

"odonotema", "red justicia"

syns. *O. tubiforme* (Bertol.) O. Ktze.; *Justicia tubaeformis* Bertol.; *Thrysacanthus strictus* Nees; *O. nitidum* (Jacq.) O. Ktze.; *Justicia coccinea* Aubl.(?)

Recent introduction. C. America. Occasional. Erect shrub, up to 1.5 m tall; leaves, mostly 5 to 20 cm long and 4 to 9 cm wide, ovate-oblong or lanceolate-oblong, wavy margins, and smooth above and slightly hairy beneath; petioles, 0.5 to 2 cm long; branching terminal flower spike, with very small bracts and straight slender bright-red corolla tubes, 2.5 cm long and only about 5 mm across, with 5 lobes, each about 3 mm long, crowded at branch tips. Planted ornamental. 5, 6, 7.

**Pachystachys lutea** Nees

"yellow shrimp plant"

Recent introduction. Brazil. Rare. Erect branched shrub, up to 45 cm tall; leaves rich, dark-green, elliptical, and pointed; stems, erect, each terminating in a striking 2.5 to 10 cm-long cone-like spike of conspicuous rich yellow overlapping bracts, from which protrude white tubular flowers, about 4 cm long. Pot plant. 3(58720).

**Pseuderanthemum bicolor** (Schrank) Radlk.syn. *Eranthemum bicolor* Schrank

Recent introduction. E. Malaysia. Rare. Erect shrub, up to 1 m tall; leaves, mostly 5 to 15 cm long and up to 6 cm wide, purple or purple-brown, ovate-oblong or lanceolate-oblong, acuminate, glabrous or finely puberulent; flowers borne in axillary cymes, the uppermost sometimes in racemes, with puberulent calyxes, up to 1 cm long, and puberulent 5-lobed white tubular corollas, 3.5 to 4 cm long with red throats, one lobe with a red blotch, and other lobes white; fruiting capsule 2.5 to 3 cm long. Planted ornamental. 6, 7(27810).

**Pseuderanthemum carruthersii** (Seem.) Guill. var. **carruthersii** "false eranthemum"

te iaro (K)

syns. *Eranthemum eldorado* Hort.; *Pseuderanthemum eldorado* (Williams) Radlk.

Recent introduction. Melanesia? Occasional. Erect shrub, up to 1 m or higher; leaves, 5 to 15 cm long, smooth, elliptic-ovate leaves, mottled yellow-green, with conspicuous netlike veins; petioles 1 to 3 cm long; erect spike-like racemes bearing flowers with inconspicuous bracts, green or reddish 5-lobed calyxes, up to 8 mm long, and white and purple or rosy-purple tubular corollas, the tube, about 1.3 cm long, and the 5 lobes spreading to about 2.5 cm or more in diameter; fruiting capsule, four-seeded, club-shaped. Planted ornamental shrub. 3, 5, 6(201), 7.

**Pseuderanthemum carruthersii** (Seem.) Guill. var. **atropurpureum** (Bull) Fosb.

"purple false eranthemum", "false face" te iaro (K); lakauli (T)

syns. *P. atropurpureum* (Bull) Radlk.; *Eranthemum atropurpureum* Bull.; *P. versicolor* (Hort.) Radlk.; *Eranthemum versicolor* Hort.

Recent introduction. Melanesia? Occasional. Erect shrub, up to 1.5 m or more high; leaves, 5 to 15 cm long, dark purplish-red, elliptic-ovate; petioles, 1 to 3 cm long; erect spike-like racemes bearing flowers with inconspicuous bracts, green or reddish 5-lobed calyxes, up to 8 mm long, and 4-lobed white and purple or rosy-purple tubular corollas, the tube and lobes about 1.3 cm long; fruiting capsule, four-seeded, club-shaped. Planted ornamental shrub. 3(58777, 58792), 5, 6, 7.

**Sanchezia speciosa** Leonard

"sanchezia"

syn. *S. nobilis* sensu auct. non Hook.f.

Recent introduction. Ecuador. Rare. Erect shrub, up to 1 m or higher, with smooth four-angled branches; leaves, 6 to 45 cm long, pointed at both ends, and green, with yellow mid- and side veins; narrow flowering spikes bearing wide red bracts,



about 2.5 cm long, each pair with clusters of 8 to 10 narrow bright-yellow tubular flowers with corollas about 5 cm long and 5-lobed calyxes; fruiting capsule, narrow, cylindrical, 6- to 8-seeded. Planted ornamental shrub 6(161).

**Thunbergia alata** Bojer ex Sims

"black-eyed Susan"

Recent introduction. Trop. Africa. Rare. Herbaceous or slightly woody pubescent climbing or trailing vine with angular stems, up to 2 m or longer; leaves, 4 to 8 cm long, mid-green, opposite, deltoid ovate or ovate-lanceolate, pointed, palmately-veined, irregularly toothed; winged petioles, about as long as the blade; flowers solitary on axillary stems (pedicels), up to 5 cm long, 2 large bracts, about 2 cm long, calyx ring-like, corolla, yellow-orange to cream, 3 to 4 cm across, with a purple tube, 2 cm long; fruiting capsule depressed-globose, beaked, about 1 cm long; seeds warty and ribbed. Planted ornamental vine. 5.

**Thunbergia erecta** (Benth.) T. Anders.

"bush thunbergia"

syn. *Meyenia erecta* Benth.

Recent introduction. Trop. W. Africa. Occasional. Erect, somewhat sprawling shrub, up to 2 m tall, with 4-angled stems; leaves, 3 to 8 cm or longer, opposite, oval-ovate, palmately 5- to 7-nerved; petioles, slender, up to 4 cm or longer, winged nearly to base; flowers solitary on axillary stems (pedicels), 1 to 2 cm long, with 2 large bracts, up to 2 cm long, calyx, 3 to 6 mm long, corolla curved, funnel-form, 3.5 to 6 cm in diameter and tube 2 or 3 cm long, irregularly 5-lobed, deep blue-violet or white with a yellow throat; fruiting capsule 2 to 2.5 cm long. Planted ornamental erect shrub. 3(58700), 5(110), 6, 7.

**Thunbergia grandiflora** (Roxb. ex Rottler) Roxb. "Bengal clock vine", "Bengal trumpet", "large-flowered thunbergia"

syn. *Flemingia grandiflora* Roxb. ex Rottler

Recent introduction. India. Rare. Climbing vine; leaves, 7.5 to 20 cm long, dark green, nearly as broad, cordate, palmately lobed, 5 to 7-nerved, pubescent; petioles, 4 to 12 cm long; flowers in pendent racemes, calyx pubescent and reduced to a narrow ring, corolla violet or whitish, 6 to 8 cm in diameter, the tube pale yellow, 3 to 3.5 cm long; capsule up to 1.5 cm, the beak to 3 cm long. Planted ornamental. 6(187).

## AMARANTHACEAE (Amaranth Family)

**Achyranthes canescens** R. Br.syn. *A. velutina* H. & A.

Indigenous? Extinct? Somewhat shrubby herb, up to 1 m tall; leaves, up to 12 cm or longer, opposite, ovate or elliptic, acuminate, slightly blunt; erect unbranched flower spikes bearing spiny bracts, often pinkish or purplish, and greenish calyx and corolla green, about 6 mm long; fruit, 5-seeded, adherent to fur or clothing. Reported by Schumann (1888) as collected by Finsch; reported present by Burges, 1933; not seen since. Extinct? 2.

**Alternanthera ficoidea** L. var. **bettzickiana** (Reg.) Backer "joyweed", "alternanthera", "telanthera", "calico plant"syns. *Telanthera bettzickiana* Reg.; *A. versicolor* Reg.; *Alternanthera bettzickiana* (Reg.) Nichols.

Recent introduction. Brazil. Rare. Small erect variable herb with red branching stems, 15 to 30 cm high; nodes usually with tufts of white hair; leaves, about 2.5 cm long, opposite, lanceolate-ovate or ovate, variegated green, pink, red, yellow, and sometimes cream; petiole equal to or longer than the blade; flowers, small white in sessile heads in axils of the upper leaves. Planted ornamental border. 6.

**Alternanthera sessilis** (L.) R. Br. ex R. & S.

"joyweed"

syns. *Gomphrena sessilis* L.; *Alternanthera denticulata* R. Br.; *A. nodiflora* R. Br.; *A. amoena* (Lem.) Voss

Recent introduction. Pantropical. Rare. Spreading or semi-prostrate branching herb, up to about 50 cm long, rooting at the lower nodes; internodes with 2 pubescent lines; leaves, 1 to 6 cm long and 0.4 to 1 cm wide, opposite, green, narrowly elliptic-obovate or oblanceolate, obtuse or acutish, minutely toothed; petiole up to about 1 cm long; flowers, white, small, stemless (sessile) in compact headlike clusters in the leaf axils; fruit enclosed in a small bladder which does not split open. Garden weed. 6(188).

**Amaranthus dubius** Mart. ex Thell.

"spleen amaranth"

Recent introduction. Trop. America. Occasional. Small erect herb, up to about 70 cm high; stem, smooth, except upper portions which are slightly hairy; leaves, 3.5 to 8 cm long and 2 to 5 cm wide, ovate, smooth on both surfaces, margin smooth; petiole, 2 to 7 cm long; flowers, greenish, in dense axillary and terminal clusters, male and female

flowers separate, each with 5 sepals; seeds, small, oval, black. Weed in home gardens and at Location. 3, 6, 7(22309, 22312).

**Amaranthus hypochondriacus** L. "prince's feather"  
syn. *A. hybridus* L. var. *hypochondriacus* (L.) Robins.

Recent introduction. Trop. America. Rare. Smooth erect herb, up to 1 m or higher; leaves, bright red-purple to purple-green; flowers, bright red-purple in thick showy feathery panicles. 6.

**Amaranthus spinosus** L. "spiny amaranth", "thorny amaranth"  
ma si han (C)

Pre-World War II introduction? Pantropical. Occasional. Smooth erect, branched herb, 25 to 70 cm high, armed with a pair of sharp needle-like spines, about 1 to 2 cm long, at the base of each petiole; leaf blades, 2.5 to 10 cm long and 1.5 to 4.5 cm wide, green, alternate, broadly lanceolate, pointed at the tip; petioles, about as long as leaf blades, clasping the stem; female flowers, pale green, clustered at leaf axils; male flowers, pale green, borne in terminal panicles; fruit a circumscissile utricle; seeds, very small, lens-shaped, shiny dark-brown. Weed in waste places and in gardens; occasionally cultivated in Chinese contract workers' gardens at Location. Used as a medicinal plant and leaves reportedly occasionally cooked for spinach by Chinese. 5, 6(140).

**Amaranthus tricolor** L. "Joseph's coat", "Chinese spinach". "amaranth", "pigweed"  
te mota, te moota (K); in ts'oi (C)  
syns. *A. gangeticus* L; *A. melancholicus* L.

Pre-World War II introduction? Trop. Asia. Occasional. Erect unarmed, branching herb, up to 1.5 m tall; leaves, 3 to 7 cm long, oval, pointed to blunt, long-petiolate, green or blotched with red or purple; flowers in rounded stemless clusters in leaf axils and in terminal panicles, about 5 cm long; fruit, a 1-seed utricle; seed, small, disc-shaped, dark brown, shiny. Food plant in Chinese gardens at Location and Topside workshops. 5(27), 6.

**Amaranthus viridis** L. "slender amaranth", "green amaranth", "pigweed"  
syn. *A. gracilis* Desf.

Recent introduction. Pantropical. Occasional. Erect or decumbent, unarmed herb, up to 20 to 60 cm high; stems, reddish, longitudinally-grooved; leaf blades, 3 to 7.5 cm long and 2.5 to 5 cm wide, alternate, green above, lighter below, broadly lanceolate or ovate, obtuse or slightly notched at tips, smooth on both surfaces; petioles, 2.5 to 5 cm

long; flowers, greenish to purplish, in small dense axillary clusters and terminal panicles; fruit, a 1-seeded utricle; seed, small, disc-shaped, dark brown. Weed in waste places, primarily at Location. 4(143N), 5(26), 6.

**Celosia argentea** L. var. **cristata** (L.) Ktze. "cock's comb"  
syn. *C. cristata* L.

Recent introduction. Trop. Americas. Erect annual herb, 30 cm to 75 cm high, stems usually ribbed; leaves, 2 to 16 cm long and up to 5 cm wide, although usually smaller, alternate, narrow lanceolate to ovate, often reddish-green; inflorescence, a dense, flatly-crested, elongated, fan-shaped flower head, 6 to 15 cm across, bearing numerous tiny flowers, pinkish or yellow, but usually magenta or bright red; each fruit with two small, glossy, black seeds. Rare. Planted ornamental. 7.

**Gomphrena globosa** L. "globe amaranth", "pearly everlasting"

Recent introduction. Trop. America. Rare. Erect branched annual herb, up to 45 cm high; leaves, 10 by 5 cm or smaller, opposite, obovate-oblong, pale-green, hairy, petioles clasping; flowers, numerous, crowded, in globose heads, about 1.5 to 2.5 cm in diameter, white, yellow, pink, red, purple or variegated, borne at the ends of branches, each head having two leafy bracts. Planted ornamental. Flowers used by Nauruans in head garlands and other ornamentation. 5(93)

**Iresine herbstii** Hook.f. "iresine", "bloodleaf", "achyranthes"

Recent introduction. Brazil. Rare. Fast-growing, erect shrubby perennial herb, up to 30 to 70 cm high, with bright red stems and branches; leaves, up to 6 cm long, opposite, fleshy, round to heart-shaped, the tip blunt or notched, brilliant red-purple to bronze-red, with wide, arching prominent veins, the blade continuing down the petiole; flowers, which may not develop, greenish-yellow, minute, numerous, in fine, much-branched panicles, up to 50 cm long. Planted ornamental. 6.

#### ANACARDIACEAE (Cashew or Rhus Family)

**Mangifera indica** L. "mango"  
damanko (N); te mangko (K); mago (T)

Pre-World War I introduction. Indo-Burma. Common. Large dense, broad-crowned tree, with dark roughened bark, up to 20 m high; leaves, 10 to 35 cm long and

2 to 8 cm wide, green to light-green, alternate, spirally arranged, simple, oblong-lanceolate, acute to acuminate, leathery (coriaceous) and somewhat shiny, pinnately-nerved, midrib prominent, young leaves often reddish; petioles up to 5 cm or more long, somewhat flattened on the upper surface; flowers, small, about 4 to 8 mm in diameter, numerous, yellowish-white to pinkish-white, 4- to 5-parted corolla, densely covered with short yellowish hairs, in large branched terminal panicles, 10 to 50 cm long; fruit, 8 to 20 cm long, fleshy, fibrous, ovoid, pointed or rounded edible drupe, with thick, smooth, green to yellow-orange or reddish skin, sweet, juicy, yellow-orange to dark orange pulp, and a large, flattened, fibrous, ribbed seed case containing one seed. Large fruit and shade tree planted in home gardens and found growing in mature spontaneous stands near Buada Lagoon. Fruit eaten ripe and green, with ripe fruit occasionally made into jam on Nauru; used for firewood. The leaves, and sap from leaves and fruit, can cause an allergic rash. Common introduced fruit tree, found in houseyard gardens, agricultural areas and naturalized throughout Melanesia, Polynesia and Micronesia, possibly an aboriginal introduction in some areas, but not on Nauru; an important cash crop for local sale and export in Polynesia, Melanesia and the larger islands of Melanesia. 2, 3(58643), 5(147), 6, 7.

**Spondias dulcis** Park. "Polynesian vi apple", Polynesian plum", "Otaheiti apple"  
dagimadere, "Egigu's tree" (N)  
syn. *S. cytherea* Sonn.

Aboriginal introduction? Pacific Islands. Rare. Medium to large stiff-branched, smooth, grey-barked, deciduous tree, up to 15 m or taller; leaves, 20 to 40 cm long, alternate, odd-pinnate, clustered at branch ends; leaflets, up to 8 cm or longer and 2.5 cm wide, commonly 4- to 12-paired, with a single unpaired terminal leaflet (8 to 25 in total), shiny, bright green, oval-lanceolate or oblong, acuminate, base acute, entire to finely toothed (crenulate); flowers, tiny, 5-parted, male, female and perfect, develop in large, lax crowded panicles; fruit, up to 8 cm or longer, oval-obovate edible drupe with green to yellow-orange skin and light green to dark yellow pulp, surrounding a single, 5-ridged, fibrous seed case with 1 to 5 seeds. Reported present by Burgess in 1935. The tree, which formerly stood near Buada Lagoon, was reportedly damaged during World War II, and although the Nauruans tried to save it by shoring it up with cement, it died shortly thereafter. Four seeds sent by R. Thaman to J. Audoa in 1981 in an attempt to reintroduce *S. dulcis*, but the result of plantings is unknown. One tree, 3 m tall, seen re-established in fenced food garden surrounding Buada Lagoon in July 1987. Ripe fruit eaten. Tree features in the well-known Nauruan legend concerning a young woman, Egigu, who became the Nauruans' "woman in the moon", after climbing the tree (dagimadere), restoring the sight of a blind woman Enibarara who lived at the top, and marrying her third son, Maramen (the moon). 2, 7.

**Spondias mombin** L.  
syn. *S. lutea* L.

"hog plum"

Extinct? Trop. Asia. Reported present by Burges. Possibly a doubtful identification. 2.

### ANNONACEAE (Custard Apple Family)

**Annona muricata** L.  
dawatsip (N)

"soursop"

Pre-World War II introduction. Trop. America. Common. Small tree, rarely over 8 m tall; leaves, about 10 to 16 cm long and 4 to 7 cm wide, bright green, alternate, entire, oblong or oblong-elliptic, acute or acuminate, glabrous, somewhat glossy above, pungent; petioles short; flowers, 2 to 3 cm or more long, yellowish-green, solitary or in pairs, with 3 thick, broadly deltoid or heart-shaped light yellow sepals and 6 cordate outer petals, borne on the branches and trunk (cauliflorous); fruit, up to 25 cm or longer and weighing 0.5 to 2 kg, fleshy, oblong or ovoid, irregularly heart- or kidney-shaped, with green to yellowish-green skin, covered regularly spaces, short, slightly curved fleshy spines, and white, juicy, somewhat acid, aromatic, cotton-like, edible pulp; seeds, about 2 cm long, numerous, black, embedded in pulp. Planted in home gardens by Nauruans and others and spontaneous on coastal strip, in some areas of escarpment forest, and in the Buada Lagoon area. Ripe fruit eaten raw, often with ice cream. Common recently introduced fruit tree throughout the Pacific. 2, 3(58586), 5, 6, 7.

**Annona reticulata** L.

"custard apple", "bullock's heart"

Pre-World War II introduction. Trop. America. Rare. Small to medium tree, rarely over 9 m tall; leaves, up to 20 cm long and 6 cm wide or more, light green, smooth, alternate, elliptic- or oblong-lanceolate, acute or acuminate, pinnately nerved, brittle; petioles about 12 mm long; flowers, about 2.5 cm long, greenish, axillary, in groups of 2 or 3 on lateral peduncles; fruit, 7 to 13 cm in diameter, yellowish- to greenish-red, ovoid or heart-shaped, with whitish pulp, surface divided by impressed lines into rhomboidal or hexagonal sections; seeds, numerous, glossy brown, embedded in pulp. Planted fruit tree; found growing, possibly spontaneously, behind settlement on Military Ridge. 2, 5(146), 6, 7.

***Annona squamosa* L.** "sweetsop", "sugar apple"  
 dawatsip (N); nameana (T)

Pre-World War II introduction. Trop. America. Occasional. Small tree, rarely over 8 m tall; leaves, 7 to 14 cm long and 4 to 5 cm wide, pale bluish-green (glaucous), two-ranked, thin, oblong or elliptic-lanceolate, acute, sparsely puberulent on both surfaces when young; petioles, about 1 cm long; flowers, about 2.5 cm long, greenish-yellow, axillary, solitary, pendent, petals narrowly lanceolate, obtusish, concave at base; fruit, about, 8 cm in diameter, light grey-blue-green, subglobose, somewhat heart-shaped, surface divided into prominent protruding knobs or tubercles, which separate, sweet, edible cream-colored soft pulp; seeds, numerous, blackish, embedded in pulp. Fruit tree planted in home gardens and growing spontaneously in inland coastal and lower escarpment forest. Ripe fruit eaten raw. 3(58589), 5(37), 6, 7.

***Cananga odorata* (Lam.) Hook.f. & Thoms.** "ylang-ylang", "perfume tree"  
 derangerang, derangirang (N)  
 syns. *Canangium odoratum* (Lam.) Baill. ex King; *Uvaria odorata* Lam.

Recent introduction. Indomalaysia. Uncommon. Tree, up to 15 m or taller, with a crooked trunk, smooth grey bark and drooping, brittle branches; leaves, 7 to 20 cm long and 4 to 9 cm wide, dark green, alternate, simple, entire, elliptic-oblong, acute, base rounded, obtuse, slightly pubescent, pinnately nerved, midrib prominent; petiole, mostly less than 2 cm; flowers, yellowish-green turning yellow, drooping, very fragrant, sepals 3, petals 6, up to 6 or 8 cm long, wavy, linear-lanceolate, on long puberulent pedicels, in axillary hanging (pedunculate) umbellate clusters of 4 to 12 flowers; fruit, 1.5 to 2.5 cm long, greenish-black, oblong, olive-like, fleshy, borne in bunches from a stalk which lengthens as the fruit develops; seeds, 6 to 12. Planted ornamental tree in home gardens in Buada Lagoon area. Flowers used in garlands and for scenting coconut oil. An important aboriginal introduction of considerable cultural importance throughout Melanesia and Polynesia, where the flowers are used in garlands and to scent coconut oil. Used in the commercial production of essential oil in the Philippines and Indonesia. 5(17), 6, 7.

#### **APIACEAE OR UMBELLIFERAE (Parsley Family)**

***Apium petroselinum* L.** "parsley"  
 syns. *Petroselinum petroselinum* (L.) Karst.; *P. crispum* (Mill.) Mansf.

Recent introduction. S. Europe and W. temperate Asia. Rare. Erect biennial or short-lived perennial herb, up to 25 to 40 cm tall, with a stout tap root; leaves, aromatic, shiny, dark green, in dense, tufted rosettes, 2 to 3-pinnate, with leaflets, 1 to 2 cm long,

deltoid-ovate, but deeply toothed or lobed, often much crisped; flowers, 2 mm in diameter, greenish-yellow, umbellets, 10 to 20 flowered, borne in flat-topped compound umbels, 2 to 5 cm in diameter; fruit (carpel), 2 to 3 mm long, grey-brown, ovoid, laterally compressed, with 5 slender ridges. Pot herb in European home gardens; planted in a halved 50-gallon drum on Command Ridge. Leaves and stems used by European inhabitants as a spice in cooking. 5.

**Coriandrum sativum** L. "coriander", "cilantro", "Chinese parsley"  
 dhania (Hindi), uen sai (C)

Recent introduction. S. Europe and the Mediterranean region. Occasional. Erect annual herb, 15 to 30 cm high; lower leaves, bright green, broad with crenately-lobed margins, upper leaves finely cut with narrow linear lobes; flowers, white to pinkish, in terminal umbels; fruit, about 3 mm in diameter, globose, yellow-brown, ribbed, 2-seeded, with an unpleasant smell when unripe, but later becoming pleasantly aromatic. Pot herb grown in Chinese home food gardens at Location and at Topside workshops. Aromatic leaves used as a spice by Chinese and Indians. Dried, imported seeds an important spice in curries. 5, 6, 7.

#### APOCYNACEAE (Dog-bane Family)

**Adenium coetatum** Stapf "desert rose", " mock azalea"  
 syn. *A. obesum* Balf.

Recent introduction. E. Africa. Rare. A smooth succulent shrub, 40 to 150 cm high, with a thick trunk, short branches and milky sap which is said to be poisonous; leaves, 2.5 to 10 cm long, dark green, shiny, ovate, arranged spirally in tufts at branch tips; flowers, about 5 cm long and 3.8 cm across, red-pink, short-stemmed, funnel-shaped, developing in clusters, 2 to 10 together. Pot plant in home gardens. 3(58716), 5, 6(176), 7.

**Allamanda hendersonii** Bull "allamanda", "cup of gold"  
 syn. *A. cathartica* L. var. *hendersonii* (Bull) Bailey & Raff.

Recent introduction. Brazil. Rare. Robust woody vinelike climbing shrub, with milky poisonous sap; leaves, 8 to 15 cm long and mostly 4 to 5 cm wide, bright green, shiny, opposite in pairs or in whorls of 3 or 4, elliptical to sub-obovate, but broadest above the middle, abruptly acuminate, entire, thick and somewhat leathery (coriaceous), midrib prominent; petiole very short; flowers, corolla tube 4 to 5 cm long, showy bright yellow, slightly fragrant, trumpet-shaped, 5-parted with broad, spreading rounded lobes,



totalling 6 to 7 cm or wider, borne in axillary and terminal racemose clusters of about 10 flowers; fruit, a prickly capsule. Planted ornamental. 3(58697), 5, 6.

**Allamanda violacea** Gardn. & Field

"purple allamanda"

Recent introduction. Brazil. Rare. Woody vinelike climbing shrub; leaves, similar to *A. hendersonii*, but bearing short, stiff hairs; flowers, similar to *A. cathartica*, but red-purple and 5 to 6.5 cm in diameter. Planted ornamental. 3, 5, 6.

**Catharanthus roseus** (L.) G. Don

"periwinkle", "Madagascar periwinkle"

denea (N); te buraroti (K); losa (T)

syns. *Vinca rosea* L.; *Lochnera rosea* (L.) Reichenb.

Pre-World War II introduction. Madagascar. Common. An everblooming erect perennial herb, up to 50 cm or taller, with white milky sap; leaves, 2.5 to 8 cm long and 2 to 3 cm wide, opposite, oblong or oblong-obovate, apex rounded, tipped with a sharp point, base acute, finely puberulent on both surfaces; midrib pale; flowers, showy white or pink, with or without a red throat, 5-parted, corolla tube, 2.5 to 3 cm long, lobes, 1.5 to 2 cm long, calyx, about 6 mm long, with awl-shaped lobes; fruit, up to 3 cm long, with paired, 2.5 cm long puberulent podlike cylinders containing several cylindrical seeds. Planted ornamental. Flowers used in garlands and reportedly boiled by some people and drunk as a cure for diabetes. 3(58758), 5(127), 6, 7.

**Cerbera manghas** L.

"cerbera", "sea mango"

dereiongo, dereiyongo (N); te reiango (K?)

syns. *C. odollam* sensu auct. non Gaertn.; *C. lactaria* (G. Don) Ham.; *Tan-ghinia lactaria* G. Don

Indigenous. Trop. Asia to the Pacific Is. Rare. Medium-sized tree, up to 7 m or taller, with white sap; leaves, 15 to 30 cm long and 5 to 8 cm wide, dark green, shiny, simple, entire, lanceolate or obovate-lanceolate, acuminate, base acute-decurrent, spirally and closely arranged; petiole 2 to 3 cm long, narrowly winged by decurrent blade margins; flower, 2.5 to 6 cm wide, tube about 2.5 cm long, 5-petaled, white with red throat, fragrant, calyx with 5 narrow lobes, 1.3 cm long, borne in branching terminal clusters about as long as the leaves; fruit, globose or ovoid, 5 to 7 cm long, smooth, deep purple to black when ripe, single or paired; seed, a woody stone, poisonous. Found near homes on the coastal strip and near church at Buada. Seems to be planted, or at least protected in built-up areas. No reported use by Nauruans, but its poisonous fruit is reportedly used medicinally and to poison fish in Samoa, Tonga and elsewhere in the Pacific. 5(16), 6, 7.

**Nerium oleander** L. var. **oleander**  
te orian (K)

"oleander"

Pre-World War II introduction. S. Europe to Iran. Occasional. Large erect shrub, up to 4 m or higher, with arching stems rising from the ground, young growth finely pubescent, young branches slightly 3-angled and all parts extremely poisonous; leaves, 10 to 20 cm long and 2 to 3.5 cm wide, dull grey-green, narrowly oblong-lanceolate, acute at both ends, entire, flat, leathery (coriaceous), midrib prominent, lateral nerves numerous, fine; flowers, 4 to 5 cm wide, showy, white, pink to deep red, slightly scented, with five toothed appendages in the corolla throat, borne in terminal cymose clusters; fruit, 10 to 20 cm long, seldom seen, sometimes developing from single flowers. Planted ornamental. 2, 3(58783), 4, 6, 7.

**Nerium oleander** L. var. **indicum** (Mill.) Deg. & Deg.  
oleander" te orian (K)  
syns. *N. indicum* Mill.; *N. odorum* Soland.

"oleander", "sweet scented"

Post World War II introduction? Iran to Japan. Occasional. Large erect shrub, up to 4 m or higher, with arching stems rising from the ground, young growth finely pubescent, young branches slightly 3-angled and all parts extremely poisonous; leaves, 10 to 20 cm long and 1.5 to 3 cm wide, dull grey-green, narrowly oblong-lanceolate, acute at both ends, entire, edges rolled back, leathery (coriaceous), midrib prominent, lateral nerves numerous, fine; flowers, 4 to 5 cm wide, corolla usually double, showy, white, pink to deep red, fragrant, funnel-shaped, with fringed appendages in the corolla throat, borne in terminal cymose clusters; fruit, 10 to 20 cm long, paired, pod-like, seldom seen, sometimes developing from single flowers. Planted ornamental shrub. 3, 5, 6, 7.

**Ochrosia elliptica** Labill.

eorara, eoerara (N)

syn. *Bleekeria elliptica* (Labill.) Koidz.

Indigenous. Australia to the Pacific Is. Occasional to common. Small to medium-sized tree, up to 8 m or higher, with white milky sap; leaves up to 15 cm long, oval or inverted ovate, blunt or short-pointed, leathery (coriaceous), arranged in pairs, threes or fours, with blades tapering into petioles about 1.2 cm long; flowers, small, cream-colored, fragrant, stemless, developing in short cymose clusters at or near the branch tips; fruit, 2.5 to 4.5 cm long, bright red, ovoid drupe, slightly keeled or flattened on the margins, pointed, twinned, with mealy violet, scented pulp surrounding one or two seeds. ~~Tree in forest remnants on rocky outcrops on the central plateau, in escarpment forests on southern half of the island, and occasionally in home gardens on coastal strip.~~ Wood used by Nauruans for rafters and small timber; leaves used medicinally, being crushed with coconut cream to treat rashes, especially for children; fruit used in children's games, and fruit and flowers used in garlands. 2, 3(58802), 4(168N), 5(92), 6, 7(27812).

**Plumeria obtusa** L. "white frangipani", "plumeria"  
 demeria (N); te meria (K); melia, pua Solomona, melia Solomona (T)

Recent introduction. Trop. America. Common. Small to medium-sized, soft-wooded, broad-crowned, knobby, branching evergreen tree, up to 5 m or taller, with thick fragile branch tips and white milky sap; easily planted from cuttings; leaves, 20 to 35 cm long and 6 to 10 cm wide, dark green, glossy, alternate, obovate rounded, blunt, smooth (glabrous), tapered at the base, pinnately nerved, midrib prominent, lateral nerves loop-connected near margin, clustered near the ends of branches; petioles, 4 to 9 cm, stout; flowers, 4 to 6 cm in diameter, all white with a central yellow eye, fragrant, but less so than *P. rubra*, 5-parted, narrowly tubular, petal lobes obovate, longer than tube, borne in terminal cymose clusters; fruit, 15 to 24 cm long, dark green later black, single or twinned, cylindrical, fusiform, with many flat winged overlapping seeds. Flowers used in garlands and dried in sun and used to scent coconut oil (*eir*). 3(58775), 5(111), 6, 7.

**Plumeria rubra** L. "frangipani", "plumeria", "temple tree", "graveyard tree"  
 demeria, arabaneit (N); te meria (K); melia, pua Fiti, melia Nauru (T)  
 syns. *P. acuminata* Ait.f. and *P. acutifolia* Poir.

Pre-World War II introduction. Trop. America. Common. Small to medium-sized, soft-wooded, broad-crowned branching deciduous tree, up to 5 m or taller, with thick fragile branch tips and white milky sap; easily planted from cuttings; leaves, 20 to 35 cm long and 6 to 10 cm wide, pale green to grey-green, alternate, elliptic-oblong, acute or acuminate, smooth (glabrous), tapered at the base, pinnately nerved, midrib prominent, lateral nerves loop-connected near margin, clustered near the ends of branches; petioles, 4 to 9 cm, stout; flowers, 3 to 5 cm in diameter, waxy-white to yellow, pink, deep red or multicolored variations, very fragrant, 5-parted, narrowly tubular, petal lobes obovate, longer than tube, borne in terminal cymose clusters; fruit, 15 to 20 cm long, dark green later black, single or twinned, cylindrical, fusiform, with many flat winged overlapping seeds. Planted ornamental. The name *demeria* seems to be applied to all color forms and to both species of *Plumeria*, with the older name *arabaneit* being reserved for the bright yellow to yellow-white cultivars, which are longer established in Nauru. Leaves used medicinally and mixed with coconut oil for curing fever; flowers used in garlands and dried in the sun and used to scent coconut oil (*eir*). 2, 3(58654), 5(50), 6, 7.

**Tabernaemontana divaricata** (L.) R. Br. "false gardenia", "paper gardenia",  
 "crepe jasmine", "scentless gardenia"  
 syns. *Nerium divaricatum* L.; *N. coronarium* Jacq.; *Tabernaemontana coronaria*  
 (Jacq.) Willd.; *Ervatamia divaricata* (L.) Burkill; *E. coronaria* (Jacq.)  
 Stapf; *Tabernaemontana alternifolia* L.; *Nyctanthes acuminata* Burm.f.

Recent introduction. India. Occasional. Smooth erect shrub, up to 2 or 3 m tall, resembling a gardenia, with scanty, white milky sap; leaves, 6 to 15 cm long and 2 to 4.5 cm wide, dark green, lighter below, glossy, opposite, elliptic oblong, acute or obtuse, acute at base, glabrous, thin, with 6 to 10 pairs of curving veins; petiole short, mostly about 1 cm long, clasping the stem; flowers, 2.5 to 5 cm in diameter, usually several, up to about 8, together or rarely solitary, in flat-topped corymbose clusters near branch tips or leaf axils, white, nearly odorless, calyx about 5 mm long, segments rather broad, deltoid and obtuse, corolla, 5-parted, tube 1.5 to 2.5 cm long, cylindrical, lobes, about 2 cm long, often doubled and ruffled, crinkled or crepe-like; fruit, rarely seen in cultivation, 3 to 7 cm long, yellow-orange, paired, oblong, podlike, with 1 to 3 ridges, pubescent, red within; seeds, many, embedded in pulp. Planted ornamental. 3(58706), 5, 6(222), 7.

**Thevetia peruviana** (Pers.) K. Schum.

"be-still tree", "yellow oleander"

syns. *Cerbera peruviana* Pers.; *C. thevetia* L.; *Thevetia neriifolia* Juss. ex Steud.; *T. thevetia* (L.) Millsp.

Recent introduction. Peru. Occasional. Everblooming shrub or small tree, up to 8 m or taller, propagated from seeds and cuttings; all parts reportedly poisonous; leaves, 5 to 15 cm long and 0.5 to less than 1 cm wide, numerous, dark green, somewhat shiny above, paler beneath, leathery (coriaceous), alternate, linear-lanceolate, acute or subobtuse, acute at base; petiole, very short, about 3 mm long; flowers, about 4 to 7 cm long, 5-parted to more than halfway down, showy yellow, mildly fragrant, funnel- or trumpet-shaped, borne in terminal cymose clusters; calyx, 1 to 1.3 cm long, 5-lobed, acute-acuminate; fruit, 4 to 5.5 cm broad, a juicy red drupe, ripening to black, containing a thin layer of pulp and 2 oily seeds. Planted ornamental. 3(58704), 5(78), 6, 7.

#### AQUIFOLIACEAE (Holly Family)

**Ilex** sp.

"holly"

Recent introduction. Eurasia. Rare. Evergreen shrub with short-stemmed leaves bearing several strong spines. Planted ornamental. 6(164).

## ARALIACEAE (Panax Family)

**Polyscias balfouriana** (Andre) Bailey "panax"

Recent introduction. Melanesia. Rare. Large erect shrub, up to 3 m or taller, with few, rapidly ascending branches; leaves, 20 to 50 cm long, compound, 1-pinnate; petioles, 8 to 22 cm long, petiolules, 2 to 4 cm long; leaflets, 5 to 20 cm long and 5 to 18 cm wide, ovoid to orbicular, cordate, shiny, dark-green, opposite, mostly 3 or 5 in number, terminal leaf largest, crenate. Planted ornamental, commonly in hedges. 5, 6, 7(22324).

**Polyscias cumingiana** (Presl) Fern.-Vil. "panax"

lautagitagi (T)

syns. *Paratropia cumingiana* Presl; *Nothopanax cumingii* Seem.; *Aralia filicifolia* C. Moore ex Fourn.; *Polyscias filicifolia* (Moore) Bailey

Recent introduction. Malesia, possible to Melanesia. Rare. Large erect shrub, up to 3 m or taller, with few, rapidly ascending weak branches; leaves, mostly 15 to 70 cm long, alternate, 1-pinnate, uppermost leaves turning a showy light-yellow, giving the plant a feathery appearance; petioles, 5 to 20 cm long, petiolules, 1 to 2.5 cm long; leaflets, 6 to 15 cm long and about 5 cm wide, opposite, entire to sharp-toothed or narrowly lobed, 6 to 7 pairs, plus terminal leaflet (13 to 15 leaflets), anise-scented; petioles 1 to 2 cm long. Planted ornamental, commonly in hedges. 6, 7.

**Polyscias fruticosa** (L.) Harms "panax"

te mamara (K?); lautagitagi (T)

syns. *Panax fruitcosum* L.; *Nothopanax fruticosus* (L.) Miq.

Pre-World War II introduction. India to W. Polynesia. Occasional. Erect, rather few-branched shrub, 1 to 3 m tall; leaves, up to 30 cm or longer, alternate, pinnate, usually bi- or tri-pinnate; leaflets, 5 to 10 cm long, terminal leaf usually the largest, green or variegated, commonly edged with white, glabrous, anise-scented, irregularly-shaped, more or less lanceolate, usually toothed, lobed lacinate or pinnatifid; flowers, small, greenish-white, borne in small umbels, forming large terminal paniculate clusters; fruit, flattened, orbicular, ribbed 2-seeded. Planted ornamental, commonly in hedges or as a living fence. 2, 3(58698), 5, 6(171), 7(22323).

**Polyscias guilfoylei** (Cogn. & March.) Bailey "panax", "hedge panax"

te toara (K); lautagitagi (T)

syns. *Aralia guilfoylei* Cogn. & March.; *Nothopanax guilfoylei* (Cogn. & March.) Merr.

Pre-World war II introduction. Melanesia to S. Polynesia. Common. Large shrub, 2 to 6 m tall, with weak, rapidly ascending vertical branches and light grey bark; leaves, mostly 15 to 50 cm long, alternate, variable, but commonly broadly ovate or elliptic and coarsely sharply-toothed or lacinate, rarely subentire, commonly variegated with white or pale yellow margins, or sometimes all dark green, shiny; petioles, 2 to 3 cm long, clasping the stem; flowers, rarely seen, small, 5-parted, petals, 2.5 by 1.2 mm, in umbels, borne on a large, much-branched terminal panicle; fruit, usually 3- to 4-celled, with 3 to 4 seeds, 4 by 5 mm. Planted ornamental, commonly as a hedge or living fence. 2, 3(58696), 5(20), 6, 7(27822).

**Polyscias scutellaria** (Burm.f.) Fosb. "panax"  
te toara (K); lautagitagi (T)  
syns. *Crassula scutellaria* Burm.f.; *Polyscias pinnata* J.R. & G. Forst.; *Nothopanax scutellaria* (Burm.f.) Merr.

Recent introduction. S.E. Asia. Occasional. Medium-sized erect shrub, 1 to 3 m tall, with weak, ascending branches; leaves, simple (unifoliate) or pinnate, with 3 or sometimes 5 leaflets; petioles, at least 12 cm, petiolules, 2 to 5 cm or longer; leaflets, 5 to 14 cm in diameter, the terminal leaflet of compound leaves largest, orbicular-cordate, concave and saucer-like, glossy, base subcordate-cordate, sometimes obliquely so, green or with white or yellow variegations, some forms wavy or with blunt or rounded teeth (crenate); flowers, borne in umbels on a much-branched panicle, small, about 3 mm long, petals, about 2.5 mm long, 6 or 7 in number; fruit, flattened, 2-seeded (rarely 3-celled and 3-seeded). Planted ornamental, commonly as a hedge or living fence. 3(58693), 5, 6, 7.

**Polyscias tricochleata** (Miq.) Fosb. "panax"  
syn. *P. pinnata* Fosb. cv. *tricochleata* Stone; *Nothopanax tricochleatus* Miq.

Recent introduction. Pacific Islands. Rare. Erect shrub, 1 to 2 m tall; leaves usually trifoliate (rarely 1 or 5 leaflets); leaflets, orbicular, white- or yellow-margined; flowers and fruit unknown. Known to be a mutant form of *P. pinnata*. Planted erect ornamental shrub with white-margined leaflets. 3(58674), 7(22325).

**Schefflera actinophylla** (Endl.) Harms "Queensland umbrella tree", "octopus tree"  
syn. *Brassaia actinophylla* Endl.

Recent introduction. N. Australia. Occasional. Small to medium-sized, soft-wooded tree, up to 10 m or taller, with thick branches marked by conspicuous leaf-scars, sometimes epiphytic; leaves, large, up to 90 cm or wider in diameter, palmately-compound, umbrella-shaped, with 7 to 15, usually 7 to 9, leaflets, forming rosettes at the

branch ends; main petioles 15 to 45 cm long, petiolules, 2.5 to 8 cm long; leaflets, 10 to 30 cm long, elliptic-obovate, oblong, sub-acuminate, the central ones longest, shiny, dark-green, leathery (coriaceous); flowers, in small red heads, arranged more or less spicate-racemosely along stout wide-spreading axes, up to 60 cm or longer, several of which radiate, like the tentacles of an octopus, from a central hub-like axis arising from each leaf cluster; fruit, 10- to 12-seeded, nutlets, red-purple. Planted ornamental. 3(58672), 5, 6, 7.

### ASCLEPIADACEAE (Milkweed Family)

***Asclepias curassavica* L.** "milkweed", "butterfly weed", "red cotton bush", "bloodflower"  
dupaimdupaim, dupaimdupwaim (N)

Pre-World War II introduction? Trop. America. Rare. Slender erect, branched, woody perennial herb, up to 1 m or higher, with milky sap; leaves, 6 to 15 cm long and 1 to 3 cm wide, opposite, oblong-lanceolate, acute at both ends, pinnately-nerved, pubescent on nerves beneath; flowers, many, small, about 60 mm in diameter, borne in 4- to 15-flowered terminal and axillary umbels on finely pubescent peduncles, 3.5 to 6 cm long; corolla, 7 to 9 mm long, red to reddish-purple, with 5 deeply-parted lobes, bent backward (reflexed), and a protruding orange to yellowish-orange scaly crown, 3.5 to 4 mm long; fruit, 5 to 7.5 cm long, erect, pointed, ovoid, podlike, smooth or downy, containing numerous round, flat seeds, 6 to 7 mm long, each bearing a tuft of long, silky, white hairs, 2 to 2.7 mm long. Planted ornamental; flowers used for body ornamentation and making garlands; reportedly poisonous to livestock. 5, 6.

***Calotropis gigantea* (L.) R. Br.** "crown flower", "giant milkweed"  
te bumorimori (K)  
syn. *Asclepias gigantea* L.

Recent introduction. India to Indonesia. Rare. A large shrub, up to 4 m or higher, with thick downy branches and copious milky sap; leaves, 7.5 to 25 cm long, nearly stemless (shortly petiolate), broad ovate-oblong, thick, pale green, downy, woolly beneath, indented at base; flowers, about 3 to 4 cm in diameter, pale lavender or white, sweetish fragrance that deteriorates when crushed, with 5 curled-back petals and a prominent symmetrical crown, sometimes only consisting of the flower crowns. Planted ornamental at the Meneng Hotel. 3(58771), 5, 6(152), 7.

**Hoya carnos** (L.) R. Br.

"wax plant", "wax flower"

syns. *Asclepias carnos* L.

Recent introduction. S. China. Rare. Fleshy waxy climbing vine, climbing by roots, up to 2 m or longer; leaves, 5 to 10 cm long, opposite, narrow to broad ovate-oblong, mid-green, thick, fleshy, shiny, flat; flowers, 1 to 1.3 cm in diameter, 5-parted, white with pink centers, convex, wheel- or star-shaped, waxy, fragrant. Planted ornamental. Single specimen; could have been the Australian species, *H. australis* R. Br. (syn. *H. bicarinata* Gray). 6, 7.

### ASTERACEAE OR COMPOSITAE (Aster, Sunflower or Composite Family)

**Ageratum conyzoides** L.

"goat weed", "ageratum"

bwiyat tsige, bwiyat ziege (N)

Pre-World War I introduction. Trop. America. Occasional. Erect to somewhat sprawling, branching, weak-stemmed, strong smelling, annual herb, up to 80 cm high; leaves, 2 to 10 cm long and 1 to 5 cm wide, opposite, ovate or rhombic-ovate, acutish, base rounded and acute at petiole, edges scalloped, pubescent on both surfaces, glandular dorsally; petiole up to 5 cm or longer; flowerheads, small, 4 to 6 mm long, bluish, corymbose, in loose, terminal and axillary clusters; involucre bracts, 3 mm long, acute-acuminate, subglabrous; florets, about 75 per head, about 1 mm long, white or light purplish-blue; fruit (achenes), 1.5 to 2 mm long, numerous, angled, nearly glabrous; pappus, of 5 awned scales. Found on low ground near Buada Lagoon and occasionally in other ruderal habitats. Leaves and flowers used in garlands and body decoration and for scenting coconut oil. 3(58652), 5(11), 6, 7, 8(9574).

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

"cobbler's peg", "Spanish needle" kauen oe, kawen oe (N)

syns. *Coreopsis alba* L.; *C. leucanthema* L.; *C. leucantha* L.; *B. pilosa* L. var. *radiata* sensu auct. non Sch.-Bip.; *B. leucantha* (L.) Willd.

Recent introduction. Trop. America. Rare. Erect branching annual herb (in big plants, the branches sometimes straggling), up to 1.5 m tall; leaf blades, 1 to 12 cm long and up to 6 cm wide, lower leaves simple, ovate and serrate, but upper leaves trifoliate or imparipinnate, leaflets ovate or ovate-oblong, acute, basally decurrent, petiolulate, serrate; petioles, up to 6 cm long; flowerheads, few, in panicles; involucre bracts, about 7 or 8, linear-spatulate; heads, 6 to 8 mm long and 6 to 8 mm wide; ray florets bright white, 6 to 8 mm long; disc-florets yellow; fruit (achenes), linear, 7 to 13 mm long, black or dark brown, about 1 mm wide, flat, 4-angled, short-strigose or glabrous, with 2 to 4 barbed awns, about 3 mm long, at the tip. Weed on dirt pile near Topside sports oval; not seen in 1987. 4(142N), 5(76), 6.



**Bidens pilosa** L.

"cobbler's peg" Spanish needle"

Recent introduction. Trop. America. Common? Slender, erect, branching annual herb, 20 to 90 cm tall; stems, 4-angled, glabrous; leaves, mostly 1 to 5 cm long, simple to compound or deeply 3 to 5-lobed, opposite; lobes or leaflets ovate to lanceolate, acute, decurrent at the base, serrate, mostly glabrous; flowerheads, 5 to 10 mm long, on terminal or upper axillary panicles or solitary on long stalks (peduncles), up to 3 cm long; involucre bracts, 2 to 3-ranked, lanceolate, the outer ones somewhat leaflike; ray florets usually absent; disc-florets, yellow, tubular; fruit, 6 to 12 cm long, a black, ribbed, straight or curved, linear achene, tipped with 2 to 4 barbed awns, which adhere to clothing. Weed in wastelaces, ruderal habitats and gardens. 8.

**Conyza bonariensis** (L.) Cronq.

"hairy horseweed"

syns. *Erigeron bonariensis* L.; *E. crispus* Pourr.; *E. albidus* (Willd. ex Spr.) A. Gray; *Conyza albida* Willd. ex Spr.

Recent introduction. Pantropical. Rare. Slender, erect annual herb, 30 cm to 1 m or higher, with pubescent stem, the lower portion with leaf scars; leaves, 2.5 to 12 cm long, dark greyish-green, narrowly lanceolate, lower ones, oblanceolate, coarsely dentate, upper ones, linear, entire, pubescent on both surfaces, attached to stem by a broad base; flower heads, 1 to 1.3 cm in diameter, in racemes or racemose panicles; involucre bracts, about 5 mm long, grey-pubescent (downy); ray-florets, usually many, inconspicuous, white to cream; fruit, about 1.6 mm long, narrow, oblong, pale achene tipped with a pappus of light silky hairs, 3 to 5 mm long. Weed in waste places. 4(133N), 5.

**Dahlia pinnata** Cav.

"dahlia"

Recent introduction. Mexico. Rare. Perennial herb, up to 1 m or higher, with tuberous roots; leaves, opposite, simple or divided feather-fashion one to three times; leaflets, toothed or lobed, arranged in pairs with an extra leaflet at the tip; flowerheads, 2.5 to 10 cm in diameter, long-stemmed, single or double, flat to globose; ray-florets, yellow central florets surrounded by conspicuous flat, tubular or rolled outer ray-florets, ranging in color from white and yellow to pink, purple and red, which range from eight to many and often conceal the central ray-florets; fruit, tiny, narrow, flattened and tipped with 2 teeth or untipped. Planted ornamental. 5(79), 6.

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

"purple sow thistle", "floras paintbrush"

syn. *Cacalia sonchifolia* L.

Recent introduction. Pantropical. Occasional. Erect, soft-stemmed, branching annual herb, 10 to 40 cm tall, lower stems pubescent, upper ones nearly glabrous; leaves, 3 to 15 cm long and 5 to 7 cm wide, simple, alternate; lower leaves, deeply irregularly lobed or dentate, subdeltoid to spoonshaped, clasping stem at the base; upper leaves, smaller, lanceolate, toothed to subentire, sometimes purplish beneath on midrib and bluish-green (glaucous) on blade; flower heads, 0.8 to 1 cm long and 2.5 to 6.5 mm wide, few, cylindrical, on slender lax peduncles in loose, branching terminal clusters; involucre bracts, about 8, cylindrical, fused, which split apart and reflex at maturity, almost covering the flowers; ray-florets absent; disc-florets, 30 to 60 in number, 5-lobed, white below, lavender to pink at the tips, tubular, just slightly longer than the involucre; fruit, about 2.5 to 3 mm long, brown, prism-shaped, 5-ribbed achene, with a pappus of numerous, silky white bristles, 6 to 8 mm long. Weed in waste places and as a pioneer in recently mined areas. 5(115), 6, 7(22313), 8.

**Gerbera jamesonii** Bolus

"Transvaal daisy", "gerbera", "African Daisy"

Recent introduction. S. Africa. Rare. Hairy perennial herb, 30 to 35 cm high; leaves, 15 to 30 cm long (blade about 2/3 as long as stem), many, deeply lobed, feather-fashion, woolly beneath, arranged in a basal rosette; flowerheads, 7.5 to 10 cm in diameter, attractive, daisy-like, pink, red, orange, yellow or cream-colored, solitary, borne on the crest bare flower stalks, about 25 to 40 cm long; central disc-florets, many, surrounded by 1 or 2 rows of narrow orange ray-florets; many single and double hybrid forms exist. Planted ornamental. 5, 6, 7.

**Gynura aurantiaca** (Bl.) DC.

"purple passion flower", "velvet plant"

Recent introduction. Java. Rare. Erect or semi-climbing, up to 75 cm; ovate, deeply lobed or toothed, leaves, dark green, covered with thick, bright purple hairs, giving the plant a velvety appearance; flowerheads, about 2.5 cm in diameter, like a petal-less daisy; disc-florets orange. Ornamental pot plant. 6.

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

"synedrella", "nodeweed"

syn. *Verbesina nodiflora* L.

Recent introduction. Trop. America. Occasional. Coarse, erect to ascending, branched annual herb, 10 to 75 cm high, often rooting at lower, decumbent nodes; leaves, 1.5 to 8 cm long and 1.5 to 5 cm wide, larger leaves usually at the top, simple, opposite, ovate to elliptic, acute tip and cuneate base, subentire to crenate-serrate, scabrous, 3-nerved from base; petiole, about 1 to 1.5 cm long, winged, pubescent on

both surfaces; flowerheads, 0.6 to 1.2 cm long and 5 to 6 mm across, 10 to 20-flowered, subsessile, solitary or few together on short axillary or terminal peduncles; involucre bracts, nearly 1 cm long, only 4 or 5, lanceolate, 2-ranked (2-seriate); ray-florets, about 3.5 to 4 mm long, yellow, strap-shaped, 3-lobed; disc-florets, yellow, with tubular corollas; fruit, 4 to 5 mm long, a black or dark-brown achene, those of ray-florets flat, oval and spiny-edged or winged with 2 terminal awns, those of the disc-florets cylindrical, unwinged with 2 erect spiny terminal awns about half as long as the achene. Weed in low ground around Buada Lagoon and in other ruderal habitats. 3(58648), 4(134N), 5(97), 6, 7, 8(9573).

**Tagetes erecta** L.

"marigold", "Aztec marigold", "African marigold"

Recent introduction. Mexico. Rare. Erect, smooth, few-branching, strongly-scented, annual herb, up to 60 cm high; lower leaves opposite, upper leaves alternate, pinnately parted or pinnate, up to 12 cm long, the segments more or less oblong, acute, distally dentate, up to 9 cm long and 1.5 cm wide; flower heads, 4 to 8 cm in diameter, solitary, flat to globose, borne on peduncles which flare distally; involucre bracts, about 2 cm long, arranged cylindrically; ray-florets yellow to red-orange, many, often concealing the central disc-florets; fruit, achene tipped with pappus, about 1 cm long, and several short scales, 3 to 4 mm long. Planted ornamental. 5, 6.

**Tridax procumbens** L.

"wild daisy", "coat buttons"

Pre-World War II introduction. Trop. America. Common. Pubescent perennial herb with prostrate to ascending stems, up to about 80 cm long; leaves, 1 to 6 cm long and 1 to 3.5 cm wide, opposite, broadly lanceolate, coarsely toothed, acute or subacute, cuneate at base, hispid on both surfaces; petioles, 5 to 15 mm long; flowerheads, about 1 cm long and 2 cm wide, terminal, borne on erect pilose peduncles, 10 to 30 cm long; involucre bracts, 2- or 3-ranked, puberulent; ray-florets, about 4 to 5 mm long, 5 or 6 in number, with a narrow corolla tube and broad ligulate limb, about 3 by 5 mm, white to light yellow; disc-florets, many, the corolla narrow-campanulate, about 8 mm long, bright yellow, 5-lobed and hairy at top; fruit, about 2 mm long, dark grey-brown, densely hairy achene, with a spreading pappus, 5 to 6 mm long, of plumose hairs. Weed in settled areas and near airport; pioneer in recently mined areas. 2, 3(58657), 4(145N), 5(25), 6, 7, 8(9548).

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

"iron weed"

syns. *V. parviflora* Reinw. ex Bl.; *V. cinerea* var. *parviflora* (Reinw. ex Bl.);  
*Conyza cinerea* L.

Pre-World War II introduction. Trop. Asia. Common. Erect loosely branching annual herb, 15 to 60 cm tall, stems longitudinally ribbed; leaves, 1 to 7 cm long and 1

to 2.5 cm wide, simple, alternate, lanceolate to ovate, acute, or variably shaped, the upper ones narrower, smaller and subsessile, the lower ones with surfaces minutely puberulent, base decurrent, irregularly toothed, with winged petioles, 1 to 3 cm long; flowerheads, 6 to 7 mm long, in loose terminal paniculate clusters on slender peduncles; involucre bracts, 4 to 5 mm long, green with brownish tips, lanceolate, 4-ranked (4-seriate), puberulent; ray-florets, absent; disc-florets, about 4 mm long, 20 to 25 in number, tubular, violet or pinkish violet, exerted; fruit, 1.5 to 2 mm long, a grey-brown, cylindrical, appressed pubescent achene, 1.5 to 2 mm long, bearing a terminal pappus of numerous white bristles which spread apart at maturity. Weed in settled areas; pioneer in recently mined areas. 2, 3(58611), 4(118N), 5(67), 6, 7, 8(9538).

**Wedelia trilobata** (L.) Hitchc.

"wedelia"

syn. *Silphium trilobatum* L.

Recent introduction. Trop. America. Occasional. Perennial creeping herb, reaching a thickness (height) of about 40 to 70 cm; leaves, 2.5 to 7 cm long, bright green, simple, opposite, three-lobed to lanceolate, toothed; petioles, short, extremely-winged, or lacking, clasping the stem; flowerheads, about 2 to 2.6 cm in diameter, daisy-like, solitary, on slender peduncles, about 5 to 7 cm long; involucre bracts, 6 to 9 mm long, green, lanceolate, 2-ranked, 5 short inner and 5 longer outer bracts; ray-florets, about 1 cm or longer and 0.5 cm wide, 8 to 10 in number, bright yellow; disc-florets, about 8 mm long, light yellow, tubular, 20 to 30 in number, fruit, not seen. Planted ornamental groundcover. 3(58609), 5, 6(237), 7.

**Zinnia elegans** Jacq.

"zinnia"

Recent introduction. Mexico. Erect annual herb, up to 60 cm tall, stems branched; leaves, 2.5 to 14 cm long and 1.5 to 6 cm wide, opposite, ovate to elliptic or oblong, obtuse or acute, hispid, sessile; flowerheads, 3 to 8 cm in diameter, solitary, showy, developing at stem and branch tips; involucre bracts, about 1 cm long, chaffy, in about 3-ranks; ray-florets, about 2 cm long and 1 cm wide, 14 to 20 in number, pistillate, violet, pink, orange, yellow or white; receptacle, convex, paleaceous, bearing numerous 5-lobed central disc-florets, about 5 mm long, yellow; fruit, 3-angled, compressed achene, with 1 to 3 terminal awns. Planted ornamental. 5(128), 6.

### BALSAMINACEAE (Balsam Family)

**Impatiens balsamina** L. "balsam", "garden balsam"

Recent introduction. India or Africa. Rare. Succulent, watery, erect, branching annual herb, up to about 60 cm high; leaves, up to 5 cm long and 4 cm wide, simple, alternate, lanceolate, acuminate, toothed (serrate); petiole, usually glandular at the base; flowers, up to 2.5 cm or more in diameter, short-stemmed, borne on short axillary pedicels on the stem below the leafy tip; sepals, 3 or 5, one usually spurred; petals, 3-lobed, lateral ones bifid, commonly double or long-spurred, showy yellow, white, pink, purple or red flowers; fruit, a woolly, 5-valved capsule, explosively dehiscent, the valves incurling instantly when separated; seeds, subglobose, usually brown, finely pitted. Planted ornamental. 5(117), 6.

**Impatiens walleriana** Hook.f. "snapweed", "patience plant", "Zanzibar balsam"  
syn. *I. sultanii* Hook.f.

Recent introduction. Zanzibar. Rare. Erect, branching, sub-shrubby perennial succulent herb, up to 50 cm high; leaves, alternate along the stem and arranged in a rosette at branch tips, narrow-ovate, acuminate at tip and base, toothed or scalloped, with soft point at each indentation; flowers, 2.5 to 3.5 cm in diameter, petals in one plane, borne, singly or 2 to 3 together, on long axillary pedicels; sepals, 3 or 5, 1 usually spurred; petals, showy, bright scarlet or red to pink, accompanied by a long spur; fruit, which may or may not develop in cultivation, a 5-valved capsule. Planted ornamental. 6.

### BASELLACEAE (Basella Family)

**Basella rubra** L. "Indian spinach", "Ceylon spinach", "Malabar nightshade"  
shaan ts'oi (C)  
syn. *B. alba* L.

Recent introduction. Trop. Asia. Occasional. Succulent dark-green to reddish-purple-stemmed, glabrous, branching, herbaceous, perennial twining vine, up to 4 m or longer; leaves, 5 to 15 cm long and 4 to 14 cm wide, alternate, entire, broad-ovate, almost heart-shaped, tender, fleshy; petioles, 1 to 2.5 cm long, green or purplish; flowers, 4 to 5 mm in diameter, sessile, closed, white to light reddish-purple, clustered on axillary spikes, 2 to 20 cm long; fruit, about 8 mm in diameter, ovoid, black, berry-like. Food plant in Chinese gardens and containers at Location. Leaves and tender stems cooked as a spinach. 5(138), 6.

### BEGONIACEAE (Begonia Family)

**Begonia coccinea** Hook.f.

"angel-wing begonia"

Recent introduction. Brazil. Occasional. Smooth shrub-like herb, up to 1 m or higher, with bamboo-like stems; leaves, 10 cm or longer, oblong, pointed, glossy green above, reddish below, finely edged with red, with a deep indentation at the base and wavy edges; flowers, about 2.5 cm in diameter, coral-red, borne in branched red-stemmed drooping clusters; male flowers, about 2.5 cm in diameter, 4-petaled, with two petals larger than the other two; female flowers, showy, with red, 3-winged ovary, about 2.5 cm long. Ornamental pot plant. 5, 6.

**Begonia rex** Putz × **B.** spp.

"hybrid begonia"

Recent introduction. Trop. America. Occasional. Erect perennial herb, up to 30 cm or higher, with short, thick, underground stems; leaves, variable, more or less ovate, pointing downward, angled or lobed, sometimes waxy, commonly with a silvery, pink, red, copper or bronze patterning on a background of all shades of green zone, and reddish beneath; flowers, variable small, pale pink, in small clusters rising from the leaves. Ornamental pot plant. 7.

**Begonia** spp.

"begonia" cultivars

Recent introduction. Trop. America. Occasional. Pot plants and planted ornamentals. 5(262), 6, 7.

### BIGNONIACEAE (Bignonia Family)

**Jacaranda mimosifolia** D. Don

"jacaranda"

syns. *J. acutifolia* Humb. & Bonpl.; *J. ovalifolia* R. Br.

Recent introduction. Brazil. Rare. Tree, up to 15 m or higher; leaves, up to 50 cm or longer, opposite, compound, fernlike, the primary axis with 20 to 40 branchlets (10 to 20 pairs of divisions), each which bears 14 to 24 pairs of oblong, hairy, pointed leaflets, about 6.5 mm long; flowers, terminal and axillary, 40 to 90 in number, borne in erect or drooping panicles, about 20 to 30 cm long; corolla, about 5 cm long, showy light blue-violet, perfumeless, bell-shaped, 2-lipped, 5-lobed; fruit, about 5 cm in

diameter, a round, flattened, wavy-edged capsule, which looks like a brown bivalve mollusc. One immature seedling planted as an ornamental. 6, 7.

**Spathodea campanulata** Beauv.  
"fountain tree"

"African tulip tree", "flame of the forest",

Recent introduction. Trop. Africa. Occasional. Medium-sized tree, up to 20 m tall, with soft, weak wood and a ridged or buttressed trunk; leaves, 30 to 50 cm long, dark-green, shiny, opposite, odd-pinnate, divided feather-fashion; leaflets, 4 to 12 cm long and 2.5 to 5.5 cm wide, 3- to 9-paired with a terminal leaflet, elliptic or ovate, acute-acuminate, entire, deep-veined, pubescent dorsally on nerves; petioles, 1 to 3 mm long; flowers, up to about 10 to 13 cm long, in showy terminal racemose clusters, opening a few at a time; calyx, hairy, closed in bud, opening along one side, boat-shaped, curving upward, nearly as long as corolla, containing water when closed; corolla, about 10 cm long and 5 cm wide, with 5 oval lobes, vivid red-orange to vermilion, the margins dark yellow, obliquely campanulate, gaping, segments crisped-undulate, somewhat tulip-shaped; stamens with yellow filaments; fruit, 15 to 20 cm long and 4 to 5 cm wide, black flattened canoe-shaped capsules; seeds, woody, with a wide parchment-like circular wing. Planted ornamental tree. Flowers used in garlands and for ornamentation. 3(58682), 5(123), 6, 7.

**Tecoma stans** (L.) Juss. ex HBK.

"yellow elder", "yellow bells", "tecoma",

"ginger Thomas" yellow flower (N); nei karairai (Miss or Mrs. Karairai)(K);  
neikarairai (T)

syns. *Bignonia stans* L.; *Stenolobium stans* (L.) D. Don

Recent introduction. Trop. America. Common. Erect shrub, up to 4 m tall; leaves, 10 to 30 cm long, opposite, pinnate; leaflets, 3 to 10 cm long and 2 to 3 cm wide, 5 to 13 in number, lanceolate to elliptic-oblong, serrate, acute-acuminate, base cuneate, sessile or short-petiolate, pinnately nerved; flowers, in large terminal racemose clusters; pedicels to 1 cm long; calyx, 3 to 5 mm long, tubular, campanulate, 5-toothed; corolla, 3 to 5 mm long, bright yellow, slightly fragrant, funnel-form-campanulate or bell-shaped, slightly bilabiate, with 5 wavy lobes; fruit, 10 to 20 cm long and 5 to 6 mm wide, narrow, flattened, rostrate capsule; seeds, many, winged. Planted ornamental. Showy flowers used in garlands and for ornamentation, especially by I-Kiribati. 3-(58656), 5(193), 6, 7, 8(9570).

### BOMBACACEAE (Bombax Family)

**Ceiba pentandra** (L.) Gaertn. "kapok tree", "silk-cotton tree" duwoduwo (N)  
 syns. *Bombax pentandrum* L.; *Eriodendron anfractuosum* DC.; *Ceiba casearia*  
 Medic.; *Bombax orientale* Spreng.

Pre-World War II introduction. India or Africa. Occasional. Tall deciduous, soft-wooded, light-grey-barked tree, up to 25 m or higher, with a buttressed trunk, commonly spiny below and cylindrical and smooth above, and horizontal tiers (whorls) of widely-spaced spreading branches; leaves, palmately compound, with 5 to 9 leaflets; leaflets, 7 to 18 cm long and 1 to 3.5 cm wide, elliptic to oblanceolate, acuminate, blue-green (glaucous) beneath, entire or obscurely toothed, distinctly petiolate; petioles, 7 to 20 cm long; flowers, which appear just before the leaves, clustered on branches; corolla, 5-petaled, cream-white or pale pink, pubescent; petals about 2.5 cm long; fruit, 7 to 15 cm long, oblong-ellipsoid, capsular, smooth, pendulous, 5-celled, eventually dehiscent, filled with numerous long, soft silky or cotton-like fibers, each 0.8 to 3 cm long; seeds, many, brown. Planted; some possibly spontaneous near Buada Lagoon. Fiber used in the past for stuffing pillows and mattresses. 3(58642), 5, 6, 7.

### BORAGINACEAE (Heliotrope Family)

**Cordia subcordata** Lam. "sea trumpet", "kou" (Hawaii)  
 eongo, eoongo, eowongo (N); te kanawa (K); kanava (T)

Indigenous. Indian Ocean to Hawaii. Rare to occasional. Medium-sized tree, up to 10 m or taller, with spreading branches and pale greyish slightly fissured bark; leaves, 5 to 20 cm long and 4.5 to 15 cm wide, alternate, pale green, thinly coriaceous, ovate, acute, base rounded, obtuse or truncate, lateral nerves 4- to 6-paired, margins entire or slightly wavy; petiole, 2 to 8 cm long; flowers, few to several, in short-stalked axillary and terminal cymose clusters; calyx, about 15 mm long, 3- to 6-lobed, lobes short-deltoid, pubescent ventrally; corolla, 2.5 to 4 cm long and 3 to 5.5 cm across the mouth (limb, which is plicate in bud), pale to bright orange, crepe-like, trumpet-shaped, scentless, 5 to 7-lobed, lobes 15 to 25 mm long, rounded; fruit, 2 to 3 cm long, ellipsoid or nearly round, apiculate-acute, enclosed in a fibrous, somewhat corky calyx, green when mature but aging to brown or black; seeds, 1 to 2 (rarely 3 or 4), coarsely muricate. Found on coastal strip near settlement areas, either planted or protected. Soft, durable wood considered by Nauruans to be excellent timber for woodcarving, boatbuilding, construction and furniture; leaves crushed and mixed with coconut milk to prevent baldness; flowers used in garlands. Trunk highly prized for woodcarving and canoe hulls throughout Micronesia, Polynesia and Melanesia. 3(58756), 5(77), 6, 7.



**Heliotropium procumbens** Mill. var. **depressum** (Cham.) Fosb. & Sachet "heliotrope"  
 syns. *H. gracile* var. *depressum* Cham.; *H. coromandelianum* var. *depressum*  
 (Cham.) A. DC.; *H. ovalifolium* Forsk. var. *depressum* (Cham.) Merr.

Indigenous. Trop. America. Rare. Prostrate branched perennial herb with a stout taproot; leaves, up to 3 cm long and mostly 3 to 6 mm wide, greenish-gray, pubescent, oblanceolate or linear-oblong, subsessile; flowers, only moderately crowded, rather sparsely pubescent, borne on one-sided coiled spikes on slender forked stalks (cincinni), 5 to 6 cm long; calyx lobes, unequal, longest to nearly 3 mm, lanceolate; corolla, 1.5 to 2 mm long, 5-lobed, white; fruit, globose, breaking into 2 to 4 1-seeded nutlets, about 1 mm high. Found on coastal strip near limestone outcrops? 4(141N), 7(22316).

**Tournefortia argentea** L.f. "beach heliotrope"  
 irin (N); te ren (K); tausunu, tauhunu (T)  
 syns. *Messerschmidia argentea* (L.f.) I.M. Johnst.; *Argusia argentea* (L.f.)  
 Heine; *Tournefortia sericea* Cham.

Indigenous. Indian Ocean to S.E. Polynesia. Common. Small to medium-sized, wide-spreading, short-trunked tree, 2 to 12 m tall, with rather stout twigs and deeply grooved bark; leaves, 10 to 30 cm long and 3 to 12 cm wide, alternate, spiralled, crowded near branch ends, obovate-oblanceolate, decurrent at base, rounded-obtuse to acute at apex, densely appressed, silvery-grey-pubescent on both sides, softly coriaceous, somewhat fleshy; petiole, stout, winged; flowers, small, about 6 mm across, tube 2 mm long, numerous, white, sessile, borne terminally on crowded, many-branched clusters of tightly-coiled, densely-pubescent, scorpion-tail-like spikes or cymes; fruit, 5 to 8 mm in diameter, round, greenish-white to brown, 4-parted, minutely apiculate; seeds (nutlets), 2 to 4, embedded in corky tissue. Found on flats behind beaches. Leaves eaten by pigs; tender leaves and meristem pounded to prepare medicines for curing children's rashes, diarrhea, and fish poisoning; fruit blown through hollow papaya petioles by children. 3(58669), 5(32), 6, 7.

## BRASSICACEAE OR CRUCIFERAE (Cabbage or Mustard Family)

**Brassica alboglabra** Bailey "Chinese kale"  
 kai laan ts'oi (C)  
 syns. *B. oleracea* var. *albiflora* O. Kunze; *B. oleracea* var. *alboglabra* (Bailey)  
 Musil

Pre-World War II introduction. Asia. Occasional. Erect, sometimes branching perennial herb, up to 30 cm or higher, grown as an annual; leaves, 6 to 20 cm long and 4 to 15 cm wide, alternate, ovate, pale bluish-green (glaucous), glabrous, dull to shiny,

petiolate or not clasping; petioles, 4 to 10 cm long; flowers, up to 2.5 cm in diameter, white, perfect, 4-sepaled, 4-petaled, without bracts, borne on slender pedicels along an elongated fleshy terminal flower stem (raceme); fruit, a long, narrow pod, with a conical beak; seeds, small, globose. Planted in Chinese food gardens at Location. Leaves, stems and flowers cooked as a vegetable. 5, 6, 7.

***Brassica chinensis* L. var. *chinensis*** "Chinese cabbage", "Chinese white cabbage"  
te kabiti n Tiaina (K); kapisai Saina (T)  
syn. *B. chinensis* Juslenius

Pre-World War II introduction. Asia. Common. Erect, loose-heading, biennial herb, grown as an annual, up to 40 cm or higher, with a tap-root; leaves, 10 to 40 cm long and 5 to 20 cm wide, alternate, shiny, dark-green, prominently white-veined, ladle-shaped, terminally rounded, upstanding, radical (coming from the roots) leaves not lobed, stem leaves usually clasping, not forming a compact head; petiole, 3 to 12 cm long, thickened, ivory-white, somewhat fleshy; flowers, about 1 to 1.5 cm in diameter, light to bright yellow, perfect, 4-sepaled, 4-petaled, without bracts, held above unopened buds, petals orbicular, borne on slender pedicels, 1 to 4 cm long, along an elongated terminal flower stem (raceme), up 50 cm long; fruit, 3 to 6 cm long, slender pods, with a conical beak, usually 2-grooved, opening lengthwise; seeds, about 1 to 1.5 mm in diameter, globose, brown to blackish-grey. Commonly cultivated in Chinese food gardens at Location and Topside workshops. Leaves and stems cooked as a green vegetable. 5, 6, 7.

***Brassica chinensis* L. var. *parachinensis* (Bailey) Tsen & Lee**  
"flowering white cabbage" paak ts'oi sum (C); te kabiti n Tiaina (K)  
syns. *B. parachinensis* Bailey; *B. chinensis* var. *oleifera* Makino

Pre-World War II introduction. Asia. Common. Erect, branched, biennial, non-heading herb, grown as an annual, up to 50 cm or higher; leaves, 10 to 50 cm long and 4 to 10 cm wide, darker-green above, lighter below, stem leaves not clasping, central stem leaves, long and narrow, ovate to lanceolate to oblong, upstanding, not heading, radical leaves more similar to those of var. *chinensis*; petiole, 3 to 12 cm long, slender, light green; flowers, about 1 cm in diameter, light yellow, perfect, 4-sepaled, 4-petaled, without bracts, borne on slender pedicels, 1 to 4 cm long, along an elongated terminal and sometimes axillary flower stem (raceme), up 40 cm long; fruit, 3 to 6 cm long, slender pod, with a conical beak, opening lengthwise; seeds, about 1 to 1.5 mm in diameter, globose, brown to blackish-grey. Commonly cultivated in Chinese food gardens at Location. Leaves, stems, and flowers cooked as a green vegetable. 5, 6.

**Brassica juncea** (L.) Czern. "mustard cabbage", "Indian mustard", "Chinese mustard"  
 kai ts'oi (C); te kabiti n Tiaina (K)  
 syn. *Sinapis juncea* L.

Pre-World War II introduction. Asia. Occasional. Erect, much-branched, non-heading, annual herb, up to 80 cm or higher, with a deep tap root; stem leaves, not clasping, basal (radical) leaves, up to 20 cm long, stalked, usually lyrate-lobed with very large ovate terminal segment; flowers, about 1 cm in diameter, bright yellow, perfect, 4-sepaled, 4-petaled, without bracts, not held above the central unopened buds, petals oval to obovate with a long claw, borne on slender pedicels along an elongated terminal and sometimes axillary flower stem (raceme), up 40 cm long; fruit, about 1.5 to 4 cm long, slender pod, rounded in cross section, with a 4-angled short beak, opening lengthwise; seeds, about 1 mm in diameter, globose, blackish-grey. Food plant in Chinese food gardens at Location. Leaves and stems cooked as a green vegetable. 5, 6, 7.

**Brassica oleracea** L. var. **capitata** L. "English cabbage"  
 te kabiti ni Imatang (K); kapis Palagi (T)

Pre-World War II introduction. Europe. Rare. Biennial herb, usually grown as an annual, up to 30 cm or higher, or 30 cm in diameter, with a short stem and an arrested, compact, much-swollen terminal bud surmounted by a mass of thick overlapping whitish-green to light blue-green leaves forming a loose or compact, round or somewhat pointed head; flowers, virtually never seen, not developing during the first year. Planted in gardens near Buada Lagoon. Leaves cooked as a vegetable. 3, 6, 7.

**Brassica pekinensis** (Lour.) Ruprecht "celery cabbage", "Shantung cabbage",  
 "Peking cabbage", "pe-tsai" wong pa'ak, wong bok (C); te kabiti n Tiaina (K)  
 syns. *B. chinensis* var. *pekinensis* (Rupr.) Sun; *B. petsai* Bailey

Recent introduction. N. China. Rare. Erect, loose- to compact-heading, biennial herb, grown as an annual, up to 50 cm or higher, somewhat resembling a large yellow-green romaine or cos lettuce; leaves, 15 to 50 cm long and 5 to 25 cm wide, alternate, light yellow-green, thin, veiny, crinkled undulate, dentate, without distinct petiole, the wide, flat, long whitish base with a dentate wing, radical leaves often forming a compact head, with midrib on the lower surface sometimes having sparse bristle-like hairs; flowers, not seen; seeds, plump, without grooves. Planted in Chinese food garden at Location. Leaves and stems cooked as a vegetable. 6.

**Rhaphanus sativus** L. var. **longipinnatus** Bailey "white radish", "daikon", "Chinese,  
Japanese or Oriental radish" loh paak (C)

Pre-World War II introduction. E. Asia. Occasional. Erect annual bristly herb, up to 50 cm or higher, with a large white cylindrical tap root, up to 30 cm long and 10 cm in diameter, or larger, and normally weighing up to 500 g to 1 kg or more; radical leaves, up to 50 cm and 12 cm wide, dark green, bristly (setulose), lyrate-pinnatifid, with 8 to 11 pairs of pinnae; flowers, rarely seen, white to lilac, small, 4-petaled; fruit, 3 to 7 cm long, up to 1.5 cm in diameter, inflated, indehiscent, with 6 to 12 seeds; seeds, about 2.5 to 3 mm in diameter, dark brown, globose. Cultivated in Chinese food gardens at Location. Leaves and fleshy white tap root cooked as vegetables or eaten raw. 5, 6.

### CACTACEAE (Cactus Family)

**Cephalocereus** sp.

"Cephalocereus"

Recent introduction. Tropical America. Rare. Jointed cactus with short, funnel-shaped, night-blooming flowers. Planted ornamental. 6(204).

**Hylocereus undatus** (Haw.) Britt. & Rose

"night-blooming cereus"

Recent introduction. Mexico. Rare. Large fleshy, green, epiphytic, rambling or climbing, branching, night-blooming cactus, with 3-angled (3-winged) stems, about 4 to 5 cm in diameter, with scalloped margins, which become more or less horny and bear cushions 2.5 cm or more apart, each with 1 to 3 short spines, and with aerial roots growing from the underside of the stems; flowers, about 25 cm long, night-blooming, lasting only until about noon of the following day, beautiful and showy, fragrant with a mildly spicy odor, waxy, cup- or funnel-shaped, with many narrow, curved, yellowish-green outer segments surrounding many white, erect petals, which are longer than the mass of long, yellow-tipped stamens and a long style tipped with a radiating stigma having about 24 lobes; fruit, rare, oblong, about 10 cm long, red, containing numerous black seeds in white pulp, which is refreshing to eat. Immature ornamental pot plant. 6.

**Opuntia** sp.

"prickly pear cactus"

Recent introduction. Tropical America. Rare. Succulent, erect, shrub-like cactus, up to 2 m or higher, with flattened light-green, thick (up to 1 cm wide), oboval, paddle-blade-like joints or cushions, about 12 to 30 cm long and 5 to 10 cm wide, smooth or with spines, up to 1 cm long; leaves, small, nearly cylindrical, short-lived; flowers and fruit, not seen. Planted ornamental. 5, 6.

**Schlumbergia truncata** (Haw.) Moran "Christmas cactus", "Easter cactus", "crab cactus"  
syn. *Zygocactus truncatus* (Haw.) Schum.

Recent introduction. Brazil. Rare. Small, smooth, day-blooming cactus, up to 30 cm or higher, with numerous, flat, dark glossy-green, jointed branches, about 4 to 5 cm long and 1.5 to 2 cm wide, coarsely toothed, blunt-ended, that fork repeatedly in pairs, resembling crab's claws; flowers, many, 5 to 6 cm long and 1 to 1.5 cm wide, rose-red, rather narrow tubular, curved, with many narrow oblong petals and sepals bent back from long, clustered, protruding white, yellow-tipped stamens and a purple style; fruit. Ornamental pot plant and planted ornamental. 6.

Unknown cactus

"cactus"

Recent introduction. Rare. Small cactus pot plant. 6.

#### CAPPARIDACEAE (CAPPARACEAE) (Caper Family)

**Capparis cordifolia** Lam.

"oceanic caper"

ekabobwiya, ekabobwija (N)

syns. *C. mariana* Jacq.; *C. spinosa* var. *mariana* (Jacq.) K. Schum.

Indigenous. Micronesia and Polynesia. Common. Small, sometimes sprawling, spineless, woody shrub, up to about 1 m high, with rather soft and light wood; leaf blades, about 3 to 5 cm long (rarely to 7 cm) and 2.5 to 5 cm wide, alternate, grayish-green, slightly fleshy, broadly ovate or orbicular, rounded at both ends or truncate or nearly subcordate at base, sometimes notched at the apex, lateral nerves 5- to 8-paired; petiole, slender, about 8 to 14 mm long; flowers, large, attractive, fragrant, pea-flower-like, asymmetric, axillary, solitary, borne on pedicels, 3 to 5 cm long, the bud opening late in the evening and withering the next morning; sepals, up to 2 cm long, 2-seriate, reflexed at anthesis, glabrous; petals, 4, up to 2 cm long, attractive, white, glabrous, obovate-suborbicular, glabrous; stamens, numerous (80 to 108), 3 to 4 cm long, showy, white, but fading to pink or even purple; anthers, 3 mm long, purple; fruit, up to 4 to 5 cm long, an oblong or ellipsoid berry, with reddish ribs and elsewhere green, ripening to dull yellow; seeds, about 3 mm long, dark brown, reniform. Found on limestone cliffs and limestone rock outcrops on coastal strip. Crushed leaves used by Nauruans as a fish poison. 2, 3(58636), 4(132N), 5(101), 6, 7.

**Capparis quiniflora DC.**syn. *C. richii* A. Gray

Indigenous. E. Indonesia (Celebes and Lombok) to Melanesia and Nauru. Occasional. Thorny, woody, high-climbing vine, with paired recurved spines, 1 to 3 mm long; leaves, up to 10 cm long and 6 cm wide or larger, variable, narrowly lanceolate to ovate; petioles, 5 to 20 mm long; flowers, small, 2 to 10 in number, serially arranged in axillary or subterminal rows on pedicels, 6 to 20 mm long, which thicken and reach 5 cm long when in fruit; sepals, up to 5 by 3 mm; petals up to 7 by 4 mm; fruit, about 40 by 35 mm, subglobose-ellipsoid. Found in plateau forest and on limestone pinnacles and cliffs of the escarpment. 3(58591, 58799, 58804a), 5, 6.

**Cleome rutidosperma DC.**

Recent introduction. Origin? Common. Slender ascending to sprawling or creeping, elongate, sparingly pilose, annual or short-lived perennial, odorless or nearly odorless herb; leaves trifoliate on very slender petioles, up to 2.5 cm long; leaflets, 2 to 2.5 cm by about 1 cm, thin, the middle leaflet longest; flowers, axillary, small, petals blue-violet or pink, fading to white, on filiform pedicels, up to 3 cm long; fruit, 3 to 4 cm long, a linear-fusiform capsule, on stipes 5 to 10 mm long; seed depressed-globose, conspicuously rugose with long curving ridges or wrinkles, dark reddish-brown. Weed in waste places, around buildings, and in areas recently cleared for phosphate mining. 3(58601, 58616, 58751), 4(108N), 5, 6, 7(22303), 8(9540).

**Cleome viscosa L.**syns. *C. icosandra* L.; *Polonisia icosandra* (L.) W. & A.; *P. viscosa* (L.) DC.

Recent introduction. Trop. Asia or Old World Tropics. Common. Erect, sticky, scarcely branching annual herb, up to 20 cm high, with longitudinally-grooved and densely glandular hairy stems and a offensive odor; leaves, up to 7 cm by 7 cm, alternate, compound, palmately 3- to 5-foliate, long petiolate, glandular pubescent; leaflets, 1.5 to 4 cm long, the terminal leaflet longest, obovate to elliptic, tip acute to rounded, base cuneate to oblique, margins entire; petiole, about as long as terminal leaflet; flowers, solitary in upper leaf axils, on pedicels, 8 to 25 mm long; calyx, caducous, 4-lobes, about 5 mm long, falling soon; petals, 4, about 7 to 12 mm long, yellow, oblanceolate; fruit, 3 to 7 cm long, podlike, curved, longitudinally grooved, densely pubescent, 2-valved, splitting longitudinally (dehiscent); seeds, about 1.3 mm in diameter, roughly circular, numerous, small, reddish-brown, ridged (reniform). Weed found primarily in lowland waste places, roadsides, and areas recently cleared for phosphate mining. 3(58653), 4(125N), 5(45), 6, 7(22310), 8(9542, 9572).

### CARICACEAE (Papaya Family)

**Carica papaya L.** "papaya", "pawpaw"  
dababaia, dababaiya (N); te mwemwera, te babaia (K); olesi (T)

Pre-World War I introduction. Trop. America. Occasional. Soft-wooded, un- or few-branched, rather palm-like, small, quick-growing tree, up to 4 m or higher, with thick, hollow, tapering, nearly smooth trunks or stems with light bark and numerous almost heart-shaped leaf-scars, copious, thick, sticky, irritating milky sap, and leaves that drop as the tree grows; trees usually male or female, although some are bisexual (hermaphroditic) with both male and female flowers on the same tree; leaves, up to 60 cm or more across, alternate, clustered near top, large, round in outline, deeply palmately 7- to 11-lobed, the lobes irregularly acuminate-toothed and lobed; petioles, longer than blade, often over 1 m long, hollow; male flowers, about 2 cm wide, numerous, white or cream-colored, fragrant, borne on loose clusters on long axillary peduncles, 30 to 90 cm long; female flowers, about 4 to 6 cm wide, white, fragrant, subsessile, 5-petaled, solitary or few together in leaf axils; fruit, 10 to 40 cm long, variably shaped from subglobose or pear-shaped to cylindrical, green turning yellow or orange, with orange to red-orange flesh; seeds, 3 to 5 mm long, globose, many, around the edges of a central cavity, dark gray-green to black, wrinkled, caper-like, enclosed in a firm gelatinous membrane. Fruit tree in home gardens and in contract worker gardens at Location and the Topside Workshops. Ripe fruit eaten, and made into jam, primarily by resident European community; fruit known to be a laxative; juice and flesh from green fruit (which contains the enzyme papain) used to tenderize pork and beef; white sap from small immature fruit used as a cure for ringworm; fragrant flowers used in garlands; and hollow leaf petioles used by children as "pea shooters" for the fruit of *Tournefortia argentea* (irin). Common, often naturalized, in houseyard gardens and agricultural areas and an important local cash crop throughout the Pacific, and a commercial export crop in areas such as Hawaii, Fiji, Tonga and the Cook Islands. 2, 3(58694), 5, 6, 7, 8.

### CASUARINACEAE (Casuarina Family)

**Casuarina equisetifolia L.** "casuarina", "she oak", "ironwood", "beefwood"  
tanenbaum (German for Christmas tree)(N); te katurina, te burukam (K); toa (T)  
syn. *C. litorea* L.

Pre-World War I introduction. Indian Ocean to Polynesia and Micronesia. Occasional. Medium to large, hard-wooded, fast-growing, pine-like tree, up to 15 m or higher, with numerous, short-lived, long, thin, drooping, needle-like, gray-green, cylindrical, jointed, striate, photosynthetic branchlets; leaves, whorled, reduced to

lanceolate or subulate, awl-shaped scales at each branchlet node; flowers, unisexual, in catkins; male flowers, brown, terminal, with whorled bracts, in spike-like inflorescences at the ends of branchlets; female flower heads, reddish-brown, condensed, lateral, each flower in the axil of a bract, protected by two lateral bracteoles, the female catkin enlarging, the bracts becoming woody in fruit; fruit, 1 to 2 cm long, globose, cone-like, dull-green ripening to brown, many-seeded. Planted, occasionally as a street tree or windbreak, and spontaneous on the coastal strip, and as a naturalized pioneer on some mined areas to where they have spread from trees planted near the Topside workshops. Although a common indigenous tree on sandy and rocky shores, and sometimes inland, throughout most of the western Pacific, and possibly an aboriginal introduction to some groups, such as Samoa, the casuarina seems to have been a recent post-European introduction to Nauru. 2, 3(58776), 5(81), 6, 7.

### CHENOPODIACEAE (Goosefoot or Saltbush Family)

**Atriplex nummularia** Lindl.

"Australian saltbush"

Said to have been introduced in 1916, but not seen in 1978 or later.

**Beta vulgaris** L. var. **cycla** L.

"Swiss chard", "silverbeet", "leaf beet"

Recent introduction. Europe. Rare. Biennial glabrous herb, up to 40 cm or taller; leaves, up to 40 by 20 cm or more, dark green, shiny, alternate, simple, feather-shaped, fleshy with thickened white midribs; flowers, rare, small, 3- to 4-flowered cymes arranged on a spike, each subtended by a small narrow leaf; fruit, mostly an aggregate formed by the cohesion of 2 or more fruits forming an irregular nutlike cluster held together by swollen perianth bases. Food plant in Chinese garden at Location. Leaves cooked as a spinach. 5, 6.

**Spinacea oleracea** L.  
poh ts'oi (C)

"spinach"

Recent introduction. S. W. Asia. Rare. Small biennial herb, up to 25 cm high; leaves, 5 to 15 cm long and 3 to 8 cm wide, ovate to cordate, acuminate or somewhat sagittate; petioles, 2 to 10 cm long; fruit, an aggregate formed by the cohesion of 3 to 6 fruits forming an irregular nutlike cluster. Food plant in garden at Location. Leaves cooked as a spinach. 5, 6, 7.



**CLUSIACEAE OR GUTTIFERAE (Mangosteen Family)**

**Calophyllum inophyllum** L. "Portia tree", "Alexandrian laurel", "beach mahogany",  
"tomano"(Hawaii) iyo, ijo (N); te itai (K); fetau, itai (T); fetau (T)

Indigenous. Trop. Africa to E. Polynesia and Micronesia. Very abundant. Medium to large, hard-wooded, often crooked, slow-growing tree, 10 to 20 m tall, with a broad, low-branching, spreading crown, rough gray bark, and sticky yellowish sap; leaves, 10 to 20 cm long and 6 to 10 cm wide, simple, opposite, dark green, glossy, glabrous above, densely covered with minute silvery-white scales beneath, stiff, leathery, elliptic-oblong, rounded or emarginate, base acute, pinnately nerved, with a stout pale yellow-green midrib, lateral nerves very fine, numerous, parallel; petioles, 1 to 2.5 cm long, stout, caniculate; flowers, about 2 cm in diameter, showy, waxy white, very fragrant when fresh, 4- to -5 petaled (rarely 6 to 8), with numerous yellow stamens, borne on pedicels, up to 3 cm long, in solitary axillary, 4 to 15-flowered racemose clusters, up to 10 cm long; sepals, 4, concave-orbicular, the outer pair smaller, about 8 mm long, the inner pair, 10 mm long; fruit, about 2.5 to 5 cm long, green to purple-black, globose, hard, heavy, thin-fleshed, with a bony shell which encloses a somewhat poisonous single kernel or seed surrounded with cork, hanging from a long stalk. Dominant large tree in original pre-mining plateau (Topside) forest vegetation, common on escarpment slopes and on coastal strip. Timber provided the best wood for house posts (*iyor, yor*), furniture, woodcarving and for canoe hulls in the past; sticky sap (*erebeniyo*) used for caulking canoes; kernel of green and mature fruit (*i kuan iyo*) crushed to yield oil which is applied to hair to make it long and black; old decayed fruit skewered on coconut midribs (*engow*) in past and burned as traditional Nauruan light; and mature fruit burned as a mosquito repellent. Trees now being indiscriminately felled and burned as refuse at a Topside dump to prepare land for phosphate mining. A tree highly valued for its timber and other purposes throughout the Pacific, the seed kernel (known commercially as "punnai nut") yielding a dark green oil formerly exported from Fiji. 2, 3(58740), 4(164N), 5(120), 6, 7.

**COMBRETACEAE (Terminalia Family)**

**Quisqualis indica** L.

Rangoon creeper"

Recent introduction. Trop. Asia. Occasional. An erect, vigorous shrub, growing into a large woody vine, from 2 to 7 m long, with slender stems and rusty-brown young growth; leaves 7 to 15 cm long, light green, soft, opposite, oval or oblong, acute, base rounded; flowers, borne in short showy drooping clusters in the leaf axils, changing color from pink to white as they open, and then darkening to red, pleasantly fragrant, calyx tube, 0.5 to 7.5 cm long, tipped with 5 short points, 5 oblong petals and 10 short

stamens; fruit, about 2.5 cm long, dry, narrow ovoid, 5-angled, 1-seeded. Planted ornamental. 3(58790), 5(113), 6, 7.

**Terminalia catappa** L. "beach almond", "Indian almond", "Malabar almond", "tropical almond", "coastal almond" etetah, eteto (N); te kunikun (K); talie, te ipe (T)

Indigenous. Trop. Asia and Australia to W. Polynesia and Micronesia. Common. Medium to large, deciduous or semi-deciduous tree, up to 30 m tall, with whorled, horizontal, wide-spreading branches arranged in tiers, and reddish timber; leaves, 15 to 30 cm long and 10 to 22 cm wide, clustered in rosettes at the ends of the branches entire, leathery, shiny, dark-green turning red and yellow before dropping, new leaves appearing almost immediately, obovate, broadly rounded, obtuse or acute, base narrowing, narrowly and abruptly obtuse at petiole, pinnately-nerved, midrib slightly pubescent; petioles, 0.5 to 1 cm long, stout; flowers, small, numerous (35 to 80), white, petal-less, with a 5-lobed, bell-shaped calyx, which soon falls, and 10 stamens, borne in axillary, spikelike racemes, about 10 cm to 24 long, near ends of branches; fruit, 5 to 7 cm long, green turning yellow, then red, ovoid, subelliptic or subobovoid, hard, flattened, two-keeled (narrowly-winged), drupe, with thin fleshy pulp surrounding a single edible almond-like kernel. Tree in original plateau forest, on escarpment and on the coastal strip; occasionally planted or protected in home gardens. Timber used in light construction and for woodcarving; roots used by some people to prepare a cure for dysentery; outside rind of fruit eaten when yellow and kernel eaten after the mature fruit has fallen; fruit strung as necklaces and used in black magic or sorcery. 3(58662), 5(116), 6, 7.

### CONVOLVULACEAE (Morning-Glory Family)

**Ipomoea aquatica** Forsk. "water spinach", "swamp cabbage", "water convolvulus"  
Lorenzo (N); ung ts'oi (C); cangcong (F)  
syns. *I. reptans* Poir.; *Convolvulus reptans* L.; *I. repens* Roth

Pre-World War II introduction. Trop. Asia, Africa and Australia. Occasional. Creeping, trailing or sometimes floating, semi-aquatic, hollow-stemmed, perennial herbaceous vine, producing long shoots, rooting freely at the nodes; leaves, 5 to 15 cm long and 2 to 10 cm wide, light green, soft and limp (flaccid), variable, commonly oblong-lanceolate or heart-shaped, the base hastate or truncate, long-petiolate; petioles, 3 to 15 cm long, hollow; flowers, 1 to 7 in cymes, peduncles, 2 to nearly 18 cm long, pedicels, 2 to 6 cm long; sepals, obtuse, ovate-oblong, 7 to 9 mm long; corolla, 3.5 to 5.5 cm long, pinkish-violet, often darker in the throat, rarely white; fruit, to 1 cm long, ovoid; seeds, finely pubescent. Food plant in Chinese and Filipino gardens at Location and Topside Workshop gardens; naturalized in muddy areas of Buada Lagoon, where it

was formerly planted by the Japanese during World War II. Tender leaves and shoots cooked as a green vegetable; usually propagated by cuttings. 5(24), 6, 7.

***Ipomoea batatas* (L.) Lam.**

"sweet potato", "kumara"

te kumara (K); kumala (T); fan shue (C)

syn. *Convolvulus batatas* L.

Pre-World War I introduction. Trop. America. Occasional. Smooth or pubescent creeping, herbaceous, perennial, vine with milky sap, forming large, edible tuberous roots; leaves, 4 to 15 cm long and 3 to 11 cm wide, green, limp, variable, deltoid-ovate to ovate orbicular, entire or palmately 3- to 5-lobed or -parted, cordate or subcordate, commonly with 2 prominent basal lobes, acute; petioles, slender, 3 to 15 cm long, often longer than blade; flowers, several to many in long-peduncled cymes; corolla, usually 3 to 5 cm long, tubular and spreading, pale rose-violet, darker purplish in the throat, rarely white; sepals (calyx-lobes), about 10 to 15 mm long, briefly mucronate; fruit, a capsule; tubers, about 5 to 10 per plant, normally 10 to 30 cm long and 100 g to 1 kg in weight, fusiform to globular, usually smooth but sometimes ridged, skin white, yellow, orange, red, purple or brown, flesh waxy-white, yellowish, orange, reddish or purple, developing in the top 25 cm of the soil by secondary thickening of adventitious roots. Cultivated in contract laborers' food gardens at Location and Topside workshops; spontaneous along roadsides in some areas of Topside. Tuberous roots cooked as a staple and young leaves of some varieties occasionally cooked as a green vegetable. Dominant staple food plant and livestock feed in most of Papua New Guinea, parts of Solomon Islands and an important supplementary staple in many areas of Polynesia and Micronesia; leaves are also cooked as a vegetable green and an important livestock feed in some areas of the Pacific. 5, 6, 7.

***Ipomoea fistulosa* Mart. ex Choisy**

"bush morning-glory"

syn. *I. crassicaulis* (Benth.) Rob.

Recent introduction. Brazil. Occasional. Perennial shrub, up to 3 m tall, with stiff but rather rambling branches; leaves, 6 to 25 cm long and 4 to 17 cm wide, ovate to heart-shaped, acuminate, midrib dorsally with 2 basal glands; petiole, 3 to 15 cm long; flowers, mostly 5 to 9 cm long, tubular, rather pale pink, but darker within the tube, day-blooming, borne in axillary, few-flowered cymes; sepals, 5, about 5 mm long, ovate orbicular; fruit, 1.5 to 2 cm long, ovoid; seeds, brownish pubescent. Planted ornamental, often along borders of home allotments. Has become naturalized in other areas of the Pacific and in S. E. Asia. 3(58617), 5(198), 6, 7.

***Ipomoea hederifolia* L.**syn. *I. angulata* Lam.

Recent introduction. Trop. America. Rare to occasional. Slender, branching, herbaceous, nearly glabrous, right-twining vine, up to 4 m high; leaves, up to 5 or 6 cm or longer and about 4 cm wide, variable, entire or irregularly lobed, ovate-cordate, acute, mucronate, basal sinus wide, marginally more or less coarsely dentate or sub-lobate, 7-nerved from base, midrib branched upward, long-petiolate; petiole, slender, as long as blade; flowers, few to several in branching, long-pedunculate, axillary clusters; corolla, 3 to 4 cm long, bright red, attractive, tubular, limb flaring to about 2.5 cm in diameter, calyx lobes long-pointed; fruit, 7 mm in diameter, a globose capsule, opening by 4 valves; seeds, 4, about 4 mm long, black, densely short hairy. Found growing spontaneously in ruderal sites on the coastal strip, climbing in a *Leucaena leucocephala* thicket and over roadside shrubbery in Ijuw near Anibare boundary in 1987. 5(149), 6, 7(22307).

***Ipomoea littoralis* Bl.**syns. *I. denticulata* (Desv.) Choisy; *Convolvulus denticulatus* Desv.; *I. gracilis* sensu auct. non R. Br.; *I. choisiana* Wight ex Safford

Indigenous. Malaysia and the Pacific. Rare. Slender, creeping or twining herbaceous maritime vine, with glabrous stems; leaves, 4 to 10 cm long and 3 to 8 cm wide, alternate, light-green, subglabrous, ovate-cordate (heart-shaped) to reniform, entire or 3-lobed, acute or acuminate to obtuse, sometimes emarginate, base cordate with broad sinus, 7-nerved from base, midrib branched upward; flowers, solitary or few on peduncles, 1 to 4 cm long, pedicels 2 to 5 cm; sepals (calyx-lobes), all approaching 1 cm, but unequal, apex slightly mucronate, inner lobes wide as long; corolla, about 3 to 4 cm long, funnellform with spreading limb, dark pink to lavender, darker in the throat; fruit, approaching 1 cm, a glabrous, 2-celled capsule; seeds, 4, glabrous. Roadside and waste places. 8.

***Ipomoea macrantha* R. & S.**

"wild moon flower"

erekogo (N); te ruku (K); fue (T)

syns. *Convolvulus tuba* Schlecht.; *I. tuba* (Schlecht.) G. Don; *I. grandiflora* sensu Koidz. non Lam.; *I. glaberrima* Boj. ex Bouton; *I. alba* sensu Taylor non L.; *Calonyction tuba* (Schlecht.) Colla; *C. comosperma* Boj.

Indigenous. Pantropical. Occasional. Coarse, somewhat woody (sub-herbaceous), creeping or twining, night-blooming (climbing) vine; leaves, 5 to 16 cm long and about equally wide, alternate, ovate-suborbicular to heart-shaped, acuminate, mucronate, base rounded, deeply cordate with open sinus, entire to slightly undulate, 7- to 9-nerved from base, midrib branched upward; petioles, up to 8 cm or longer; flowers, solitary or few, commonly in pairs, on elongate axillary peduncles, 8 to 14 cm long and 10 to 14 cm

across the limb, pedicels, about 2 cm long, bracteate; sepals (calyx-lobes) subequal, 1.5 to 2.5 cm long, broadly suborbicular, rounded, persistent, containing slimy sap; corolla, 7 to 12 cm long, funnelform, attractive, white with pale greenish bands, opening about midnight, fading and wilting by morning; fruit, 2 to 3 cm long, globose, dry, borne in the persistent calyx, splitting into 4 1-seeded capsules; seeds, about 1 cm long, dark, glabrous or with two rows of minute hairs. Found climbing on trees in coastal and plateau forests and creeping on open ground in some ruderal places. Leaves possibly used medicinally by Nauruans? 3(58666, 58735), 4(131N), 5(118), 6, 7.

***Ipomoea pes-caprae* (L.) Sweet ssp. *brasiliense* (L.) v. Ooststr.** "beach morning-glory"  
erekogo, irekogo (Burges)(N); te ruku (K); fue (T)  
syns. *Convolvulus brasiliensis* L.; *C. maritimus* Desr.; *I. brasiliense* (L.) Sweet

Indigenous. Pantropical. Abundant. Vigorous, prostrate, creeping, somewhat fleshy, herbaceous, vine, with a long main root and reddish-purple stems, rooting at nodes and extending up to 5 to 10 m; leaves, 5 to 12 cm long and wide, sometimes wider than long, alternate, glabrous, somewhat goat-foot-shaped and folded along the midvein, somewhat succulent, ovate-orbicular, base cordate to rounded, apex notched or 2-lobed, areolate veiny; petioles, 2 to 10 cm long, sometimes longer than blade, with 2 glands at apex; flowers, borne in solitary or several-flowered cymes, on long axillary peduncles to about 15 cm long; sepals (calyx-lobes) to 1 cm long, ovate, mucronate or notched at apex; corolla, 4 to 5 cm long, funnelform, dark rosy-pink to violet, purplish in the throat; fruit, about 1.3 to 2.5 cm across, subglobose capsule, splitting at the top into 4 sections; seeds, 4, densely pubescent. Found on beach sand, not far from the sea, and on coastal vegetation. Leaves crushed to yield juice which prevents hair from falling out. 2, 3(58729), 4(129N), 5(29), 6, 7.

***Merremia quinquefolia* (L.) Hall.f.**  
*Convolvulus quinquefolia* L.

Recent introduction. W. Indies. Herbaceous prostrate or climbing vine; leaves, palmately compound with 5 leaflets, leaflets oblong to lanceolate, 2.5 to 6 cm long; petioles, 2 to 5 (rarely up to 9) cm long; flowers, borne in axillary, solitary or several-flowered cymes, the peduncles glandular in the upper part and sometimes mixed with spreading bristly hairs; sepals, 4 to 8 mm long, narrowly ovate to oblong, obtuse, subequal or the outer ones shorter; corolla, 1.8 to 2.5 cm long, pale yellow or whitish; fruit, about 9 mm long, capsular, globose, stramineous, 4-valved; seeds, about 4.5 mm long, shortly curled-pilose, blackish. Weed seen in one place in semi-open area on escarpment. 3(58765).

## CRASSULACEAE (Orpine Family)

- Kalanchoe pinnata** (Lam.) Pers. "air plant", "miracle plant", "life plant"  
te ang (K)  
syns. *Cotyledon pinnatum* Lam.; *Bryophyllum pinnatum* (Lam.) Kurz; *B. calycinum* Salisb.

Pre-world War II introduction. Indian Ocean Islands. Occasional. Succulent, glabrous, erect, un- or sparingly-branched, pale gray-green, perennial herb, with reddish stems marked with oblong light spots, somewhat woody at the base, up to 60 cm or higher; leaves, up to 20 cm long by 10 cm, opposite, simple or pinnately compound with 3 to 5 leaflets, broadly elliptic, margins crenate (scalloped), each crenation bearing at the notch a vegetative bud which (when leaf is detached) may produce rootlets and stem, eventually yielding a complete new plant; petioles, up to 10 to 12 long; petiolules, 3 to 5 mm long; flowers, 3 to 6 cm long, red or red-pink and green, cylindrical, pendent, calyx and corolla 4-parted, dangling in terminal panicles; fruit, follicular. Planted ornamental. Common pot plant; naturalized and spreading around water tank near Topside Workshop food gardens. 2, 3, 5, 6, 7.

- Kalanchoe tubiflora** (Harvey) Hamet "chandelier plant"  
syns. *Bryophyllum tubiflorum* Harvey; *B. verticillata* Scott-Elliot

Recent introduction. Madagascar. Rare. Succulent erect perennial herb, up to 50 cm or higher; leaves, 2 to 12 cm long and about 6 mm thick, generally dull green, with purplish blotches or transversely striped, slender, nearly cylindrical or tubular (subterete), usually whorled in threes at the stem nodes or crowded toward stem ends, 7-toothed at the apex where vegetative buds develop; flowers, about 2 to 2.5 cm long, reddish, pendent, corolla much longer than calyx, both 4-parted. Ornamental potplant. 3(58715), 4(52).

## CUCURBITACEAE (Melon Family)

- Benicasa hispida** (Thunb.) Cogn. "wax gourd", "ash pumpkin", "winter melon",  
"white gourd" tung kwa (C)  
syns. *B. cerifera* (Fisch.) Savi; *Cucurbita hispida* Thunb.; *C. cerifera* Fisch.

Pre-World War II introduction. Java. Occasional. Wide-spreading, herbaceous, pubescent or hispid, annual climbing vine, to several meters, with short, branched tendrils; leaves, 10 to 35 cm across, rounded, cordate, pubescent, palmately 5- to 11-lobed; petioles, 10 to 20 cm long; flowers, 6 to 12 cm in diameter, monoecious, solitary,

axillary; calyx, 5-lobed; corolla, yellow, 5-petaled; male flowers on peduncles, 5 to 15 cm long; female flowers, subsessile, ovary densely hairy; fruit, 20 to 120 cm long and 15 to 80 cm wide, weighing up to 10 kg or more, melon-like, globose to oblong-cylindrical, green, with a easy-to-remove white waxy covering, more or less hairy when young; flesh (pulp), white, spongy; seeds, about 1 to 1.5 cm long and 5 to 7 mm wide, numerous, central, buff-colored, smooth, flat, ovate-elliptic, with narrow base. Food plant in Chinese gardens at Location. Flesh of fruit cooked as a vegetable. 5, 6, 7.

**Citrullus lanatus** (Thunb.) Matsum. & Tan. var. **cafferorum** (Alef.) Fosb. "watermelon"  
te meren (K); meleni (T)  
syns. *Citrullus vulgaris* var. *cafferorum* Alef.; *C. vulgaris* Schrad. ex Eckl. & Zeyh.

Pre-World War II introduction. S. Africa. Rare. Slender, much-branched, wide-spreading, prostrate, hairy, herbaceous, annual creeper, with rather thin, angular, grooved stems, 1.5 to 5 m long, branched (bifid or trifid) tendrils and an extensive and superficial root system; leaves, 5 to 20 cm long and 2 to 12 cm wide, alternate, scabrid or harshly pubescent, deeply pinnately lobed, the lobes again pinnately lobed and toothed, with broad apices; flowers, monoecious, solitary, axillary, on short pedicels, 3 to 5 cm long, bell-shaped (campanulate), usually more male than female flowers; calyx, 5-lobed; corolla, 2.5 to 3 cm in diameter, deeply 5-parted, pale yellow, petals, 1 to 1.5 cm long; male flowers, greenish; female flowers, longer-pedunculate, ovary ovoid with woolly hairs; fruit, large, up to over 50 cm long and 25 cm in diameter and weighing up to 4 to 20 kg, rounded (globose) or oblong; rind, mostly glabrous, dark-green, striped or patterned, hard, but not durable; flesh (pulp), red to whitish-pink (rarely yellow), watery, sweet; seeds, 6 to 15 mm long and 5 to 7 mm wide, many, black, sometimes white mottled, smooth, flattened, with swellings on either side of the apex. Food plant in home gardens and as spontaneous juveniles around residences and dump heaps. Fruit eaten raw. 2, 3, 5, 6, 7.

**Cucumis melo** L. var. **cantalupensis** Naud. "cantaloupe", "rock melon"  
te meren (K); meleni (T); heung kwa, t'im kwa (C)

Recent introduction. S. W. Asia and Africa to the Mediterranean. Occasional. Softly hairy, trailing, herbaceous, annual vine, with ridged or striated stems, tender unbranched tendrils, and an extensive and superficial root system; leaves, 7 to 13 cm across, simple, rounded or kidney-shaped, usually 5-angled and sometimes shallowly 3- to 7 lobed; petiole, 8 to 16 cm long; flowers, about 2.5 cm across, generally andromonoecious (with hermaphroditic and male flowers on the same plant), yellow; male flowers, often in groups, each on a slender pedicel; hermaphroditic (and female) flowers, solitary, with shorter and thicker pedicels; fruit, 12 to 24 cm long and 10 to 18 cm in diameter, globose or oblong, hollow; rind, thick, scaly, rough, netted or often deeply grooved; flesh (pulp), soft, juicy, pale-orange, slightly sweet or fragrant; seeds, 8 to 12

mm long, many, whitish or buff, smooth, flat, in a central cavity with fleshy placentas. Food plant in Chinese gardens at Location. Fruit flesh eaten raw. 5, 6.

**Cucumis melo** L. var. **conomon** Makino  
ts'it kwa (C)

"Oriental pickling melon"

Pre-World War II introduction. China. Rare. Softly hairy, branching, trailing, occasionally climbing, herbaceous, annual vine, with ridged stems, tender unbranched tendrils, and an extensive and superficial root system; leaves, 7 to 13 cm across, simple, rounded to heart- or kidney-shaped; flowers, about 2.5 cm across, generally andro-monoecious (with hermaphroditic and male flowers on the same plant), yellow; male flowers, often in groups, each on a slender pedicels; hermaphroditic (and female) flowers, solitary, with shorter and thicker pedicel; fruit, 20 to 30 cm long and 6 to 8 cm in diameter, oblong, cylindrical, cucumber-like, slightly hollow; rind, thin, pale whitish-green to yellowish-green, longitudinally lined, smooth or slightly pubescent; pulp, soft, white to greenish-white, almost tasteless; seeds, 5 to 10 mm long, many, whitish or buff, smooth, flat, in a central cavity with fleshy placentas. Trailing or climbing food plant in Chinese gardens at Location and Topside. Fruit cooked as a vegetable, often in soups. 5, 6.

**Cucumis sativus** L.

"cucumber"

te kukamba (K); kukampa (T); tseng kwa, wong kwa (C)

Pre-World War II introduction. N. India. Rare. Scabrid, climbing or trailing, herbaceous, annual vine, climbing from 1 to 5 m, with strongly 4-angled stems, unbranched tendrils and an extensive and superficial root system; leaves, 8 to 20 cm long, hispid or rough, base cordate, apex acuminate, scarcely angled, unlobed or shallowly 3- to 5-lobed with acute sinuses, dentate, palmately 5- to 7-nerved; petioles, 5 to 18 cm long; flowers, 2 to 4 cm long, monoecious, yellow, bell-shaped, deeply 5-partite, hairy, wrinkled; calyx, 5 to 10 mm long, with 5 narrow lobes; male flowers, predominant, borne in axillary clusters on slender pedicels; female flowers, solitary or few, axillary, on stout peduncles; fruit, 15 to 25 cm long, pendulous, slenderly oblong or cylindrical, often slightly curved, dark to light-green skinned, glabrous or covered with tiny bristly tubercles or warts (echinate), particularly when young; flesh, pale whitish-green; seeds, 8 to 10 mm long and 3 to 5 cm wide, many, whitish, oblong, flat, margin defined only at the apex. Food plant in houseyard gardens. Fruit eaten raw, and occasionally cooked. 5, 6, 7.



**Cucurbita maxima** Duch. "pumpkin", "winter squash", "autumn squash"  
dabamakin (N); te baukin, te bamakin, te bangke (K)

Recent introduction? S. America. Rare. Prostrate, long-trailing, slightly rough, herbaceous, annual vine, with branched tendrils; stems, soft, round in cross-section; leaves, 6 to 19 cm long and 7 to 20 cm wide, slightly kidney-shaped (subreniform), nearly orbicular in outline, shallowly 5-lobed, cordate with a very deep sinus, margins denticulate, green, occasionally with white blotches, coarsely pubescent, not rigid; petioles, up to 20 cm long; flowers, solitary, monoecious, bell-shaped, acute or obtuse in bud, corolla lobes curved outward, bright yellow; male flowers, 4 to 7 cm long on peduncles, 10 to 17 cm long; sepal lobes, linear; calyx lobes, narrow subulate; female flowers, on a soft corky peduncle, thickening to a fruit-stalk, up to 7 cm long, thicker than stem, spongy, nearly cylindrical, not expanded at point of attachment to fruit; fruit, variously shaped, hard, green to dull orange or yellow, often mottled, usually hollow; flesh, yellow to orange, rather fibrous; seeds, 16 to 20 mm long and 8 to 12 mm wide, not separating easily and cleanly from pulp, dull white or buff, usually smooth or glossy, sometimes with fine wrinkles, ovate, attachment acute and asymmetrical, apex nearly straight across or oblique, margin or rim, smooth, obtuse, single, slightly raised. Food plant, often adventive in gardens. Fruit cooked as a vegetable. 3.

**Cucurbita pepo** L. "pumpkin", "field pumpkin", "summer squash", "marrow"  
dabamakin (N); te baukin, te bamakin, te bangke (K); panikeni (T)

Pre-World War II introduction. Trop. America. Prostrate, long-trailing (rarely somewhat erect), slightly rough, hard-stemmed, herbaceous, annual vine, with 4- to 5-branched tendrils; stems, harsh to touch and spiculate, round in cross-section; leaves, 6 to 19 cm long and 7 to 20 cm wide, broadly triangular or heart-shaped, often pointed, palmately, deeply 5-lobed, broad sinus between lobes, central lobe longest, rather finely toothed, harsh to the touch and spiculate, more prickly than *C. maxima*, cordate with narrow, acute sinuses, green, occasionally with white blotches, stiff and more or less rigid, foliage held upright; petioles, up to 15 cm long; flowers, solitary, monoecious, bell-shaped, acuminate in bud, corolla lobes nearly always upright, bright yellow to yellow-orange; sepals, short, awl-shaped; calyx lobes, narrow subulate; male flowers, 5 to 6 cm long on peduncles; female flowers, on a hard, sharply 5-angular, grooved peduncles, maturing into a short fruit-stalk, without cork development and not, or only slightly enlarged at point of attachment to fruit; fruit, variable, usually spherical-oblately, dull orange to orange-brown, sides radially round-ridged, hollow; flesh, orange, coarse-grained, rather fibrous; seeds, 10 to 18 mm long and 8 to 11 mm wide, separating easily and cleanly from pulp, dirty white or creamy white, smooth or finely granular, ovate, attachment obtuse and symmetrical, apex usually straight across, thin or fairly plump, margin or rim, smooth, obtuse, clearly defined, usually appearing double. Occasional. Food plant, often adventive in waste places and gardens at Location and elsewhere on the coastal strip. Fruit cooked as a vegetable. 3, 5, 6, 7.

**Luffa acutangula** (L.) Roxb. "angled loofah", "vegetable sponge", "ridge gourd",  
 "dish-cloth gourd" sze kwa (C)  
 syn. *Cucumis acutangulus* L.

Pre-World War II introduction. India, Paleotropics. Occasional. Stout, climbing, glabrous, herbaceous, annual vine, with pentagonal stems, 3- or more-forked tendrils and fetid when bruised; leaves, 10 to 24 cm long and wide, rounded, rather shallowly palmately 5- to 7-lobed, coarsely and shallowly toothed, scabrous, pale beneath; flowers, 4 to 5 cm in diameter, monoecious, axillary, pale yellow, 5-petaled, petals almost completely distinct, male and female flowers borne together in the same axil, opening in the late afternoon or evening; male flowers, in racemes of several flowers, peduncle 10 to 25 cm long, stamens 3; female flowers, solitary, stigmas 3, ovary 10-ribbed; fruit, 15 to 40 cm long and 5 to 10 cm in diameter, green to gray-green, very narrowly obovoid, with 10 acute longitudinal ridges or ribs, crowned with enlarged sepals and style; flesh, white, somewhat spongy, becoming fibrous when old; seeds, 10 to 13 mm long and 7 to 9 cm wide, black, pitted, flattened. Climbing foodplant in Chinese gardens at Location and Topside. Young green fruit cooked as a vegetable. 4(162N), 5, 6, 7, 8(9577).

**Luffa cylindrica** (L.) Roem. var. **insularum** (A. Gray) Cogn. "smooth loofah",  
 "wild vegetable sponge", "scrubber gourd", "dish-cloth gourd"  
 syns. *Momordica cylindrica* L.; *M. luffa* L.; *Luffa aegyptica* Mill.; *L. insularum*  
 A. Gray

Pre-World War II introduction; although variety *insularum* seems to be indigenous to many Pacific islands, it was probably introduced to Nauru. Trop. Asia. Locally common. Vigorous, climbing, somewhat pubescent, herbaceous annual vine, with pentagonal stems and 2- to 3-, or more-forked tendrils; leaves, to 20 cm long and nearly as wide, much longer than petiole, orbicular-ovate to almost kidney-shaped (subreniform), deeply 5- to 7-angled or -lobed, acuminate or acute, base deeply cordate with open sinus; petiole, 5 to 10 cm long, scabrid or hispid; flowers, 5 to 9 cm in diameter, monoecious, axillary, yellow, petals almost completely distinct, male and female flowers in the same axil, opening in the early morning; male flowers, 4 to 20, crowded near the end of a solitary axillary peduncle, stamens 5; female flowers, solitary, stigmas 3, ovary not ribbed; fruit, 12 to 30 cm long, oblong-cylindrical, smooth or slightly ribbed or striped, crowned with stout sepals and style, fleshy at first, becoming dry; flesh, white, spongy, becoming fibrous when old; seeds, 10 to 15 mm long, black, smooth, flat, faintly winged. Weedy found on edges of forest, waste places, and spreading over Topside topsoil dump on plateau. 3(58587, 58731), 5(75), 6, 7.

**Momordica charantia** L. "bitter gourd", "bitter melon", "balsam apple"  
fu kwa (C); ampalaya (P)

Pre-World War II introduction. Paleotropics. Occasional. Slender, high-climbing, herbaceous, annual vine, 2 to 4 m long, with slightly pubescent, 5-angled, furrowed stems and unbranched tendrils; leaves, 5 to 15 cm in diameter, palmately 3- to 5-lobed, the lobes more or less undulate or coarsely toothed, base cordate, smooth or slightly pubescent; petiole, 10 to 12 cm long; flowers, 2.5 to 3.5 cm in diameter, monoecious, axillary, yellow, corolla deeply-lobed; calyx, deeply 5-parted; male flowers, single or racemose, stamens 3; corolla, deeply 5-parted, 1.5 to 2 cm long; female flowers, solitary, on peduncles with a kidney-shaped bracteole at base, stigmas 3; fruit, 5 to 20 cm long, pendulous, ovoid to oblong-cylindric or pear-shaped, irregularly longitudinally ridged with numerous bumpy tubercles, short-pointed at tip, light green to orange or dark yellow when ripe, splitting at the tip into three irregular valves; pulp, bitter when green and slightly sweetish when ripe; seeds, 12 to 16 mm long and 5 to 9 mm wide, numerous, light brownish to light gray patterned, covered with a soft, fleshy red aril. Food plant in Chinese and Filipino gardens at Location and in Chinese gardens at Topside workshops and surrounding Buada Lagoon. Fruit and young leaves occasionally cooked as vegetables. 4(144N), 5, 6, 7.

#### ERICACEAE (Heath Family)

**Rhododendron** sp. "azalea"

Recent introduction. Rare. Asia. Evergreen shrub. Flowers not seen. Planted ornamental. 6.

#### EUPHORBIACEAE (Spurge Family)

**Acalypha amentacea** Roxb. var. **wilkesiana** (Muell.-Arg.) Fosb.

"copper leaf", Jacob's coat" "beefsteak plant", "fire dragon plant"

Kayser bush (N); te aronga (K); kalakalaapuki, kakarapus, ogoogo, lakau kula (T)

syn. *A. wilkesiana* Muell.-Arg.

Pre-World War I introduction. Melanesia. Common. Perennial shrub, up to 2 m or higher, with pubescent young branches; leaves, 5 to 20 cm long and 3 to 15 cm wide, alternate, simple, mostly ovate, crenate-serrate, acuminate, pubescent, rather curved and coarsely crisped, pinnately-nerved, attractive, commonly dark or bright-red, red-green or

green, often mottled with various shades of red, dark pink or bronzy green, sometimes with whitish or reddish-white margins resembling a thin marbling of fat on a beefsteak; petioles, 2 to 10 cm long; stipules, 3 to 11 mm long, oblong-lanceolate; flowers, monoecious, tiny, about 1 cm across, petal-less, borne alternately on slender axillary or terminal spikes, 4 to 15 cm or longer; bracts, about 4 to 10 mm across, red to deep purple, 5- to 13-toothed, only slightly cupular, subtending single flowers; male spikes slender, elongated, hanging among lower leaves, accompanied by smaller bracts; female spikes somewhat shorter, nearly erect, among leaves at branch tips, each cluster (1 to 5) accompanied by a larger triangular, toothed bract, often with a rounded central lobe; ovary, 1.5 to 2 mm wide, green, puberulent; styles whitish, hair- or bristle-like, curved; fruit, a small capsule. Planted ornamental and hedge plant. 3(58743, 58757), 5(41), 6, 7.

***Alcalypha amentacea* Roxb. var. *wilkesiana* f. *circinata* (Muell.-Arg.) Fosb.**

te aronga (K)

syn. *A. wilkesiana* Roxb.f. *circinata* Muell.-Arg.

Recent introduction. Pacific Is. Occasional. Perennial shrub, up to 2 m tall; leaves, 3 to 14 cm long and wide, suborbicular or reniform or broadly ovate, often rounded at the apex, somewhat flabellinerved, green, commonly variegated with a white margin. Planted ornamental, often as hedges. 3(58769), 5, 6, 7.

***Acalypha hispida* Burm.f.**

"cats' tail", "chenille plant", "red-hot poker"

Recent introduction. Indonesia. Rare. Perennial shrub, up to 2 m high; young branches pubescent; leaves, 5 to 18 cm long and 3 to 10 cm wide, green, alternate, ovate, dentate-crenate, acuminate, pinnately-nerved; petioles, 3 to 9 cm long; stipules, 5 to 10 mm long, oblong-lanceolate; flowers (female), axillary, petal-less, borne in pendulous, bright-red, velvety, tassel-like spikes, 10 to 50 cm long and 1 to 2.5 cm in diameter, resembling a cat's tail; bracts, minute, entire, subtending flower clusters; fruit, not seen. Planted ornamental. 3(58705), 5, 6,.

***Breynia disticha* J.R. & G. Forst var. *disticha* f. *nivosa* (W.G. Smith) Croizat**

"leaf-flower of the Pacific islands", "snow bush" eomonon (N)(Burges,1933)

syns. *B. nivosa* (Bull) Small; *Phyllanthus nivosus* Bull

Pre-World War II introduction. Pacific Is. Rare. Perennial glabrous shrub, up to 3 m or taller, with slender, densely, two-ranked branches; leaves, 2.5 to 5 cm long, alternate, 2-ranked or spirally arranged, oval-ovate, entire, green, variegated with white, pink, light red or purple, obtuse or abruptly pointed; petioles, short; stipules, very small, triangular acute; flowers, monoecious, small, green, petal-less, on short axillary pedicels; male flowers, 3 to many, borne in close clusters (fascicles) in the lower axils; female

flowers, solitary, with a green, 6-lobed or -toothed, bell-shaped or cuplike calyx, borne in the upper axils. Planted ornamental. 2, 3, 5, 6, 7.

**Codiaeum variegatum** (L.) A. Juss. "croton", "codiaeum"  
 syns. *Croton variegatum* L.; *Phyllaurea variegata* (L.) Wight; *P. codiaeum*  
 Lour.

Pre-World War II introduction. Malaysia to Melanesia. Common. Glabrous, densely-branched, shrub or small tree, up to 4 m or taller; leaves, 7 to 32 cm long and 2 to 15 cm wide, alternate, spirally arranged, thick, leathery, extremely variable in shape, size and color, commonly entire, sometimes interrupted, wavy, twisted or 3- or more-lobed, linear-lanceolate, oblong or ovate to obovate, mostly acuminate, pinnately-nerved, plain, spotted, mottled, variegated, or decoratively patterned green, red, purple, pink, yellow and white, nerves often brightly colored, red or yellow; petioles, 1 to 9 cm long; flowers, monoecious, small, petal-less, borne in lax axillary narrow spikes, 15 to 25 cm long; male flowers, about 6 mm wide, with 5 or 6 sepals and petals and 15 to 35 free stamens, chestered; female flowers, solitary, lacking petals, scattered; fruit, small, a subglobose, thin-walled, 3-lobed capsule. Planted ornamental and hedge plant. 3(58714), 5, 6(199, 200), 7.

**Euphorbia antiquorum** L. "cactus spurge", "false cactus", "Malayan spurge tree"

Recent introduction. India, S.E. Asia. Rare. Erect, spiny, cactus-like shrub, up to 3 m or higher, with thick, green, succulent, ridged, 3- to 4-angled stems and branches; spines, up to 7 mm long, brown, on ridge elevations; leaves, none or commonly falling soon, 6 to 13 mm long, thick, oval; flowers, small, yellowish or greenish, borne in upper leaf axils. Planted ornamental. 3(58680), 5(130), 6, 7.

**Euphorbia chamissonis** (Kl. & Gke.) Boiss. "beach spurge"  
 e mai (B)(N); te tarai (K); teluna (T)  
 syns. *E. atoto* sensu auct. (Borges) Micr. non Forst.f.; *Anisophyllum*  
*chamissonis* Kl. & Gke; *Chamaesyce atoto* sensu auct. non (Forst.f.)  
 Croizat

Indigenous. Trop. Pacific. Rare. Erect to semi-erect or sprawling, freely-branching, glabrous subshrub, up to 1 m tall, with decumbent or ascending stems, which are branched, appear jointed and thickened at the nodes, a woody rootstock and white sticky latex; leaves, 1.5 to 3 cm long and 1 to 2 cm wide, opposite, entire, somewhat fleshy, ovate-oblong, oval-ovate or oblong subspatulate, base cordate and somewhat unequally 2-sided, apex acute to obtuse, sometimes mucronate, palmately veined, glabrous, light-green or glaucous above, whitened beneath; petioles, up to 2 mm long; flowers, numerous, monoecious, white or greenish, petal-less, in cyathia borne in small axillary or

terminal branching clusters (cymes); involucre of cyathea usually 1.7 to 2.3 mm long, glands with minute appendages; fruit, about 3 mm long, a glabrous, dehiscent capsule; seeds, small, smooth, released when dry fruit opens. Spreading shrub on seashore. 2(38.5), 3, 5(106), 6, 7.

**Euphorbia cyathophora** Murr. "painted leaf", "Mexican fire plant", "hypocrite plant", "wild poinsettia", "Christmas bush", "dwarf poinsettia"  
deriba, deribeh (N); te kabekau (K)  
syns. *E. heterophylla* L. var. *cyathophora* (Murr.) Griseb.; *Poinsettia cyathophora* (Murr.) Kl. & Gke.

Pre-World War II introduction. Trop. America. Occasional. Erect annual herb, up to 80 cm or higher, with glabrous, green, longitudinally-grooved stems, sparingly pubescent young shoots and white latex; leaves, 3 to 8 cm long and 1.5 to 3.5 cm wide, alternate below, opposite above or in threes, somewhat fiddle-shaped (pandurate), pinnately, sharply and shortly 2- to 4-lobed, usually with a deep, rounded notch or incision on each margin, those of the basal leaves sometimes simply ovate, entire or obscurely distantly serrate, mostly glabrous, the upper leaves crowded beneath the flowers, the uppermost, bract-like leaves near the flowers with a bright red basal blotch; petioles, 1 to 4 cm long, slender; flowers, monoecious, small, inconspicuous, greenish, petal-less, in cyathia packed in short terminal clusters (cymes), 2 to 4 cm wide; involucre of cyathium, 3 to 5 mm long, on a stalk of equal length, cup-shaped, 5-lobed, green, enclosing several male flowers and 1 female flower, and bearing a funnel-shaped gland with a large elongated opening, about 1.5 cm long; male flowers, tiny, numerous, surrounding the female flower and reduced to a single stamen, anthers, yellow; female flowers, one per cyathium, consisting of a stalked, 3-lobed ovary; fruit, 3 to 5 mm long, glabrous, subglobose, 3-lobed capsule (schizocarp), splitting at maturity into three 1-seeded segments; seeds, 2 to 2.5 mm across, dark brown, tuberculate, obovoid or globose, basally flattened, apically subconic. Roadside and waste place weed. 1(23.R), 2, 3(58628), 4(104N), 5(31), 6, 7(27818), 8(9556).

**Euphorbia geniculata** Ortega

"wild spurge"

Recent introduction. Texas, Mexico and the W. Indies. Occasional. Erect annual herb, to about 60 cm or higher, with somewhat hairy, green hollow stems and white latex; leaves, 3 to 8 cm and 1.5 to 3.5 cm wide, basal and apical leaves opposite, other leaves alternate, entire, ovate or oblong-rhomboidal, acute-acuminate, obscurely dentate toward base, lower leaves all green, glaucous beneath, the uppermost bract-like leaves near the flowers with a white or pink basal blotch; petioles, 1 to 5 cm long; flowers, monoecious, small, inconspicuous, greenish, petal-less, in cyathia packed in short terminal clusters (cymes), 2 to 4 cm long; involucre of cyathium, cup-shaped, 5- to 7-lobed, green, enclosing several male flowers and 1 female flower, and bearing a single funnel-shaped gland at one side; male flowers, tiny, numerous, surrounding the female

flower and reduced to a single stamen, anthers, yellow; female flowers, one per cyathium, consisting of a stalked, 3-celled ovary with 3 bifid styles; fruit, 3 to 5 mm across, subglobose, 3-lobed capsule (schizocarp), splitting at maturity into three 1-seeded segments; seeds, 2.5 to 3.2 mm across, grey-brown, angular, sharply keeled on one side, slightly tuberculate. Weed of roadsides and wastepieces. 5(72), 6, 7, 8(9580).

***Euphorbia heterophylla* L.**

"wild spurge"

syn. *Poinsettia heterophylla* (L.) Klotzsch & Garcke

Recent introduction. Mexico. Occasional. Erect, unbranched annual herb, up to 70 cm high, with hollow stems; leaves, alternate, the lower entire, oval or elliptic, with irregularly-toothed margins, the upper leaves deeply lobed, the topmost leaves green or with a purple-spotted (never red) base and clustered beneath the inflorescences; inflorescences, separately male and female borne in terminal cyathia; cyathium, a 5-lobed green cup enclosing several male and one female flower and bearing a gland with a small circular opening; fruit, a 3-celled capsule, explosively dehiscent; seeds, 1 to a cell, 2 to 2.5 mm across, subglobose, dark brown to black, rugose or tuberculate, with a keel and a transverse groove at right angles to it. Weed of roadsides and ruderal sites. 3(58623, 58667), 4(102N).

***Euphorbia hirta* L.** "garden spurge", "asthma plant", "hairy spurge", "old blood"te

tarai, te tarai Kutaie ("Kusaie, Kosrae")(K)

syns. *E. pilulifera* L.; *Chamaesyce hirta* (L.) Millsp.

Pre-World War II introduction. Pantropical. Abundant. Erect or decumbent, scarcely branching, widely spreading, densely hairy annual herb, 6 to 60 cm high, with white latex; leaves, 1 to 4 cm long and 0.5 to 1.5 cm wide, opposite, simple, elliptical, oblong or ovate-rhomboidal, acute to obtuse tip, base obliquely acute, finely serrate, stipulate, leaf surfaces appressed pubescent, green, often with red, brown or purplish tinge, paler beneath; petioles, 2 to 3 mm long; flowers, monoecious, very small, greenish white, petal-less, in cyathia arranged in 1 to 2 dense, axillary, globose clusters (cymes) on short pedicels, 3 to 15 mm long; involucre 4- to 5-lobed, enclosing several male flowers and 1 female flower, and with minute glands; male flowers, minute, surrounding the female flower, each consisting of a single stamen; female flowers, on per cymatium, consisting of a 3-celled ovary; fruit, 1 to 1.3 mm across, globose, hairy, brown, 3-lobed schizocarp splitting into three 1-seeded segments at maturity; seeds, about 1 mm long, irregular oblong with some faint transverse ridges. Weed in waste places and open areas; pioneer plant in recently mined areas. 2, 3(58627, 58677), 4(114N), 5(21), 6, 7, 8(9554).

**Euphorbia hypericifolia** L.

"spurge", "graceful spurge"

te tarai (K)

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

Recent introduction. Trop. America. Occasional. Slender, reddish-stemmed, glabrous, branching herb, 10 to 50 cm high, with a taproot and white latex; leaves, 1 to 2.5 cm long and 0.3 to 1 cm wide, thin, opposite, elliptic or elliptic-lanceolate, entire or minutely toothed, base oblique, green, rarely pinkish or reddish-purplish, glaucous below; petioles, short, about 1 to 2 mm long; flowers, monoecious, small, inconspicuous, greenish, petal-less, in cyathia borne in small cymes, on pedicels, 1.2 to 3 cm long, in upper axils; involucre bracts, white, aging to pink; fruit, a 3 lobed capsule, with one seed to a lobe, and forked styles; seeds, less than 1 mm long, ribbed, reticulate, dark red to purplish. Garden and ruderal weed. 3(58658), 5(72), 6(223), 7, 8(9555).

**Euphorbia milii** Ch. des Moul. var. **splendens** (Bojer) Ursch & Leandri

"crown of thorns"

syn. *E. splendens* Bojer

Recent introduction. Madagascar. Rare. Erect branching shrub, up to 1 m or higher, with hard, succulent, nearly cylindrical, subterete or slightly ridged stems, sometimes twining, beset with many slender spines, up to 2.5 cm long; leaves, 2 to 5 cm long and 1.5 to 4 mm wide, obovate, thinly fleshy, bright green, crowded toward branch tips, soon falling; flowers, monoecious, very small, petal-less, in cyathia borne on long axillary peduncles near the branch tips, each subtended by two opposite, rounded, wing-like, bright- or salmon-red bracts, 8 to 10 mm long. Planted ornamental and pot plant. 6(178).

**Euphorbia prostrata** Ait.

"prostrate spurge"

te tarai (K)

syn. *Chamaesyce prostrata* (Ait.) Small

Pre-World War I introduction. Trop. America. Abundant. Prostrate annual herb, much-branched at base, with white latex and slender purplish or pinkish stems, 2 to 20 cm long, which are glabrous or minutely puberulent on one side only; leaves, 2 to 10 mm long and 1.5 to 6 mm wide, opposite, simple, oblong-elliptic to oblong-obovate, tip rounded to obtuse, base rounded to obliquely unequalateral, margins finely serrate (serrulate), glabrous or sparsely puberulent dorsally, glaucous with a purplish tinge; petioles, short, about 1 mm long; stipules, on upper side of stem distinct, linear, pilose, those of lower side fused, apically toothed; flowers, monoecious, very small, purplish, petal-less, borne in cyathia arranged in short, few-flowered axillary clusters (cymes) on short pedicels; involucre, 4 to 5-lobed, enclosing several male and 1 female flowers, and bearing purple glands; male flowers, minute, surrounding the female flower, each consisting of a single stamen; female flowers, one per cymatium, consisting of a 3-celled



ovary; fruit, about 1 mm long, subglobose, 3-lobed schizocarp, sparsely hairy on the margins, pinkish or purplish, on a stalk as long as the fruit, splitting at maturity into three 1-seeded segments; seeds, about 0.8 mm long, narrowly ovoid, truncate basally, apically obtuse, tetragonal, reddish or grayish, 5- to 7-grooved transversely. Weed along paths and open waste places; pioneer plant in recently mined areas. 1(62.R), 3(58630, 58631), 4(116N), 5(22), 6, 7, 8(9552).

**Euphorbia pulcherrima** Willd. ex Klotszch "poinsettia"  
syn. *Poinsettia pulcherrima* (Willd.) R. Grah.

Recent introduction. Mexico. Rare. Erect, glabrous, branching, soft-wooded shrub, up to 2 m or higher, with white latex; leaves, 8 to 25 cm long and 5 to 15 cm wide, elliptic to elliptic-ovate, acute, entire or slightly sinuate-toothed or lobed, often somewhat fiddle-shaped, bright green, pubescent; petioles, 3 to 8 cm long; uppermost bracteal leaves bright red (rarely pink, white or yellow), lanceolate, forming a rosette, borne at the tips of long arching stems; flowers, monoecious, inconspicuous, greenish, petal-less, in rather large cyathia; involucre, 8 to 10 mm high, green, with reddish 5-laciniate lobes, with a large yellowish gland about 4 mm long; styles, bifid, red; fruit, about 1.5 cm long, a long-stipulate capsule, glabrous, nodding; seeds, about 6 mm across, subglobose, pale, smooth. Planted ornamental. 6.

**Euphorbia rubicunda** Bl. "thyme-leaved spurge", "dwarf spurge"  
te tarai (K)  
syn. *E. thymifolia* sensu auct. non L.

Recent introduction. India. Occasional. Small prostrate, hispid, annual herb, with pinkish stems and white latex; leaves, up to 1 cm long, opposite, obliquely oblong obtuse, crenulate, glabrous or puberulent, coppery; stipules, less than 1 mm long, elongate fimbriate; flowers, monoecious, minute, petal-less, borne in cyathia arranged in short, few-flowered axillary clusters (cymes) on short pedicels; involucre enclosing several male and 1 female flowers, gland small or none; fruit, about 1 mm long, very shortly-stalked, white-pubescent, 3-celled capsule; seeds, about 0.7 mm long, 1 per cell, blunt, light-brown, 4-angled, with 5 or 6 shallow transverse furrows. Weed along roadsides and around buildings. 3(58824, 58661), 6, 7, 8(9561).

**Euphorbia tirucalli** L. "pencil plant", "pencil tree", "naked lady", "milk hedge",  
"milk bush"

Recent introduction. E. Africa and India. Occasional. Medium to large, freely branching shrub, up to 4 m or higher, with numerous slender, cylindrical, leafless, green articulated branches; leaves, 0.7 to 2.5 cm and up to 0.5 cm wide long or less, narrow, reduced to linear scales on youngest branch tips, early caducous; flowers, inconspicuous,

borne in cyathia in sessile, axillary and terminal, clusters (cymes); involucre, with 5 glands (nectaries); fruit, a 3-valved capsule; seeds, smooth, ovoid. Planted ornamental. 5, 6(168).

**Jatropha integerrima** Jacq. "rose-colored jatropha", "red-flowered jatropha"  
syns. *J. hastata* Jacq.; *J. panduraefolia* Andr.

Recent introduction. Cuba. Common. Slender shrub up to 1 to 3 m high, with little or no watery latex; leaves, 6 to 16 cm long and 4 to 10 cm wide, alternate and spirally arranged, ovate to fiddle-shaped (panduriform), acuminate, mostly entire with obscure basal teeth or marginally incised or toothed;; petioles, 3 to 10 cm long; stipules, minute, subulate-deltoid, entire; flowers, monoecious, 5-petaled, dissected, attractive rich pink to bright red, petals about 10 to 13 mm long, borne in terminal or axillary umbels with long, branched stalks, about 6 to 14 cm long; male flowers, distal, usually with a dissected disc, stamens, 8 to 10, anthers yellow to salmon-orange; female flowers, lower, with cupular or pulviniform disk, ovary 3-locular; fruit, about 1 cm long, shallowly lobed, breaking into 3 segments; seeds, ellipsoid, with crustaceous testa. Planted ornamental. 3(58796), 5, 6(276), 7.

**Jatropha podagrica** Hook. "gout stalk", "coral plant"

Recent introduction. Central America. Rare. Succulent, un- or little-branched perennial shrub, up to 1 m or higher, with a swollen stem, much swollen at the base, and white latex; leaves, 10 to 30 cm in diameter, peltate to broadly ovate, entire to palmately 3- or 5- angled or -lobed, whitish beneath, sinuses rounded, lobes broad and acute, attached within the margin by long petioles; petioles, 5 to 12 cm long; stipules, divided into small rigid segments; flowers, about 12 mm across, orange-red to vermilion, borne in dense umbels on long peduncles; calyx, eglandular, orange-red, 5-petaled, petals 5 to 8 mm long, red to vermilion; pistil, prominent, about 4 mm long, light orange-yellow (ovary) to yellowish-green (stigma and style); fruits, about 1.5 cm long, capsular, broad-ellipsoid, breaking into 3 segments; seeds, ellipsoid, with crustaceous testa, poisonous. Ornamental pot plant. 6.

**Manihot esculenta** Crantz "cassava", "manioc", "tapioca"  
te tabioka (K); tapioka, kasava (T)  
syns. *M. utilisissima* Pohl; *M. manihot* (L.) Karst.; *Jatropha manihot* L.

Pre-World War II introduction. Brazil or Trop. S. America. Common. An erect, glabrous, slightly glaucous, half-woody, branched or unbranched shrub, up to 3 m or higher, with milky latex, stems bearing prominent nubby leaf scars, and large edible tuberous roots; leaves, 10 to 30 cm across, alternate, spirally arranged, somewhat pendulous, palmately 3- to 9-lobed (usually 5- to 7-lobed), the lobes, 4 to 22 cm long and

1 to 6 cm wide, very slenderly lanceolate-elliptic, or obovate-lanceolate, acuminate, deeply separated, dark to light green and glabrous above, glaucous and pale beneath, sometimes red-tinged, sometimes slightly hairy beneath, midrib green to deep red; petioles, 5 to 32 cm long, green to deep red; stipules, usually with 3 to 5 lanceolate lobes to 1 cm long, deciduous; flowers, about 1 to 2 cm across, monoecious, petal-less, often not developing, pendulous, borne in few-flowered, lax, axillary paniculate clusters, 3 to 10 cm long, with male and female flowers in the same inflorescence, the latter near the base; bracts, linear, deciduous; sepals 5, pale yellow or tinged with red, glabrous without, puberulent within; male flowers, on pedicels 0.5 to 1 cm long, calyx, 3 to 8 mm long, campanulate with 5 triangular lobes extending to middle of calyx, stamens 10 in 2 whorls, alternately short and long, filaments free, anthers small, basal disk orange, fleshy with 5 double lobes; female flowers, on pedicels 1 to 2.5 cm long, usually larger than males, calyx 5-partite to base, 1 cm long or more, ovary, 3 to 4 mm long, 3-carpellary, 6-ridged, glabrous, greenish-white with pink or red streaks, on a 10-lobed disc, style connate, surmounted by 3 lobed white stigmas, each lobe much divided; fruit, 1.5 to 2 cm long, subglobose to ellipsoid capsule with narrow longitudinal wings or ridges, 3-seeded, splitting explosively; seeds, about 12 mm long, ellipsoid, smooth, gray mottled with dark blotches, carunculate, with a thin crustaceous testa; tubers, developing as swellings on adventitious roots at a short distance from the stem, usually 4 to 10 per plant, 10 to 100 cm long and 3 to 15 cm in diameter, usually weighing 1 to 10 kg or more, cylindrical or tapering, occasionally branched, outer skin, rough or smooth, light to darker brown to white or pinkish, inner rind or cortex usually white, but sometimes tinged with pink or brown, core or pith consisting of rich white or yellowish starch with few xylem bundles and latex tubes. Food plant in I Kiribati and Tuvaluan gardens at Location and Topside workshops. This easy-to-grow plant, which thrives on the poorest of soils, has become the dominant staple root crop, displacing taro and yam as the dominant staple in many areas of high-island Micronesia, and in Fiji, Tonga, parts of the Cook Islands, and in the drier areas of Vanuatu, New Caledonia, and Papua New Guinea. 5, 6, 7.

**Pedilanthus tithymaloides** (L.) Poit. "slipper flower", "slipper spurge", "shoe spurge", "zigzag plant", "redbird cactus", "ribbon cactus"  
 syns. *P. carinatus* Spreng.; *Euphorbia tithymaloides* L.

Recent introduction. Caribbean. Occasional. Erect or somewhat decumbent, sparsely branching, slightly succulent subshrub, up to 1 m or higher, with white latex and fleshy, cylindrical stems which zigzag from node to node; leaves, 5 to 10 cm long, alternate, soon falling, fleshy, waxy, ovate to lanceolate, subsessile, often variegated or streaked green, white, yellowish or pink tinted, or in some forms completely albino; flowers, monoecious, inconspicuous, petal-less, yellowish, borne in cyathia in axillary or terminal cymose clusters; cyathium, about 12 mm long, narrow, boat- or slipper-shaped red or pink bracts containing 1 female and several male flowers, with 4 glands; fruit, 7.5 by 9 mm, capsular; seeds, 5 mm long, ovate. Planted ornamental. 3(58681), 5, 6, 7.

**Phyllanthus amarus** Sch. & Th.

"sleeping plant"

te kaimatu (K)

syn. *P. niruri* L. sensu auct. plur. non L.

Recent introduction. Trop. America (despite African type locality). Common. Erect to semi-prostrate, diffusely branched annual herb, somewhat woody at the base, 10 to 50 cm high; leaves, 4 to 10 mm long and 2 to 4 mm wide, numerous, crowded, simple but appearing pinnately compound, alternate, in two rows on opposite sides of the branchlets, oblong-elliptic or squarish, tip and base rounded, entire, green, lighter beneath, glabrous, subsessile; stipules, about 1.5 mm long, narrow-triangular; flowers, monoecious, minute, petal-less, greenish, borne in axillary cymules, on the branchlets, under the leaves, and containing 1 male and 1 female flower per node; calyx lobes 5, acute; pedicels 2 mm long; male flowers, with 3 stamens; female flowers, with a 3-celled ovary and 3 bifid styles; fruit, about 1.5 mm wide, solitary, capsular, 3-celled, depressed globose, glabrous, greenish to yellow-brown, borne on a stalk about 1.5 mm long, splitting at maturity into three 2-seeded segments; seeds, about 1.5 mm long, wedge-shaped, rounded dorsally, light brown, longitudinally 5- to 7-ribbed on back. Weed of gardens and waste places. 3(58685, 58733), 4(155N), 5(47), 6, 7, 8(9571).

**Phyllanthus societatis** Muell. Arg.

eoemangemang, ewemangemang, eoemangmang (N)

Indigenous. Polynesia and Micronesia. Common. Erect, or half-erect, branching shrub, up to 50 cm or taller; leaves, 0.6 to 2.5 cm long, alternate, simple but appearing pinnately compound, alternate, in two rows on opposite sides of the branchlets, sessile, mucronate, cuneate; flowers, monoecious, minute, petal-less, greenish, borne in axillary cymules; male flowers, numerous, slender stalked, sepals 6, oblong-ovate, having 6 alternate glands at base, stamens 3, filaments united; female flowers, mostly solitary, sepals 6, waxy white, ovary 3-lobed subtended by an entire glandular disc; fruit, 6 to 7 mm in diameter, depressed, splitting at maturity into three 2-seeded sections. Found as scattered individuals and small communities in unmined areas on plateau, on slopes around plateau, at base of escarpment and on coastal strip, around cemeteries, and occasionally in revegetated mined areas and as a pioneer plant on limestone pinnacles on the coastal strip. Straight main stems used as toy spears by children. 3(58595, 58748, 58801), 5(48, 51), 6, 7(22317), 8(9590).

**Ricinus communis** L.

"castor bean", castor oil plant"

Recent introduction. Africa. Rare. Coarse, erect, branching, glabrous, semi-woody shrub, up to 3 m or higher, with spreading, hollow greenish or reddish stems and branches with well-marked nodes and leaf scars, watery sap, and a well-developed taproot; leaves, 10 cm to 75 cm in diameter, alternate, spirally arranged, round-ovate in outline, peltate, mostly deeply palmately 5- to 11-lobed, lobes sharply acuminate or

acute, serrate, palmately nerved, green to somewhat purplish when young, paler beneath; petiole, 8 to 50 cm long, with 2 glands at apex; flowers, monoecious, small, petal-less in large terminal (appearing axillary) paniculate clusters (cymules), 10 to 35 cm long, with male flowers at the base and female flowers on the top; male flowers, with 3 to 5 calyx lobes, very numerous stamens variously connate in branching clusters; female flowers, with caducous, spathaceous calyx, ovary 3-celled, styles spreading usually bifid; fruit, 1 to 2 cm long, ovoid, capsular, softly spiny, green to purplish-brown, with three 1-seeded lobes, dehiscent; seeds, 0.5 to 1.5 cm long, oblong-ellipsoid, compressed dorsally, smooth, mottled with brown, black and grey or white, very oily. Weed of roadsides and waste places. 3, 4(137N), 5(145), 6, 7, 8.

**Synadenium cupulare** (Boiss.) Wheeler

Recent introduction. Trop. Africa. Rare. Large, succulent shrub, 1 to 1.6 m high, with thick cylindrical, thornless branches; leaves, 5 to 10 cm long, alternate, inverted ovate or obovate, thick, cuneate, tapering to a short petiole; flowers, small, red, borne in cyathia in axillary and terminal umbels, with a greenish-yellow gland. Pot plant at Cliff Lodge. 5, 6.

**FABACEAE OR LEGUMINOSAE (Bean, Pea or Legume Family)**

**Acacia farnesiana** (L.) Willd. "sweet acacia", "West Indian blackhorn", "cassie flower", "klu" (Hawaii) katin, debena (B)(N); te bakoa, te kai bakoa (K)  
syns. *Mimosa farnesiana* L.; *Vachellia farnesiana* (L.) W. & A.

Pre-World War II introduction. Trop America. Occasional. Erect, much-branching shrub, up to 3 m or higher, the trunk and branches bearing numerous straight, slender stipular spines, 4 to 30 mm long; leaves, dark green, finely divided, bipinnate, with 2 to 6 (rarely 8) pairs of compound leaflets (pinnae), 1 to 4 cm long, each with 8 to 25 pairs of small leaflets, 3 to 6 mm long and 1 to 1.5 mm wide; flowers in pedunculate axillary heads, 1 to 3 heads together, peduncles, 1 to 3 cm long; flower heads, about 1.3 cm across, subglobose, yellow to yellow-orange, fragrant, stamens numerous; fruit, a pod, 5 to 8 cm long and 8 to 15 mm in diameter, plump, cylindrical or subterete, curved, dark brown to black, indehiscent; pulp, sweetish; seeds, compressed, elliptic, brown. Found in waste places and on roadsides. Glue made from seed pod. 2, 3(58640), 4(159N), 5, 6, 7, 8(9568).

**Acacia** sp.

"acacia"

Recent introduction. Australia? Rare. Planted ornamental tree. 3(58699).

**Adenanthera pavonina** L.

"red-bead tree", "false wiliwili" (Hawaii)

bin ("bean")(N); lopa (T)

Pre-World War II introduction? Malaysia. Common. Medium-sized, deciduous tree, up to 7 m or higher; leaves, bipinnate, with 2 to 8 pairs of compound leaflets (pinnae), each with 6 to 12 pairs of alternate leaflets, 2 to 5 cm long and 1 to 3 cm wide, ovate, obtuse, glabrous, rather pale green, thin; petiolules about 2 mm long; flowers, greenish-white to yellowish, sweet-fragrant, short-pedicellate, borne in slender, elongate axillary or aggregated terminal pedunculate racemose clusters, up to 15 cm or more long; calyx, campanulate, 4- to 5-toothed; stamens 8 to 10; fruit, a pod, up to 25 cm or longer and 2 cm wide, slender, flattened, linear at first, becoming falcately curved or contorted, brown, smooth and shiny inside, 2-valved, dehiscent, becoming spirally twisted after dehiscence; seeds, about 8 mm across, 10 to 12 per pod, lenticular, suborbicular, hard, very ornamental, dark or bright red. Spontaneous tree in escarpment and Buada forests and in older strip-mined areas. Seeds used in necklaces and eaten by children. 3(58804), 5(142), 6, 7.

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

"alysicarpus", "one-leaved clover"

syns. *Hedysarum vaginale* L; *A. nummularifolius* (L.) DC.

Pre-World War II introduction. Paleotropics. Common. More or less prostrate, somewhat suffruticose hispid branching, spreading herb, with jointed stems up to 1 m or more long; leaves, 0.3 to 5 cm long and 0.2 to 3 cm wide, alternate, somewhat dimorphic, the proximal elliptic-subobovate, the distal narrower, lanceolate, rounded at the tips, obtuse or truncate at base; petioles, 1 to 8 mm long, slender; stipules, prominent; flowers, about 6 mm long, pinkish to reddish purple, short-pedicellate, borne in rather dense short terminal racemose clusters, up to 8 cm long, 6 to 12 flowers to a cluster; fruit, pods, 1 to 2.5 cm long, crowded, 5 to 7 seeded, cylindrical, rugose, jointed, indehiscent, but breaking at the joints between seeds at maturity; seeds, about 1.5 mm long, oblong-oval, brown to pale brown or yellowish. Weed in open or semi-open places, along jeep tracks in unmined forest, and a pioneer plant in recently mined areas. 2, 3(58744, 58763), 4(115N), 5(88), 6, 7.

**Bauhinia monandra** Kurz

"pink bauhinia", "orchid tree", "pink butterfly tree",

"St. Thomas tree"

Recent introduction. Burma. Occasional. Shrub or small tree, up to 5 m or higher, with a rounded crown, smooth gray bark and brown-hairy young growth; leaves, 7 to 20 cm long and wide, alternate, ovate-oblong in outline, cordate to rounded at base, palmately 3- to many-nerved, pubescent beneath when young, deeply divided at apex into 2 wing- or butterfly-like lobes which extend about a fifth to half way to the base, lobes obtuse to subacuminate; calyx, spathaceous or 5-lobed; flowers, orchid-like, up to 10 cm

across, several together in terminal or axillary racemes; petals 5, erect or spreading (4 obovate, 1 ovate), each about 3 to 5 cm long and 2 to 3 cm across, white to pink with red or purple blotches or dots, the uppermost one with deeper red, yellow or yellow margined; fertile stamen 1, staminodes 5, small; pods, 15 to 18 cm long and about 3 cm wide, oblong or linear, flattened, leathery, rather shiny brownish or black; seeds, ovate, compressed, dull brown, free or separated by tissue or septa. Planted ornamental. 3(58785), 5, 6(224), 7.

**Bauhinia variegata** L. "white bauhinia", "orchid tree", "butterfly tree", "purple orchid tree", "mountain ebony"

Recent introduction. India, Burma and China. Rare. Shrub or small tree, up to 8 m high; leaves, 5 to 14 cm long and wide, alternate, broadly ovate to suborbicular, cordate to truncate at based, palmately-nerved, split at apex into 2 wing-like lobes which extend about a third of the way or less to the base, lobes rounded; flowers, several together in terminal or axillary racemes; petals 5, obovate, 4 to 6 cm long and 2 to 3 cm across, the uppermost one broader, variable from pale purple to rose or white or yellow, with one petal variegated with red and yellow; fertile stamens 5, staminodes 5, about half as long as the stamens; pods, up to 30 cm long and 2.5 cm wide. The tree is variable with the two main varieties being *B. variegata* var. *variegata*, with pale purple to rose petals, with purple or crimson veins or blotches, and var. *candida* with white petals with green veins, and somewhat purplish on the exterior. Planted ornamental tree. 6(194), 7.

**Caesalpinia bonduc** Roxb. "beach nicker", "gray nicker", "nicker bean"  
dugienae, dogienae (N)

Indigenous. Pantropical. Rare. Scrambling to climbing shrub with long branches with sharp, recurved, hooked spines, young parts brown pubescent; leaves, 30 to 80 cm long, bipinnate with 6 to 12 pairs of pinnae; stipules pinnate, subpersistent, leafy, composed of 2 or 3 superimposed parts, caducous; leaflets (pinnae), 1.5 to 6.5 cm long and 0.5 to 3 cm wide, opposite or subopposite, ovate to elliptic-oblong, inequilaterally rounded or cuneate at base, obtuse to subacute at apex, slightly pubescent; petiolules, 2 to 3 mm long; flowers, about 1 cm long, numerous, in supra-axillary racemose clusters, calyx greenish brown, corolla yellow, pedicels at antithesis 6 to 12 mm long; pods, 4.5 to 9 cm long and 3 to 5 cm wide, oblong, inflated, prickly, dehiscent; seeds 1 or 2, about 1 to 1.8 cm in diameter, subglobose, smooth, glossy gray or olive green, very hard. Large shrub in coastal thicket and in overgrown garden on Command Ridge. 5(114), 6(158, 212, 269).

**Caesalpinia pulcherrima** (L.) Sw. "pride of Barbados", "dwarf poinciana",  
"Barbados flower fence"  
syn. *Poinciana pulcherrima* L.

Recent introduction. Trop. America. Occasional. Shrub, up to 2 to 3 m tall, with branches bearing short, stiff, scattered prickles; leaves, up to 30 cm long, alternate, bipinnate, pinnae 4 to 8 pairs, each with 5 to 13 pairs of leaflets; leaflets, about 2 to 2.5 cm long and up to 1 cm wide, light green, elliptic, obtuse or with shallow notch at apex, obliquely inequilateral; flowers, on long pedicels in long terminal racemes, petals 5, 15 to 25 mm long, spreading, orbicular or oblong, crinkly-edged, usually long-clawed, scarlet to orange-red or red-and-yellow, usually with yellow wavy margins, or all yellow (var. *flava*); filaments, 5 to 7.5 cm long, mostly scarlet, longer than petals; pedicels, 2.5 to 10 cm long; pods, up to 10 cm long and 2 cm wide, coriaceous, oblong, smooth, brown to black, several-seeded, dehiscent; seeds, 6 to 8 per pod, brown, compressed, Planted ornamental. 3(58789), 5(38), 6, 7.

**Cajanus cajan** (Mill.) Millsp. "pigeon pea", "red gram", arhar dhal (Hindi)  
syns. *C. indicus* Spreng.; *C. flavus* DC.; *Cystisus cajan* L.

Pre-World War II introduction. India and southeast Asia. Said to have been introduced in 1935, but not seen in 1978 or thereafter, but possibly re-introduced since then by expatriate Indian contract employees. Erect, short-lived, perennial pubescent shrub, 1 to 3 m or higher, with prominently ribbed stems and a pronounced taproot, sometimes grown as an annual; leaves, spirally arranged, pinnately trifoliolate; leaflets, 2.5 to 12 cm long and 1.5 to 4 cm wide, elliptic to lanceolate, acute, dotted beneath with resin glands, grayish-green pubescent, soon glabrate above, finely silvery-pilose beneath, longer-stalked terminal leaflet usually larger than short-stalked laterals; petiole, grooved, about 2 to 8 cm long; stipules, ovate, hairy, about 4 mm long; flowers, about 2.5 cm long, in long-pedunculate terminal panicles, also axillary and subcapitate-racemose, subequal to the leaves in length; calyx 4-lobed, two upper lobes united (connate); corolla, 12 to 17 mm in diameter, petals, usually suborbicular, reflexed auriculate at base, bright yellow, marked with dark reddish-brown to crimson lines within and often flushed with brown to red without, wings yellow, keel yellow-green; pods, 4 to 10 cm long and 6 to 15 mm wide, linear-oblong, flattened, inflated, pubescent-glandular, pointed, with diagonal depressions between the seeds, often streaked with purplish black to reddish brown, tardily dehiscent; seeds, variable in shape and color, 2 to 8, up to 8 mm in diameter, globose, compressed, cream-colored to reddish or brownish or speckled with small white hilum, edible. Cultivated food plant.

**Calopogonium mucunoides** Desv. "calopogonium", "calopo"

Recent introduction. Trop. America. Rare. Slender creeping or twining perennial herbaceous vine, coarsely brown-tawny pubescent; leaves pinnately trifoliolate; leaflets, petiolate, nearly equal in size, about 3 to 7 cm long and 2 to 6 cm wide, ovate to rhomboid, obtuse to apiculate-subacute at apex, densely pubescent; flowers, 7 to 10 mm long, axillary, short- to long-pedunculate, sessile or nearly so, medium to pale blue or slightly purplish, sometimes with proximal yellow blotches; pods 2 to 4 cm long and 3 to



5 mm wide, compressed-convex, slightly constricted between the seeds, coarsely pubescent; seeds 4 to 8, cube-like, flattened, about 3.5 by 3 by 2 mm, pale brown. Locally abundant weed in low ground around Buada Lagoon. Probably originally introduced as a green manure and nitrogen-fixing plant, but now naturalized. 3(58651), 6(153).

**Canavalia cathartica** Thouars "Mauna Loa bean" (Hawaii)  
 erekogo, irekogo (N); te kitoko (K); saketa (T)  
 syns. *C. microcarpa* (DC.) Piper; *C. turgida* Graham (of Burges list)

Indigenous. Pantropical. Occasional. Rather coarse creeping and high climbing herbaceous vine; leaves, about 20 cm long, alternate, trifoliolate; leaflets, 8 to 15 cm long and 7 to 10 cm wide, ovate to acuminate, base rounded, obtuse, papery, whitish puberulent; flowers, 3 to 4 cm long, fragrant, short-pedicellate, few, borne on rather long, axillary peduncles up to 20 cm long, pedicels about 2 mm long; calyx, 5-lobed, about 14 mm long, white-puberulent, upper lip much shorter than calyx tube; corolla 5-petaled, pink to lavender, the wings and keel petals somewhat paler than the others; pods, 10 to 12 cm long and 3 to 4.5 cm wide, thick, inflated, indehiscent or tardily dehiscent, 3-angled on one edge, pointed, tan or brown; seeds, about 6, about 1.8 cm long, ovoid, slightly flattened, brown to dark reddish-brown, hilum 9 to 14 mm long. Climbing on trees in escarpment forest of Anibare. 2(49.5), 3(58737, 58800), 5(135), 6, 7.

**Canavalia ensiformis** (L.) DC. "Jack bean", "horse bean"  
 syn. *Dolichos ensiformis* L

Pre-World War II introduction. W. Indies. Reported by Schumann (1898) as collected by Finch, but not seen in 1978. Bushy erect annual herb, 1 to 2 m high, the tips of branches tending to twine; leaves trifoliolate; leaflets, 6 to 15 cm long and 5 to 10 cm wide, ovate-elliptic, obtuse or shortly acute, shortly white puberulent especially on petioles and petiolules; petioles, stout, grooved above, usually longer than leaflets, terminal leaflet long-stalked, lateral leaflets short-stalked with unequalateral base; flowers, 2 to 2.8 cm long, short-pedicellate, borne on axillary peduncles of 10 to 50 flowers in groups of 3 to 5 on swollen pedicel glands, pedicels 2 mm long; calyx, 14 mm long, 5-lobed, with 2 upper and 3 smaller lower lobes, puberulent, the upper lip only slightly shorter than the calyx tube; corolla 5-petaled, rose to violet; pods, 20 to 35 cm long and 2 to 3.5 cm wide, stout, somewhat compressed, pale tan or straw-colored when ripe, pendant, spirally dehiscent, ribbed near upper suture; seeds, 8 to 20, about 2 cm long and 1.3 cm wide, oblong, somewhat compressed, ivory white with brown scar, hilum about 9 mm long, pale brown with orange margin.

**Canavalia rosea** (Sw.) DC. "sea bean", "bay bean"  
 erekogo (N); te kitoko (K)  
 syns. *C. maritima* (Aubl.) Thouars; *C. obtusifolia* (Lam.) DC.

Indigenous. Pantropical. Rare. Prostrate, rather coarse trailing or weakly climbing glabrous or slightly pubescent herbaceous vine; leaves, alternate, trifoliate; leaflets, 6 to 12 cm and nearly as wide, fleshy-coriaceous, elliptic to suborbicular, subovate or subobovate, obtuse or slightly emarginate-notched at apex, base rounded, obtuse to acute, with pubescent appressed hairs; flowers, 2 cm to 3 cm long, short-pedicellate, in long-pedunculate axillary few-flowered racemes, up to 20 cm long, slightly shorter than the leaves; pedicel about 3 mm long; calyx 5-lobed, about 12 mm long, whitish-puberulent, upper lip much shorter than tube, lowest tooth 2 mm long; corolla, 5-petaled, about 3 cm long (standard), pink to purple, commonly with white blotch or yellowish proximally, the wings and keel petals pale magenta; pods, 8 to 15 cm long and 2 to 3 cm wide, broadly linear, inflated or only slightly compressed, spirally dehiscent, pale tan; seeds, about 1.8 cm long, elliptic, slightly compressed, brown with dark marbling, hilum about 7 mm long. Found in beach vegetation. 7(27804).

**Cassia alata** L. "golden candelabra bush", "Roman candle tree", "candle bush",  
 "ringworm bush"  
 syn. *Senna alata* (L.) Roxb.

Recent introduction. Mexico. Rare. Coarse erect shrub or small tree, 2 to 5 m tall, with downy green branches and strong-smelling foliage and bark; leaves, 50 to 80 cm long, with 5 to 13 pairs of large leaflets; leaflets, 5 to 18 cm long and 3 to 9 cm wide, the distal ones largest, ovate-oblong, obtuse, truncate, or even slightly notched at apex, sessile; stipules, obliquely deltoid, 6 to 16 by 3 to 10 mm; inflorescence, a striking long-pedunculate erect dense cone-like racemose spike, 15 to 60 cm long, bearing many crowded and overlapping flowers; calyx, 5-parted, sepals up to 16 mm long, yellow or orange; petals 5, 16 to 23 mm long, bright yellow, subtended by yellow or yellow-orange floral bracts; pods, 12 to 19 cm long and 2 to 3 cm wide, straight, widely ascending, sharply tetragonal, papery or leathery in texture, winged lengthwise down the middle of each valve; seeds, numerous, up to 60, flat. Planted ornamental; leaves widely used as a cure for ringworm, but reportedly not in Nauru. 5, 6.

**Cassia fistula** L. "golden shower tree", "Indian laburnum", "pudding-pipe tree"  
 te katia? (K)

Recent introduction. Trop. Asia. Occasional. Small to medium tree, up to 10 to 15 m or higher, with a short bole and spreading crown; leaves, with 3 to 8 pairs of leaflets; leaflets, 8 to 21 cm long and 5 to 9 cm wide, subsymmetrically ovate or elliptic, acute to subacuminate; inflorescence, 15 to 65 cm long, a drooping many (15 to 75)-flowered axillary raceme, resembling in size and shape a large bunch of grapes, often

occurring 2 or 3 together; pedicels 3 to 6 cm long; calyx 5-sepaled; corolla, 4 to 6.5 cm across, 5-petaled, petals 1.6 to 3.2 cm long, bright golden yellow, subequal, shortly clawed; stamens 10, strongly accrescent (crescent-shaped) toward the abaxial side of the flower, the filaments of 3 long abaxial stamens sigmoidally arcuate, gradually and slightly thickened in the middle, and much longer than the anthers; pods, 30 to 60 cm long and 2 cm or less thick, cylindrical or narrowly terete, straight, smooth, hard-walled, dark brown, with seeds embedded in sweet, sticky, blackish pulp; seeds, many, up to 100, brownish. Planted ornamental. 3(58529, 58788), 5, 6, 7.

**Cassia glauca** Lam. "scrambled-egg tree?"  
 syns. *C. sulfurea* DC. ex Colladon; *Senna sulfurea* (DC. ex Colladon)  
 Irwin & Barneby

Recent introduction. India. Rare. Small tree, 4 to 6 m high; leaves, up to 30 cm long with 4 to 7 pairs of leaflets; leaflets, up to 8.5 cm long and 3.8 cm wide, usually elliptic, paler beneath; inflorescence, a 7 to 15-flowered axillary raceme; pedicels, 2 to 4 cm long; calyx 5-sepaled, innermost sepal 8 to 11.5 mm long; corolla 5-petaled, petals, up to 23 to 30 mm long, ovate to oblong-obovate, bright yellow to orange-yellow; pod, 10 to 17 cm long and 1.3 to 1.8 cm wide, plano-compressed, brown; seeds, transverse, compressed parallel to valves. Planted ornamental. 6(170, 175), 7.

**Cassia grandis** L.f. "pink shower tree", "horse cassia"  
 te kasia? (K)

Recent introduction. Central America. Rare. Medium-sized tree up to 10 m or higher; leaves with 8 to 17 pairs of leaflets; largest ones 3.5 to 6.5 cm long and 1.2 to 2.5 cm wide, oblong, obtuse at apex; inflorescence, 8 to 27 cm long, a 20 to 45-flowered raceme, axillary or borne on branches, becoming obliquely geotropic from drooping branches; pedicels, 8 to 20 mm long subtended by bracts; bracts, 2 to 5 mm long, ovate, caducous as pedicels begin to elongate; corolla, 5-petaled, longest petals 8.5 to 11 mm long; pods, 40 to 90 cm long and 3.5 to 5 cm wide, massively linear-oblong, slightly laterally compressed, keeled dorsally by 1 and ventrally by 2 parallel blunt ribs; seeds, 14 to 16 mm long and 9 to 10 mm wide. Planted in home garden at Buada. 7.

**Cassia occidentalis** L. 'coffee senna', "arsenic bean"  
 tan braua ("sunflower")(N); te katia? (K)  
 syn. *Senna occidentalis* (L.) Link

Pre-World War II introduction. Trop. America. Abundant. Erect, branching fetid annual subshrub, up to 2 m high, with glabrous longitudinally grooved stems and often woody near the base; leaves, 11 to 24 cm long, alternate, pinnately compound, with 4 to 6 pairs of opposite leaflets; leaflets, 3 to 12 cm long and 2 to 4 cm wide, the terminal

pair largest, elliptic or ovate-lanceolate, acute to acuminate, base inequalaterally rounded, entire, glabrous; petiole with conspicuous gland near base, petiolules 1 to 2 mm long; inflorescence, a short 1- to 5-flowered axillary or terminal raceme, each flower subtended by an acute, caducous bract; calyx deeply divided into 5 pinkish or brown-tinged sepals with rounded tips; corolla, 5-petaled, each petal about 9 to 16 mm long, obovate, yellow, drying whitish and brown-veined; pods, 6 to 15 cm long and 5 to 9 mm wide, erect or narrowly ascending, linear, flattened, glabrous, falcate, the margins somewhat thickened, purplish in colour with green margins turning brown; seeds, 15 to 50, about 3 mm long, ovate, brown, mostly with broad faces turned toward septa. Weed of waste places and roadsides. Dried seeds boiled as a tea substitute during World War II, a use learned from the Japanese; soft leaves cooked as a spinach and used medicinally by the Chinese. 2, 3(58529), 4(128N), 5(13), 6, 7, 8(9547).

**Centrosema pubescens** Benth.

"centro"

Pre-World War II introduction. Trop. S. America. Extinct. Trailing or climbing herb, with slender pilose stems, often forming tangled mats; leaves trifoliolate, petiolate, the terminal leaflet larger; leaflets, 3 to 9 cm long and 1.5 to 5 cm wide, ovate to elliptic, apex mucronate, base rounded, short-pilose but glabrate on both sides; inflorescence, compact, axillary, several-flowered pseudo-raceme, each flower subtended by bracteoles about 8 mm long and equal in length or smaller than calyx; flowers blue to purple or mauve with darker veins and a white or yellowish patch down the middle of largest petal (standard), the standard, up to 4 cm broad and 3 cm long, broadly orbicular, rather reflexed with a spur scarcely 1 mm long, pubescent without, the keel petals nearly as long as the wings; pods, up to 17 cm long and 7 mm wide, excluding persistent style, compressed, margins thickened, with 4 prominent ribs or wings near the sutures, dehiscent, the style often persistent as a beak; seeds, often about 20, 5 by 3 by 2 mm, oblong or subglobose, compressed, olive-green with red markings to red-brown with black streaks, hilum small. Reported in 1935 to have been introduced, but not seen in 1978 or thereafter. A widely used pasture legume and nitrogenous cover or green manure crop.

**Cicer arietinum** L. "chick pea", "garbanzo bean", "Indian gram", "common gram",  
"chana" (Hindi)

Pre-World War II introduction. W. Asia. Extinct. Erect or spreading, much-branched, annual herb, 25 to 50 cm tall, downy with all parts covered with clavate glandular hairs and with tetragonous stems and a well developed tap root; leaves, about 5 cm long, imparipinnate with 9 to 15 leaflets, yellowish-green to dark bluish-green; stipules, about 8 mm long, ovate, notched; leaflets, 0.8 to 2 cm long and 0.5 to 1.5 cm wide, opposite or alternate, ovate, elliptic or obovate, serrate; inflorescence, an axillary jointed peduncle, bearing solitary flowers, 2.4 to 4 cm long, borne on pedicels 5 to 10 cm long and slightly longer than peduncles; calyx, united with 5 teeth; corolla, white,

greenish, pink, purplish red or blue, pink flowers fading to blue with age, standard (largest petal), 1 to 1.5 cm long, broad and clawed, wings free, keel incurved; stamens 10; pods, 1.5 to 3 cm long and 1 to 2 cm across, 1- to 2-seeded, oblong, swollen, beak obliquely placed, sometimes sterile; seeds, 0.5 by 1 cm in diameter, angular, oblong-obovoid, with pointed beak and small hilum, testa smooth, wrinkled or rough, ranging in color from white, yellow, red, brown to nearly black. Common food and fodder legume reported in 1935 to have been introduced, but not seen in 1978 or thereafter.

***Clitoria ternatea* L.**

"butterfly pea"

Recent introduction. Trop. America or Pantropical. Fast growing perennial climbing or sprawling herb with slender stems, up to 3 m long, and a woody rootstalk, young growth somewhat pubescent; leaves, alternate, compound, odd-pinnate, with 5 to 9 leaflets, one terminal; leaflets, 2 to 7 cm long and 1.5 to 4 cm wide, oblong to elliptic, obtuse, base acutish, appressed-pilose but subglabrate on both sides; petiolules, about 2 mm long; stipules, short linear; flowers, mostly solitary, sometimes paired in leaf axils on pedicels about as long as petioles; calyx, about 1.5 to 2 cm long, longish-tubular subtended by 2 conspicuous basal bracteoles and lobes about half as long as tube; petals large, up to 4 by 5 cm, the standard the largest, other petals very small; standard, erect, half-tubular, wavy-margined, bright vivid blue to violet with a pale yellow or white proximal blotch, finely puberulent dorsally, wings much shorter, also blue with pale basal parts; pods, 8 to 12 cm long awns 0.8 to 1 cm wide, linear-oblong, compressed, 2-valved, sharp-beaked, thick-margined and slightly broad-margined distally, appressed-pilose but subglabrate, dehiscent; seeds, 5 to 10, up to 8 by 4 by 2.5 mm, ellipsoid or subglobose, compressed, greenish to pale or dark brown with darker mottling, hilum small. Occasional. Planted ornamental. 3(58778), 5(71), 6(246), 7.

***Crotalaria goreensis* Guitl. & Pers.**

"rattlepod"

Recent introduction. W. Africa. Common. Erect subshrub, 50 cm to 1 m tall, branching below; leaves, alternate, long-petiolate, trifoliolate; petioles, 2 to 4 cm long; stipules foliaceous, trifoliolate, similar to, but smaller than leaflets, stipular leaflets, 3 to 8 mm long and 1 to 3 mm wide, stipular petiolules 3 to 8 mm long; leaflets, 1 to 4 cm long and 4 to 8 mm wide, the terminal leaf longest, narrowly elliptic, acute, obovate or slightly mucronate, base acute, light gray-green, glabrous; inflorescence, a leaf opposed peduncle, 3 to 7 cm long, bearing solitary flowers, pedicels about 1 to 2 mm long; calyx funnelform, about 2 mm long; corolla, yellow; pods, 1 to 1.8 cm long, 2-valved, oblong, inflated, beaked, dehiscent; seeds, small, about 3 mm long, club- or kidney-shaped, dark brown. Widespread weed of waste places, roadsides and other ruderal sites on coastal strip and on plateau. 3(58593, 58612, 58738), 4(106N), 5(3, 58), 6, 7(22311), 8(9569).

**Crotalaria retusa** L.

"rattlepod"

Recent introduction. Trop. Asia. Rare. Coarse short-lived subshrub or stiff herb, 40 to 100 cm high, with pilose ribbed stems; leaves, 4 to 8 cm long and 1.5 to 2.5 cm wide, simple, alternate, obovate-oblong to oblanceolate, rounded, emarginate or mucronate, cuneate at base, shortly-stalked, finely pubescent, the hairs minute and closely appressed; stipules, 1 to 5 mm long, subulate; petioles, about 3 mm long; inflorescence, a dense terminal many-flowered raceme, up to 30 cm long; flowers, 2 to 3 cm long, borne on short downward bent pedicels; calyx, 2-lipped, the upper deeply bifid, the lower 3-toothed; petals bright yellow, the standard, about 2 cm high and 3 cm wide, reflexed, yellow marked with purplish veins or blotches, the wings, about 1.5 cm long, yellow, almost hiding the keel, the keel with a short twisted beak; pods, 3 to 5 cm long and 1.3 to 1.8 cm wide, oblong-clavate, inflated, dehiscent, held horizontally, black when dry; seeds, about 20, about 4 mm long, yellowish or golden-brown. Weed of ruderal habitats and roadsides. 4(158N).

**Crotalaria spectabilis** Roth

"rattlepod"

syn. *C. sericea* Retz.

Recent introduction. India and Paleotropics. Occasional. Erect robust, smooth-stemmed subshrub, up to 1 m or higher, leaves, 5 to 13 cm long, obovate, oblanceolate or sometimes spoonshaped, base acuminate or cuneate, shortly petiolate, glabrous above, with soft silky hairs (villose) below; stipules sessile and persistent; inflorescence, a loose peduncle, 30 cm or longer, bearing 20 or more flowers; flowers, 2.5 cm or longer, bright yellow or purple?; floral bracts, leaflike, oval or cordate; calyx, about 12 mm long, glabrous, cleft more than halfway to the base; pods, 2.5 to 5 cm long, 2-valved, bladder-shaped, glabrous, containing a small number of seeds, which at maturity become loose in the pod. Weed near Buada Lagoon, in gardens, and near coast in Nibok; occasionally cultivated in home gardens. 3(58647), 4, 6, 7, 8(9579).

**Cyamopsis tetragonoloba** (L.) Taub.

"cluster bean", "guar" (Hindi)

syns. *C. psoraloides* (Lam.) DC.; *Psoralea tetragonoloba* L.; *Dolichos psoraloides* Lam.

Pre-World War II introduction. India. Extinct. Robust bushy annual, 1 to 3 m high, with stiff, erect, angled, grooved, white-pilose branches; leaves, alternate, trifoliate; leaflets, ovate, sparsely serrate; inflorescence, a dense axillary raceme bearing 6 to 30 solitary flowers in axils of caducous bracts; calyx, cupuliform, oblique, the lowermost tooth the longest; petals 5, strongly veined, the standard, about 8 mm long, obovate, not clawed, white, the wings, oblong free from the keel, pinkish, the keel petals erect, slightly gibbous or short-calcarate; pods, 4 to 10 cm long, linear, compressed, with a marked beak, a double ridge on the dorsal side and a single ridge on the ventral side, septate between the seeds, dehiscent, borne in stiff erect clusters; seeds 5 to 12, about 5

mm long, compressed-oval, white to gray or blackish. Cultivated food plant, the young tender pod which are cooked as a vegetable; reported in 1935 to have been introduced, but not seen in 1978 or thereafter.

**Delonix regia** (Bojer) Raf. "poinciana", "royal poinciana", "flame tree", "flamboyant",  
"flame of the forest" bin ("bean"), red tree (N); te tua (K); fuatausaga (T)

Pre-World War II introduction. Madagascar. Occasional. Rapidly growing, medium-sized, spreading, broad-crowned deciduous tree, up to 10 to 12 m high and several times as wide, with smooth, light-colored bark; leaves, mostly 20 to 60 cm long, alternate, bipinnate, frond-like, with 10 to 20 pairs of pinnae; pinnae, about 10 cm long, each with 25 to 35 pairs of leaflets; leaflets, 0.5 to 1 cm long, opposite, oblong-elliptic, obtusish, base oblique, subsessile, glabrous, medium green; stipules, inconspicuous, forked at base, the divisions pinnate, with 3 to 6 leaflets; inflorescence, an axillary corymbose-raceme bearing large, showy flowers, 7.5 to 10 cm across, aggregated near ends of branchlets; bracts, small, caducous, bracteoles none; calyx, short-tubed, sepals 5, valvate, subequal, free at antithesis; petals 5, about 4 to 7 cm long, subequal in size, brilliant crimson to scarlet or red-orange, conspicuously clawed, imbricate (overlapping), the uppermost with whitish or yellowish streaks or mottling, broad-bladed and stalked with their distal part abruptly expanded, orbicular with wavy edges; pods, 13 to 60 cm long and 3 to 5 cm wide, linear-oblong, parallel-edged, flattened, shortly-beaked at tip, woody or coriaceous, pendent, septate, dark reddish-brown turning black, filled within between the seeds, many-seeded, persistent, dehiscent; seeds, oblong-cylindric, transverse, gray with pale margins, testa hard. Planted ornamental; flowers used in garlands. 3(58620), 5(121), 6, 7.

**Derris trifoliata** Lour. "beach derris root", "beach poison vine"  
syns. *Derris uliginosa* Benth.; *Robinia uliginosa* Willd.

Indigenous. Trop. Africa to Polynesia. Occasional. Glabrous creeping and climbing shrub with prostrate rooting stems and rather large, scattered lenticels, climbing to a height of 5 to 6 m; leaves, alternate, 3 to 7-foliolate; leaflets, 4 to 12 cm long and 2 to 6 cm wide, ovate to elliptic-ovate, acute-acuminate or cuspidate at apex (acumen rounded or emarginate at tip), base obtuse or rounded-subtruncate, subcoriaceous, rather glossy medium-green, slightly paler but not glaucous dorsally, the secondary nerves prominulous beneath, petiolate; petioles, 4 to 8 mm long; inflorescences, axillary short-pedunculate racemes bearing flowers on short slender pedicels; calyx, 2 to 3 mm long, pale green; corolla, 6 to 8 mm long, petals, pale pink or greenish-white and faintly pink-tinged; the filaments and styles white; pods, 3 to 5 cm long and 2 to 3.5 wide, subreniform or subrhomboid to broadly oblong, flat, with a wing, 1 to 2 mm broad, along the upper suture, greenish or tan, conspicuously veiny, 1- to 2-seeded; seeds, 1.5 to 2.4 cm long, oblong-reniform. In forest on cliffs and steep slopes of escarpment surrounding the

central plateau. No reported use in Nauru, although the roots, which contain rotenone, are often used for fish poison throughout the Pacific. 3(58803), 6.

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

"Florida beggarweed"

syns. *D. purpureum* (Mill.) Fawc. & Rendle; *Hedysarum purpureum* Mill.; *H. tortuosum* Sw.

Recent introduction. W. Indies and Central America. Common. Erect subshrub or annual, somewhat woody (ligneous), branching herb, up to about 2 m high, with slender densely and finely pubescent longitudinally grooved stems; leaves, alternate, trifoliate; petioles, often reddish; stipules, asymmetrical, distinctly auriculate at base on side away from petiole (and less obviously on side toward petiole), acuminate from a broad base, sometimes reflexed, persistent; leaflets, 2.5 to 13 cm long and 1.5 to 7 cm wide, the terminal leaflet largest, narrowly elliptic to ovate, acute to mucronate, base acute to rounded, laxly pilose with long hairs and/or short, uncinuate hairs; inflorescences, simple or branching racemes, 20 to 50 cm long; calyx, deeply 5-lobed, densely pubescent, borne on a thin pedicel, 5 to 17 mm long, with many basally thickened hairs; corolla, 4 to 5 mm long, pea-like (papilionaceous), white or greenish-yellow to pink shading to mauve; stamens 10, diadelphous; pods, 1.5 to 3 cm long, twisted, brown, segmented, each segment (article) 3 to 6.5 mm long and 3 to 4 mm wide, the articles suborbicular, the isthmi comparatively narrow, about one-fourth as broad as articles, 2- to 7-seeded, each seed in a separate compartment which separates at maturity; seeds, compressed. Weed on roadsides, on slopes in settled areas, and in waste places. 3(58639, 58741), 4(110N), 5(87), 6, 7(22308).

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

"tropical trefoil", "three-flowered beggarweed"

syn. *Hedysarum triflorum* L.

Recent introduction. Pantropical. Occasional. Diminutive prostrate freely-branching perennial creeping herb with slender stems with appressed or weakly spreading hairs, up to 1 mm long, and a woody rootstalk, commonly forming a thick mat; leaves alternate, trifoliate, clover-shaped, lower leaves sometimes unifoliate; stipules symmetrical at base, lanceolate, acuminate; leaflets, 4 to 10 mm long and almost as wide, terminal leaflet largest, sometimes bearing 2 white marks, obovate to elliptic-obovate or obcordate, rounded (obtuse) and usually distinctly (but slightly) emarginate, base narrowed to a short petiolule; inflorescence, a lax, 2- to 3-(rarely 5)-flowered fascicle (occasionally solitary), up to 6 cm long, borne opposite the leaves, each fascicle subtended by a soon caducous primary ovate-acuminate, not congested bract,; pedicels or peduncles, 3 to 10 mm long, lengthening in fruit to over 1 cm, puberulent with straight or weakly spreading hairs, 0.7 to 1 mm long, or glabrous; calyx, appearing subequally 5-lobed, lobes shallowly connate at base for less than half their length; petals pale or rich pink to reddish-violet, the standard obovate, 4 to 5 mm long; pods, 6 to 20 mm long and about 2.3 mm broad, indented on the lower suture, segmented into 2 to 5 articles, each 2



to 4 mm long and broad, indehiscent, with only uncinat hairs, the isthmi two-thirds to three-quarters as broad as the articles; seeds, bean-shaped (reniform). Weed in gardens, lawns and in shaded ruderal habitats on plateau. Possibly deliberately introduced as a green manure and cover crop. 3(58708, 58803), 4(126N), 5(148), 6, 7.

**Dolichos lablab** L. "hyacinth bean", lablab bean", "dolichos", "bovanist bean", "Egyptian bean", "Indian bean", "bataw or batani bean (Philippines)  
syns. *D. purpureus* L.; *Lablab purpureus* (L.) Sweet; *L. niger* Medik.; *L. vulgaris* Savi; *L. cultratus* DC.

Recent introduction. Paleotropics. Rare. Vigorous perennial, glabrous or finely pubescent twining or scrambling herbaceous vine, from 1.5 to 6 m long or high, all parts often flushed with purple; leaves, alternate, trifoliolate; petioles, 6 to 26 cm long; leaflets, 5 to 15 cm long and nearly as wide, entire, broadly triangular ovate, lateral leaflets oblique, acute-acuminate, base obtuse, subglabrous or softly pubescent, 3-nerved from base, midrib branched upward, the terminal leaf longer stalked; inflorescences, erect, terminal and axillary peduncles, 5 to 40 cm long, bearing pseudoracemose clusters of 1 to 5 flowers together at nodes along the peduncle, each about 1.5 cm long, on slender pedicels up to 1 cm long; bracts and bracteoles, 2 to 5 mm long, caducous; calyx, about equal in length to the pedicels, 4-lobed, campanulate, bilabiate, the 2 upper lobes joined into an entire or emarginate lip, the lower lip 3-lobed; petals, small, violet or whitish, the standard up to 14 mm long and 20 mm across, orbicular, reflexed, auriculate at base, the wings obliquely obovate, longer than the keels, the keel petals incurved at a right angle, obtuse with a small convex pocket at base; stamens 10; pod, 6 to 12 cm long by 2 to 4 cm wide, 2-valved, obliquely oblong, flattened, often curved, beaked at tip with persistent style; seeds, 3 to 6, usually not larger than 15 by 9 by 5 mm, ovoid, slightly compressed, dark brown, reddish or pale tan or white, often speckled, the hilum linear with whitish rim-aril. Food plant in Filipino gardens at Location; the young pods and tender seeds cooked as a vegetable. Said to have been introduced in 1935 and established by 1936. 5, 6.

**Erythrina variegata** L. var. *variegata* "variegated coral tree"

Recent introduction. Pacific Is. Rare. Differs from *E. variegata* var. *orientalis* (see description below) in having narrower, more leathery leaves, which are mottled or variegated with light yellow along the midribs and side veins, and larger lighter-colored flowers in longer erect clusters. Planted ornamental. 3, 5(39), 6, 7.

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**Erythrina variegata** var. *orientalis* (L.) Merr. "coral tree", "dadap"  
yora, yoreh (N)  
syns. *E. indica* Lam.; *E. corallodendron* var. *orientalis* (L.) Merr.

Indigenous. Indopacific. Occasional. Medium to large deciduous tree, up to 25 m high, the trunk and branches usually with coarse spiny thorns; leaves, alternate, trifoliate, membranous, rachis not including the petiole 12 to 40 cm long; petioles, 9 to 20 cm long; leaflets, 6 to 30 cm long and nearly as wide, broadly triangular-ovate, rhombic or cuspidate, acute-acuminate, rounded, acutish or truncate at base, lower leaflets somewhat oblique, with prominent glands below the base of petiolules; petiolules, 5 to 14 mm long; inflorescence, a dense axillary or terminal pedunculate raceme, up to 40 cm long, bearing numerous flowers, about 6 cm long, clustered near the end of the raceme; calyx tube in bud closed at orifice, early broken by the emergent corolla; petals, bright dark red or scarlet, very unequal, the standard 5 to 8 by 2 to 3.5 cm, broadly elliptic, narrowed proximally to a short claw, the keel petals separate, obovate, rounded at apex, nearly as long as the wings, these obovate, rounded, about one-third as long as the standard; pod, 10 to 45 cm long and 2 to 3.5 cm in diameter, not or slightly constricted between the seeds, the valves coarsely reticulate-veined, glabrous, black, tardily dehiscent; seeds, 1 to 12, 1.2 by 2.5 cm, ovoid, bright red to brownish red, the hilum oblong. Planted or spontaneous on coastal strip and in old strip-mined land; a number of large specimens along road near Nauru Phosphate Company tennis court area. Trunks and thick branches used for living fence posts, and in canoe construction in the past; flowers used in garlands in the past. 3(58737a), 5, 6, 7.

**Gliricidia sepium** (Jacq.) Kunth ex Walp. "gliricidia", "madre de cacao (mother of cocoa)", "Nicaragua cocoa shade"  
syn. *Robinia sepium* Jacq.

Recent introduction. Central and northern So. America. Small semi-deciduous fast-growing tree, up to 10 m tall, with pale bark and ascending stems; leaves, 15 to 25 cm long, imparipinnate, with 5 to 17 leaflets; leaflets, 3 to 8.5 cm long and 1.5 to 5 cm wide, opposite, ovate, ovate-oblong to elliptic-oblong, obtusely acuminate, often with brown blotches or bronzy and glaucous beneath, dull green above, glabrate; inflorescences, stiff short racemes, 5 to 13 cm long, on the older branches after the leaves have fallen, bearing single flowers, each about 1.8 to 2 cm long, on the rachis; bracts, small, bracteoles none; pedicels, 8 to 12 mm long, jointed at tip; calyx, cupuliform, puberulent, red-tinged; petals 5, rose or paler pink, the standard, large, suborbicular, reflexed, sometimes with small inflexed auricles, claw very short, with a pale yellow central blotch, the wings falcate-oblong, free, shorter than the keel, the keel petals incurved, sometimes partly yellowish; stamens, 10, the filaments of 9 connate into the sheath; pods, 8 to 16 cm long and 1.5 to 1.9 cm wide, 2-valved, linear-oblong, flattened, non-partitioned, dehiscent, the valves coriaceous; seeds, 2 to 9, purplish-brown. Planted roadside ornamental on Meneng Terrace. Widely used in tropical America and elsewhere as a shadetree for tree for cocoa, bananas and coffee and as a living fence and wind-break. 7(22320).

**Hardenbergia violacea** (Schneev.) F.C. Stern

"sarsaparilla"

Recent introduction. Australia. Rare. A climbing or scrambling evergreen herb; leaves, simple; inflorescence, clusters of violet flowers with yellow markings. Ornamental pot plant. 6.

**Indigofera hirsuta** L.

"hirsute indigo"

Recent introduction. Africa and Madagascar to southern Asia and Australia. Occasional. Erect or low spreading shrub, up to 1 m tall, stiffly and copiously brown-hirsute with long hairs and woody at the base; leaves, imparipinnate with 5 to 7 leaflets; leaflets, up to 4.5 by 2.5 cm, opposite, elliptic-obovate, densely pilose on both sides; inflorescence, a dense raceme, 20 to 30 cm long, the peduncle, 2.5 to 8 cm long, both peduncle and pedicels brown pubescent; calyx about 4 mm long, divided nearly to base with linear-setaceous lobes, brown pubescent; corolla, small, with brick-red to salmon-red or rose-colored petals; pods, 1.2 to 2 cm long and about 2 mm in diameter, straight, cylindrical, somewhat tetragonal, with spreading dark brown hairs; seeds, 6 to 9, nearly square or rectangular in outline. In plateau forest along path. 3(58614, 58730), 5(136), 8(9545).

**Indigofera spicata** Forssk.

"creeping indigo"

syns. *I. hendecaphylla* Jacq.; *I. endecaphylla* Jacq. ex Lam. (sphalm?)

Recent introduction. Africa and Madagascar to Yemen, southeast Asia and Australia. Occasional. Spreading or prostrate annual herb, with stems sometimes ascending to 60 cm; leaves imparipinnate with 5 to 11 leaflets (usually 7); leaflets, 3 to 30 mm long, alternate or rarely opposite, elliptic to obovate, apex mucronate, shortly petiolate; inflorescence, an axillary raceme, up to 15 cm long, the peduncle 1 to 4 cm long, the pedicels, about 0.5 mm long; calyx, 2 to 3 mm long, divided nearly to the base; corolla, 4 to 5 mm long, salmon pink; pods, 11 to 25 mm long and about 2 mm in diameter, straight, cylindrical, appressed-strigulose or pubescent; seeds, 5 to 8. Roadside weed on coastal strip and plateau. 4(123N), 6, 7.

**Leucaena leucocephala** (Lam.) de Wit "leucaena", "koa haole"(Hawaii), "lead tree",  
"wild tamarind" bin ("bean")(N); te kai tetua (K)

syns. *L. glauca* (L. ex Willd.) Benth.; *Mimosa leucocephala* Lam.; *Mimosa glauca* sensu L.; *Acacia leucocephala* (Lam.) Link

Pre-World War II introduction. Trop. America. Common. Erect slender shrub or small tree, 1 to 5 m high, young growth puberulent; leaves, alternate, bipinnate, to 25 cm long, with 3 to 10 pairs of opposite pinnae, 5 to 10 cm long, each with 7 to 20 pairs

of leaflets; petioles, up to 10 cm or longer; leaflets, 6 to 19 mm long and 1.5 to 5 mm wide, opposite, lanceolate to oblong-lanceolate, acute, asymmetrical, inequilateral at base, sessile, somewhat dull grayish-green, glabrous; flowers, 1.5 to 3 cm in diameter, in dense, axillary globose, head-like, pedunculate clusters; peduncles, up to 4 to 6 cm long; calyx, 2.5 mm long, tubular, short-dentate with 5 small lobes at top; petals 5, 4 to 5 mm long, linear, free, pale green or white; stamens, 10, nearly 1 cm long, long-exserted, filaments white, anthers hairy, pale yellow; pods, 8 to 20 cm long and 1 to 2.2 cm wide, clustered, 2-valved, strap-shaped, linear, flat, beaked at apex, not septate, dark brown, more or less dehiscent; seeds, 15 to 25, about 6 mm long, transverse, oval-oblong, flat, glossy brown. Spontaneous in disturbed habitats on escarpment slopes below plateau and in isolated stands on coastal strip. Used as firewood. 3(58638), 4(161N), 5(9), 6, 7, 8(9564).

**Mimosa pudica** L. var. **tetrandra** (HBK ex Willd.) DC.

"sensitive plant"

syn. *M. tetrandra* HBK ex Willd.

Recent introduction. Trop. America. Rare. Decumbent or prostrate subwoody, loosely branching perennial creeper, up to 50 cm high, with reddish-brown stems bearing scattered curved prickles; leaves, alternate, bipinnate, with 1 to 3 pairs of pinnae, palmately arranged at the end of the rachis, each with 12 to 25 pairs of leaflets; leaflets, 6 to 15 mm long and 1.2 to 3 mm wide, linear or oblong, acute, asymmetrical, sessile, bristly, sensitive with leaves immediately folding at pulvinate joints if touched or jarred; flowers, 1 to 2 cm in diameter, in small globose, head-like, axillary pedunculate clusters; peduncles, up to 2.5 cm long, hairy; calyx, absent or very small; corolla, 4-lobed, sympetalous, very small; stamens 4, 4 to 6 mm long, showy, rose-pink to purple; pods, 0.8 to 2 cm long and 2 to 4 mm wide, clustered, thin, flat, prickly-bristly, indented between the seeds, splitting at maturity from the undivided margins into 2 to 5 one-seeded segments; seeds, 2 to 5, about 2 mm across, rounded, brown. Roadside weed near Buada Lagoon. 4(156N), 6(190).

**Peltophorum pterocarpum** (DC.) Backer ex Heyne "yellow poinciana", "copperpod", "golden flamboyant", "yellow flame tree"

syns. *P. inerme* (Roxb.) Naves; *P. ferrugineum* (Dcne.) Benth.; *Inga pterocarpa* DC.; *Caesalpinia inermis* Roxb.; *C. ferruginea* Dcne.

Recent introduction. Malaysia to N. Australia. Rare. Medium-sized, heavily-foliaged, broad-crowned tree, 8 to 15 m high; leaves, bipinnate, 30 to 50 cm long, rachises brown puberulent, with 4 to 15 pairs of pinnae, each with 8 to 20 pairs of leaflets; stipules small, caducous; leaflets, about 0.8 to 3 cm long and 3.5 to 10 mm wide, opposite, oblong, rounded or emarginate, base oblique, dark green; flowers, each about 2.5 cm across, fragrant, borne in large terminal racemes aggregated into panicles; bracts, lanceolate, bracteoles none; bracts, buds and axes brownish-reddish pubescent; calyx tube short, 5-lobed, lobes imbricate; petals, 1 to 2 cm long, orbicular to ovate,

slightly unequal, imbricate with frilly margins, subequal, bright yellow; stamens 10, free, the filaments curved; pods, 5 to 11.5 cm long and 2 to 2.7 cm wide, 2-valved, oblong-lanceolate, flattened, straight or curved, slightly winged along both margins, copper-colored, red-brown or brown when ripe, blackening eventually but persistent on the tree, veiny on the sides, indehiscent; seeds, 1 to 4, transverse, oblong, flattish, pale brown. Planted ornamental tree on Military Ridge. 5, 6.

**Samanea saman** (Jacq.) Merr.

"rain tree", "monkeypod tree"

syns. *Albizia saman* (Jacq.) F. v. Muell.; *Mimosa saman* Jacq.; *Enterolobium saman* (Jacq.) Prain ex King; *Pithecellobium saman* (Jacq.) Benth.; *Inga saman* (Jacq.) Willd.

Recent introduction. Trop. America. Rare. Large to massive tree, 7 to 25 m high, the trunk up to 1 m in diameter, the crown rounded, usually broader than tall; leaves, bipinnate, with 2 to 9 pairs of pinnae, each with 2 to 10 pairs of leaflets; leaflets, 2 to 8 cm long and 1 to 4.5 cm wide, the distal ones larger than the proximal ones, ovate to obovate or oblong-elliptic, asymmetric, subsessile, shining above, downy beneath, folding (closing) in late afternoon for the night and in cloudy or rainy weather; flowers, in axillary long-pedunculate heads, the central flower larger than the others; calyx, 6 to 7.5 mm long, short lobed; corolla, up to 13 mm long, petals connate up to the middle, pink with greenish or yellowish lobes; stamens many, 2 to 4 cm long, basally connate, exerted, white proximally, shading to pink or crimson distally; pods, 9 to 24 cm long, 1.3 to 2.2 cm wide and 1.5 to 2.5 mm thick, straight or slightly curved, thick but compressed, semi-succulent, internally septate, with thickened sutures, brown turning black when mature, indehiscent, containing sweet, sticky brown pulp within; seeds 15 to 20, exarillate, brown. Ornamental tree in home gardens on Meneng Terrace and at Buada. 5, 6, 7.

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

"beach pea"

erekogo (N); te kitoko (K); saketa (T)

syns. *V. lutea* (Sw.) A. Gray; *Phaseolus marinus* Burm.; *Dolichos luteus* Sw.

Indigenous. Pantropical. Common. Prostrate, creeping, sometimes climbing, subglabrous, weak-stemmed, long-trailing herbaceous perennial vine; leaves, alternate, trifoliate; stipules, 2 to 3 mm long, ovate to lanceolate, inconspicuously bilobate at base, early caducous; petioles, 5 to 10 cm long; leaflets, 4 to 10 cm long and 3 to 8 cm wide, broadly ovate or suborbicular to obovate, apex rounded to emarginate, base obtuse, 3-nerved from base, midrib branched upward, lateral leaflets somewhat oblique, inconspicuously appressed-pilose on both surfaces but soon glabrate, somewhat fleshy; flowers, 1.5 to 2 cm long, short-pedicellate, in few-flowered racemose clusters crowded distally on axillary peduncles, up to 15 cm or longer; petals and stamens, pale to bright yellow, the standard usually 12 to 14 mm in diameter, obovate, the keel not much longer than other petals, incurved for about half a complete turn or less; pods, 4 to 8 cm long

and 5 to 7 mm wide, linear-oblong or subcylindrical, slightly curved, inflated, slightly contracted between the seeds, splitting open along the two sides when mature, green turning brown; seeds, 2 to 10, up to 7 by 6 by 5 mm, ellipsoidal, brown, with an oblong hilum and undeveloped rim-aril. Found on beaches and in open sites and waste places behind beaches; reported by Burges (1935) to be "growing plentifully wherever soil is fairly heavy and moist, e.g., as at Buada. The natives have always considered that other plants grew better if near *Vigna* . . ." Plant used medicinally; leaves crushed to bathe young girls' hair and to make adult hair grow long and black; leaves used to cover earthen oven. 1(30.R), 2, 3(58610), 4(120N), 5(33), 6, 7, 8.

***Vigna unguiculata* (L.) Walp. ssp. *sesquipedalis* (L.) Verdc.** "long bean", "yard-long bean", "snake bean", "asparagus bean", "asparagus pea"  
bin ("bean")(N); te bin ("bean")(K); tau kok (C)  
syns. *V. sesquipedalis* (L.) Fruw.; *Dolichos sesquipedalis* L.; *Vigna sinensis* (L.)  
Endl. ex Hassk. var. *sesquipedalis* (L.) Koern.

Pre-World War II introduction. Trop. Africa. Twining, climbing annual herb with glabrous stems, up to 2 to 4 m high; leaves, pinnately trifoliate; stipules, large, produced below the base attachment, more or less persistent; leaflets, 5 to 16 cm long and 4 to 11 cm wide, the terminal leaflet with a long petiolule, ovate to rhombic-ovate, acute, entire or sometimes inconspicuously lobed, the veins sometimes purplish; inflorescence, an axillary long-pedunculate few-flowered raceme, with flowers in clusters of 3 to 6; the bracts and bracteoles small, caducous; pedicels, short, shorter or about as long as the calyx; calyx, campanulate, bilabiate, the two upper lobes completely or partly united, the lower lip 3-lobed; corolla, much exserted, petals, white or greenish, tinged with yellow, blue or purple, the standard orbicular with inflexed auricles, the wings slightly shorter than the standard, the keel petals about as long as the wings or longer, obtuse or beaked, sometimes incurved, truncate; stamens 10, alternately slightly longer and shorter, the filaments of 9 connate into a sheath, the vexillary filament free, the anthers uniform; pods, variable depending on the cultivar, 20 to 100 cm long and 0.3 to 1.1 cm broad, pendent, linear, subterete, straight or somewhat inturned or twisted, sometimes rather flaccid, not septate, more or less inflated and sometimes flabby when young, dehiscent, the style dehiscent; seeds, many, usually 8 to 12 mm long, elongate reniform, variable in color. Common. Food plant in Chinese gardens at Location and Topside workshops. 5, 6.

**GENTIANACEAE (Gentian Family)**

- Fagraea berteriana** A. Gray ex Benth. pua (Polynesia); "pua kenikeni" (Hawaii)  
 eijinut? (B)(N)  
 syns. *Carissa grandis* Bertero ex. Guill.; *Fagraea berteriana* A. Gray ex Benth.;  
*F. berteriana* Benth. ex Seem.; *F. grandis* Pancher & Sebert

Indigenous? Pacific Islands, from New Caledonia to as far east as the Marquesas and Hawaii, although possibly an aboriginal introduction in these areas. Extinct; reported by Hambruch in 1910, but not seen in 1933 or thereafter. Medium to large glabrous, often-branching tree, 1.5 to 20 m high, branches with conspicuous leaf scars; sometimes a scrambling, climbing or epiphytic shrub; leaves, up to 15 cm long and 8 cm wide, opposite, oval-ovate or oblong, rounded, obtuse or sub-acute-acuminate blunt, base cuneate or decurrent, entire, rather thick, pinnately nerved, midrib stout, lateral veins slender and obscure; petiole, up to 2.5 cm long; flowers, nearly 5 cm wide, very fragrant, fleshy, in axillary cymose clusters; calyx, 12 to 15 mm long, rather deeply-lobed; corolla, 5-parted, tubular, the tube 3 to 5 cm long, the lobes imbricate spreading, overlapping to the right, creamy-white turning yellow; style greenish; fruit, 3 to 5 cm long and 2 to 4 cm wide, ellipsoidal, obtuse to acute at apex, rather succulent, yellow turning orange to bright red when ripe; seeds, very numerous, embedded in pulp. Fragrant flowers used in garlands and to scent coconut oil in Polynesia and Melanesia. 1.

**GERANIACEAE (Geranium Family)**

- Pelargonium × hortorum** "geranium", "fish geranium"  
 syn. *P. hortorum* Bailey

Recent introduction. So. Africa. Rare. Tender perennial subshrub, up to 50 cm high; leaves, 7 to 13 cm in diameter, rounded, scalloped, downy; flowers, not seen. Pot plant. 6.

**GESNERIACEAE (Gloxinia Family)**

- Columnnea gloriosa** Sprague "showy column flower", "columnnea"

Recent introduction. C. America. Rare. Trailing or pendent perennial herb, stems up to over 1 m long; leaves, about 2.5 cm long, pale green, pubescent; flowers, 3.5 to 7.5 cm long, borne on weeping stems, solitary; calyx, about 1.5 cm long, deeply 5-

parted; corolla, showy, bright scarlet with a yellow throat and underside of tube. Pot plant. 6.

**Columnnea** sp.

"columnnea"

Recent introduction. Trop. America. Rare. Pot plant. 6.

**Episcia cupreata** (Hook.) Hanst.

"episcia", "peacock plant"

syn. *Achimenes cupreata* Hook.

Recent introduction. Colombia and Venezuela. Occasional. Spreading or creeping pilose perennial herb with long stolons and short, stout stems, rooting at the joints, up to 30 cm or higher; leaves, 10 to 13 cm long to 6 to 8 cm wide, including the petiole, blade about 7.5 cm long, opposite, broadly elliptic to ovate, edges scalloped, pinnately-nerved, succulent, hairy, variable in color from coppery to reddish green or clear green, often variegated; flowers, about 2.5 cm long, axillary, solitary, borne on long pubescent peduncles; calyx, deeply 5-lobed; corolla, much larger than calyx, tubular, with 5 subequal, rounded lobes spreading to about 2 cm in diameter, tube red on upper surface, yellow with red spots on lower surface and within, the limb orange-red, the 3 lower lobes the longest; fruit, a 2-valved capsule; seeds, ellipsoid, smooth, brown. Pot plant. 5,6.

**Saintpaulia ionantha** Wendl.

"African violet", "Saintpaulia"

Recent introduction. Trop. E. Africa. Rare. Stemless perennial pubescent herb; leaves, 3.5 to 8 cm long and wide, long-petiolate, alternate to subopposite, suborbicular to oblong-ovate, succulent, velvety, edges scalloped, often purplish beneath, forming a rosette or broad tuft of leaves at the base; petioles, pilose; inflorescences, axillary, 2- to 10-flowered cymose peduncles, rising above the leaves; calyx, deeply 5-lobed, the lobes linear or lanceolate, erect; corolla, 2 to 3.5 cm across, rotate to broadly campanulate, much longer than the calyx, the tube short, the limb 5-lobed, 2-lipped, the upper lip 2-lobed and shorter, color variable depending on the cultivar, white or pink to violet, dark purple or blue; fruit, about 7 mm long, longer than the calyx, a narrow-oblong to subglobose capsule, dehiscent by decay of the pericarp; seeds, ellipsoid. Pot plant. 5,6.



## GOODENIACEAE (Naupaka Family)

**Scaevola taccada** (Gaertn.) Roxb.

"scaevola", "saltbush",

"half-flower"; "beach naupaka" (Hawaii)

emet, emed, emit (B)(N); te mao (K); gasu, gahu (T)

syns. *S. sericea* var. *taccada* Makino; *S. frutescens* sensu auct. non (Mill.) Krause; *S. frutescens* var. *sericea* (Forst.f.) Merr. (nom. nud.); *S. koenigii* Vahl; *S. lobelia* Murr.; *Lobelia taccada* Gaertn.; *L. koenigii* (Vahl) Wight

Indigenous. Trop. Asia to Hawaii. Very abundant. Erect freely branching, spreading, somewhat succulent, soft-wooded, pithy-stemmed glabrous to pubescent shrub, up to about 2 m high, with leaves spiralled or crowded near the ends of the branches; leaves, 8 to 26 cm long and 3 to 12 cm wide, alternate, obovate to oblong-spathulate, apex rounded (obtuse) or emarginate, base cuneate-decurrent, margins somewhat wavy or obscurely toothed or crenate, glabrous or somewhat puberulent, slightly fleshy, light bright green, the midrib sometimes faintly purplish, venation obscure; petiole, short, up to 15 mm long, broad, winged by decurrent blade margins with a basal tuft of sulky white hairs in the leaf axil; inflorescence, a fragrant axillary forking 3- to 9-flowered cymose cluster, 2 to 5 cm long, the peduncles 0.5 to 2 cm long; calyx, 5 to 12 mm long including acute lobes, 5 to 10 mm long; corolla, 12 to 22 mm long, the tube, 10 to 15 mm long, white to greenish or purplish, the limb, 5 to 10 mm long, spreading, white or pale green without, and purple-veined or brown-bordered, the lobes with membranaceous, sometimes fimbriate or erose margins, asymmetrical, appearing to be split in two with only half the petals remaining; fruit, 10 to 18 mm in diameter when fresh, drying to 7 to 13 mm, 2-celled, subglobose, bluntly costate, fleshy, white; seeds, 1 or 2. Abundant in strand vegetation; dominant species and one of first colonizers on strip-mined areas. Wood considered good for smoking (cooking) fish and the black noddy bird (an important delicacy at feasts); hollow sticks used as "guns" to shoot gum balls (*egato*) and small balls carved from pandanus; inner bark used in the past to make headbands which resembled noddy-bird feathers and which were worn for traditional dances; leaves used to wrap food in and to cover the earth oven (*eom*, *eyom*); *Scaevola* and *Guettarda speciosa* (*iut*) flowers the first flowers smelled by returning sailors; flowers used in garlands and either added directly, or boiled with coconut oil to scent it; leaves crushed to yield a juice to retards loss of hair and cure rashes; inner bark scraped to yield medicine for abscesses or boils, and white ripened fruit squeezed into eyes as a "pre-eye-drops" cure for conjunctivitis. 2, 3(58622, 58761), 5(30), 6, 7(27801).

### HERNANDIACEAE (Hernandia Family)

**Hernandia nymphaeifolia** (Presl.) Kubitzki "lantern tree"  
 etiu, yetiu, etsiw (N); te nimareburebu, te bingibing (K); puka, puka vaka (T)  
 syns. *H. sonora* L.; *H. peltata* Meissn.; *H. ovigera* sensu auct. non L.; *Biasoletia nymphaeifolia* Presl

Indigenous. Trop. Asia to Pacific Is. Rare. Medium to large tree, up to 20 m high, with a shortly buttressed trunk and smooth grayish, slightly fissured bark; leaves, 12 to 40 cm long and 10 to 30 cm wide, alternate, rounded-ovate, acute-acuminate, subpeltate to peltate near base, glabrous, softly leathery, medium green (the ventral insertion of the petiole usually red), palmately 5- to 9-nerved from petiole; petiole, 5 to 17 cm long; inflorescence, a densely-flowered axillary and terminal long-stalked, tomentose cymose panicle of numerous, unisexual but monoecious, white to yellowish-white flowers, 12 to 30 cm long; involucre, green to whitish or pinkish, slightly fleshy, subtended by 4 bracteoles; each cyme composed of 3 pedicellate white to pale green flowers, the 2 laterals males, the center one female; male flowers, about 7 mm long, 3-merous; female flowers, 4-merous; style up to 5 mm long; fruit, about 2.5 cm in diameter, broadly obovoid-subcompressed, nut-like, brown, nearly smooth, somewhat ribbed, enclosed in an enlarged, fleshy, white or grayish to reddish succulent balloon-like vesicle with a circumscissile opening; seed 1. Tree on or near base of escarpment. Very light wood, which is sometimes found in the form of driftwood, used for canoe outriggers, pull-floats for fishermen to tie fish to, and corks for bottles; fruit rubbed against rock to burn each other in traditional games. 5(10), 6, 7(27819).

### LAMIACEAE OR LABIATAE (Mint Family)

**Coleus amboinicus** Lour. "Indian borage"  
 syns. *Plectranthus amboinicus* (Lour.) Spreng.; *Coleus aromaticus* Benth.

Recent introduction. Africa and India to Indonesia. Rare. Very aromatic, densely pubescent, somewhat succulent, low sprawling or ascending perennial herb, up to 1 m high, with sub-quadrangular to subterete stems; leaves 2 to 11 cm long and 1.5 to 9 cm wide, opposite, broadly ovate to suborbicular, acute to broadly rounded (obtusish), base cuneate or rounded to truncate, coarsely crenate to dentate (toothed), succulent, finely pubescent on both sides, fragile; petioles 1 to 5 cm long, densely pubescent; inflorescence, a long simple (unbranched) terminal spicate panicle up to 50 cm or longer bearing numerous ( up to 30 or more) whorls of flowers on short pedicels at intervals of about 1 to 2 cm; bracts, 3 to 4 mm long; pedicels slender, hirsute, up to 5 mm long; calyx 1.5 to 4 mm long, campanulate, hirsute and glandular, the upper lip erect, broadly ovate-oblong, the other teeth narrow, very acute; corolla, 7 to 12 mm long, pale blue or violet to pink, the tube 3 to 4 mm long, declinate, expanding distally, pubescent without, the

upper lip to 4.5 by 3 mm, erect, puberulent, the lower lip to 5 to 6 by 4 mm, concave; fruit, about 0.5 by 0.7 mm, a nutlet, smooth, pale brown. Pot plant at Location and at Indian residence at Meneng Terrace. Leaves used as a spice in curries and medicinally. 6(211), 7.

**Coleus pumilus** Blanco "creeping coleus"  
syn. *C. repens* Gurke

Recent introduction. W. Africa. Occasional. Pot plant. 2(59673, 58781), 5, 6.

**Mentha piperita** L. "mint", "peppermint"  
syn. *M. × piperita* L. (*M. aquatica* L. × *M. spicata* L.)

Recent introduction. Europe. Rare. Strongly-scented erect to sprawling rhizomatous perennial herb, the stems 4-angled, glabrous to sparsely pubescent, often purplish; leaves, 1 to 6 cm long and 1 to 3.5 cm wide, opposite, lanceolate-elliptic to oblong-ovate, ovate or suborbicular, somewhat rugose, sharply acute to apiculate, cuneate to rounded or cordate at base, serrate at margin, pubescent to glabrous; petioles, 3 to 6 mm long; inflorescence, a terminal spikelet at stem tips with flowers arranged in whorls (verticils) which are congested terminally and more distantly-spaced basally, mostly glabrous except on calyces; calyx, 3 to 4 mm long, tubular, purplish and dotted with oil glands, the teeth subequal, ciliate, narrowly acuminate, much shorter than calyx tube at anthesis; corolla, 4 to 6 mm long, pale violet, glabrous or puberulent, the tube exerted; stamens 4, small, included; fruit, about 0.75 mm long, a brown nutlet. Pot herb planted in old oil drum on Command Ridge and at Indian residence at Meneng Terrace. 6, 7.

**Ocimum basilicum** L. "basil", "sweet basil"  
dementsi (N); te marou (K); mili (T)

Pre-World War II introduction. Africa to Pacific Is. (Paleotropics). Occasional. Freely-branching aromatic perennial herb or subshrub, often cultivated as an annual, up 80 cm or higher, the stems 4-angled, the branchlets glabrous to hispid; leaves, 2 to 8 cm long and 1 to 3 cm wide, opposite, elliptic-lanceolate to ovate and oblong, acute, base cuneate to attenuate, entire or obscurely dentate, glabrous to scattered-pubescent; petioles, up to 2 cm long, slender; inflorescences, terminal racemes, 10 to 15 cm or longer, at stem tips bearing many short-pedicellate, 6-flowered whorls (verticils) at intervals; bracts, petiolate, green to rich purple, the bracteoles, 2 to 6 mm long; calyx, 2 to 3 mm long at anthesis, enlarging to 5 to 9 mm long in fruit, bilabiate, 10-nerved, with long hairs inside, greenish, purplish-tinged; corolla, 7 to 9 mm long, tube 3.5 mm long, upper lip 4-toothed, lower lip entire, white, glabrous to hispid; fruit, of 4 nutlets, 1.5 to 2.5 mm long, obovoid or ellipsoid, brown or blackish, pitted, swelling in water and becoming slimy. Planted in home gardens; common in I Kiribati and Tuvaluan gardens at

Location. Fragrant flowers and leaves used in garlands and for scenting coconut oil. 2, 3, 5(141), 6, 7(22305).

**Ocimum sanctum** L.

"sacred basil", tulsi (Hindi)

demere (N)?; te marou (K)

syn. *O. tenuiflorum* L.

Pre-World War II introduction. Trop. Asia, now Pantropical. Rare. Erect, aromatic, much-branched herb or subshrub up to 1 m high, the branchlets soft-pubescent; leaves, 3 to 7.5 cm long and 1 to 2.8 cm wide, elliptic to elliptic-oblong or rhomboidal, obtuse to acute, base cuneate to attenuate, margin entire or remotely serrate, upper bract-like leaves ovate to cordate, green to grayish-purple, pubescent on both surfaces but especially on nerves beneath; petioles, up to 2.5 cm long; inflorescences, slender racemes at stem tips, 8 to 10 cm long, bearing whorls (verticils) of flowers at intervals; bracteoles, 2 to 3 mm long, ovate, acuminate, ciliate; pedicels, up to 4.5 mm long; calyx, 2.5 to 3.5 mm long at the anthesis, enlarging to 5 mm in fruit, often purplish, glabrous within except occasionally puberulent near the base of upper lobe, the upper lip suborbicular, reflexed, short-apiculate, the lower lip longer than the upper lip, the teeth 4, lanceolate; corolla, 3 to 5 mm long, the tube 1.5 to 2 mm long, upper lip with rounded lobes, lower lip entire, purplish to pale pink or white; stamens 4; fruit, 0.8 to 1.5 mm long, nutlets, subglobose-compressed or broadly ellipsoid, purple-green to brown, smooth to minutely pitted. Planted ornamental. Fragrant flowers and leaves used in garlands and headbands and for scenting coconut oil. 5, 6, 7.

**Plectranthus oertendahlii** Fries

"Swedish ivy", "prostrate coleus"

Recent introduction. S. Africa. Rare. Prostrate or trailing, tender or somewhat succulent, perennial herb, up to 50 cm high, with creeping reddish stems; leaves, suborbicular, velvety, bronze-green with silver along the veins and purplish beneath; inflorescences, erect or ascending racemes or panicles, 10 to 15 cm long, bearing whorls (verticils) of flowers at intervals; corolla, 2-lipped, pink. Pot plant. 3(58673, 58781), 5, 6.

**Plectranthus scutellarioides** (L.) R. Br.

"painted nettle", "coleus", "painted-

leaf plant"

syns. *Coleus scutellarioides* (L.) Benth. and *C. blumei* Benth.; *Ocimum scutellarioides* L.; *Solenostemon scutellarioides* (L.) Codd

Recent introduction. Malaysia. Occasional. Erect or ascending, tender or somewhat succulent, aromatic brown-pubescent perennial herb up to 1.5 m high, the stems 4-angled and branches glabrous to pubescent; leaves, opposite, 4 to 17 cm long and 3 to 10 cm wide, broadly ovate to ovate-cordate, acute to acuminate, base truncate to

rounded or cuneate and attenuate, crenate, doubly crenate to laciniate, scabrid to subglabrous, variegated, highly ornamental, variously colored, green, red, purple, yellow or white; petioles, 1 to 8 cm long, slender; inflorescences, erect terminal racemes or panicles, 5 to 40 cm long, bearing whorls (verticils) at intervals; bracts, 4 by 5 mm, ovate, long-acuminate, deciduous; pedicels, 3 to 4 mm long; calyx, 2 to 4 mm long and 2 to 3 mm wide, enlarging to 7 mm long in fruit, bilabiate, obliquely campanulate, pubescent and gland-dotted, 10-nerved; corolla, 8 to 18 mm, long, infundibular, blue to purple or mauve, the tube, about 5 mm long, paler, puberulent, abruptly decurved, the upper lip about 1.5 mm long, erect, the lower lip deeply concave, up to 6 mm long; stamens 4; fruit, nutlets, 0.75 to 1.2 mm long, lenticular to broadly ovoid or subglobose, brown, smooth, glossy. Planted ornamental and pot plant. 5, 6, 7.

### LAURACEAE (Laurel Family)

**Cassytha filiformis** L. "beach dodder", "giant dodder", "devil's twine"  
denuwanini, denuwenini, eduwinini (B)(N); te ntanini (K); fetai (T)

Indigenous. Pantropical. Abundant. Slender, filiform, branching, twining or climbing light green to yellowish-green or yellowish-orange, glabrous parasitic herb, up to 3 to 8 m long, attaching to host plants by means of sucker-like haustoria, often forming dense, tangled mats; leaves, alternate, spirally arranged, reduced to minute scales; inflorescences, erect solitary pedunculate spike-like clusters, 1.5 to 5 cm long, borne in the axils of minute bracts; rachis, rather thick, glabrous, finely brown-hairy; bracts and bracteoles ovate-circular; flowers, bisexual, the perianth greenish-white to yellowish-white, somewhat fleshy, tepals 6, white, the 3 outer tepals, connate, broadly ovate-circular, about 0.75 mm across, the 3 inner ones broadly ovate, glabrous, 2 to 2.5 mm long; stamens 9; staminodes, few, yellow; fruit, 4 to 7.5 mm in diameter, subglobose, white when mature, enclosed in a fleshy perianth tube, 1-seeded; seed with a membranaceous or coriaceous testa. Parasite on other plants, found generally on natural vegetation at all elevations. Entire plant used as garlands and headbands; plant used for "black magic" by I Kiribati and other islanders, a practice occasionally copied by Nauruans; tender tips used at times in the past for scenting coconut oil; fruit eaten by children in the past. 2(23.5), 3(58590), 4(163N), 5(6), 6, 7, 8(9566).

**Persea americana** Mill. "avocado", "avocado pear", "alligator pear"  
syns. *Laurus persea* L.; *Persea gratissima* Gaertn.f.

Recent introduction. Mexico. Rare. Medium to large evergreen tree, up to 12 m or taller; leaves, 7 to 30 cm long and 2.5 to 20 cm wide, alternate and spirally arranged, elliptic, ovate-oblong or obovate-oblong, acute-acuminate, chartaceous to somewhat coriaceous, glaucous beneath, downy when young, nerves alternate, pinnate, prominent; petioles, 1.5 to 5 cm long; inflorescences, axillary many-flowered downy panicles

crowded near the ends of branches; peduncles and pedicels, yellowish-green, pubescent; flowers, bisexual, somewhat fragrant, subtended by lanceolate deciduous hairy brown bracts, 4 mm long; the perianth of 6 tepals, 10 to 15 mm in diameter, greenish to yellowish white, short-pedicellate; stamens 9, in 3 whorls, the staminodes, conspicuous, orange to brown; pedicels cylindrical or enlarged and fleshy when in fruit; fruit, 7 to 25 cm long and 5 to 12 cm in diameter, subglobose to pear-shaped (pyriform) fleshy, 1-seeded drupe, skin light-green to purplish, flesh light-green to yellow-green, of butter-like consistency, edible; seed, single, subglobose, up to 5 cm in diameter, with 2 brown seed coats and 2 fleshy, whitish or pink cotyledons. Seedling planted in garden at Meneng Terrace. 5.

### LECYTHIDACEAE (Brazilnut Family)

**Barringtonia asiatica** (L.) Kurz "fish-poison tree", "barringtonia"  
 kwenbabai, kwenababai, eijinut (B)(N); te baireati (K); futu (T)  
 syns. *Mammea asiatica* L.; *Barringtonia speciosa* Forst.; *B. butonica* Forst.

Indigenous. Indo-Pacific. Occasional. Large, spreading, round-crowned tree, 10 to 20 m high, with gray bark and rather stout branches; leaves, 15 to 50 cm long and 8 to 24 cm wide, alternate, clustered toward the ends of branches, obovate or oblong-obovate, obtuse or slightly emarginate, base cuneate, subcoriaceous, glabrous, glossy-green, subsessile; petioles, 1 to 5 cm long; inflorescences, terminal more or less erect racemes, 2 to 15 cm long and 15 cm broad; pedicels, 2 to 9 cm long; calyx, 2-lobed, sepals, 2 to 4 by 2 to 3 cm, concave, obtuse, persistent on fruit; corolla, 4-parted, sweetly fragrant, petals, about 4 to 8 cm long and 2.5 to 4.5 cm wide at anthesis, elliptic to ovate, white, early deciduous; stamens numerous, 4 to 12 cm long, white at base, pink- or red-tinged distally, anthers yellow; style, 6 to 15 cm long, white at base, pink- or red-tinged distally; fruit, 8 to 12 cm long and broad, 4-angled, 1-seeded, pyramidal or subturbinate, exterior fibrous, crowned by calyx (2 large persistent sepals), pendent and heavy when ripe, buoyant; seed, 4 to 5 cm long and 2.5 to 4 cm wide, ovoid or ellipsoid. Spontaneous or planted on coastal strip, often in home gardens; larger concentrations on escarpment leading to plateau above Anibare Bay. Wood a favoured timber and fuelwood for cooking toddy syrup (*kamwaerara*); fruit possibly used to poison fish in the past. Fruit commonly used as a fish poison or stupefacient elsewhere in the Pacific. 1(48.R), 2, 3(58665), 5(36), 6, 7.

**LYTHRACEAE (Lythrum Family)**

**Lagerstroemia indica** L.

"crape myrtle"

Recent introduction. S. China. Rare. Glabrous, deciduous shrub or small tree, 2 to 5 m high, with 4-angled branchlets; leaves, 3 to 10 cm long and 2 to 5 cm wide, alternate, elliptic to oblong-subobovate, obtuse to acute, subsessile; inflorescences, terminal or axillary panicles, 5 to 20 cm long, bearing clusters of flowers, each about 2.5 to 3 cm across; calyx, 6-lobed, campanulate, glabrous; petals 6, 12 to 15 mm long, ovate-suborbicular, wrinkled, clawed, scentless, white, pink or lavender to rich purple or blue; stamens about 15 to 40; fruit, about 0.5 to 1 cm long, ovoid, capsular; seeds, winged. Planted ornamental on Command Ridge. 3(58712), 5, 6.

**MALPIGHIACEAE (Malpighia Family)**

**Stigmaphyllon ciliatum** (Lam.) Juss."Brazilian golden vine", "golden cup", "orchid vine"

Recent introduction. W. Indies to Brazil. Rare. Slender, woody vine; leaves, 2.5 to 8 cm long and nearly as wide, cordate, glabrous with pubescent margins; inflorescences, axillary racemose clusters of 3 to 7 flowers, each about 3.7 cm in diameter; sepals 5; petals 5, bright yellow, free, stalked at base, unequal, wavy, orchid-like; stamens 10, unequal, only 6 bearing anthers; styles 3; fruit, 3-parted, each part with a broad wing about 2.5 cm long. Planted ornamental climber. 3(58725), 6.

**Tristellateia australasiae** Rich.

"bagnit"

syn. *Tristellateia australis* Rich.

Recent introduction. Malaysia and Australia. Occasional. Glabrous, long woody climber with stems dotted with raised lenticels; leaves, 2 to 12 cm long, opposite or verticillate, ovate, acute or obtuse, base rounded or subcordate with 2 glands, glabrous, rather pale green; petiole, 5 to 20 mm long; inflorescences, terminal racemes at branch tips bearing 12 or more flowers, each nearly 2.5 cm in diameter; sepals 5; petals 5, bright yellow, 4 of them slightly falcate, equal, each about 1 cm long excluding the 2 mm long pinkish-orange claw; stamens, usually 10 of unequal length, yellow turning red; style 1, curved, undivided; fruit, samaroid, with a lateral wing with 5 to 8 slender flattened lobes each up to about 1 cm long. Planted ornamental climber. 5, 6(179, 205),

7.

## MALVACEAE (Mallow Family)

**Abutilon asiaticum** (L.) Sweet var. **supraviride** Fosb.

ekaura, inen ekaura (N); te kaura ni Banaba (K)

Indigenous. S. E. Asia to the Pacific Is. Occasional. Erect velvety-pubescent subshrub, 0.5 to 2 m high; leaves, 5 to 12 cm long, alternate, suborbicular-ovate cordate at base, coarsely crenate-serrate or lobed, palmately-nerved, downy gray-green, long-petiolate; flowers, 1.5 to 2.5 cm across, axillary, solitary, on long pedicels, 4 to 7 cm long; calyx 5-lobed; corolla, 1.5 to 2.5 cm across, petals 5, about 1 cm long or longer, imbricate, deltoid-obovate, orange-yellow; fruit, circular, a capsular schizocarp of 11 to 20 radiating carpels, hirsute, brown when dry, each carpel flattened, somewhat boat-shaped, apiculate by the short persistent style-remnant, about 8 mm long; seeds, reniform, stellate-pubescent. Found in waste places and ruderal habitats along coastal strip, especially near the Ijuw-Anibare boundary, and among pioneering weeds in topsoil in areas recently cleared for phosphate mining. Tender meristem used to scent coconut oil; flowers used in garlands and headbands. 2, 3(58807, 58805), 4(107N), 5(107), 6, 7(22306).

**Gossypium barbadense** L.

"sea-island cotton", "cotton"

duwoduwo (N); te baubau (K)

syns. *G. brasiliense* Macf.; *G. peruvianum* Cav.

Pre-World War I introduction. Trop. America. Extinct? Erect branching shrub, up to 3 m or higher; leaves, 7 to 13 cm long, alternate, rotund to ovate, cordate, deeply palmately 3 to 5 (rarely 7)-lobed or laciniate, glabrous with short, fugacious hairs, long-petiolate; stipules foliaceous, lanceolate or ovate, auriculate; inflorescences, terminal or on short axillary branches, solitary or 2 to 4-flowered racemes; bracteoles of epicalyx 3, much longer than the calyx, with cordate base and a deeply incised or laciniate apical lobe; top of pedicel with or without glands below the bracteoles; corolla, 5 to 8 cm across, obovately 5-petaled, petals, about 5 to 8 cm long, yellow, becoming streaked with red or purple on fading, usually with a basal reddish or purplish spot; fruit, a 3-valved ovoid, leathery, pitted capsule dotted with black oil glands; seeds, numerous, ovoid, black, covered with fine, long, pure white easily-removed woolly fibers or hairs (cotton). Collected by Burges in 1935, but not seen by subsequent collectors. Grown by Nauruans in the past for the cotton which was used to stuff mattresses and pillows. The Nauruan name for cotton is the same as for kapok. 2.



**Hibiscus esculentus** L. "okra", "gumbo", lady's finger"; bindi (Fiji Hindi)  
syn. *Abelmoschus esculentus* (L.) Moench.

Recent introduction. Asia. Coarse, erect suffruticose, annual herb, 1 to 3 m high, with green or red-tinged stems; leaves, 10 to 25 cm long and 10 to 35 cm wide, alternate, broadly cordate, palmately 3- to 7 lobed, serrate, hirsute, pale green beneath; petioles, 15 to 35 cm long, hispid, often red-tinged; flowers, solitary, axillary; peduncle about 2 cm long; epicalyx of up to 10 narrow bracteoles, up to 1.5 cm long, usually falling before fruit reaches maturity; calyx completely fused as flower develops, splitting longitudinally as flower opens, falling with the corolla after anthesis, 2 to 3 cm long; petals 5, yellow with crimson spot on claw, obovate, 5 to 7 cm long; staminal column united to base of petals, 2 to 3 cm long, with numerous stamens; stigmas small, 5 to 9, deep red; fruit, 10 to 30 cm long and 2 to 3 cm across, a pyramidal-oblong, beaked capsule, longitudinally furrowed, hirsute or glabrous, dehiscent longitudinally when ripe; seeds, 5 mm in diameter, dark green to brown, rounded, tuberculate.

**Hibiscus manihot** L. "bush spinach", "edible hibiscus"; "bush hibiscus spinach";  
"pele" (Polynesia); mbele (bele in Fiji); nambere (K); pele (T); kabis, slippery  
kabis (SI)  
syn. *Abelmoschus manihot* (L.) Medik

Recent introduction. S. E. Asia. Occasional. Erect, perennial, often suffruticose woody herb or subshrub, 1.5 to 3 m or higher, with young stems, petioles and pedicels glabrous or short-hairy, often accompanied by longer hairs; leaves, 10 to 60 cm by 5 to 60 cm, alternate, extremely variable in shape, orbicular to ovate-oblong, base cordate, either contracted into an elongated-triangular acumen from a broad base or palmately 3 to 7-lobed (or 3 to 7-fid) to subentire, lobes or segments triangular-ovate, oblong-lanceolate, obovate-spathulate or linear, entire, dentate or serrate, pellucid-dotted, more or less crenate, glabrous or pubescent; petiole, 2 to 50 cm long; stipules, 2 to 8 cm long, filiform, caducous, flanked by paired, variable lobed or entire leaflets, 2 to 6 cm long; inflorescences, axillary, solitary, on pedicels, 1 to 5 cm long; bracteoles of epicalyx, 4 to 6 (-8), 1 to 3 cm long and 0.5 to 1 cm broad, ovate to oblong, not rarely coherent in pairs, pubescent on both sides; petals 3, 5 to 8 cm by 3 to 6 cm, yellow with purple centers; fruit, 3.5 to 6 cm long and 2 to 2.5 cm broad, capsular, pentagonous, with 5 prominent costas, concave between the costas, loculicidally dehiscent; seeds, many, about 3 to 4 mm long, subglobose, asymmetrical, dark brown, pubescent. Food plant in gardens at Location and Topside Workshop and occasionally in other home gardens. Nutritious slippery green leaves cooked as a green vegetable by Solomon Islanders, Tuvaluans, I-Kiribati and Fijians. Along with taro leaves, one of the two most important leafy green vegetables in the Pacific Is. 5, 6(105), 7.

**Hibiscus mutabilis** L. "changeable rose mallow", "changeable rose", "variable rose"  
dorot ("the rose")(N)

Recent introduction. S. China. Rare. Large, downy pubescent shrub, up to 5 m tall, with both simple and stellate hairs; leaves, 10 to 25 cm long and broad, alternate, orbicular, cordate, 3 to 7-lobed, long-acuminate, 5 to 11-nerved, dark green above and light green and tomentose beneath; petioles, 2 to 8 cm long; inflorescences, axillary (occasionally terminal), usually single but sometimes double; pedicels, 7 to 10 cm long, accrescent, articulate; epicalyx, 6-segmented, well-developed, persistent, segments about 2 cm long, linear-lanceolate; calyx, 5 to 7 cm across, deeply divided, 5-lobed, lobes 2 to 3.5 cm long, abruptly widened above the base; corolla, 8 to 12 cm across, opening white changing to pink, many-petaled, petals 4 to 5 cm long; fruit, about 2.5 cm wide, subglobose, capsular, 5-locular, setose-lanate; seeds, reniform, tomentose, the hairs 2 to 4 mm long, spreading to subspreading. Planted ornamental along road to Meneng Terrace. 5(157), 7.

**Hibiscus rosa-sinensis** L. "hibiscus", "red hibiscus"  
dorot ("the rose")(N); te roti ("the rose")(K); aute (T)

Pre-World War II introduction. Trop. Asia. Common. Many branching, glabrous shrub, up to 1 to 4 m tall, with erect to drooping branches; leaves, about 6 to 15 cm long and up to 12 cm wide, alternate, variable, ovate-elliptical, acute or acuminate, crenate-serrate, subcordate, obtuse or subacute, green on both sides, palmately 5-nerved; petioles, up to 5 cm long; inflorescences, axillary, near the ends of branches on elongate pedicels, 1.5 to 7.5 cm long; epicalyx of 5 or more ovate- to linear-lanceolate bracts 5 to 18 mm long; calyx, green, 5-lobed for about half its length, persistent; corolla, mostly 8 to 12 cm across, single or in some forms double, campanulate or broadly funnelform, petals entire, showy, usually bright red, but also pink, yellow, light-orange or white; staminal tube slightly longer than the corolla, often nodding or pendulous, crimson; fruit, capsular, ovoid-rounded, 5-valved, 15-seeded (or less); seeds, subglobose, rarely seen. Planted ornamental and hedge plant; flowers used in garlands and for decoration. One of the commonest and most widespread of all ornamental plants in tropical regions. 3(58791), 5(126), 6, 7.

**Hibiscus schizopetalus** (Mast.) Hook.f. "coral hibiscus", "dragon flower"  
dorot (N)

Recent introduction. E. Africa. Rare. Glabrous shrub, 2 to 4 m high, very much like *H. rosa-sinensis*; leaves, alternate, ovate-elliptical, acute, dentate; inflorescences, solitary, pendulous on long pedicels at the ends of slender, drooping branches; pedicels, 8 to 10 cm long; segments of epicalyx 1 to 2 mm long; calyx irregularly 2- to 4-lobed, sometimes spathaceous; corolla, deeply dissected (laciniate), reflexed, petals pink-and-white to coral-red, sometimes with white or yellow margins; staminal tube about twice as

long as petals, slender, flaccid, red, curved at the tip. Planted ornamental. 3(58770), 5(125), 6.

**Hibiscus tiliaceus** L. "beach hibiscus", hibiscus tree", "hau" (Hawaii)  
ekwane (N); te kiaiai, te rao (K); fou, fau (T)  
syns. *Pariti tiliaceus* (L.) A. St. Hil.; *P. tiliaceum* Britt.; *Paritium tiliaceum* (L.)  
A. St. Hil.

Indigenous. Pantropical. Very abundant. A small, dense, broad-crowned, often scrambling tree, 3 to 10 (rarely 15 to 18) m high, intricately branched when mature, with many spreading low branches from a short trunk; youngest branches gray-pubescent, older ones glabrate with grayish rather smooth very fibrous and mucilaginous bark and bast fiber; leaves, up to 15 or 20 cm long and nearly as wide, round-ovate, abruptly acuminate, base deeply cordate, velvety pubescent when young, glabrate and dark green above, grayish-white stellate-tomentose beneath and slightly glaucous, palmately 7- to 9-nerved with linear basal glands dorsally; petioles, up to 12 or 15 cm long; stipules, 2 to 4 cm long, broadly attached, ultimately leaving annular scars; inflorescences, terminal or axillary, solitary or in few-flowered open cymes or panicles; epicalyx conspicuous, shorter than calyx, with 8 to 12 deltoid, acute segments (bracts); pedicels 1 to 3 cm long; calyx 5-lobed; corolla, about 10 cm across, cupular-campanulate, yellow with a maroon-purple eye, aging (after falling) to salmon red; staminal tube shorter than corolla, yellow; style rich purple distally; fruit, 1 to 2.5 cm long and 2 cm wide, ovoid globose, capsular, 5-celled, pubescent, grayish-brown, splitting at top when mature; seeds, generally 15, glabrous, brownish black. In thickets and forest on escarpment surrounding plateau and on inner and outer edges of coastal strip. Timber used for house construction and considered good for canoe outriggers, poles for noddy bird nets, and the best wood for the construction of frigate bird nesting platforms (*eteo*, *etea*); very soft pieces of wood rubbed together in the past to make fire by friction in the procedure known as *ikumo*; inner bark (bast fiber) used to make white fiber, which after stripping off outer bark and soaking in mud and sea water, is used to make skirts (*ridi*), special hula skirts (*ingung*), and baskets (*ebwer*, *eber*); fibre used for straining coconut cream and for lashing house rafters; leaves used for parceling pig and other foods for cooking in the earth oven (*eyom*, *eom*); leaves cooked with water as a cure for diarrhea. 1(22.R), 2, 3(58747), 4(169N), 5(28), 6, 7.

**Hibiscus** ornamental hybrids

"hybrid hibiscus"

Recent introduction. Rare. Origin? Variable shrubs, up to 2 m or higher; leaves smooth to rough; flowers, single or double; bracts, few to several; calyx of single forms 5-lobed, showy, more or less campanulate; staminal column more or less covered with stamens surrounding all but the tip of a longer 5-lobed style; fruit a 5-valved capsule containing 15 or more seeds. Planted ornamentals. 3, 5, 6, 7.

**Malvastrum coromandelianum** (L.) Garcke

"false mallow"

syns. *M. tricuspdatum* A. Gray; *Malva coromandeliana* L.; *Malva tricuspdata* R. Br.

Recent introduction. C. America to S. United States. Common. Tough-stemmed, woody-rooted, widely-branching annual herb or subshrub up to 1 m high (usually less); stems, pubescent with 4-rayed hairs; leaves, 2 to 6 cm long and 1 to 2.5 cm wide, alternate, ovate to ovate-elliptic or ovate-lanceolate, acute or obtuse, serrate, appressed-pubescent, 3-nerved from the base, midrib branched upward; petioles, 1.5 to 4 cm long, slender; stipules, 0.5 to 1 cm or more long, lanceolate to very narrow; inflorescences, axillary, solitary or finally appearing in short axillary and terminal clusters; peduncles, about 5 mm or longer; epicalyx of 3 free narrow subulate bracts; calyx, deeply 5-lobed, the sepals ovate, acute, pubescent; corolla, about 1.2 to 2 cm across, broadly campanulate, 5-petaled, opening after mid-day, finally falling with the staminal tube; petals slightly unequally bilobed at apex, yellow to salmon-orange; staminal column shorter than the corolla, divided at apex into numerous filaments; fruit, about 6 mm across, a discoid (wheelshaped) schizocarp breaking up at maturity into 10 one-seeded segments (mericarps), each about 3 mm long, with a few stiff hairs and 2 stubby points on the convex side; seeds, 1.5 mm long, obliquely reniform, black with a dull surface. Weed in settled areas, roadsides and ruderal sites. 3(58694, 58728, 58766), 5, 6(207), 7, 8.

**Malvaviscus arboreus** Cav. var. **penduliflorus** (Moc. & Sesse ex DC.) Schery

"sleeping hibiscus", "Turk's cap"

syns. *M. penduliflorus* Moc. & Sesse ex DC.; *M. conzatti* Greenm.; *M. grandiflorus* Hort. non H.B.K.

Recent introduction. Trop. America. Occasional. A shrub, 1 to 3 m high, with fibrous bark; leaves, 7 cm to 20 cm long and up to 10 cm wide, alternate, narrowly ovate to ovate-oblong or ovate-lanceolate, acute to obtusely acuminate, base broad cuneate to rounded, serrate; petioles, usually 5 to 12 cm long, puberulent; stipules, about 7 mm long, linear; flowers, solitary, axillary, pendulous, hibiscus-like; pedicels, 4 to 6 cm long or longer, slender, pubescent; epicalyx of usually 6 to 7 linear oblong bracts, about 1 to 1.5 cm long, apex obtuse, margins ciliate; calyx, 5-lobed, exceeding bracts of epicalyx by up to 1 cm; corolla, about 4 to 7 cm long, 5-petaled, bright red (occasionally pink), petals, unequally obovate, slightly keeled, flattened at apex, base suricular, remaining rolled, overlapping and closed; staminal tube slightly exerted, slender, reddish or pale pink with dull purple anthers; fruit, a 5-seeded schizocarp, globose, fleshy, red. Planted ornamental. 5(124), 6.

**Sida acuta** Burm.f. "spiny-headed sida", "broom weed"  
 "coffee bush" (N)  
 syns. *S. carpinifolia* L.f.; *S. glomerata* Cav.

Recent introduction. Pantropical. Common. Low, freely-branching perennial subshrub, up to 1 m tall, with slender stems and a strong taproot; leaves, 1.5 to 7.5 cm long and 0.5 to 2 cm wide, alternate, lanceolate or linear-lanceolate, acute, obtuse, cordulate or rounded at base, sharply serrate, yellowish-green, more or less stellate-pubescent or glabrous beneath, palmately 3-nerved from base, pinnately nerved above the base, midrib branched upward; petioles, 3 to 5 cm long; stipules linear-acute or linear-subulate, up to 12 mm long; inflorescences, solitary or paired, axillary or sometimes terminal; pedicels, 2 to 10 cm long; calyx, about 5 mm across, 5-lobed, lobes pointed; corolla, about 4 to 15 mm across, 5-petaled, petals united at base, obovate, rotate, yellow; stamens numerous, fused into a column (monadelphous); fruit, 4 to 5 mm broad, a 6 to 10-carpellate schizocarp, carpels 2-awned, grooved dorsally; seeds, about 1.5 to 2 mm long, rounded-wedge-shaped, dark reddish-brown. Weed on coastal strip, along roadside, and in and near thickets. Two forms, a narrow ovate-lanceolate-leaved form (22303) and a broader-leaved form (96) exist. 3(58615, 58649, 58806), 5(23, 96), 6, 7(22303), 8(9558, 9582).

**Sida fallax** Walp. "ilima" (Hawaii)  
 ekaura, idibin ekaura (N); te kaura (K)

Indigenous. Indo-Pacific. Rare. Small downy, often almost prostrate, shrub, up to 50 cm high; leaves, about 2 to 4 cm long and 1 to 3 cm wide, alternate, oblong or cordate, acute or obtuse, serrate or scalloped-edged, glaucous, downy; petioles, about 1 to 2 cm long ??; flowers, axillary or terminal, solitary or 2 or 3 near ends of branch tips; pedicels, 2 to 5 cm long, slender ??; calyx, about half as large as corolla, 10-ribbed, downy; corolla, about 2 to 2.5 cm across, 5-petaled, yellow to rich orange, reddish near the center; stamens numerous, fused into a column (monadelphous); fruit, a wheel-like, 7- to 12-carpellate schizocarp with 1-seeded, short-awned seed cases or carpels; seeds ??.

Found in ruderal habitats on coastal strip and in areas cleared recently for phosphate mining. Unopened flower buds used, after soaking in coconut oil to retard their opening and make them last, to make headbands and necklaces worn by dancers and sportsmen during special occasions; dried and treated leaves used by I Kiribati, in Kiribati, as a very strong fertilizer and mulch in ceremonial giant swamp taro (*Cyrtosperma chamissonis*) gardens. 1(5.R), 2(7.5), 5(108), 6(160, 162).

**Sida rhombifolia** L. "broomweed", "broom plant", "Cuba jute", "Paddy's lucerne"  
 "coffee bush", itsi (tea) (N)

Recent introduction. Pantropical. Common. Tough-stemmed, much-branching, erect, stellate-pubescent shrub, 30 cm to 1.5 m high; leaves, 1.5 to 8 cm long and 0.7 to

2.5 cm wide, alternate, elliptic or rhombic-ovate to subspatulate or lanceolate, acute to obtusish, base cuneate to very narrowly obtuse at petiole, serrate near apex, somewhat glaucous-green above, pale beneath, glabrous above, densely stellate-pubescent beneath; petioles, 2 to 6 mm long (rarely longer); stipules 3 to 10 mm long, narrow; flowers, solitary or occasionally paired in axils; pedicels 1 to 5 cm long, slender; calyx, about 15 mm wide, 5-lobed, lobes deltoid-apiculate; corolla, about 6 to 18 mm wide, 5-petaled, petals free, obovate, unequally bilobed, rotate, yellow to pale orange; stamens numerous, fused into a column (monadelphous); fruit, about 8 mm in diameter, an 8- to 10 (rarely 12)-carpellate schizocarp, carpels about 3 to 4.5 mm long, deltoid, apiculate, stellate pubescent dorsally, with 2 sharp awns, about 1 mm long at apex; seeds, 1 per mericarp, about 2 mm long, rounded wedge-shaped or almost pyramidal-triangular, dark brown or black. Weed of roadsides, waste places and semi-shaded areas. Tea made from leaves during World War II; leaves boiled in water used to treat blisters. 3(58621), 4(138N), 5, 6, 7, 8(9575).

***Sida spinosa* L. var. *angustifolia* (Lam.) Griseb.**

"prickly sida"

Recent introduction. Pantropical. Occasional. Soft pubescent herb, up to 1 m high, the young stems covered with minute soft hairs; leaves, 2.5 to 5 cm long and 0.4 to 2 cm wide, alternate, ovate-lanceolate, or oblong, acute, base rounded, obtuse or subcordulate, serrate; petiole, up to 2 cm or longer, slender; stipules, small, pointed, one at base and 2 lateral, usually curved downward; flowers solitary or in axillary or terminal paniculate clusters of 2 or 3; corolla, about 1 cm across, 5-petaled, light yellow; fruit, an ovoid 5-carpellate schizocarp, carpels 2-beaked; seeds, triangular, smooth, dark brown. Weed in waste places. 4, 6.

***Thespesia populnea* (L.) Sol. ex Correa**

"milo" (Hawaii, Polynesia)

itira, itiryra (N); te bingibing (?) (K); milo (T)

syns. *Hibiscus populneus* L. (at least in part); *H. bacciferus* Forst.f.; *Malvaviscus populneus* (L.) Gaertn.

Indigenous. Paleotropics. Occasional. Medium tree, 3 to 15 m (rarely 20 m) high, with a fairly stout trunk, rough corrugated bark, dense round crown, and glabrous branches; branch tips silvery brown lepidote or scurfy, glabrescent; leaves, 5 to 15 cm long and almost as broad, alternate, rather crowded, ovate, base cordate with an open sinus, acuminate, entire or rarely somewhat lobed, green above, only slightly paler beneath, glabrous, slightly fleshy-coriaceous, glossy, usually at right angles to petiole, the tip pointing down, midrib yellowish, palmately 7- to 7-nerved; petioles, 3 to 12 cm long; inflorescences, solitary, axillary; pedicels, about half as long as the petioles, stout; epicalyx, 3 to 5-bracteate, bracts, 4 to 17 mm long, oblong to lanceolate, caducous; calyx, about 18 mm in diameter, rim- or disc-like, unlobed or scarcely toothed, persistent; corolla, 8 to 10 cm across, 5-petaled, campanulate, rather persistent, pale yellow with a maroon or reddish center of "eye", fading to purple or pinkish-purple; staminal

column fused (monadelphous), shorter than corolla, cylindric, toothed at apex, pale yellow; stigmas yellow; fruit, about 2 to 4.5 cm across, depressed-pentagonal-globose, usually 4- to 5-celled, coriaceous-woody, glabrous, green becoming purplish or brown at maturity, with a yellowish gum, indehiscent, irregularly crumbling upon aging, calyx persistent at base; seeds, 4 per cell, usually 7 to 8 mm long, ovoid to obovoid, glabrous or silky pubescent (villous). Growing along edges of mangroves in Anetan; planted on golf course. Specimens (73.R) have leaves scarcely cordate, almost subtruncate at base, as in *Thespesia populneodes*, but have seeds villous on angles, as in *T. populnea*. Considered the best wood for house construction, woodcarving, furniture and canoe outriggers; wood also used in traditional stick games. 1(73.R), 2, 3(58745), 4(165N), 5(57), 6, 7(27821).

### MELIACEAE (Mahogany Family)

**Melia azedarach** L. "Indian lilac", "China berry", "Persian lilac", "pride of India"  
gadong, gadung (N)

Pre-World War I introduction. Trop. Asia. Common. Small to medium tree, 3 to 12 m (rarely 15 m) high, with wide-spreading branches and coarse weak wood; leaves, up to 50 cm or longer, alternate, bipinnate, with 3 to 7 pairs of leaflets, the lowest pinnae sometimes once more divided (thus partly tripinnate); leaflets, 3 to 9 cm long and 1 to 3 cm wide, opposite, oblong-ovate or lanceolate, acute to acuminate, base somewhat inequilaterally acute, serrate, glabrous; petiolules, up to 8 mm long; inflorescences, axillary, open, many-flowered panicles, 10 to 30 cm long; calyx, 5- to 6-lobed, puberulent; corolla, nearly 2 cm across, 5 (or 6)-petaled, the petals about 8 mm long, oblanceolate, purple to lavender or nearly white, fragrant; staminal tube cylindric, as long as petals, toothed, lilac, anthers 10; fruit, about 13 to 20 mm long, 3- to 8-locular, a subglobose to ellipsoid, fleshy, yellow drupe, the endocarp thick, bony; seeds, 1 (or 2) per locule, laterally compressed, the testa crustaceous. Planted ornamental and spontaneous on coastal strip, in strip-mined area on plateau, near the Topside Oval, and on escarpment slopes near phosphate processing plant. 2, 3(58732), 4(122N), 5(74), 6, 7.

**Sandoricum koetjape** (Burm.f.) Merr. "santol" (Philippines)  
syns. *S. indicum* Cav.; *Melia koetjape* (Burm.f.) Merr.

Recent introduction. Malesia. Extinct? Medium to rather bulky, somewhat deciduous tree, up to 12 m or higher, with velvety-pubescent young branchlets and brown to gray smooth or slightly flaky bark; leaves, spiralled, trifoliate; leaflets, 10 to 20 cm long, oblong-ovate, acute, rounded at base, slightly asymmetric or not, velvety-pubescent or leathery, withering yellow or red; inflorescences in many-flowered axillary panicles, 10 to 20 cm long; calyx, 5-lobed, pubescent; corolla, 5-petaled, the petals about 1 cm

long, linear, yellowish, fragrant; stamen tube elongate, anthers 10, stigma 5-lobed; fruit, 8 to 10 cm across, a globose, fleshy drupe with velvety-pubescent skin, usually 5-celled, 1 seed to each cell; pulp, brownish-white, acid, edible; seeds, large, inedible. Small recently planted seedling growing in Filipino home garden at Location in 1980. No longer present in 1981. 5.

### MORACEAE (Mulberry Family)

**Artocarpus altilis** (Park.) Fosb.

"breadfruit"

deme (N); te mai (K); mei (T)

syns. *A. incisus* (Thunb.) L.f.; *A. communis* Forst.

Aboriginal introduction. Malayo-Pacific. Common. Medium to large, round-topped tree, 10 to 20 m or higher, with thick milky sap; leaves, 30 to 60 cm (rarely up to 1 m) long and 20 to 40 (rarely up to 65 cm) cm wide, alternate, deeply pinnately 5- to 7-lobed or -incised, lobes long-acuminate, oblong, acute, or in some varieties entire or shallowly divided with 2 or 4 short triangular lobes, base broadly cuneate or obtuse, dark green above, paler beneath, thick-coriaceous, glabrous above, sometimes hairy on the nerves beneath or on both surfaces; midrib raised strongly beneath; petioles, 3 to 5 cm long, stout; stipules, 10 to 25 cm long, dorsally pilose; male inflorescences, 7 to 30 cm long and 1.5 to 4 cm wide, solitary, axillary, dense, yellow, somewhat spongy, cylindrical (somewhat club-shaped), drooping spikelike clusters on stout peduncles 3 to 8 cm long; female inflorescences, solitary, axillary, globose to rounded-oblong or ellipsoid headlike clusters, 8 to 10 cm long and 5 to 7 cm wide, which develop into fruits, stiffly upright on stout peduncles 4 to 8 cm long; fruit, a syncarp, 10 to 30 cm in diameter, globose or rounded-oblong, weighing up to 6 kg, studded with slightly conic or pyramidal, hexagonal carpel apices, yellowish-green to brownish; inner flesh yellowish-white to creamy, usually seedless, but sometimes with seeds, about 2.5 cm long. Planted staple tree crop on coastal strip. Fruit cooked as a staple food; sap (*denda*) used as an adhesive for caulking canoes and a chewing gum; leaves used for wrapping food for cooking, for parcelization of fresh food, and as plates; medicine for curing ear aches made by crushing juice out of tender meristems. Two main cultivars of *A. altilis* are *deme* and *modenewe* or *modenawe* ("modern way"). Important staple food in Kiribati, Tuvalu. and other atoll countries, and an important supplementary staple in other areas of the Pacific. 2, 3(58753), 5, 6, 7.



**Artocarpus heterophyllus** Lam. "jakfruit", "jackfruit"  
 te mai rekereke (K)  
 syns. *A. integrifolia* sensu L.f.; *A. integer* sensu (Thunb.) Merr.

Pre-World War II introduction. Indomalaysia. Rare. Medium tree, 10 to 20 m high, with thick milky sap and young twigs with many long, rigid hairs which are often hooked at the apex; leaves, 5 to 25 cm long and 3 to 12 cm wide, alternate, oval or oblong, entire (sometimes 3-lobed on young trees), acuminate, acute or obtuse, base cuneate or obtuse, non-decurrent, dark-green, coriaceous, with stiff hairs; petioles, about 3.5 cm long; stipules, 1.5 to 8.5 cm long; male inflorescences, axillary or terminal spikelike clusters, 2.5 to 10 cm long and 1 to 3 cm in diameter, ellipsoid-clavate, terete, yellow or greenish yellow; female inflorescences, in globose or oblong heads which turn into fruit and which are borne on the trunk or older branches (cauliflorous or ramiflorous); fruit stalk 7 to 12 cm long; fruit, a syncarp, usually 30 to 40 cm long but occasionally up to 60 to 90 cm long and about half as wide, oblong cylindrical, golden yellow to yellow-green, weighing up to 20 kg, rind studded with hexagonal bluntly conic carpel apices; inner flesh pulpy, waxy, whitish-yellow, acid or sweetish or fetid when over-ripe; seeds, 2 to 3 cm long, rounded, brown, enclosed in a slippery pulpy jacket. Planted fruit tree reported present by Burges in 1933; young tree seen in Topside Workshop food gardens in 1987. Ripe fruit eaten; immature fruit cooked as a supplementary staple in curries by Indians. *A. integrifolia* and *A. integer* are incorrect botanical names for the jakfruit and according to Corner (in *Gard. Bull. Straits Settlem.* 10:56-81, 1939), *A. integer* refers to a separate species, the champedak which is not present in Nauru, and *A. integrifolia* is an illegitimate name (Smith, 1981). 2,6.

**Artocarpus mariannensis** Trec. "Marianas breadfruit"  
 damenkamor (N); te mai kora (K); matua mei (T)

Aboriginal introduction? Micronesia. Occasional. Tree similar to *A. altilis*; leaves smaller, 10 to 30 cm long, half as wide, broadly obovate to broadly elliptic, acute to acuminate, entire to variously lobed in the upper part, but cutting usually not more than halfway to the midrib, usually less, with some leaves often quite entire, base cuneate, glabrous and somewhat shiny above, brown hairs on the veins and midrib beneath; petiole, up to 4.5 cm long, usually half this length; male spike, up to about 8 to 10 cm long; fruit, rather small, shortly cylindrical, usually with several large seeds and somewhat scanty pulp. Planted staple fruit tree. Same uses as for *A. altilis*, but fruit of *A. mariannensis* eaten raw and cooked. 3(58755), 5, 6, 7.

**Ficus benghalensis** L. "banyan", "Indian banyan", "east Indian fig", "Vada tree"

Recent introduction. India. Occasional. Large spreading tree, up to 20 m or higher and often several times as wide, with milky latex and massive pillar roots, descending from branches, which extend the tree laterally, sometimes almost indefinitely;

leaves, 10 to 30 cm long and 5 to 20 cm wide, elliptic to ovate, obtuse, base usually cordate, glabrous (downy when young), leathery, with intercostal venation, the lateral nerves in 5 to 7 distinctly spaced pairs, the basal nerves elongate in 2 to 4 pairs; petioles, 1.5 to 7 cm long, not articulate to lamina; male inflorescences disperse; female inflorescences similar to fig (gall); fruit, a fig about 14 to 25 mm in diameter, axillary, paired, sessile or the body pedicellate, depressed-globose, orange-red, edible, the basal bracts well-developed, 10 to 14 by 3 to 7 mm; seeds, small, smooth. Planted ornamental tree on coastal strip; common on golf course. 3(58749), 5(53), 6, 7.

**Ficus elastica** Roxb. "Indian rubber tree", "rubber plant", "Indian rubber fig"

Recent introduction. India to Nepal and Malaya, perhaps southward to Java. Occasional. A large spreading, fast-growing banyan tree, up to 35 m high (usually much smaller as an ornamental), with smooth gray bark, copious aerial roots and milky latex; leaves, 10 to 40 cm long and 4 to 22 cm wide, elliptic to subobovate, short-acuminate, thick, stiff, leathery, glabrous, dark-green and shiny above, paler beneath, primary lateral nerves usually in 15 to 22 pairs, the secondary lateral nerves almost as prominent as the primary, leaves in bud enclosed in pointed, rolled, rosy, caducous sheaths; petioles, 4 to 12 cm long, not articulate to lamina; stipules large and conspicuous, pink to red; male flowers, disperse; figs, up to 12 by 9 mm, in pairs, short-ellipsoid or oblong, greenish-yellow, with a short thick peduncle usually 3 to 5 mm long and 4 to 6 mm thick, the basal bracts 3, early caducous. Planted ornamental tree or house plant in its juvenile form. 5, 6, 7.

**Ficus prolixa** Forst.f. var. **carolinensis** (Warb.) Fosb. "native banyan"  
eaeo, eyayo, yayo (N)

Indigenous. Micronesia. Very abundant. Medium to large tree, 2 to 20 m high, with many aerial roots descending from branches; leaves, 8 to 16 cm long and 6 to 8 cm wide, alternate elliptic-oblong or oblanceolate, short acuminate, base cordate or subcordate, glabrous, primary nerves in 5 to 10 pairs; petioles, 0.8 to 3 cm long; male inflorescences ostiolar and disperse; figs, 5 to 10 mm in diameter, axillary, mostly solitary, subglobose, ripening white to pink and purple-black, with 3 slightly coherent rounded basal bracts, sessile or borne on peduncles up to 3 mm long. Common on plateau in areas of unmined forest, in older strip-mined areas, and on the escarpment and coastal strip, primarily on coral-limestone pinnacles and outcrops. *F. prolixa* seems to be one of the only species capable of long-term colonization of residual pinnacles in strip-mined areas and could become dominant in the disclimax vegetation. Berry-like fruit (*moduru*) eaten cooked and mixed with boiled sap (toddy or *karawai*) from the coconut flower spathe (*kamerara*) to make a dish known as *dedangan* or *dedengan* which can keep for two to four weeks, and, if cooked and dried in the sun, will keep for years if stored in a dry place; sap used as chewing gum (*ikumi, kumi*). 1, 3(58663), 5(19), 6, 7.

**Ficus tinctoria** Forst.f. var. **neo-ebudarum** (Summerh.) Fosb. "Dyer's fig", "native fig" debero (N); te bero (K); felo (T)

Recent introduction. S. E. Asia to Polynesia and Micronesia. Rare. Small dioecious tree, up to 8 m high, commonly with long aerial roots or prop-roots; leaves, about 8 to 15 cm long and 5 to 8 cm wide, ovate, with a slightly asymmetric base, dark green withering to a bright yellow with purplish veins, lateral nerves in 3 to 9 pairs; tepals, white; figs, about 12 mm in diameter, globose, yellowish turning dull reddish, borne on peduncles about 10 mm long. Planted food tree in Rev. J. Aigimea's garden. Fruit eaten cooked; fruit also cooked and mashed and mixed with boiled coconut syrup (*kamirara*, *kamerara*) to make a pudding (*dedengan*). Plant introduced from Kiribati, where it is a supplementary staple in many areas and a major staple in the drier islands of southern Kiribati. Use learned by some Nauruans from I-Kiribati, but recipe essentially the same as used by Nauruans for *F. prolixa*. 5(104), 6, 7(27808).

**Ficus** sp.

Recent introduction. Planted ornamental. Rare. 5 (197).

### MORINGACEAE (Moringa Family)

**Moringa oleifera** Lam. "horseradish tree", "drumstick tree", "saijan", "seijan" (Hindi), malunggay (P)  
syns. *Guilandina moringa* L.; *M. moringa* (L.) Millsp.; *M. pterygosperma* Gaertn.

Recent introduction. India. Occasional to common. Small soft-wooded tree up to 10 m high, with thick stems, corky, gummy bark and pungent roots; leaves, 20 to 60 cm long, alternate, bi-tripinnate, the pinnae and leaflets opposite; leaflets, 1 to 3 cm long and 5 to 18 mm wide, oval to obovate, sometimes faintly notches, somewhat grayish-green; inflorescences, shorter than the leaves, axillary, many-flowered, paniculate; calyx, 5-lobed, lobes imbricate, subequal, spreading or reflexed, white; corolla, about 1.5 to 2.5 cm across, 5-petaled, petals imbricate, shortly connate at base, unequal, the lowermost the largest, erect, the other reflexed, white, greenish proximally, fragrant; stamens 10, 5 with yellow anthers, perfect, epipetalous, the filaments free; fruit, 15 to 4 cm long, a 3-valved, pendent, podlike capsule, elongated, beaked, subtorulose, the valves thick, spongy with 9 blunt ribs; seeds, many, about 10 mm in diameter, 3-angled, winged at angles. Food plant in Indian home gardens on Meneng Terrace and in Filipino Gardens at Location. Nutritious leaves, fruit, and flowers cooked as vegetables by resident Filipino and Indian families. Very common food tree planted by Indians in Fiji. 5, 6, 7.

## MYRTACEAE (Myrtle Family)

**Eucalyptus** sp.

"eucalyptus", "gum tree"

Recent introduction. Australia. Rare. Tree with peeling bark; leaves, aromatic; flowers, petals absent, with numerous showy stamens; fruit, a woody capsule, opening by slits; seeds, small and numerous. Planted ornamental tree in Nauruan houseyard garden. 6.

**Pimenta dioica** (L.) Merr.

"allspice"

syn. *P. officinalis* Lindl.; *Myrtus pimenta* L.; *M. dioica* L.

Recent introduction. C. America and W. Indies. Rare. Small to medium tree, 6 to 12 m high, with nearly smooth silvery-brown bark and brittle wood; leaves, 5 to 20 cm long and 2 to 8 cm wide, opposite, narrowly elliptic to elliptic-oblong, bluntly acute, obtuse to rounded at base, thick, coriaceous, glabrous, dark green above and paler and gland-dotted beneath, pinnately veined, mid-rib impressed above and prominent below, highly aromatic; petioles, usually 1 to 1.5 cm long; inflorescences, many-flowered, subterminal axillary (in axils of the upper leaves) cymose panicles, 5 to 15 cm long; pedicels, about 1 cm long, pubescent, with small brownish bracteoles; calyx, 4-sepaled campanulate with spreading persistent lobes about 2 mm long; corolla, about 8 to 10 mm in diameter, 4-petaled, petals, about 4 mm long, rounded, reflexed, white, spreading, caducous; stamens numerous, free; fruit, 5 to 7 mm in diameter, a small subglobose berry, dark purple when mature, with sweet pulpy mesocarp; seeds, usually 2, subglobose with a spiral embryo. Planted ornamental seedling in home garden. 6.

**Psidium guajava** L.

"guava"

kuwawa (N); tekuwawa (K); kuava (T)

syn. *P. pomiferum* L.

Recent introduction? Trop. America. Common. Shrub or small, shallow-rooted tree, 2 to 10 m high, with smooth green, light reddish-brown or copper-colored bark, wide-spreading branches, and pubescent 4-angled or -winged young branches, often producing suckers from roots near base of trunk; leaves 5 to 15 cm long and 3 to 7 cm wide, opposite, ovate-elliptic or oblong-elliptic, acute-acuminate, base obtuse to rounded, dull green, pubescent beneath, often rather brittle, lateral veins 7 to 20 per side, slightly sunken above, prominent below; petioles, 2 to 10 mm long; inflorescences, axillary, solitary or in 2- to 3-flowered cymes; peduncle, about 1 to 2 cm long, pubescent; calyx, 4- to 6-lobed, campanulate, splitting irregularly, lobes 1 to 1.5 cm long, reflexed, pubescent, persistent; corolla, about 2.5 to 3 cm across, petals 4 or 5, elliptic to obovate, slightly concave, reflexed, white, slightly fragrant, fugaceous; stamens, numerous (about

200 to 250), white, about as long as petals, with yellow anthers; style, 1.5 to 2 cm long, filiform, greenish-yellow, exerted above stamens; fruit, 3 to 12 cm long, globose, ovoid or pyriform, surmounted with remnants of calyx lobes, shining pale green, whitish yellow or faintly pink when ripe, pulpy; pulp, granular-juicy, sweet-sour, light pink to reddish-pink or cream-colored, aromatic; seeds, many, 3 to 5 mm long, bony, reniform, yellowish to light brown, embedded in pulp. Occasionally planted or protected in home gardens; spontaneous on coastal strip and locally abundant in unmined forest on plateau and in mined areas. Wood an excellent firewood and makes good fishing poles; leaves used to treat diarrhea; ripe fruit eaten and made into jams. 3(58650, 58767), 4(105N), 5(94), 6, 7, 8.

**Syzygium malaccense** (L.) Merr. & Perry "Malay apple", "mountain apple"  
 apolo Solomona ("Solomon Is. apple")(T)  
 syns. *Eugenia malaccensis* L.; *Carophyllus malaccensis* (L.) Stokes; *Jambosa malaccensis* (L.) DC.

Recent introduction. S. E. Asia. Rare. Medium tree, 6 to 15 m tall; leaves, 10 to 38 cm long and 5 to 22 cm wide; opposite, elliptic to oblong-obovate, bluntly acuminate, base obtuse to acute, then abruptly decurrent on petiole, glossy, glabrous, paler beneath, obscurely punctate, thick-coriaceous, pinnately nerved, lateral nerves submarginally loop-connected 4 to 7 mm from margin; petiole, 8 to 15 mm long, stout, in young leaves reddish; inflorescences, dense few-flowered cymes, about 5 cm long, on defoliate older branches and on trunk; pedicels, 1 cm long or less; calyx tube, 1.5 to 2 cm long, turbinate, 4-lobed, lobes rounded, wider than long; corolla, 4 to 7 cm in diameter across expanded stamens, petals 4, 8 to 18 mm long, obovate, concave, red, fugaceous; stamens, many (about 125), 1 to 3.5 cm long, erect, red to vivid crimson-pink; anthers, small yellowish; style, nearly 2 cm long, dark red; fruit, about 6 to 8 cm long, obovoid or pyriform, crowned by inflexed calyx-lobes, glossy and slightly waxy in appearance, crisp-succulent, light green maturing to red or greenish-white or striped or mottled, usually 1-seeded; flesh, white, watery; seeds, about 2 cm across. Planted fruit tree seedling in Tuvaluan garden at Location. Common aboriginal introduction throughout most of high-island Melanesia and Polynesia, where the fruit is eaten. 5, 6.

#### NYMPHAEEACEAE (Waterlily Family)

**Nymphaea** sp. "water lily"

Recent introduction. E. and S. Africa and Madagascar. Rare. Aquatic perennial herb with submerged rhizomes; leaves, peltate, floating, long-petiolate, arising from the rhizome; flowers, cup-like, solitary, regular, bisexual; calyx, 4-sepaled, the sepals, nearly free, intergrading into the petals; corolla, many-petaled, petals, overlapping, showy, variously colored from rich blue, pink, yellow to creamy-white; stamens,

numerous, anthers introrse, opening by slits; carpels united into a multilocular ovary bearing a flat radiate stigma; seeds, hard, operculate, arillate. Planted ornamental in water tanks and in small household fish ponds. 3(58684), 4, 5(251).

### NYCTAGINACEAE (Four-o'clock Family)

**Bougainvillea glabra** Choisy "bougainvillea", "red bougainvillea"  
tsita, tsitta (N); te akanta (K); akanta (T)

Recent introduction. Brazil. Stout, woody scrambling or climbing vinelike shrub, with spiny, but less thorny than *B. spectabilis*; leaves, alternate, elliptic, acute at both ends, sparsely puberulent on both surfaces; inflorescences, axillary, nearly 2.5 cm long, in threes within 3 involucre bracts; bracts, ovate, commonly red, but variable in color, persistent; perianth 5-lobed, swollen, 5-angled below constriction, yellow to yellowish-white; fruit, 7 to 13 mm long, a glabrous anthocarp. Occasional. Planted ornamental. Flowers used by I-Kiribati in garlands. 3(58726), 5, 6, 7.

**Bougainvillea spectabilis** Willd. "bougainvillea", "purple bougainvillea"  
tsita, tsitta (N); te akanta (K)

Recent introduction. Brazil or Peru. Occasional. Stout, woody scrambling or climbing vinelike shrub with stout axillary spines and the young growth finely pubescent; leaves, alternate, ovate, acute at both ends, tomentose beneath and often above; inflorescences, axillary, nearly 2.5 cm long, in threes within 3 involucre bracts; bracts, ovate, rich purplish-magenta to rosy pink, less commonly orange, pale yellow or white, veiny, persistent; perianth 5-lobed, tubular, indistinctly angled, yellow to yellowish white; stamens usually 8, unequal; fruit, 11 to 14 mm long, a 5-angled anthocarp, densely pilose, not sticky. Planted ornamental. Flowers used by I Kiribati in garlands. 5, 6, 7.

**Mirabilis jalapa** L. "four-o'clock", "marvel of Peru", "false jalap"  
teoua, teowa (N); te aoaaua, te awaava (K)

Recent introduction? Mexico. Occasional. Erect, glabrous, somewhat succulent annual herb, up to 1 m tall, with tuberous roots; leaves, 5 to 10 cm long, opposite, ovate-lanceolate, apex long attenuate-acuminate, base broadly cordate; petioles up to 2.5 cm long; inflorescences, bisexual, in terminal clusters; perianth, 2.5 to 5 cm long, 5-parted, funnel- or trumpet-shaped, red, purple, yellow or various, fragrant, opening late in the afternoon; stamens, 5; fruit, 8 mm long, an anthocarp, hard, ribbed, black, not prickly or sticky. Planted ornamental; spontaneous in some places on coastal strip. Flowers used in garlands. 3(58784), 5, 6, 7.

**Pisonia grandis** R. Br.

"pisonia"

yangis, yangys, yangits (N); te buka (K); puka, puka vai (T)  
syns. *P. alba* Span.

Indigenous. Indopacific. Uncommon. Medium to large, soft-wooded tree with a stocky trunk and brittle, often wind-broken, branches; leaves, up to 20 cm or longer and 10 cm wide, opposite, elliptic or ovate, obtuse to acutish, base acute, thin, pale green, glabrous, pubescent along the midrib beneath, with numerous lateral veins; petiole, up to 5 cm or longer; inflorescences, small, in terminal cymose clusters; perianth 4- to 6-lobed, fragrant; stamens 5 to 13, unequal; style present; fruit, about 1 cm long, an anthocarp, fusiform or short-cylindric, with rows of short spines, glandular, very sticky. Tree in unmined plateau forest bordering escarpment above Anibare Bay and on unmined residual rocky limestone outcrops. Very brittle wood used in past as an inferior fuel; most important roosting habitat for noddy birds which are an important ceremonial food. 6, 7.

**OLEACEAE (Olive Family)****Jasminum multiflorum** (Burm.f.) Andr.

"jasmine", "star jasmine"

rimone (N)

syns. *Nyctanthes multiflora* Burm.f.; *J. pubescens* Willd.

Recent introduction. India. Rare. Pubescent spreading, sometimes climbing shrub, 1 to 2 m high, with copiously pilose or tomentose branchlets; leaves, 2 to 6 cm long and 1.5 to 4 cm wide, opposite, ovate, acute, rounded or truncate to subcordate or cordate at base, pubescent on both surfaces or sometimes glabrate above; petiole, short; inflorescences, short, compact terminal clusters; calyx, 4- to 8-lobed, lobes, 8 to 18 mm long, subulate, densely pubescent with spreading yellowish hairs 8 to 18 mm long; corolla, about 2.5 cm across, tube 19 to 28 mm long, 4- to 9-lobed, lobes, 12 to 20 mm long, acute, white, tube greenish, fragrant to odorless; fruit, a berry, 2-lobed, 2-locular and 2-seeded. Planted ornamental. 5, 6.

**Jasminum sambac** (L.) Ait.

"jasmine", "Arabian jasmine", "pikake" (Hawaii)

rimone (N); te bitati (K); pitasi (T); sampagita (P)

syn. *Nyctanthes sambac* L.

Pre-World War II introduction. India. Common. Pubescent, or somewhat downy, scrambling or sometimes climbing (scandent) shrub, up to 1 m or higher, with angular branchlets; leaves, 2 to 10 cm long and 1.5 to 6 cm wide, opposite, elliptic to ovate, acute or obtuse, base rounded or cuneate, nearly glabrous, with evident pinnate nerves,

blades with axillary hair tufts beneath; petiole, short, arched, pubescent; inflorescences in few-flowered axillary clusters; calyx, about 2.5 cm across, 4- to 10-lobed, lobes about 6 to 7 mm long, linear, ciliate or glabrous; corolla, tubular, often double, tube about 15 mm long, the lobes, oblong to nearly orbicular, obtuse, as long as tube, white, fragrant; fruit a berry. Planted ornamental, especially in I-Kiribati and Tuvaluan gardens at Location; also in Nauruan gardens. Flowers used in garlands and for scenting oil. 3(58719), 5(18), 6, 7.

### ONAGRACEAE (Evening Primrose Family)

**Ludwigia octovalvis** (Jacq.) Raven "swamp primrose", "willow primrose"  
te mam (K); titania? (T)  
syns. *Jussiaea suffruticosa* L.; *Oenothera octovalvis* Jacq.

Recent introduction. Pantropical. Rare. Erect, coarse, slender, branching perennial herb, 50 cm to 2 m high, with sparingly to densely pubescent and longitudinally-grooved stems which are somewhat woody at the base; leaves, 3 to 15 cm long and 0.5 to 2.8 cm wide, alternate, linear-lanceolate to ovate, acuminate or acute, base cuneate to acute, with 11 to 20 pairs of lateral nerves; petioles, up to 1 cm long; inflorescences, solitary, axillary, 2.5 to 3 cm across, borne on short pedicels, about 1.2 cm long with 2 small bracts near top; calyx, 4-lobed, lobes, 6 to 15 mm long and 1 to 7.5 mm wide, ovate-lanceolate to linear, persistent, sometimes red-tinged; corolla, 4-petaled, tubular, tube linear, about 2 cm long, petals, 5 to 17 mm long and 4 to 17 mm wide, broadly obovate or cuneate, emarginate (notched), yellow, caducous; stamens 8, 1 to 4 mm long (excluding anthers), alternately unequal; fruit, 1.7 to 6.5 cm long and up to 5 to 7 mm wide, a longitudinally 8- to 10-ribbed cylindrical 4-celled capsule with sepals persistent at apex, late dehiscent along the sides; seeds, 0.6 to 0.75 mm long, several-rowed in each cell, free, not embedded in endocarp. Weed in swampy area bordering mangroves in Meneng. 4 (150).

### OXALIDACEAE (Wood Sorrel Family)

**Averrhoa bilimbi** L. "belimbi"

Recent introduction. Malaya to India. Rare. Small tree, 3 to 10 m high; leaves, up to 60 cm long, odd-pinnate with 15 to 41 pairs of leaflets; leaflets, 3 to 11 cm long and 1.5 to 3 cm wide, oblanceolate, acute-acuminate, a few proximal ones smaller than the distal leaflets; inflorescences, cauliflorous or ramiflorous, borne in fascicles on branches or trunk; calyx, 5-sepaled, sepals imbricate, yellowish-red to purple; corolla, 5-petaled,



petals, 1 to 2 cm long, dark red, glabrous within, not cohesive; stamens 10, all with anthers; fruit, 5 to 10 cm long and 2 to 5 cm across, oblong-cylindric (cucumber-shaped), smooth, subterete, faintly 5-angled, yellowish-green, acid, crisp; seeds, 6 to 8 mm long and 4 to 6 mm across, embedded in pulp, exarillate. Three large trees planted near Indian homes on Meneng Terrace. Fruit eaten ripe; green and ripe fruit made into pickles by Indian families. 7.

**Oxalis corniculata L.**

"yellow wood-sorrel", "creeping wood-sorrel"

syn. *O. repens* Thunb.

Pre-World War I introduction; reported by Schumann & Lauterbach (1901) as collected by Finsch. Paleotropical and paleosubtropical; now cosmopolitan. Rare. Procumbent, creeping, freely-branching, pubescent perennial herb, ascending to 10 to 20 cm high or decumbent, with several stems radiating from the main root, the individual stems rooting at the nodes and rarely exceeding 50 cm in length; leaves, usually less than 2.5 cm across, alternate, palmately trifoliate, clover-like, the terminal leaflet much larger than the lateral leaflets; leaflets, 4 to 20 mm long and wide, obcordate, deeply notched at apex, base obtuse, nearly pubescent; stipules, up to 3 mm long, united to base at petiole, inconspicuous; petioles, 1 to 8 cm long; inflorescences, 1- to 6-flowered umbels on axillary peduncles, 2 to 7 cm long; pedicels, 4 to 15 mm long, slender; bracts and bracteoles, 0.5 to 3 mm long, deltoid-linear; calyx, 5-sepaled, sepals, 2.5 to 6 mm long, lanceolate to narrowly ovate; corolla, 5-petaled, petals, 4 to 8 mm long, oblanceolate, yellow; stamens 10, in two series; fruit, 5 to 20 mm long and 2 to 4 mm across, an oblong, 5-locular, 5-angled, acute-tipped, pubescent capsule, opening by longitudinal valves; seeds, 5 to 10 per locule, each about 1.5 mm long, compressed, cross-ridged or wrinkled, brown. Weed at MQ 40 Command Ridge. 1, 6(163).

**PASSIFLORACEAE (Passion Flower Family)**

**Passiflora coccinea Aubl.**

"scarlet passion flower"

Recent introduction. Trop. America. Rare. Climbing, tendril-bearing vine; leaves, up to 15 cm or longer, simple, ovate, toothed, woolly beneath; petioles, purplish, with no glands or 2 at base; inflorescences with striking scarlet petals, yellowish on reverse, with filaments white at proximally, shading through pink to purple distally; fruit, about 5 cm in diameter, orange or yellow with green lines and spots, edible. Planted ornamental. 6.

**Passiflora edulis** Sims

"passionfruit"

Recent introduction. Trop. America. Rare. Vigorous woody perennial climbing vine, up to 15 m long, with glabrous, grooved stems and axillary, spirally coiled tendrils; leaves, 10 to 15 cm by 12 to 25 cm, alternate, broadly ovate in outline, deeply palmately 3-lobed, lobes ovate-oblong, sharply acute to acuminate, sinus rounded, base cordate, serrate; petioles, 2 to 5 cm long, usually glabrous, grooved on upper surface, with 2 conspicuous glands near base of blade; stipules, about 1 cm long, lanceolate; inflorescences, axillary, 7 to 10 cm in diameter; peduncle, 2 to 5 cm long, triangular; bracts 3, 1 to 3 long and 1 to 2 cm wide, near apex of peduncle, leafy, ovate to lanceolate, serrate-glandular; calyx, 5-lobed, tubular at base, sepals, 2 to 3 cm long and 1 to 2 cm wide, ovate-oblong, spreading, reflexed, white above, yellowish-green below, spongy, fleshy, with thorn-like appendage near tip and 0 to 4 glands on margins; corolla, 5-petaled, petals, 2.5 to 3 cm long and 0.5 to 1 cm wide, elliptic, free, white, alternating with calyx, inserted on throat of calyx; corona of 2 outer rows of wavy, threadlike, radiating filaments, 2 to 3 cm long, white distally and purple or pink proximally, with several rows of short, purple-tipped papillae; stamens 5, filaments united in a tube around gynophore for about 1 cm then widely parted for 1 cm; anthers, 1 to 1.5 cm long, versatile, transverse, 2-celled, pale yellow, hanging downwards below level of ovary; fruit, 4 to 6 cm long, subglobose or ellipsoid, yellow or purple depending on the variety or form, rind hard, endocarp white; seeds, many, about 5 by 3 mm, compressed, testa blackish, 3-toothed at base, attached to peg-like funiculi on the ovary wall and surrounded by yellowish-orange, aromatic pulpy and juicy aril with a tart but pleasing flavor; seeds, pulpy aril and juice edible. Two small seedlings in home garden. Supplementary food plant in many parts of the Pacific and currently or formally an important cash crop in Niue, Fiji, W. Samoa, Hawaii and Papua New Guinea. 6.

**Passiflora foetida** L. var. **hispida** (DC.) Killip

"love-in-a-mist"

syn. *P. hispida* DC. ex Triana & Planch."stinking passion flower",  
oatamo, watamo (N); te biku (K)

Pre-World War II introduction. Trop. America. Occasional. Creeping or climbing perennial herbaceous vine, 1.5 to 5 m long, with weak, densely long-hispid, longitudinally-grooved stems, axillary coiled tendrils and fetid (bad smelling) foliage; leaves, 4 to 12 cm long and almost equally wide, simple, ovate or ovate-cordate in outline; palmately 3-lobed, the lobing shallow to halfway to the mid-vein, lobe apices acute, base subcordate, margins unevenly dentate or entire, both surfaces hispid-hirsute; petioles, 2 to 6 cm long, pubescent; stipules, lacinate, the divisions filiform; inflorescences, 2.5 to 5 cm across, solitary, axillary; pedicels 2 to 7 cm long; involucre bracts prominently 2- or 3-bipinnatifid; calyx, 5-lobed, tubular, sepals oblong, mucronate, inside white; corolla, 5-petaled, petals, 1.5 to 2.5 cm long, oblong, white; stamens 5, pale green, surrounded by a ring-like corona of filaments, 9 to 15 mm long, white distally and purple to rich-blue proximally; fruit, 1.5 to 2.5 cm in diameter, subglobose to ovoid, yellowish-orange to red-orange, often with faint greenish vertical lines, leathery, thin-walled, surrounded by

pinnatifid involucre bracts, tardily dehiscent; seeds, many, surrounded by scanty, slimy, sweetly-tart yellowish-orange pulpy aril, edible. Weed, generally on plateau, but also on escarpment and coastal strip, along roadsides and in ruderal habitats. Scanty pulpy aril and seeds eaten by children. 2, 3(58592), 4(117N), 5(54), 6, 7, 8(9581).

### PIPERACEAE (Pepper Family)

**Peperomia obtusifolia** (L.) A. Dietr. "jade plant", "baby rubber plant"  
syn. *Piper obtusifolia* L.

Recent introduction. W. Indies and Florida. Rare. Erect or decumbent, spreading, branching, succulent perennial herb, up to 20 cm high, with reddish stems; leaves, 3 to 10 cm long and 2 to 6 cm wide, alternate, oval to inverted-ovate, obtuse, apex sometimes notched, base decurrent to cuneate, glabrous, shiny, dark green above pale below, succulent; petioles, 1 to 3 cm long, reddish; inflorescences, erect spikes, 5 to 15 cm or longer, green, bearing minute sessile flowers; stamens 2. Pot plant. 3(58691), 6, 7.

**Peperomia pellucida** (L.) HBK. "peperomia"  
syns. *P. pellucidum* L.; *P. lineata* Miq. ex Yuncker

Recent introduction. Trop. America. Rare. Pale, erect or reclining, fleshy, glabrous, weak-stemmed perennial herb, 15 to 30 cm high, with branched stems; leaves, 1 to 3.5 long, alternate, ovate-cordate, acute to acuminate, base rounded to cordate or cordate-truncate, glabrous, shiny above dull beneath; petioles, 3 to 12 mm long; inflorescences, slender leaf-opposed or terminal spikes, 2 to 5 cm long, bearing minute, well-separated green sessile flowers; calyx and corolla absent; stamens 2; ovary subtended by a minute bract; fruit, less than 1 mm in diameter, a green globose, rostellate (beaked) drupe with longitudinal ribs, containing a single warty seed. Weed of pot plants in homes. 5(7), 6, 8.

### POLYGALACEAE (Polygala Family)

**Polygala paniculata** L.

Recent introduction. Trop. America. Rare. Slender, erect, profusely-branching annual herb, 10 to 60 cm tall, with glandular-pubescent stems and a tuberous, yellow, strongly aromatic tap-root with the scent of peppermint or wintergreen; leaves, 1 to 2.5 cm long and 2 to 4 mm wide, linear-lanceolate, in whorls of 5 caducous leaves below and spirally arranged above; inflorescences, slender terminal racemes, 2 to 15 cm long,

bearing numerous crowded small flowers, 2 to 3 mm long; calyx, 5-parted, the two inner sepals resembling wings and much larger than the others and resembling petals; corolla, 3-petaled, the upper pair rather narrow, the lower (keel) boat-shaped; petals and inner sepals at first white, becoming purplish or pinkish with age; stamens 8; fruit, about 2 to 3 mm long, oblong, glabrous, not winged; seeds, about 1.5 mm long, oval-oblong, black with tiny white hairs and a 2-lobed whitish caruncle. Weed along Topside running track and in other waste places. 5, 6(203), 7.

### POLYGONACEAE (Buckwheat Family)

**Antigonon leptopus** Hook. & Arn. "Mexican creeper", "mountain rose",  
"confederate vine", "chain of love", "love vine", "hearts on a chain", "coral vine"

Recent introduction. Mexico. Occasional. Perennial herbaceous climbing to scrambling vine with slender glabrous stems, axillary tendrils and tuberous roots; leaves, 5 to 12 cm long, alternate, broadly ovate, cordate, apiculate to acuminate, net-veined, wrinkled and wavy-edged; petioles, 1 to 5 cm long; inflorescences, long, slender, loose, 6- to 15-flowered racemes which end in branched tendrils; pedicels about 1 cm long; flowers about 13 mm long; tepals 5, rose pink or white with a darker center, becoming membranous, greenish, reticulate-veined; fruit, up to 1.5 cm long, a triangular, brownish achene; seed, longitudinally grooved. Planted ornamental and spontaneous in waste places and ruderal habitats. 3(58679), 5(59), 6, 7, 8(9562).

**Coccoloba uvifera** (L.) Jacq. "sea grape"  
syn. *Polygonum uvifera* L.

Recent introduction. Trop. America. Rare. Small glabrous tree, up to 8 m or higher, with thick branchlets and spreading branches; leaves, 10 to 20 cm across, usually broader than long, alternate, suborbicular, cordate, firm, coriaceous, glossy, glabrous, the midrib and lateral nerves reddish; inflorescences, erect spike-like racemes, about 15 cm long; individual flowers with 5 tepals, 8 stamens and 3 styles, greenish-yellow, fragrant; fruit, about 1 cm across, a subglobose or pyriform, reddish berry-like drupe, sweetish-acidic, astringent, edible. Planted ornamental near Buada Lagoon. 3(58787), 6.

### PORTULACACEAE (Purslane Family)

**Portulaca grandiflora** Hook.

"portulaca", "purslane", "pigface"

Recent introduction. Brazil. Rare. Decumbent, succulent, annual herb, up to 15 cm high, with tufts of white silky hairs at the nodes and just below the flowers; leaves, 12 to 35 mm long and 1 to 4 mm wide, narrowly cylindrical or subterete; inflorescences, terminal; calyx, 2-lobed, sepals, 5 to 12 mm long, connate; corolla, 2 to 3 cm across, 4- to 6-petaled, petals, 12 to 30 mm long, pink, red, yellowish, white or striped; stamens, many (40 to 75); fruit, about 5 mm in diameter, a membranous capsule, circumscissile (dehiscent by a hemispherical lid). Planted ornamental. 3(58659), 5, 6, 7.

**Portulaca oleracea** L.

"pig weed", "purslane", "wild purslane"

debois, doboiy (N); te boi (K); katuli (T)

Pre-World War II introduction. Europe. Occasional. Prostrate, spreading, fleshy, glabrous herb, up to 30 cm high, branching at base with branches sometimes reddish; leaves, 4 to 30 mm long and 3 to 12 mm wide, alternate or clustered at branch ends, obovate, spatulate or oblong-cuneate, obtuse to slightly notched, base cuneate, fleshy, flattened, dull green or reddish, sessile; inflorescences, terminal, sessile, few-flowered; calyx, 2-lobed, sepals connate; corolla, usually 5-petaled, petals yellow, withering early; stamens 7 to 15; fruit, about 4 mm long, a membranous capsule, circumscissile (dehiscent by a hemispherical lid); seeds, numerous, small, black, slightly roughened. Weed in gardens and waste places, especially in sandy, hydromorphic soils of the shores of Buada Lagoon. Cooked leaves and stems eaten after pounding and mixing with coconut flower spathe syrup (*kamerara*); important famine food during World War II; plants fed to pigs; leaves and stems boiled with water being used to cure scabies. 3(58624, 58734), 5(4), 6, 7, 8.

### RHAMNACEAE (Buckthorn Family)

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

"soapbush", "hoop withe"

ewongup (N)

syns. *Ceanothus asiaticus* L.; *Ceanothus capsularis* Forst.f.

Indigenous. Paleotropical. Common. Sprawling or climbing, much-branched shrub or small tree, 1 to 5 m high; leaves, mostly 4 to 11 cm long and 1 to 6.5 cm wide, alternate, ovate, acuminate, base rounded or subcordate, finely crenate-dentate, glossy green, nearly glabrous, palmately 3-to 5-nerved, the midrib branched upward; petioles, 1

to 3 cm long; inflorescences, small, axillary short-pedunculate, 3- to 7-flowered, compact, cymose clusters; peduncles less than 3 mm long; pedicels, about 3 mm long, slender; calyx, 5-sepaled, sepals acute, white to pale or dull yellow; corolla, 5-petaled, petals hoodlike, green to yellowish-green or whitish; stamens 5, less than 1 mm long; disc, broad, saucer-like, greenish-yellow to yellow-orange; fruit, 6 to 8 mm in diameter, depressed-globose, 3-celled, green or brown; seeds 3 (1 per cell), nearly 5 mm long, dark brown or black. Found in forests on plateau and on cliffs and slopes and at base of escarpment. Rolled leaves used with flowers of other species in garlands. A traditional source of soap in other Pacific islands, although not reportedly used for this purpose on Nauru. 2, 3(58641), 4(113N), 5(69), 6, 7.

### RHIZOPHORACEAE (Mangrove Family)

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

"brown mangrove"

etum, etam (N); te tongo, te tongo buangui (K)

syns. *Rhizophora gymnorrhiza* L.; *R. conjugata* L.; *Bruguiera gymnorrhiza* Savigny; *B. rheedii* Bl.; *B. eriopetala* W. & Arn.; *B. conjugata* (L.) Merr.

Indigenous. Indopacific. Occasional. Medium tree, 3 to 15 m tall (in Nauru rarely over 4 m), with an inconspicuously buttressed trunk, knee-like pneumatophores, dark fissured trunk bark, and smooth-barked slightly nodose stems; leaves, 9 to 20 cm long and 4 to 9 cm wide, opposite, elliptic-oblong, acute-acuminate at both ends, base decurrent, thick-coriaceous, quite glabrous, somewhat glossy dark green; petioles, up to 4 cm or longer; stipules, to 3.5 cm long, linear-lanceolate, reddish, sheathing the new leaves, caducous; inflorescences, solitary, axillary, somewhat nodding, up to 3 or 4.5 cm across, on pedicels 1 cm long; calyx, 10- to 14-lobed, firm, glossy red to dull yellow or yellow-green, lobes, about 1.5 cm long, slender-subulate or very narrowly-lanceolate, as long as tube; corolla, 10- to 14-petaled, petals 3 to 5 cm long, narrowly oblong, notched at apex, white fading to brown, each lobe bristly; stamens, many (or as few as 20), about 1 cm long; anthers, 4 to 5 mm long, linear; pollen dirty white; styles nearly 2 cm long, pale green; fruit, 2 cm long and 1.5 cm thick, turbinate, crowned by calyx limb; seed germinating on tree to form an elongated, somewhat extruded, cylindrical radicle, reaching 15 to 25 cm long before falling. Localized in system of brackish lakes or lagoons near base of escarpment in Meneng, Anabar and Anetan District (lake in Anabar known as Araro); reportedly present in Buada Lagoon in the past. Strong wood excellent for house construction; pre-germinated seed (fruit) eaten cooked, after scraping, drying in the sun and then boiling; the Nauruan delicacy known as *etum* or *etam*, is prepared by mixing the grated pre-germinated seed with coconut milk and then baking; skin of seed used to prepare a black dye for traditional skirts (*ridi*). 2, 3(58746), 4(167N), 5(103), 6, 7.

## ROSACEAE (Rose Family)

**Filipendula rubra** (J. Hill) B.L. Rob.

"queen of the prairies"

Recent introduction. Central U.S. Hardy, clump-forming, perennial herb, up to 60 cm high; leaves, compound, up to 20 cm or longer; inflorescences, large, feather-like, compact, many-flowered, irregular panicles, 15 to 30 cm wide, bearing many small peach-pink flowers. Rare. Planted ornamental. 6.

**Rosa damascena** Mill.

"damask rose"

dorot ("the rose")(N); te roti ("the rose")(K)

Recent introduction. W. Asia. Occasional. Erect, robust, aculeate shrub, up to 2 m high, with stems bearing numerous prickles or small thorns; leaves, pinnate, with 5 to 9 leaflets; leaflets, 7 by 5 cm, ovate-oblong, puberulent beneath on the midrib; inflorescences, clustered, 6- to 12-flowered corymbs, with bristly pedicels and receptacles; calyx, 5-sepaled, imbricate in bud; corolla, 5-petaled (sometimes more), red or pink, fragrant; stamens and ovaries numerous; hypanthium pilose within; fruit, a 1-seeded achene included by the fleshy, colored fruitlike hypanthium. Planted ornamental. 5(80), 6.

## RUBIACEAE (Coffee Family)

**Aidia cochinchinensis** Lour.

enga, enguh (N)

syns. *Randia cochinchinensis* (Lour.) Merr.; *R. racemosa* (Cav.) F.-Vill.; *Stylocoryna racemosa* Cav.; *Randia graeffei* Reinecke; *Stylocoryna densiflora* (Wall.) Miq.; *Randia densiflora* (Wall.) Benth.

Indigenous. Trop. Asia to Pacific Is. Rare, possibly extinct. Small, glabrous tree or shrub, 1 to 2 m high, with smooth stems; leaves, 9 to 18 cm long and 3 to 6 cm wide, opposite, oblong-lanceolate to elliptic-ovate, acute or acuminate, base acute-decurrent or attenuate, thinly coriaceous, rather glossy, pinnately nerved; petioles, 0.5 to 2 cm long, ridged by decurrent leaf-blade margins; stipules, small, connate; inflorescences, axillary, rather dense, many-flowered, rather richly-branched, short-pedunculate, cymose clusters, up to 4 to 6 cm or longer, but not longer than the adjacent leaf, glabrous or minutely puberulent; bracts shortly deltoid; calyx, short, 5 (rarely 4-)-toothed; corolla, usually 5-lobed, tube and lobes about equally long, about 1.5 by 3 mm, creamy-white, throat pubescent; stamens 4 to 5, inserted on corolla tube; anthers, linear, exerted, nearly as long as corolla lobes; style, rather thick, exerted, 7.5 mm long; fruit, 5 to 9 mm long, globose, reddish to purplish, edible, with several to many seeds, crowned by calyx

remnant. Rare shrub with edible fruits in escarpment forest. Ripe fruit eaten, especially by children. 2(K9), 6(165).

**Gardenia augusta** (L.) Merr.

"gardenia"

syns. *Varneria augusta* L.; *Gardenia florida* L.; *G. jasminoides* Ellis; *G. radicans* Thunb.

Recent introduction. China. Rare. Erect shrub, 1 to 2 m or higher; leaves, 4 to 12 cm long, and 1 to 4 cm wide, opposite, ovate, oblong-lanceolate or elliptic obovate, acute or somewhat acuminate, decurrent at base on short petiole, somewhat glossy, dark green; petioles, 1 to 8 mm long, winged by decurrent leaf-blade margins; stipules, often split nearly to base with a single unilateral lobe, but sometimes bilobed; inflorescences, axillary, solitary; calyx 5- to 7-winged, terminated by linear-lanceolate spurs, 15 to 30 mm long and 1.5 to 6 mm wide; corolla, 6 to 8 cm across, 6-petaled (double cultivars with additional petals), tube 5 to 9 cm long, white aging yellow-brown, very sweetly fragrant; stamens 5 to 11; fruit, 2 to 3 cm long, ovoid, 5- to 6- ribbed, crowned by calyx, many-seeded. Planted ornamental. 6, 7.

**Gardenia taitensis** DC.

"Tahitian gardenia", tiare Tahiti (Tahiti)

te tiare (K); tiale, siale (T)

Recent introduction. Pacific Is. Rare. Large shrub to small tree, up to 5 m tall; leaves, 6 to 18 cm long and 3 to 10 cm wide, opposite, elliptic-obovate, obtusely short-pointed, base cuneate, somewhat glossy or shiny, bright green, prominently pinnately nerved, midrib very prominent; petiole, winged by decurrent leaf-blade margins, the petiole bases of leaf-pairs joined together by stipules; petioles, usually less than 5 mm long; stipules, connate, bilobed; inflorescences, solitary, in upper leaf axils; calyx, prominently 4-lobed, lobes 11 to 30 cm long and 2 to 8 mm wide, lanceolate; corolla, 4 to 8 cm across, 4- to 8-petaled, petals, up to about 3 or 4 cm long, spreading from a tubular base, about equalling tube, bright white, very fragrant; fruit, about 2 to 2.5 cm in diameter, globose, longitudinally ridged. Planted ornamental in Tuvaluan garden at Location. Fragrant flowers used in garlands and to scent coconut oil. 6, 7.

**Gardenia** sp.

"Professor Pucci gardenia"

Recent introduction. Origin. Rare. Planted ornamental. 6.



**Guettarda speciosa** L.

"guettarda"

iut, yut (N); te uri (K); pua, puapua, uli (T)

Indigenous. Trop. Asia to the Pacific Is. Small spreading tree, 4 to 15 m high, with thick branchlets; leaves, 10 to 25 cm long and 6 to 18 cm wide, opposite, broad-ovate, acute-subacuminate to obtuse, rounded or emarginate, base obtuse to subcordate, rather dark green above, paler and usually puberulent beneath, with 7 to 10 pairs of prominent lateral nerves; petioles, 2.5 to 4 cm long, pubescent, leaving large scars on the twigs when they fall; stipules, small, ovate, leaf-like, at nodes between leaf-pair petiole bases; inflorescences, compact, forked, many-flowered cymose clusters on axillary peduncles, 5 to 10 cm long, usually forming after leaf-fall; calyx, about 1 cm long, cupulate, truncate, pubescent; corolla, tubular, 2.5 to 5 cm long and 2 to 3 cm across the limb, 5- to 6-petaled, dull or yellowish white, fragrant, villous within; flowers dimorphic, some with short styles not reaching the anthers, others with exerted styles; fruit, 2 to 3 cm in diameter, a woody, depressed-globose, 4- to 9-chambered drupe with a circular rim at apex, whitish, pinkish or green when ripe, faintly ribbed, usually 4- to 6-seeded. Occasional in woods and thickets on coastal strip, but less common in forest on plateau near escarpment; common in regrowth in older strip-mined areas; planted in home gardens. Straight pieces of timber make excellent house rafters and used for canoe parts and handicrafts; bark scraped and mixed with other plant extracts, eg., *Scaevola taccada* (emet) and *Cordia subcordata* (eongo) to produce a medicine for beriberi; leaves used to parcel food and as plates; flowers used in garlands and decorations, often after soaking in coconut oil; flowers considered the best for scenting coconut oil; juice from flowers used as a deodorant; flowers and young leaves soaked in water to make a love potion, which is drunk by women and which when sweating, makes men go crazy (reportedly learned from I-Kiribati); juice of flowers mixed with coconut juice used to keep hair healthy. 2, 3(58759), 5(70), 6, 7(27806).

**Hedyotis corymbosa** (L.) Lam.syn. *Oldenlandia corymbosa* L.

Recent introduction. Pantropical. Rare. Much-branched, annual herb, up to 20 cm high, with slender ascending or erect, bluntly 4-angled stems; leaves, 1 to 4 cm long and 1.5 to 8 mm wide, opposite, linear-oblong or narrowly elliptic, acute at both ends, blade pale beneath, midrib prominent, chartaceous, subsessile or petiole very short; stipules fused to petioles; inflorescences, 2- to 8-flowered axillary cymes which are shorter than the leaves; pedicels, 4 to 8 mm long, slender; calyx, about 2 mm long, 4-lobed, not exceeding ovary; corolla, about 2 mm long, white or faintly pinkish-purplish; stamens inserted just above the base of the tube; fruit, about 2 mm by 2 mm, a 2-celled capsule, ~~exalate, flattened at apex, slightly laterally compressed, with several seeds per cell,~~ dehiscent by valves at apex. Weed in waste places and ruderal habitats. 4(140N), 5(143), 6, 8(9560).

***Ixora casei* Hance**

"ixora"

te katuru, te katiru (K); suni (T)

syns. *I. duffii* Baine; *I. duffii* T. Moore; *I. carolinensis* Hosok.; *I. confertiflora* Val. non Merr.; *I. volkensis* Hosok.; *I. pulcherrima* Volk.

Recent introduction. Caroline Is. (Southeast Asia?). Occasional. Large shrub, up to 3 m or higher; leaves, up to 30 cm long, opposite, narrow-oblong, acute, dark-green glossy, glabrous, short-petiolate; stipules, interpetiolar, entire, acuminate; inflorescences, many-flowered, terminal cymose clusters, about 20 cm in diameter, not at all fragrant; calyx, tiny, 4-toothed; corolla, about 5 cm long, tubular, 4-lobed, lobes, ovate, more or less acute, spreading, twisted spirally in bud, deep vermilion-red to scarlet; stamens 4; fruit (rare), a 2-seeded, berry-like drupe. Planted ornamental in Nauru, but reportedly wild in Palau, Chuuk (Truk) and Pohnpei (Ponape) and Kosrae (Kusaie). 3(58707), 5, 6, 7.

***Ixora coccinea* L.**

"ixora", "flame of the woods"

syn. *I. fraseri* Hort. ex Grant

Recent introduction. Southeast Asia. Occasional. Small shrub, up to 2.5 m high; leaves, 3 to 10 cm long and 2 to 5 cm wide, opposite, oblong-obovate or subcordate and slightly amplexicaul, obtuse, coriaceous, sessile; inflorescences, dense terminal corymbose clusters; calyx, 4-toothed, puberulent; corolla, up to 5 cm long, tubular, 4-lobed, lobes 10 to 15 mm long, ovate-lanceolate, acute, red, orange-pink or yellow; stigmas, 3 to 4 mm long, red; fruit, a 2-seeded berry-like drupe. Planted ornamental. 5, 6(202).

***Ixora* sp.**

"ixora"

Recent introduction. Rare. Planted ornamental. 5, 6(196).

***Morinda citrifolia* L. var. *citrifolia***

"beach mulberry", "Indian mulberry"

deneno (N); te non (K); nonu (T)

syn. *M. indica* L.

Indigenous. Trop. Asia and Australia to S.E. Polynesia. Common. Shrub or small tree, up to 6 m or higher, with quadrangular branchlets; leaves, 15 to 30 cm long and 6 to 18 cm wide, opposite, broadly elliptic or slightly obovate, acute or obtuse, dark green, glossy, pubescent when young; petioles, 1 to 2 cm long, narrowly ridged by decurrent leaf-blade margins; stipules, interpetiolar, sheathing, large, connate, deltoid, sometimes bifid; inflorescences, axillary, solitary, fleshy, headlike clusters, up to 2.5 cm long, irregularly subglobose on peduncles, 2 to 3 cm long; calyx, truncate; corolla, about 1 cm long, pilose in the throat, usually with 5 acute lobes about 5 mm long, pure white; anthers included or slightly exserted; style about 1.5 cm long; fruit, 4 to 12 cm long, a

globose-ovoid, fleshy, compound drupe (syncarp) containing 1-seeded pyrenes, somewhat waxy, shiny, creamy to yellowish-white; flesh, strongly fetid and gelatinous, but edible when ripe; seed, bony. Common to abundant on coastal strip, often protected or planted around homes and in waste areas; occasional in plateau forest and in older strip-mined areas. Plants kept around homes to ward off evil spirits; small pieces cut up and rubbed on hands, face, etc., to ward off evil spirits; roots ground to provide a yellow dye; ripe fruit eaten raw, but far more common eaten in the past; fruit cooked and mixed with coconut syrup to make pudding (*dedangan*); fruit and branches cooked to eliminate evil smells, especially after war; roots and branches crushed and squeezed to cure rashes, fruit and roots ground and cooked to cure headaches, tender leaves heated up with coconut oil and used as a poultice to suck puss out of boils (*ibir, ibur*), raw fruit ground and drunk as a cure for diabetes, and fruit cooked and used as a cure for dysentery. Plant also a very important medicinal and multi-use plant in Kiribati and Tuvalu. In Kiribati, where there have been recent outbreaks of vitamin A-deficiency-induced nightblindness among young children, programs encouraging mothers to feed children the cooked leaves of vitamin A-rich *M. citrifolia* have reportedly improved the situation. 2, 3(58754), 5(98), 6, 7(27807).

**Mussaenda erythrophylla** Schum. & Thonn.

"red mussaenda"

Recent introduction. Trop. Africa. Rare. Shrub or liana, 2 to 4 m high, often with drooping or climbing branches and copiously pilose branchlets; leaves, 5 to 12 cm long and 3 to 8 cm wide, oval-ovate to almost cordate (when young), acuminate, base obtuse to slightly decurrent, copiously pilose, prominently veined; petioles, 1 to 6 cm long; stipules, interpetiolar; inflorescences, terminal, several-flowered, branched, corymbose cymes; calyx, 5-lobed, one of the lobes (rarely 2) enlarged, petal-like, up to 9 cm long and 6.5 cm wide, ovate-lanceolate, lax-pendant, bright red above and somewhat paler beneath, palmately veined, pubescent, the other lobes, up to about 1 cm long and 2 mm wide, narrowly linear-lanceolate, caducous, bright red, calyx tube reddish-pubescent; corolla, about 2.5 cm long, tubular, 5-lobed, red-pubescent outside with tube white or pale-yellow within distally; stamens 5, included; fruit, a berry with numerous minute seeds; Planted ornamental. 6(195).

**Mussaenda frondosa** L.

"mussaenda"

syn. *M. sericea* Bl.

Recent introduction. Trop. Africa and Madagascar to S. Asia. Rare. Erect shrub, up to 4 m or higher, with drooping or rambling branches; leaves, 5 to 18 cm long and 3 to 7 cm wide, opposite, ovate to lanceolate, acuminate, base obtuse, rounded or decurrent, puberulent; petioles, 1 to 3 cm long; stipules, concealing a band of hairs, caducous; inflorescences, terminal corymbose cymes; bracts and bracteoles caducous; calyx 5-lobed, one of the lobes (rarely more) enlarged, petal-like, foliaceous, colored, white or pink; corolla, mostly 2 to 3 cm long, tubular, 5-lobed, dark-yellow to orange; stamens 5,

included, anthers normal but always devoid of pollen in "female", long-styled flowers; fruit, 1 to 1.5 cm long, a berry, ellipsoid, truncate at base, black when ripe, seeds, numerous, reticulate. Planted ornamental. 6(248).

**Pentas bussei** K. Kr.

"red pentas", "red star cluster"

Recent introduction. Trop. Africa? Rare. Planted ornamental. 3(58675), 6.

**Pentas lanceolata** (Forssk.) K. Schum. "pentas", "Lady Fletcher", "Egyptian star cluster"  
syns. *Ophiorrhiza lanceolata* Forsk.; *Pentas carnea* Benth.

Recent introduction. Trop. Africa, Madagascar, Comorro Islands and Arabian Peninsula. Occasional. Erect, pubescent, sometimes straggling, perennial herb or subshrub, up to 80 cm high; leaves, 2.5 to 15 cm long, opposite, ovate, acute to acuminate, pubescent; inflorescences, up to 7.5 cm across, terminal, open, headlike, corymbose clusters; corolla, long-tubular, commonly 5-lobed, lobes, acute, mauve or rich purple to pink and white, with a white-bearded throat; fruit, about 4 mm long, obovoid, capsular with minute seeds. Planted ornamental. 3(58689), 5, 6(233,166), 7.

**Spermacoe assurgens** R. & P.

"buttonweed"

syns. *S. suffrutescens* Jacq.; *Borreria laevis* sensu auct. plur. non (Lam.) Griseb.

Recent introduction. S. Asia. Uncommon. Decumbent or ascending, perennial herb, up to 40 cm high, with slender, wiry, somewhat angled stems and slightly woody and branching near the base; leaves, 2 to 6 cm long and about 0.5 to 2 cm wide, elliptic-lanceolate, sharply acuminate, base cuneate, pinnately nerved, nerves prominent, scabrid near margin but otherwise glabrous, subsessile; stipules, connate, with filamentous processes, interpetiolar, fused to the leaf-stalks; inflorescences, in axillary verticillate headlike clusters; calyx, small, 4-lobed, lobes ovate; corolla, 1.5 to 3.5 mm long, infundibular, 4-lobed, lobes, spreading, white or pink-tinged; stamens 4, exerted from the corolla, with white filaments and pale blue or bluish-tinged anthers; style, pink and white-tinged; fruit, 1 to 4 mm long, 2-seeded, enclosed in calyx, finally splitting; seeds, 1.5 to 2 mm long, oblong, brown, transversely ridged, still clasped by the half-calyx with part of the septum. Weed in waste places and houseyard gardens. 5(2), 6.

**Tarenna sambucina** (Forst.f.) Dur. ex Drake

syns. ~~*Coffea sambucina* Forst.f.; *Stylocoryna sambucina* (Forst.f.) A. Gray;~~  
*Tarenna glabra* Merr.

Indigenous? New Caledonia to S.E. Polynesia and Micronesia. Extinct? Small glabrous or minutely puberulent shrub or small tree, 1.5 to 12 m high, with 4-angled

young branches; leaves, 10 to 20 cm long and 5 to 9 cm wide, opposite, narrowly-elliptic or ovate-elliptic, acute at both ends, attenuate to petiole, membranaceous or thin-coriaceous, lateral nerves usually 7 or 8 pairs; petioles, 1 to 4 cm long; stipules, interpetiolar, deltoid, entire, persistent; inflorescences, terminal, many-flowered corymbose cymes; calyx, about 2 cm long, 5-lobed; corolla, 6 mm long, funnelform, creamy-white turning yellowish, villous within, fragrant; stamens 5; style exerted 3.5 mm long, anthers white, the style greenish to white; fruit, 5 to 6 mm in diameter, a globose berry, green turning purplish-black; seeds, about 8, each 2 mm long, 4-sided. Reported present by Burges in 1935, but not collected since. 2.

### RUTACEAE (Rue Family)

**Citrus aurantifolia** (Christm.) Swingle "lime"  
 derem, deraim (N); te raim (K); laim, tipolo (T)  
 syn. *Limonia aurantifolia* Christm.

Pre-World War II introduction. Malesia. Occasional. Small, much-branched tree, 2 to 6 m high, with copious short, stiff, sharp spines; leaves, 4 to 10 cm long and 4 to 6 cm wide, alternate, usually ovate-elliptic but variable in different cultivars, margins somewhat crenulate; petioles, 5 to 18 mm long and 1.5 to 6 mm wide, spatulate, narrowly-winged, leaflike, articulate with leaf blades; inflorescences, axillary, 1- to 7-flowered, produced over an extended period, 2 to 2.5 cm in diameter; corolla, small, 4- to 5-parted, 8 to 12 mm long and 2.5 to 4 mm wide, white to pale pink; stamens 20 to 25; ovary 9- to 12-locular; fruit, 2.5 to 6 cm in diameter, ovoid to subglobose, green to yellowish when ripe depending on the cultivar; peel, thin, 1 to 3 mm thick, glandular, adherent; pulp greenish, juicy, very acid but pleasantly fragrant in some cultivars; seeds, small, oval, flattened angular, pale yellow or whitish. Planted fruit tree. Juice of fruit used to marinate raw fish and to make drinks. 3(58695), 5, 6(221), 7.

**Citrus limon** (L.) Burm.f. "lemon"  
 te remen, te remon (K); moli, laim (T)  
 syns. *C. medica* var. *limon* L.; *C. limonum* Risso; *C. limonia* Osbeck

Pre-World War II introduction. E. Asia. Rare. Small tree or shrub, 2 to 9 m high, with stout, stiff spines; leaves, 5 to 10 cm long and 3 to 6 cm wide, alternate, long-ovate, acute, serrate; petioles, 0.5 to 1 cm long, very narrowly winged or margined, ~~cordate, clearly articulate with leaf blades; inflorescences, axillary, solitary or few, 3.8~~ to 5 cm in diameter; corolla, usually 5-parted, petals white within but pinkish or purplish-tinged outside and when in bud; stamens 20 to 40; ovary 8- to 10-locular; fruits, 5 to 12 cm long, ovoid or ellipsoid, 8- to 10-locular, with a broad apical papilla or nipple; peel, about 5 mm thick, adherent, prominently gland-dotted, slightly rough, green

to bright yellow when ripe depending on the cultivar; pulp, pale yellow, juicy, sour; seeds, ovoid, white. Planted fruit tree. Reportedly more abundant in the past. Juice used to marinate raw fish and to make drinks. 5, 6, 7.

**Citrus reticulata** Blanco "tangerine", "mandarin orange"  
syns. *C. deliciosa* Ten.; *C. nobilis* Lour. var.

Recent introduction. Rare. E. Asia. Small, usually spiny tree, 3 to 8 m high; leaves, 4 to 8 cm long and 1.5 to 4.5 cm long, alternate, ovate or elliptic to lanceolate, usually crenate, dark shining green above, yellowish-green beneath; petioles, 5 to 15 mm long and 1.5 to 3 mm wide, alternate, narrowly winged or margined, 1.5 to 3 mm wide across the wings, clearly articulate with leaf blades; inflorescences, axillary, small 1.5 to 2.5 cm in diameter; corolla, usually 5-parted, petals, white; stamens about 20; ovary 10- to 15-locular; fruit, 5 to 8 cm in diameter, depressed-globose to subglobose, greenish with yellowish patches to bright orange; peel, thin, loose, separating easily from the segments; pulp, orange, sweet, juicy; seeds, small. Immature planted fruit tree. 5, 6.

**Citrus sinensis** (L.) Osbeck "orange", "sweet orange"  
te aoranti (K)  
syn. *C. aurantium* var. *sinensis* L.

Recent introduction. S. Asia. Rare. Small to medium tree, 4 to 12 m high, often with stout spines; leaves, 5 to 15 cm long and 2 to 8 cm wide, alternate, ovate to oval-elliptic, glabrous, dark green above, sometimes slightly serrate; petioles, 1 to 2.5 cm long and 3 to 5 mm wide, winged, clearly articulate with leaf blades; inflorescences, axillary, solitary or in small racemes, 2 to 3 cm in diameter; corolla, usually 5-parted, petals white, fragrant; stamens 20 to 25, united into groups; ovary 10- to 14-locular; style slender with globose stigma, soon deciduous; fruit, 4 to 12 cm in diameter, subglobose, greenish-yellow or orange, juicy, edible; peel up to 5 mm thick, tightly adherent to segments; pulp, yellow-orange to dark orange, juicy, slightly acidic, sweet; seeds, none to many, obovoid, white. Immature planted fruit tree; reportedly more common in past and planted by the Japanese during World War II. 6, 7.

**Murraya paniculata** (L.) Jack "mock orange", "orange jessamine", "orange jasmine"  
syns. *Chalcas paniculata* L.; *Murraya exotica* L.

Recent introduction. Trop. Asia, Malesia and Australia. Rare. A shrub to small tree, 1 to 8 m high, but usually kept under 3 m by pruning; leaves, alternate, pinnate; leaflets, 3 to 7, usually 5, 3 to 10 cm long and 2 to 4 cm wide, ovate to subobovate, glossy, thin-coriaceous, nitid; petiolules, very short; inflorescences, 1- to 8-flowered, compact paniculate clusters; calyx, 5-parted, deeply-lobed, sepals basally somewhat united; corolla, 5-parted, petals, usually 10 to 15 mm long and 3 to 6 mm wide,

imbricate, pure white, fragrant; stamens 10, the filaments 6 to 12 mm long, the style 5 to 9 mm long; ovary 2-locular, styles with capitate stigma; fruit, 1 to 1.3 cm long, an ovoid to ellipsoid reddish-orange berry; seeds, 1 to 2, villous. Planted ornamental and pot plant at Location. 6(184), 7.

### SAPINDACEAE (Soapberry Family)

**Dodonaea viscosa** (L.) Jacq.

"native hop bush"

eteweo, eteweau (N)

syns. *Ptelea viscosa* L.

Indigenous. Pantropical. Common. Shrub or small tree, 0.5 to 6 m high, with angular branchlets and slightly sticky resinous exudate; leaves, 5 to 12 cm long and 1 to 3 cm wide, alternate, narrowly lanceolate or oblanceolate, acute at both ends, long-attenuate at base, margins somewhat wavy, firm to somewhat coriaceous, olive green above, paler beneath, somewhat viscid appearing varnished, subsessile; petioles, 1 to 2 mm long, winged; inflorescences, in short, lax terminal or axillary panicles about half as long as the leaves, individual flowers about 4 mm across, greenish-yellow; calyx, 5-parted; petals none; disk, small or obsolete; stamens, usually 8, distinct; fruit, 15 to 20 mm in diameter, inflated, papery, reddish or orange to brown, 2- to 4-winged (lobed) capsule, the wings membranous, veiny, glabrous; seeds, 1 or 2 per lobe, black, with a spiral embryo. Common in scrub and occasional in plateau forest; occasional in revegetated older mined areas. Strong but flexible trunks and branches used for fishing rods and for frames for flying-fish and noddy nets; leaves occasionally used to scent coconut oil. 2, 3(58598, 58637), 5(73), 6, 7, 8(9578).

**Nephelium litchi** Camb.

"lychee", "lychee nut"

syn. *Litchi chinensis* Sonn.

Recent introduction. S. China. Rare. Small to medium tree, up to 10 m high, with a heavy trunk, spreading crown and thick foliage; leaves, paripinnate with 2 to 4 pairs of leaflets; leaflets, 8 to 15 cm long and 3 to 4 cm wide, elliptic-oblong, coriaceous, glossy; inflorescences, large terminal panicles; individual flowers, small, pale greenish-yellow; calyx, 5-parted; petals none; disk, annular; stamens 6 to 10; fruit, 3 to 3.5 cm in diameter, pendent in loose clusters, covered with small pyramidal tubercles, usually bright red to purplish when ripe; pulp-like aril, white, translucent, fleshy, somewhat gelatinous, juicy, sweet, fragrant, edible, with a grapelike consistency; seed, dark brown, covered by aril. Planted fruit tree seedling. 6.

### SAPOTACEAE (Sapodilla Family)

#### **Chrysophyllum cainito** L.

"star apple", "cainito"

Recent introduction. W. Indies. Rare. Medium tree, 5 to 12 m high, with puberulent, golden-brown young branchlets and white latex; leaves, 8 to 20 cm long and 3 to 9 cm wide, alternate, 2-ranked, elliptic to elliptic-oblong, sharply acute or obtuse, base acute, coriaceous, pinnately nerved, lateral veins very slender, shiny, dark-green above, densely silky-pubescent and golden-brown beneath; petiole, 1 to 2 cm long; inflorescences, axillary, often many-flowered, pedicellate to sessile clusters; calyx, 5 (4 to 6)-parted, spirally arranged; corolla, usually exerted from calyx, 3 to 5 mm long, tubular, 5 (4 to 11)-lobed, lobes equal to or longer than tube, purplish-white; stamens, as many as corolla lobes, inserted; fruit, 5 to 12 cm in diameter, subglobose to ovoid, smooth, with light green to purple skin; pulp, white, sweet, often juicy, edible; seeds, 4 to 8, hard, obliquely obovoid, compressed, with a broad lateral scar, glossy, brown, embedded in a star-like arrangement in the pulp. Planted fruit tree seedling. 6.

### SAXIFRAGACEAE (Saxifrage Family)

#### **Saxifraga sarmentosum** L. f. "mother of millions", "mother of thousands", "roving sailor", "strawberry geranium"

syn. *S. stolonifera* ?? authority

Recent introduction. E. Asia. Rare. Tufted perennial herb, up to 30 cm high, with many slender, strawberry-like, branching red runners upon which numerous new plants are formed; leaves, 2.5 to 10 cm in diameter, rounded, cordate, scalloped or dentate, softly-pubescent, green and white- or silvery-veined or variegated above and pale green, suffused with red or pink beneath; inflorescences, erect, loose, long-stalked, spikelike clusters, up to 15 to 50 cm high; corolla, 5-petaled, star-like, 2 petals about 12 mm long which far exceed the other 3, irregularly-shaped, white to flesh-pink; stamens 10. Pot plant. 4 (144).

### SCROPHULARIACEAE (Snapdragon Family)

#### ~~**Angelonia angustifolia** Benth.~~

~~"angelonia", "monkey face"~~

~~syns. *A. gardneri* auct. non Hook.; *A. salicarifolia* auct. non H. & B.~~

Recent introduction. Trop. America. Occasional. Erect perennial herb, up to about 60 cm high; leaves, up to 7.5 or 9 cm long and 1 cm wide, opposite or verticillate (or



distal one alternate), narrow-oblong or lanceolate, minutely glandular-serrulate to subentire, sessile or subsessile; inflorescences, axillary, solitary or paired, slender-pedicellate; calyx, deeply 5-lobed; corolla, 1.5 to 2 cm across, short-tubular, 2-lipped, the limb widely cupuliform, about 2 cm across, short-spurred, 5-lobed, 4 broad and flat, the lower one cupuliform in the lower half, the throat broadened into a sac-like cup, blue or purplish; stamens 4, borne on the dorsal side of the cupuliform part of the corolla, the filaments short, thick; fruit, a globose or ellipsoid, 2-valved capsule, rarely indehiscent. Planted ornamental. 3(58723), 5, 7.

**Angelonia biflora** Benth.

"angelonia"

Recent introduction. Trop. America. Rare. Erect perennial herb, up to 1 m high; very similar to *A. angustifolia*, except that it is slightly taller and has a slightly larger and paler, often white, corolla. According to Smith (1991), it is questionable whether these two taxa constitute separate species. 6(256). Planted ornamental

**Bacopa procumbens** (Mill.) Greenm.

syns. *Erinus procumbens* Mill.); *Herpestris chamaedryoides* HBK.; *Bacopa chamaedryoides* (HBK.) Wettst.

Recent introduction. Trop. America. Suberect, perennial herb, with quadrangular glabrous stems, rooting at the nodes; leaves, 1 to 2.5 cm long and 6 to 12 mm wide, opposite, elliptic or shortly ovate-elliptic, crenulate-serrulate; inflorescences, axillary, usually solitary; pedicels, 4 to 6 mm long, extending in fruit to 18 mm; calyx 5-parted, upper segment broadest; corolla, slightly longer than the calyx, subregular, cylindrical-tubular, 5-lobed, yellow; stamens, 5; fruit, a 2-valved capsule, enclosed by the calyx. Weed in lawns and disturbed places. 2 (58813).

**Russelia equisetiformis** Schlecht. & Cham.

"firecracker flower", "coral plant"

dokaibangi, dugaibangi, dogaiwangi (N); te kaibaun (K)

syn. *R. juncea* Zucc.

Recent introduction. Mexico. Occasional. Shrub or subshrub, up to 1.5 m high, with long, straggling, longitudinally-ridged, whorled or drooping green branches or stems; leaves, up to 2 cm long and 1.5 cm wide, ovate, dentate, whorled in groups of 5 to 8 on main stem, but more often, reduced to minute, opposite, linear, awl-shaped scales on branches; inflorescences, narrow, terminal, loose, drooping paniculate cymes; pedicels about 1 cm long; calyx 5-parted; corolla, 1.5 to 2.5 cm long, long-tubular, with a small 5-lobed limb, lobes about 3 mm long, bright red, nodding; stamens 4, inserted; fruit, about 5 mm long, globose or broadly ellipsoid, 4-valved, rostrate; seeds, many, oblong. Planted ornamental. 3(58678), 4(157N), 5, 6(213), 7.

**Russelia sarmentosa** Jacq.

Recent introduction. Mexico. Rare. Shrub or subshrub, up to 1.5 m high; leaves, ovate to triangular, in whorls; inflorescences, in clusters of 30 to 40 individual flowers; calyx 5-parted nearly to base; corolla, tubular, 5-lobed, scarlet; stamens 4, inserted; fruit, globose or broadly ellipsoid, 4-valved, rostrate; seeds, many, oblong. Planted ornamental. 3 (58795).

**Scoparia dulcis** L.

Recent introduction. Trop. America. Rare. Branched, subligneous, perennial herb, 20 to 80 cm high, with wiry, angular-ribbed stems; leaves, 3 to 4 cm long and 1 to 1.5 cm wide, opposite or whorled in threes, narrowly elliptic, oblong-obovate or oblanceolate, subsessile, distally serrulate or serrate, gland-dotted beneath; inflorescences, axillary, solitary, pedicellate; calyx 4-lobed nearly to base, lobes, imbricate; corolla, 5 to 8 mm across, 4-lobed nearly to base, the lobes spreading, subequal, obtuse, white to pale blue or pale purple with a darker center, pubescent within; stamens 4, subequal, greenish; stigma, slender; ovary green; fruit, an ovoid or subglobose, 2-valved capsule; seeds, many, tuberculate or scrobiculate. Weed of waste places. 6(159), 8(9557).

**SOLANACEAE (Nightshade Family)****Capsicum annuum** L. var. **annuum**

"chilli pepper", "red pepper"

epeba (N); te beneka (K); tili, polo feu (T)

Recent introduction. Trop. America. Erect, glabrous, annual or short-lived, much-branched perennial herb or subshrub, up about 1 m high; leaves, 1.5 to 12 cm long and 0.5 to 7.5 cm wide, alternate, broadly lanceolate to ovate-elliptic or acute-acuminate, base cuneate or acute, thin, subglabrous; petioles, 0.5 to 2.5 cm long; inflorescences, usually solitary or paired, terminal, pendulous, but because of the form of branching appear somewhat axillary; pedicels, up to 1 or 1.5 cm long, usually 1 per node after first flowering; calyx, about 2 mm long, campanulate, shortly 5-dentate, 10-ribbed, persistent, usually enlarging to enclose the base of the fruit; corolla, 0.8 to 2 cm in diameter, rotate-campanulate with a very short tube, deeply 5- to 6-parted, white, sometimes with a greenish or bluish tinge; stamens, 5 to 6, inserted near base of corolla, anthers bluish or purplish drying green, dehiscing longitudinally, style simple, white or purple; fruit, 3 to 6 cm long and 2 to 3 cm wide, oblong to subglobose, somewhat irregularly shaped, wrinkled or twisted, a many-seeded pendent berry, with a leathery skin, green turning bright red when ripe, indehiscent, hot-spicy, pungent; seeds, 2 to 4 mm long, suborbicular, compressed, pale yellow. Planted spice plant in expatriate garden at Meneng Terrace. Fruit used to spice food. 6, 7.

**Capsicum annuum** L. var. **grossum** (L.) Sendtn. "bell pepper", "sweet pepper",  
 "sweet capsicum", "paprika", "pimento" pepa (T)  
 syn. *C. grossum* L.; *C. dulce* Hort. ex Dun.

Recent introduction. Trop. America. Rare. Similar to *C. annuum* L. var. *annuum*, but bearing a larger, oblong to linear, almost quadrangular, or sometimes broadly ellipsoid-acuminate fruit, 6 to 14 cm long and 5 to 10 cm across, green to bright red or occasionally yellow, partially hollow, usually sweet and non-pungent. Food plant in Topside workshop gardens. Fruit eaten raw in salads and cooked as a green vegetable. 5, 6.

**Capsicum frutescens** L. "tabasco", "bird chilli", "perennial chilli"  
 epeba (N); te beneka (K); tili, polo feu (T)  
*C. minimum* Roxb.

Pre-World War II introduction. Trop. America. Rare. Coarse, perennial, suffrutescent, much-branched subshrub, 0.6 to 2 m high, leaves, 2 to 9 cm long and 1 to 4 cm wide, alternate, ovate-elliptical to ovate-lanceolate, acute-acuminate, base acute or obtuse, entire or slightly undulate, glabrous or slightly pubescent; petioles 1 to 3 cm long; inflorescences, terminal and axillary, commonly paired, sometimes more, long-pedicellate; pedicels, 1 to 2.5 cm long, 2 (rarely 3) per node after first flowering; calyx, 2.5 to 3 mm long, tubular, shortly 5-dentate, persistent, usually enlarging to enclose the base of the fruit; corolla, 1 to 1.5 cm in diameter, deeply 5-lobed, white to greenish-white or purplish-white; stamens 5, anthers purple; fruit, 1 to 1.5 cm long and about 5 mm across, ellipsoid-lanceolate, ellipsoid-ovoid or subconic, an erect, many-seeded berry, with a leathery skin, green or greenish-yellow turning bright red when ripe, indehiscent, hot-spicy, pungent; seeds, 2 to 3 mm long, suborbicular, compressed, pale yellow. Planted or protected in Tuvaluan garden at Location and in Topside Workshop gardens. Reportedly much more common in the past. Fruit used to spice foods. 6.

**Cestrum nocturnum** L. "night cestrum", "night flowering cestrum", "night-flowering  
 or night-blooming jasmine", "lady of the night" fafine o te po (T)

Recent introduction. W. Indies. Rare. Erect, glabrous shrub, 2 to 5 m high; leaves, 7 to 20 cm long, spiralled, ovate-oblong to lanceolate-elliptic, petiolate; inflorescences, cymose racemes longer than petioles; calyx, about one-third as long as the corolla, 5-toothed, green, persistent; corolla, 1.5 to 2.5 cm long, tubular, 5-lobed, narrowed at throat, widened at apex, with a small spreading limb, lobes, 5 to 6 mm long, ~~obtuse to subacute, erect or spreading, greenish-yellow, pale yellow or cream-white,~~ extremely fragrant, mostly at night; stamens 5, included, puberulent at base; fruit, 6 to 10 mm long, a subglobose berry, white, 1- to 3-seeded. Planted ornamental. 5(15), 6.

**Datura metel** L.  
syn. *D. fastuosa* L.

"datura", "cornucopia", "jimson weed"

Recent introduction. S.E. Asia. Rare. Erect herb or subshrub, 1 to 2 m high; leaves, 4 to 25 cm long and 2 to 20 cm wide, narrowly ovate to angular-ovate, acute, base oblique, sinuate-repand to sinuately-lobed, major lobes 2 or 3 per side, glabrous to slightly puberulent; petiole, 1 to 16 cm long; inflorescences, solitary, terminal, single or double (or triple); pedicels, 8 to 15 mm long, erect or nodding; calyx, 3 to 9 cm long, tubular, with 5 (-9) conspicuous longitudinal veins, usually 5-lobed, lobes 8 to 25 mm long, circumscissile after the anthesis; corolla, commonly 12 to 18 cm long, often double or triple, tubular, trumpet-like, 5-lobed, the lobes with acumens 1 to 2.5 cm long, purple without, pale lavender to white within; stamens 5, at apex of tube, anthers 1 to 2 cm long; style, 10 to 14 mm long; fruit, 3 to 4 cm in diameter, a capsule, deflexed, subglobose, prickly or spiny with 100 to 200 conical tubercles, each 2 to 5 mm long, irregularly dehiscent; seeds, 4 to 5 mm long, many, compressed, yellow-brown. Planted ornamental. 6.

**Nicotiana tabacum** L.  
te kaibake (K)

"tobacco"

Pre-World War I introduction. Trop. America. Rare. Coarse, erect herb up to 2 m or higher; leaves, 30 to 60 cm long, spiralled, the lowest ones forming a rosette, oblong-ovate to lanceolate, acute, sometimes shortly-decurrent on stem, surfaces pubescent, subsessile; inflorescences in terminal racemose panicles, pubescent; calyx, 1 to 2 cm long, tubular-campanulate, 5-lobed, accrescent, puberulent; corolla, 3 to 5 cm long, tubular, 5-lobed, lobes, ovate, puberulent, pink to red; stamens 5, included or slightly exerted, filaments puberulent at base; ovary glabrous; fruit, 15 to 17 mm long, a brown capsule with persistent calyx at base; seeds, numerous, minute, subreniform, tuberculate. Planted in home gardens; reportedly more common in the past. Leaves dried and cured for smoking. 3, 5, 6.

**Physalis angulata** L.  
watamo, oatamo (N); te baraki (K); pini (T)

"cape gooseberry", "bladderberry", "ground cherry"

Pre-World War II introduction. Trop. America. Common. Erect, nearly glabrous, branching annual herb, up to 80 cm or higher, with hollow angular-ribbed stems; leaves, 3 to 14 cm long and 2.5 to 9 cm wide, alternate, ovate to oblong-lanceolate, acute-acuminate to obtuse, base obtuse or acute (somewhat asymmetrical), irregularly toothed or sinuate-entire, very short-puberulent on both sides; petioles, 2 to 11 cm long; inflorescences, axillary, pedicellate; pedicels, 0.7 to 1.5 cm long, slender, enlarging to 2.5 cm in fruit; calyx, 3 to 6 mm long, enlarging to 2 to 4 cm long in fruit, short-puberulent; corolla, 0.6 to 1 cm long, pale-yellow, yellowish-green near base, partly puberulent externally; stamens 5, 2.5 to 4 mm long, capitate; anthers, 1 to 2.5 mm long, blue; style, 4 to 5 mm long; fruit, 1 to 1.6 cm in diameter, subglobose or ellipsoid,

fleshy, enclosed in an inflated, balloon-like, ovoid calyx, up to about 3 cm long, with an apical opening; seeds, about 1.7 mm long, flat, reniform, yellowish. Weed in low ground near Buada Lagoon, on road fill in currently mined areas, and in disturbed soil and dumps on coastal strip. Ripe fruit eaten by children. 2, 3(58645, 58768), 4(130N), 5(14), 6, 7(22321), 8(9541).

**Physalis lagascae** R. & S. "ground cherry", "wild cape gooseberry", "bubble fruit"  
 watamo, oatamo (N); te baraki(K); pini (T)  
 syn. *P. minima* L.

Recent introduction. Trop. America. Rare. Low, much-branched, somewhat sprawling annual herb; leaves, 1.5 to 6 cm long and 1 to 3 cm wide, mostly alternate, oval-ovate, acute at both ends, margin entire or somewhat wavy, spreading pilose on both surfaces; petioles, 0.5 to 3 cm long, slender; inflorescences, solitary, axillary; pedicels, 2 to 5 mm long, enlarging to 9 mm in fruit; calyx, short-spreading-pilose without, glabrescent, green, inflated, enclosing but free from fruit; corolla, 4 to 6 mm across, yellow, with a darker center with 5 very distinct brownish blotches; fruits, 5 to 7 mm in diameter, berrylike, sessile, enclosed in a papery, inflated, bag-like calyx, 12 to 25 mm long, ovoid acuminate, prominently 5-angled. Weed in low ground near Buada Lagoon. 3(58646).

**Solanum lycopersicum** L. var. *lycopersicum* "tomato"  
 te tomato (K); tomato (T)  
 syns. *Lycopersicon esculentum* Mill.; *L. lycopersicum* (L.) Karst.

Pre-World War II introduction. Trop. America. Rare. Erect, pilose, glandular herb, 0.5 to 2 m high, with capitate hairs on the younger parts, slightly succulent, solid green stems, which sometimes becoming prostrate and spreading, a strong tap-root, and a distinctive strong odor; leaves, 10 to 30 cm long and 6 to 20 cm wide, spirally arranged, pinnate or bipinnate, with a terminal leaflet and equal or unequal smaller lateral leaflets alternating with larger leaflets; petiole, 3 to 6 cm long; larger leaflets (major pinnae) 7 to 9, 5 to 10 cm long, opposite and/or alternate, usually irregularly toothed or incised, sometimes pinnatifid, puberulent; inflorescences, extra axillary (opposite or between the leaf axils), 4- to 12-flowered racemes, the individual flowers, about 2 cm in diameter, pendent; pedicels, 1 to 2 cm long; calyx, 5- to 8-lobed, sepals, about 1 cm long, slender, persistent, enlarging in fruit; corolla, about 1 cm long, rotate, 5- to 8-lobed, lobes, lanceolate, stellate, later reflexed, yellow; stamens, 5 to 8 or 10; anthers, 5 mm long, apical appendage 2 mm; ovary glabrous; fruit, 2 to 12 cm in diameter, subglobose, usually depressed at both ends, a 3 to 12-celled berry, bright red or yellowish when ripe, juicy, edible; seeds, many, 3 to 5 mm long and 2 to 4 mm wide, reniform, compressed, silvery-pubescent, light brown or yellowish. Food plant at Location and in expatriate home gardens; spontaneous in waste heaps. 5, .

**Solanum melongena** L.

"egg plant", "aubergine", "brinjal"

Recent introduction. S. Asia. Rare. Erect, stellate-tomentose, weakly-perennial, branching herb or subshrub, 0.5 to 1.5 m high, the stems sometimes prickly and all parts covered with a gray tomentum; leaves, 6 to 25 cm long and 4 to 15 cm wide, alternate, ovate to elliptic oblong, obtuse to acute, base obtuse to subcordate, usually shallowly sinuately 2- to 4-lobed, both surfaces densely or sparingly stellate-tomentose; petioles, 1 to 10 cm long; inflorescences, solitary or 2- to 5-flowered cymes, opposite to subopposite the leaf axils, the lower flowers bisexual the upper ones male; pedicels, 1 to 3 cm long, elongating and enlarging in fruit; calyx, about 2 cm long, narrowly 5- to 7-lobed, lobes, 1 to 1.5 cm long, acuminate, enlarging and sometimes splitting in fruit, stellate-hairy, persistent; corolla, 3 to 5 cm in diameter, 5- to 6-lobed, campanulate, lobes about the length of the tube, broadly-triangular, incurved, hairy beneath, glabrous within, pale violet to purplish-violet; stamens, 5 to 6, about 1 cm long, free erect, yellow, with short filaments; anthers, 5 to 8 mm long, yellow; fruit, 5 to 30 cm long and 3 to 8 cm across, pendent, highly variable in shape depending on the cultivar, subglobose, oblong, cylindrical or obovoid or pyriform, a fleshy berry with leathery skin, smooth, shiny, purple-black to purple, white, yellowish or striped; seeds, many, compressed, pale yellow or light brown, Food plant in home gardens. 5, 6.

**Solanum tuberosum** L.

"potato", "Irish potato"

Recent introduction. S. America-Andes Mts. Rare. Branched, sprawling annual herb, up to 1 m high, with a mass of fine, fibrous, adventitious roots and swollen stem tubers borne on underground stolons; leaves, 10 to 25 cm long, pinnate, with small interjected leaflets between larger leaflets (main pinnae); larger leaflets, 5 to 9, ovate; inflorescences, leaf-opposed, few-flowered cymose panicles; peduncles, 5 to 10 cm long; calyx lobes, 5 to 8 mm long, lanceolate; corolla, about 2 cm in diameter, subrotate, white or pale violet to purple or bluish; fruit, 1.5 to 2 cm in diameter, subglobose, a small inedible berry; seeds, suborbicular to subreniform, green or yellowish. Immature food plant at Location. 5, 6, 7.

**STERCULIACEAE (Cocoa Family)****Waltheria indica** L.

"waltheria"

syns. *W. americana* L.; *W. elliptica* Cav.

Recent introduction. Pantropical. Occasional. Downy perennial subshrub, 0.3 to 1 m high, with erect, branched tomentose stems and woody near base; leaves, 1 to 6 cm long and 0.5 to 3 cm wide, alternate, ovate-oblong, crenate or serrate, velvety-pubescent with mixed stellate and simple hairs, prominently veined; petioles, about 1 to 1.5 cm long; stipules, narrow, caducous; inflorescences, axillary, dense cymose clusters;

peduncles, up to 4 cm long; bracts 3, linear, caducous; calyx, about 6 mm long, 5-lobed; corolla, slightly longer than calyx, 5-lobed, clawed, yellowish-orange to yellow, persistent; stamens 5, connate at base; ovary, 1-celled, sessile; fruit, a 2-valved capsule; seeds 1, rarely 2, exalate. Weed in waste places, vacant lots and ruderal habitats on coastal strip. 3(58668), 4(112N), 5(5, 109a), 6, 7(22301), 8(9599).

## SURIANACEAE

### *Suriana maritima* L.

gie", gie cool? (T)

Indigenous. Pantropical. Rare. Shrub or small tree with pubescent young growth, 1 to 4 m high, often dwarfed and wind-trimmed when exposed to salt spray; leaves, 1.5 to 3 cm long and 2 to 6 mm wide, alternate, crowded, narrowly obovate-oblong or linear-spathulate, acute, base decurrent, very short-petiolate; inflorescences, axillary racemose clusters; bracts, green, persistent; calyx, 5-lobed, persistent; corolla, 5-lobed, petals, about 8 mm long, imbricate, yellow; stamens 10; fruit, a 5-parted, 5-angled capsule, pubescent, brownish, enclosed in persistent calyx, Rare coastal plant. 7(27820)

## TILIACEAE (Linden Family)

### *Muntingia calabura* L.

bin (bean)(N)

"Panama cherry", "Panama berry"

Recent introduction. Trop. America. Occasional. Small pubescent tree, 3 to 12 m high, with tiered, slightly drooping branches; leaves, 5 to 10 cm long and 2 to 3.5 cm wide, alternate, crowded, oblong-acuminate, obliquely subcordate, strongly asymmetrical, thin, serrulate, sticky-pubescent, soon wilting; stipules, about 5 mm long, linear, paired, unequal, caducous; inflorescences, supra-axillary, 1 or few-flowered clusters; pedicels, about 2 to 3 cm long; calyx, 5 (rarely 6 or 7)-parted, sepals, about 1 cm long, lanceolate-caudate, tomentose-hirsute; corolla, 5-parted, petals about 12 to 13 mm long, broadly spathulate-deltoid, white or pink-tinged; stamens about 75, yellow; filaments, about 6 mm long, slender, distinct, white; anthers, small, rounded, yellow; fruit, 1 to 1.5 cm in diameter, subglobose, berry-like (baccate), 5-celled, light-red to yellowish, sweet, juicy, edible; seeds, many, about 0.5 mm long, elliptic, grayish-yellow, embedded in pulp. ~~Planted ornamental fruit tree; naturalised and spreading in strip-mined areas in interior Baiti District.~~ Ripe fruit eaten as a snack food, primarily by children. 3(58752), 4(139N), 5(91), 6, 7.

**Triumfetta procumbens** Forst.f.

"beach burr"

ikiau, ikiow, igiau, giau (B)(N); te kiaou (K); tolotolo, kiaou (T)  
syn. *T. fabreana* Gaud.

Indigenous. Paleotropics. Rare. Pubescent prostrate subshrub with long-trailing, densely-stellate pubescent branches up to 3 m long; leaves, 1.5 to 6 cm long and nearly as wide, alternate, broadly ovate to suborbicular or shallowly 3-lobed, rounded to obtuse, base rounded to subcordate, crenate-serrate, densely stellate-woolly beneath, palmately 5- to 7-nerved; petioles, up to 6 cm long; inflorescences, axillary, pedunculate, subumbellate clusters; calyx, 5-lobed, with a cornate protuberance at tip; corolla, 10 to 12 mm across, 5-parted, petals bright yellow; stamens, numerous and distinct; fruit, 6 to 12 mm in diameter, subglobose, spiny, burr-like, stellate-pubescent. Growing along coastal strip and in open areas in coastal thickets. Probably incorrectly reported as *T. semitriloba* Jacq. by Burgess in 1935. Juice from crushed leaves used medicinally to cure filariasis and fever, to retard hair from falling out, and for a gelatinous post-natal medicine which is drunk by mothers to help rid them of afterbirth; crushed leaves and stems also mixed with toddy (*kerawai*) and used as poultices on boils. 1, 2, 4(111N), 5(109), 6, 7(27803).

**URTICACEAE (Nettle Family)****Laportea ruderalis** (Forst.f.) Chew

luna, aluna, pakisikisi (T)

syn. *Urtica ruderalis* Forst.f.; *Fleurya ruderalis* (Forst.f.) Gaud. ex Wedd.;  
*Schykowskya ruderalis* (Forst.f.) Endl.; *Boehmeria paniculata* Gaud.;  
*Fleurya paniculata* Gaud.

Indigenous. Malayo-Pacific. Rare. Erect, un- or few-branched, slightly fleshy, glabrous herb, up to 40 cm high; leaves, 1.5 to 8 cm long and 1 to 4 cm long, alternate, obtuse, obtuse or acute, base truncate or subcordate, coarsely crenate; petiole, as long as blade; inflorescences, axillary, pedicellate, in open paniculate clusters, shorter than petiole; male flowers, 4-rarely, 3- or 5-merous; female flowers, 4-merous, perianth with unequal lobes; fruit, obliquely ovate, an achene partly enclosed in the persistent perianth. Growing in shady areas near caves and in moist habitats at the base of the limestone escarpment. 5(99), 6, 7(27809).

**Pellionia** sp.

Recent introduction. Trop. Asia. Small, creeping, succulent, perennial herb; leaves, 2.5 to 7 cm long, oval, attractive, variegated with combinations of purple, light green, bronzy-green or gray depending on the species and cultivar; inflorescences, inconspicuous, greenish. Pot plant. 6.



**Pilea cardieri** Gagn. & Guill.

"aluminum plant"

Recent introduction. Vietnam. Occasional. Erect, branching, somewhat succulent when young, perennial herb, up to 40 cm high, with somewhat 4-angled stems and swollen internodes; leaves, up to 9 cm long and 5 cm wide, ovate, paired, dentate near apex, dark-green with silvery blotches above, light green beneath; petioles, 2 to 3 cm long; inflorescences, axillary, long-pedicellate, globose clusters; perianth segments, dull white or slightly pink-tinged. Pot plant. 5, 6.

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

"artillery plant"

syns. *Parietaria microphylla* L.; *Pilea muscosa* Lindl.

Recent introduction. Trop. America. Occasional. Low, delicate, much-branched, succulent, glabrous, perennial herb, up to 30 cm high, with tender greenish or purplish stems; leaves, 3 to 6 mm long and 1 to 2 mm wide, opposite, 2-ranked, crowded, elliptic to spatulate or obovate; inflorescences, axillary, cymose clusters; individual flowers, minute, unisexual, minute, greenish, sometimes red-tinged; female flowers, 3-tepaled, tepals, unequal; stamens, opening explosively. Weed in pot plants and under planted ornamentals. 3(58713), 5(8), 6, 7.

**Pilea nummularifolia** (Sw.) Wedd.

"creeping Charlie"

Recent introduction. Tropical America. Occasional. Creeping perennial herb, up to 20 cm high, rooting at the nodes; leaves, up to 2.5 cm in diameter, oval, crenate, succulent, pubescent, 3-veined from base; inflorescences, rose-red. Pot plant; ground cover in shaded areas. 5, 6.

#### VERBENACEAE (Verbena Family)

**Clerodendrum inerme** L. var. **oceanicum** A. Gray

"beach privet"

eamwiye, eamwije, eyamwiye, eyamwije (N); te inato (K); inato (T)

syns. *Volkameria inermis* L.; *Clerodendrum nereifolium* Wal.; *C. commersonii* (Poir.) Spreng.

Indigenous. Indomalaysia, Australia and the Pacific Is. Common. Erect, trailing or scrambling, sometimes shrubby, glabrous perennial, up to 5 m high; leaves, 3 to 13 cm long and 1 to 7 cm wide, opposite, or sometimes in whorls of 3, elliptic to obovate or narrowly lanceolate, short-acuminate or cuspidate to somewhat blunt, base acute, glabrate, thinly fleshy, pinnately nerved, dotted beneath with a few sunken glands

basally; petiole, 0.4 to 2 cm long, slender, leaf scars prominently somewhat raised; inflorescences, axillary, supra-axillary or pseudoterminal, 3- to 12-flowered cymose clusters; peduncle, 1 to 4 cm long, slender, subglabrate; pedicels, 3 to 6 mm long; bracteoles, small, few; calyx, 4 to 6 mm long, campanulate, subtruncate and minutely 5-denticulate, enlarging somewhat as fruit matures; corolla, up to 3.5 cm long, hypocrateriform or slender-tubular, 5-lobed, lobes, 5 to 8 mm long, ovate, subequal, somewhat expanded distally, bluntly acute at apex, glabrous white or pinkish along tube, fragrant; stamens 4, 1 cm long, exserted, inrolled in bud, filaments red, purple or pinkish; anthers, yellow; style, exserted to 20 mm, purple to rich pink distally, paler proximally; fruit, about 1 to 1.5 cm in diameter, obovoid, drupaceous, separating into four 1-seeded nutlets, yellow-green to dark-brown, turning black at maturity, subtended by a indurate, striate-venose calyx; seeds, oblong. Abundant on limestone cliffs and pinnacles, forming luxuriant curtains near edge of escarpment and on parts of coastal strip in Anetan District; occasionally a planted ornamental. Fragrant flowers used in garlands; leaves reportedly pounded and used as a cure for leprosy in the past (cure reportedly received in a dream). 2, 3(58664), 4(103N, 166N), 5, 6, 7(27817).

***Clerodendrum paniculatum* L.**

"pagoda flower"

Recent introduction. E. Trop. Asia. Rare. Perennial shrub, up to 1 to 2 m high, with medullose to hollow, bluntly quadrangular branchlets, the nodes with a broad band of hairs; leaves, 4 to 15 (-40) by 7 to 20 (-38) cm, opposite, broadly ovate, prominently 3 to 7-lobed or the uppermost ones entire, base cordate, the lobes acute to short-acuminate and remotely dentate to crenate or entire, thin chartaceous to membranaceous, minutely strigillose to glabrous above, squamose with peltate scales beneath; inflorescences, axillary or terminal, many-flowered panicles, up to 45 cm long and broad; pedicels, 4 to 15 mm long, filiform, reddish; calyx, 3 to 5 mm long, campanulate, deeply-divided, red to orange-red; corolla, hypocrateriform or narrow-tubular, the tube, up to 2 cm long, slender, the limb spreading to 1 cm across, orange-red to vivid scarlet (rarely white), puberulent; stamens and style exserted 2.5 to 3.5 cm beyond corolla throat; fruit, drupaceous, greenish-blue to black at maturity. Planted ornamental. 5, 6(235), 7.

***Clerodendrum thomsoniae* Balf.f.**

"bleeding heart"

Recent introduction. W. Africa. Rare. Perennial shrub or climbing vine, up to 3 m or higher, with slender, distally 4-angled and terete proximal branchlets and twining older branches; leaves, 5 to 15 cm long and 2.5 to 7 cm wide, elliptic to elliptic-ovate, acute to short-acuminate, base subcordate to subacute or rounded, glabrate on both surfaces or puberulent on venation; petioles, 8 to 30 mm long; inflorescences, terminal or distally axillary, cymose clusters, to 12 by 15 cm; peduncles, 2.5 to 6.5 cm long, slender; pedicels, 7 to 16 mm long, slender; calyx, 2 to 2.7 cm long, deeply 4- to 5-lobed, lobes sharply acute, pale yellow-green, becoming white or pinkish in flower, red-violet in fruit, prominently veined; corolla, 2.2 cm long, hypocrateriform or tubular, the

tube, 1.5 to 2.5 cm long, slender, greenish-red, 5-lobed, lobes up to 1 cm long, deep red to scarlet or crimson distally, the limb spreading or reflexed, to 2 cm broad; stamens and style, long-exserted, pale green; fruit, a drupe, glossy, black, with a brilliant red aril uniting the 4 pyrenes; seeds, 4, nutlets. Planted ornamental. 3(58794), 5, 6, 7(27817).

**Duranta repens L.**

"golden dewdrops", "golden eardrops"

*D. erecta* L.; *D. plumieri* Jacq.

Recent introduction. Trop. America. Rare. Erect perennial shrub or small tree, up to 4 m or higher, with slender, arching, drooping or trailing branchlets and sometimes bearing axillary or suppressed spines; leaves, 1.5 to 7 cm long and 0.5 to 4 cm wide, opposite or in whorls of 3, elliptic or ovate, rarely elliptic-obovate, obtuse to acute to acuminate or apiculate, base cuneate, entire or distally serrate, usually thin-textured, glabrate on both surfaces; petioles, 1 to 8 mm long, slender; inflorescences, axillary or terminal, erect or recurved, loose, many-flowered paniculate clusters or racemes, 5 to 30 cm long; pedicels, 1 to 5 mm long; bracteoles, minute or occasionally subfoliaceous; calyx, 3 to 4.5 mm long at anthesis, tubular, angular, minutely toothed or subulate; corolla, about 8 mm long, surpassing calyx by about 2 to 5 mm, tubular, 5-lobed, 7 to 14 mm across the limb, pale purple to bluish-purple, 2 slightly smaller lobes with a purple stripe and 3 slightly larger plain lobes, fragrant, puberulent on both surfaces; stamens 4; fruit, 6 to 12 mm in diameter, a globose, 8-seeded drupe, juicy, yellow to orange, enclosed by the enlarged, curved-beaked, yellowish calyx. Planted ornamental. 5, 6, 7.

**Lantana camara L. var. aculeata (L.) Mold.**

"lantana"

magiroa (N); te kai buaka (K); kaipuaka (T)

Pre-World War II introduction. Trop. America. Occasional. Erect or rambling, more or less pungent-odorous, perennial shrub, 1 to 5 m high, the stems and branches usually armed with short, recurved prickles; leaves, 2 to 12 cm long and 2 to 6 cm wide, opposite, decussate or whorled, ovate to oblong-ovate, acute to short-acuminate, base abruptly rounded and cuneate, crenate-serrate, stiff chartaceous, reticulate-rugose and scabrous above, downy or hispid, below, pinnately nerved, spicy pungent if rubbed; petioles 0.7 to 2 cm long; inflorescences, axillary, crowded, hemispherical, many-flowered, corymbose heads, 2 to 4 cm across; peduncle, 2 to 9 cm long, slender; bracteoles, 4 to 9 mm long and 1 to 1.5 cm wide, oblong to lanceolate, acute to subulate at apex; calyx, about 3 mm long, 2-lobed, inconspicuous; corolla, 10 to 12 mm long, tubular or hypocrateriform, 4 to 5-lobed, 5 to 8 mm across the limb, pubescent internally, white, pink, orange and red with a darker eye, the youngest flowers central, pale, the older flowers orange, the oldest ones red (or white); stamens 4; fruit, 3 to 4 mm in diameter, a fleshy, slightly juicy drupe, purple-black; seeds 1, a 2-celled pyrene with an air cavity between the cells. Planted ornamental; naturalized in ruderal sites and in unmined open plateau forest; occasional in older revegetated strip-mined sites. Flowers

used in garlands. The first Nauruan to plant lantana was reportedly a woman by the name of Magiroa who stole it from a garden of an expatriate British Phosphate Company employee, hence the Nauruan name. 2, 3(58599, 58798), 4(101N), 5(42), 6, 7, 8(9563).

**Lantana camara** L. var. "drap d'or"

"cloth of gold lantana"

Recent introduction. Trop. America. Rare. Cultivar with single-colored yellow flowers. Planted ornamental. 3, 6.

**Premna serratifolia** L.

"premna"

idibiner, idibinerr (N); te ango (K); aloalo, valovalo, te ango (T)

syns. *P. obtusifolia* R. Br.; *P. gaudichaudii* Schauer; *P. mariannarum* Gaud. ex Schauer; *P. integrifolia* L.; *P. taitensis* Schauer; *P. corymbosa* (Burm.f.) Rottl. & Willd.; *P. alba* Lam.; *P. angustifolia* Lam.; *P. paulobarbata* Lam.

Indigenous. Indopacific. Common. Small, nearly glabrous shrub or small tree, up to 5 m or higher, with minutely puberulent youngest branches; leaves, 2 to 15 cm long and 1 to 9 cm wide, opposite, elliptic to oblong-ovate or suborbicular, subacuminate to blunt, sometimes short-mucronate, base rounded or obtuse to subcordate, chartaceous, shiny, usually ventrally concave, glabrate or minutely puberulent dorsally on nerves, 4 to 7 pairs of lateral nerves; petioles 0.5 to 6 cm long; inflorescences, terminal, sometimes also axillary, richly-branched, many-flowered, corymbose clusters, 3 to 10 cm or more across; peduncles, up to 2 cm long; pedicels, up to 1 mm long; bracts, to 5 mm long, paired at each node, subulate to narrowly lanceolate, persistent; calyx, 1.5 to 2 mm long at anthesis, cupular, bilabiate, minutely 4- to 5-toothed or subtruncate, minutely puberulent on both surfaces; corolla, 2.5 to 4 mm long, tubular or short-hypocrateriform to subrotate, tube up to 2.5 cm long, 4- to 5-lobed, somewhat bilabiate, the longest lobe to 1.5 cm long, greenish; stamens 4 or rarely 5, 1.2 to 2.4 mm long, 2 longer, 2 shorter, very slightly exerted or included; fruit, 2 to 4 mm across, subglobose, glabrous, green turning purple-black at maturity. Common tree on coastal strip and in escarpment forest; common in home gardens. Timber used for house rafters in the past; wood considered to be among the best firewood for cooking pandanus; leaves boiled with coconut oil to scent it; flowers used in garlands; young leaves used as poultices to help wounds heal. 1(49.R), 2(8.5), 3(58597, 58633), 5, 6, 7(27810).

**Stachytarpheta jamaicensis** (L.) Vahl

"Jamaica vervain", "blue rat's tail"

edidubai, edidubaiy (N); te uti ("lice")(K)

syns. *Verbena jamaicensis* L.; *Stachytarpheta indica* (L.) Vahl

Pre-World War II introduction. Trop. America. Extinct? Erect, sparsely-branching perennial subshrub, up to about 1 m high; leaves, 4 to 11 cm long and 2.5 to 5

cm wide, opposite, elliptic-oblong, acute or subobtuse, distally crenate-serrate, decurrent on the petiole, flat, pale, somewhat glossy, silvery- or irridescent-green, lateral nerves not prominent dorsally; inflorescences, erect, elongated purplish spikes, 15 to 40 cm long; individual flowers, axillary to a bract, a few opening at a time, evanescent and soon caducous, sessile; bracts, 4 to 5 mm long, with a scarious margin; calyx, dorsally compressed, 4- to 5-toothed; corolla, 5 to 10 mm long and 4 to 12 mm wide tubular, 5-lobed, pubescent internally, pale violet to purple or whitish; fertile stamens 2, included; fruit, 4 to 5 mm long, 2-segmented, enclosed in the calyx. Weed reported present by Burges in 1935, but not reported since. 2.

**Stachytarpheta urticifolia** Sims

"blue rat tail", "false verbena"

edidubai, edidubaiy (N); te uti ("lice")(K)

syn. *Cymburus urticifolius* Salisb.

Pre World War II introduction. Trop. America. Common. Erect, sparsely-branching perennial subshrub, 0.5 to 1.5 m high; leaves, 4 to 12 cm long and 2 to 7.5 cm wide, opposite, decussate, ovate-elliptic or ovate, acute or subobtuse, base cuneate-decurrent, distally crenate-serrate, leaf teeth ciliate, rich green, subglossy, pinnately nerved, lateral nerves prominent dorsally, bullate (convex between the veins); inflorescences, erect, elongated, greenish spikes, 14 to 50 cm long, bearing numerous flowers in groove-like depressions on the rachis; peduncle up to 3 cm long; individual flowers, axillary to a bract, a few opening at a time, evanescent and soon caducous, sessile; bracts, 4 to 7 mm long, erect, lanceolate, aristate at apex; calyx, 5 to 7 mm long, dorsally compressed, 4- to 5-toothed; corolla, up to 8 mm long, tubular, 5-lobed, pubescent internally, medium violet to dark blue-violet; fertile stamens 2, included, white; style, white; fruit, 2-segmented pyrene, enclosed in a persistent calyx. Common weed in waste places and ruderal habitats, especially along roadsides. Mature dried black fruits reportedly eaten by some children. 3(58632), 4(109N), 5(12), 6, 7, 8(9543).

**Vitex negundo** L. var. **bicolor** (Willd.) H.J. Lam

"blue vitex"

dagaidu, dogaidu (N); te kaitu? (K)

syn. *V. trifolia* L. var. *bicolor* (Willd.) Mold.

Indigenous. E. Africa to the Pacific Is. Occasional. Erect, aromatic, freely-branching shrub or small tree, 1.5 to 8 m high, with 4-angled puberulent branches; leaves, opposite, 3- to 5- (rarely 7-) foliate; leaflets, oblong-elliptic to ovate-lanceolate, acute to subacuminate, the central one longest, up to 11 cm and 3 cm wide, with petiolules up to 1 to 2 cm long, the other leaflets smaller on shorter petiolules, pinnately nerved, dark above, densely white-tomentose beneath, aromatic; petioles, 2.5 to 6 cm long; inflorescences, terminal or axillary, narrow, branching, puberulent, paniculate clusters; calyx, about 3 mm long, 5-toothed, gray-puberulent; corolla, about 4 mm long, bilabiate, 5-lobed, blue-violet, puberulent; filaments and style blue to purple; fruit, 5 to 6 mm long, subglobose drupe, 1-seeded, black. Occasional in some forest stands on coastal

strip in low-lying areas near base of escarpment and in some home gardens. Branches used for fishing rods for small fish; flowers and leaves used in garlands and other body ornamentation; seeds used to make garlands; young leaves and meristem crushed with coconut oil as a cure for fever blisters; juice of fruit drunk as a cure for fits and convulsion. 2, 3(58635), 4(119N), 5(19, 56), 6, 7, 8(9584).

### VITACEAE (Grape Family)

**Cissus sp.** "cissus"

Recent introduction. Trop. Asia? Rare. Thick-stemmed vine; leaves, cordate; flowers not seen. Planted ornamental. 6.

**Vitis vinifera L.** "grape"

Recent introduction. S.E. Europe to India. Rare. Tendril-bearing, woody vine; leaves, 5 to 10 cm across, subcordate in outline, usually palmately lobed, usually serrate, more or less glabrate above, white- or reddish-tomentose beneath; inflorescences, leaf-opposed panicles; flowers bisexual and male, 5-merous; calyx, subtruncate; corolla, 5-parted, petals coherent distally, the calytra caducous before full anthesis; fruit, 1 to 2 cm in diameter, and ovoid to suglose, 2- to 4-seeded berry, juicy, edible; seeds, rostrate at base, light brown. Single immature plant at Location. 5, 6.

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## Appendix I. Class, subclass, family and antiquity status of the vascular flora of Nauru.

Class/Subclass Family	Indi- genous	Abori- ginal	Recent	Total
<b>PTERIDOPHYTA (Ferns and Fern Allies)</b>				
Aspleniaceae	1	-	-	1
Davalliaceae	2	-	1	3
Ophioglossaceae	1	-	-	1
Polypodiaceae	2	-	-	2
Psilotaceae	1	-	-	1
Pteridaceae	1	-	2	3
Subtotal	8	-	3	11
<b>GYMNOSPERMAE</b>				
Araucariaceae	-	-	1	1
Cycadaceae	-	-	1	1
Subtotal	-	-	2	2
<b>ANGIOSPERMAE (Flowering Plants)</b>				
<b>MONOCOTYLEDONS</b>				
Araceae	-	-	26	26
Arecaceae	-	1	6	7
Bromeliaceae	-	-	4	4
Cannaceae	-	-	1	1
Commelinaceae	-	-	5	5
Cyperaceae	2	-	6	8
Dioscoreaceae	-	-	2	2
Iridaceae	-	-	3	3
Liliaceae	-	-	34	34
Marantaceae	-	-	6	6
Musaceae	-	-	3	3
Orchidaceae	-	-	6	6
Pandanaceae	1	-	1	2
Poaceae	3	-	23	26
Pontederiaceae	-	-	1	1

Strelitziaceae	-	-	4	4
Taccaceae	-	1	-	1
Zingiberaceae	-	-	6	6
Subtotal	6	2	137	145

## DICOTYLEDONS

Acanthaceae	-	-	21	21
Amaranthaceae	1	-	10	11
Anacardiaceae	-	1	2	3
Annonaceae	-	-	4	4
Apiaceae	-	-	2	2
Apocynaceae	2	-	9	11
Aquifoliaceae	-	-	1	1
Araliaceae	-	-	7	7
Aclepiadaceae	-	-	3	3
Asteraceae	-	-	14	14
Balsaminaceae	-	-	2	2
Basellaceae	-	-	1	1
Begoniaceae	-	-	3	3
Bignoniaceae	-	-	3	3
Bombacaceae	-	-	1	1
Boraginaceae	3	-	-	3
Brassicaceae	-	-	6	6
Cacataceae	-	-	5	5
Capparidaceae	2	-	2	4
Caricaceae	-	-	1	1
Casuarinaceae	-	-	1	1
Chenopodiaceae	-	-	3	3
Clusiaceae	1	-	-	1
Combretaceae	1	-	1	2
Convolvulaceae	3	-	5	8
Crassulaceae	-	-	2	2
Cucurbitaceae	-	-	9	9
Ericaceae	-	-	1	1
Euphorbiaceae	2	-	22	24
Fabaceae	6	-	35	41
Gentianaceae	1	-	1	1
Geraniaceae	-	-	1	1
Gesneriaceae	-	-	4	4
Goodeniaceae	1	-	-	1
Hernandiaceae	1	-	-	1
Lamiaceae	-	-	7	7

Lauraceae	1	-	1	2
Lecythidaceae	1	-	-	1
Lythraceae	-	-	1	1
Malpighiaceae	-	-	2	2
Malvaceae	4	-	12	16
Meliaceae	-	-	2	2
Moraceae	1	2	5	8
Moringaceae	-	-	1	1
Myrtaceae	-	-	4	4
Nymphaeaceae	-	-	1	1
Nyctaginaceae	1	-	3	4
Oleaceae	-	-	2	2
Onagraceae	-	-	1	1
Oxalidaceae	-	-	1	1
Passifloraceae	-	-	3	3
Piperaceae	-	-	2	2
Polygalaceae	-	-	1	1
Polygonaceae	-	-	2	2
Portulacaceae	-	-	2	2
Rhamnaceae	1	-	-	1
Rhizophoraceae	1	-	-	1
Rosaceae	-	-	2	2
Rubiaceae	4	-	12	16
Rutaceae	-	-	5	5
Sapindaceae	1	-	1	2
Sapotaceae	-	-	1	1
Saxifragaceae	-	-	1	1
Scrophulariaceae	-	-	1	1
Solanaceae	-	-	10	10
Sterculiaceae	-	-	1	1
Surianaceae	1	-	-	1
Tiliaceae	1	-	1	2
Urticaceae	1	-	4	5
Verbenaceae	3	-	6	9
Vitaceae	-	-	1	1
Subtotal	45	3	287	335
<b>GRAND TOTAL</b>	<b>59</b>	<b>5</b>	<b>429</b>	<b>493</b>



Appendix II. Nature and ecological and cultural (ethnobotanical) importance of coastal plant species of the tropical Pacific Ocean (Notes: 1) Under "Habitat", O = outpost strand zone, I = inner littoral zone, M = mangrove habitats, W = coastal wetland or marshes; N = also found naturalized or wild in non-coastal habitats, and C = cultivated or planted; 2) Under "Origin", I = indigenous, A = aboriginal introduction, R = recent post-European contact introduction, and ? = status unsure; 3) Under "Importance", "Eco" = ecological importance in coastal plant communities and "Cult" = cultural importance in terms of a species' range throughout the Pacific islands or its overwhelming importance in some localities, with +++ = very important in most island groups, with multiple usage in terms of cultural importance, ++ = of considerable importance in some island groups or some important uses locally, + = present in some island groups or of some use in restricted localities, and - = of minor ecological importance or no cultural uses reported from Melanesia, Polynesia, or Micronesia).

Latin Name	Habitat	Origin	Importance	
			Eco	Cult
<b><u>FERNS</u></b>				
<i>Acrostichum aureum</i>	I,W,M	I	++	+
<i>Asplenium nidus</i>	I,N	I	++	++
<i>Davallia solida</i>	I,M,N,C	I	+	+
<i>Nephrolepis</i> spp.	I,M,N,C	I	++	++
<i>Polypodium scolopendria</i>	I,N	I	+++	+++
<i>Pteris</i> spp.	I,N	I	+	+
<i>Pyrrosia adnascens</i>	I,N,M	I	+	+
<i>Stenochlaena palustris</i>	I,N,M,W	I	+	+
<i>Tectaria</i> spp.	I,N	I	+	+
<i>Thelypteris</i> spp.	W,I,N	I	++	+
<b><u>HERBS</u></b>				
<i>Achyranthes</i> spp.	I	A?	+	++
<i>Boerhavia</i> spp.	O,I	I	+	++
<i>Crinum asiaticum</i>	O,C	I?,A?,R	+	++
<i>Dendrobium</i> spp.	I,M,N,C	I	+	+
<i>Hedyotis</i> spp.	O,I	I	+	-
<i>Heliotropium</i> spp.	O,I	I	+	+
<i>Hymenocallis littoralis</i>	O,I,C	R	+	+
<i>Laportea</i> spp.	I,N	I	+	+

<i>Lepidium bidentatum</i>	O	I	+	+
<i>Peperomia</i> spp.	O,I,N	I	+	+
<i>Portulaca australis</i>	O,I	I?	+	++
<i>Portulaca pilosa</i>	O	I	+	+
<i>Procris pedunculata</i>	O,I,N	I	+	+
<i>Sesuvium portulacastrum</i>	O,W	I	+	+
<i>Tacca leontopetaloides</i>	O,I,N,C	A	+	++
<i>Taeniophyllum fascicola</i>	I,N	I	+	-
<i>Triumfetta procumbens</i>	O	I	+	++

## GRASSES AND SEDGES

<i>Cyperus javanicus</i>	O,I,W,N	I,A,R	++	++
<i>Cyperus laevigatus</i>	W	I,A?	+	++
<i>Cyperus polystachyos</i>	O,I,W	I	+	-
<i>Digitaria setigera</i>	O,I,N	I	++	-
<i>Eleocharis</i> spp.	W	I,A?	+	++
<i>Fimbristylis cymosa</i>	O,I	I	++	+
<i>Ischaemum</i> spp.	O	I?	+	+
<i>Lepturus repens</i>	O	I	++	-
<i>Paspalum</i> spp.	O,W	I,A?	+	+
<i>Sporobolus</i> spp.	O,I	I,A,R?	+	-
<i>Stenotaphrum</i> spp.	O	I,A?	+	+
<i>Thuarea involuta</i>	O	I	++	-

## VINES AND LIANAS

<i>Abrus precatorius</i>	I,M	I,A	+	+
<i>Canavalia cathartica</i>	I,N	I,R	+	+
<i>Canavalia rosea</i>	O,I,N,C	I,R	++	++
<i>Canavalia sericea</i>	O	I	+	+
<i>Cassytha filiformis</i>	O,I,N	I	++	++
<i>Derris trifoliata</i>	O,I,M	I	++	++
<i>Entada phaseoloides</i>	I,N	I	++	+++
<i>Epipremnum pinnatum</i>	I,N	I	+	++
<i>Hoya australis</i>	I,N	I,R	+	+
<i>Ipomoea littoralis</i>	O,I,N	I	++	+
<i>Ipomoea macrantha</i>	O,I,N	I	++	++
<i>Ipomoea pes-caprae</i>	O,W	I	+++	++
<i>Mucuna gigantea</i>	I,N	I	+	+
<i>Vigna marina</i>	O,I,C	I	+++	++

## SHRUBS

<i>Abutilon</i> spp.	I,N,C	I	+	++
<i>Acanthus ebracteatus</i>	M	I	+	+
<i>Allophylus timoriensis</i>	I,N	I	+	+
<i>Bikkia tetrandra</i>	O	I	+	+
<i>Caesalpinia bonduc</i>	I,N,M	I	+	+
<i>Canthium</i> spp.	I,N	I	+	++
<i>Capparis</i> spp.	O,I	I	+	+
<i>Clerodendrum inerme</i>	O,I,M,C	I	+++	++
<i>Colubrina asiatica</i>	O,I,N	I	++	++
<i>Desmodium umbellatum</i>	I,N	I	+	+
<i>Dalbergia candenatensis</i>	I,M	I	+	+
<i>Dodonaea viscosa</i>	I,N	I,A,R	++	++
<i>Euphorbia chamissonis</i>	O	I	+	+
<i>Gardenia taitensis</i>	I,C	I,A,R	+	++
<i>Geniostoma</i> spp.	I	I	+	+
<i>Jossinia reinwardtiana</i>	O,I	I	+	-
<i>Nypa fruticans</i>	M,W	I,R	++	++
<i>Pemphis acidula</i>	O,I,C,M	I	+++++	+
<i>Scaevola taccada</i>	O,I,C,	I	+++++	+
<i>Sida fallax</i>	I,N,C	I,A?	+	++
<i>Sophora tomentosa</i>	O,I	I	+	+
<i>Suriana maritima</i>	O	I	+	+
<i>Timonius</i> spp.	I	I	+	+
<i>Tephrosia purpurea</i>	I,N	I,A	+	++
<i>Wollastonia biflora</i>	O,I,P	I	++	++
<i>Wikstroemia</i> spp.	I,N,C	I,A	+	++
<i>Ximena americana</i>	O,I	I	+	+

## TREES

<i>Acacia simplex</i>	O,I,M	I	++	++
<i>Aidia cochinchinensis</i>	I,N	I	+	+
<i>Avicennia maritima</i>	M	I	++	++
<i>Barringtonia asiatica</i>	O,I,C	I	+++	++
<i>Barringtonia racemosa</i>	I,W	I	+	+
<i>Bruguiera gymnorrhiza</i>	M	I,R	+++++	+
<i>Calophyllum inophyllum</i>	O,I,N,C	I	+++++	+
<i>Casuarina equisetifolia</i>	O,I,N,P	I,R	+++++	+
<i>Cerbera manghas</i>	I,N,M,C	I	+	++
<i>Ceriops tagal</i>	M	I	+	+
<i>Cocos nucifera</i>	O,I,N,C	A,I?	+++++	+

<i>Cordia subcordata</i>	O,I,C	I,A	+++++
<i>Cycas circinalis</i>	I,N,C	I,A?,R	+ ++
<i>Cynometra</i> spp.	M,C	I	+ +
<i>Diospyros</i> spp.	I,N	I	+ +
<i>Dolichandrone spathacea</i>	M,I	I	+ +
<i>Erythrina fusca</i>	M,W,I	I	+ +
<i>Erythrina variegata</i>	O,I,N,C	I,A	+++++
<i>Excoecaria agallocha</i>	M,O,W	I	++ +
<i>Ficus obliqua</i>	I,N	I	++ ++
<i>Ficus prolixa</i>	I,N	I	++ +++
<i>Ficus scabra</i>	O,I,N	I,A?	+ +
<i>Ficus storkii</i>	I,N	I	+ +
<i>Ficus tinctoria</i>	I,N,C	I,A?	++ +++
<i>Glochidion</i> spp.	I,N,C	I	+ ++
<i>Grewia crenata</i>	I,N	I	+ ++
<i>Guettarda speciosa</i>	O,I	I	+++++
<i>Gyrocarpus americanus</i>	I,N	I	+ ++
<i>Heritiera littoralis</i>	O,I,M	I	+ +
<i>Hernandia sonora</i>	O,I,C	I,A?	++ ++
<i>Hibiscus tiliaceus</i>	O,I,M,N,P	I,A	+++++++
<i>Inocarpus fagifer</i>	M,W,N,C	I,A?	+++++
<i>Intsia bijuga</i>	I,N,M	I	+ ++
<i>Leucaena insularum</i>	O	I	+ +
<i>Lumnitzera littorea</i>	M,I	I	++ ++
<i>Mammea odorata</i>	I,M	I	+ +
<i>Manilkara</i> spp.	I,N	I	+ +
<i>Metroxylon</i> spp.	W,N,C	I,A,R	++ ++
<i>Morinda citrifolia</i>	I,N,P	I,A?	+++++
<i>Neisosperma oppositifolia</i>	O,I	I	++ ++
<i>Pandanus tectorius</i>	O,I,N,W,P	I,A	+++++++
<i>Phaleria disperma</i>	I,N,C	I	+ ++
<i>Pipturus argenteus</i>	I,N	I	++ ++
<i>Pisonia grandis</i>	O,I,C	I	++ ++
<i>Pittosporum arborescens</i>	I,N	I	+ +
<i>Planchonella costata</i>	I,N	I	+ +
<i>Polyscias</i> spp.	I,N	I	+ +
<i>Pongamia pinnata</i>	O,I,M,N	I	+ +
<i>Premna serratifolia</i>	I,N,C	I	+++++
<i>Rhizophora</i> spp.	M	I	+++++++
<i>Santalum</i> spp.	I,N	I	+ ++
<i>Serianthes</i> spp.	I,N	I	+ +
<i>Sonneratia alba</i>	M	I	+ +
<i>Soulamea amara</i>	I?	I	+ +
<i>Syzygium</i> spp.	I,N	I	+ +

<i>Terminalia catappa</i>	O,I,N,C	I,A,R	++++++
<i>Terminalia littoralis</i>	O,I,C	I	+ +
<i>Thespesia populnea</i>	O,I	I	++ +++
<i>Tournefortia argentea</i>	O,I,C	I	++++++
<i>Vavaea amicorum</i>	I,N	I	+ +
<i>Vitex</i> spp.	O,I,N,P	I	++ ++
<i>Xylocarpus</i> spp.	M,I	I	+ ++

Sources: An extensive review of the available literature and personal records and observations by the author; for full listing of sources, see Thaman, 1992.