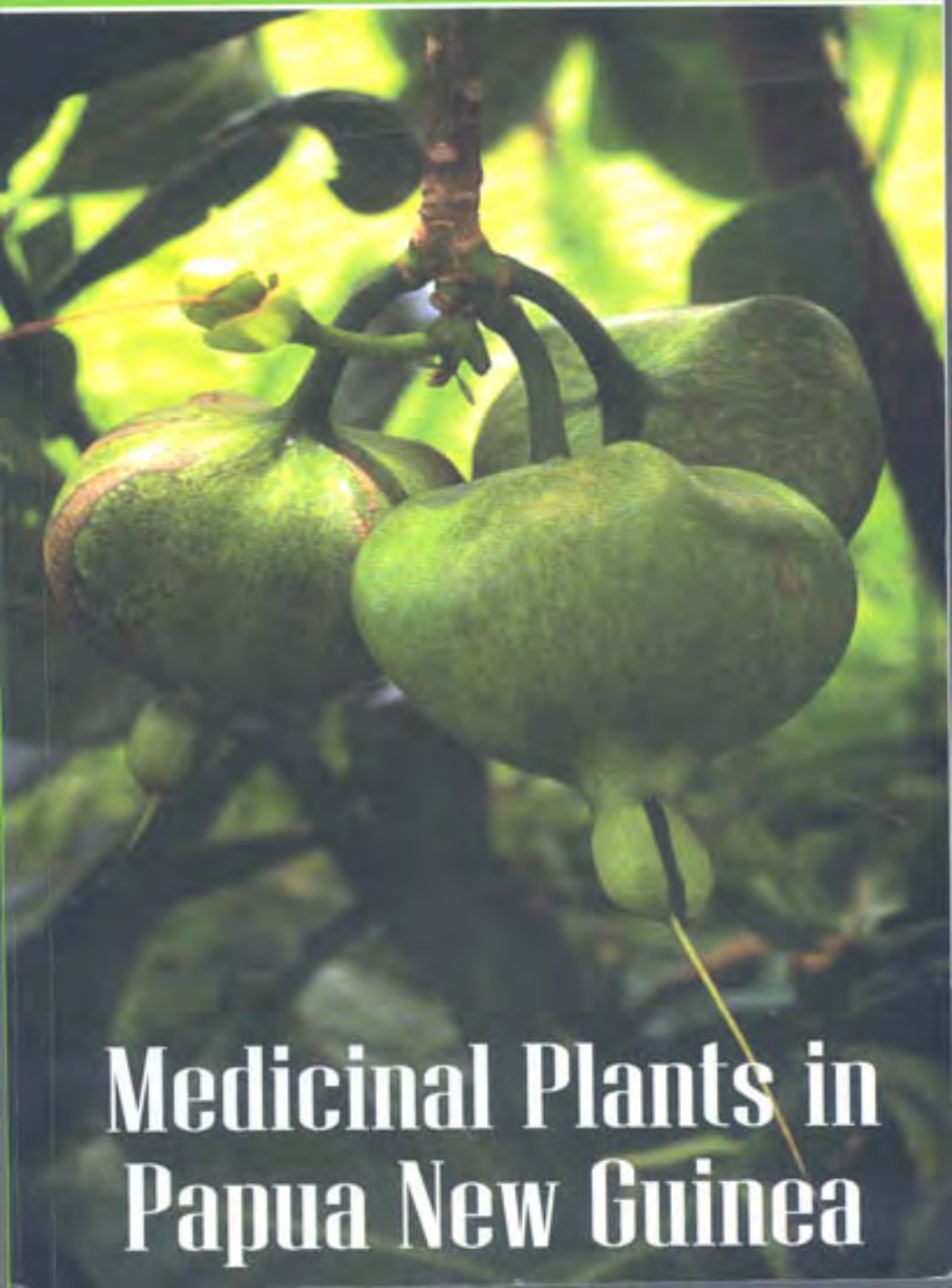
World Health Organization
Western Pacific Region



Medicinal Plants in Papua New Guinea

MEDICINAL PLANTS
IN
PAPUA NEW GUINEA

Information on 126 commonly used medicinal plants in Papua New Guinea

World Health Organization
Western Pacific Region

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Medicinal Plants in Papua New Guinea

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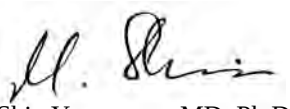
PREFACE

Traditional medicine, including the knowledge, skills and practices of holistic health care, exists in all cultures. It is based on indigenous theories, beliefs and experiences, and is widely accepted for its role in health maintenance and the treatment of disease.

Medicinal plants are the main ingredients of local medicines, but rapid urbanization is leading to the loss of many important plants and knowledge of their use. To help preserve this knowledge and recognize the importance of medicinal plants to health care systems, the WHO Regional Office for the Western Pacific has published a series of books on medicinal plants in China, the Republic of Korea, Viet Nam and the South Pacific. *Medicinal Plants in Papua New Guinea* is the fifth in this series.

This book covers only a small proportion of the immense knowledge on traditional medicine, the plant species from which they are derived, the diseases they can treat and the parts of the plants to be used. The diverse cultures, languages and traditional practices of Papua New Guinea made this a particularly challenging project. But we believe the information and accompanying references can provide useful information for scientists, doctors and other users.

Medicinal Plants in Papua New Guinea, prepared in collaboration with the University of Papua New Guinea, presents information and colour pictures of 126 species of commonly used medicinal plants. I believe it will prove an invaluable resource in the quest for good health for all people of the Western Pacific Region.



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Photographs of the medicinal plants were taken by Professor Rai and Mr Pius Piskaut. The assistance of Dr Osea Gideon and Mr Piskaut in carrying out scientific identification of some plants included in this text is also acknowledged.

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MEDICINAL PLANTS
IN
PAPUA NEW GUINEA

Acalypha c.f. grandis **Benth.**

***Acalypha c.f. grandis* Benth.** **Euphorbiaceae**

Local Name : atepulopulo (Wagawaga, Milne Bay).

Description. Spreading shrub or tree to 10 m high. A coarse, thinly pubescent plant, with large, broadly ovate leaves up to 25 x 20 cm, base definitely or slightly cordate, apex shortly caudate-acuminate, margin shallowly or moderately crenate-serrate; petiole up to 17 cm long; stipules lanceolate, up to 1 cm long; young parts fulvous-peberulous. Male inflorescence up to 20 cm. Female inflorescence up to 17 cm, somewhat lax-flowered; bracts up to 10 mm diameter; acutely 7-11-toothed, pubescent. The female bracts show great variation. Apart from their great increase in size from the flowering to fruiting stage, the teeth may be short or long, broad or narrow, and (especially) subacute to long-acuminate.

Habitat. In primary or secondary forest, on a stream bank. Common about the houses.

Distribution. Philippines, the Moluccas to Malesia. Widely distributed throughout Papua New Guinea.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1]. Young leaves are squeezed into water and the solution drunk to treat diarrhoea and dysentery.

Reference:

1) Holdsworth D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical paper No. 175, Noumea, New Caledonia, 6.

Acalypha wilkesiana Muell., Arg.

Acalypha wilkesiana Muell., Arg. ***Euphorbiaceae***

Local Names : kokoai (Kokopo, East New Britain); lep, eseue (Mendi, Southern Highlands); wamala (Aroma, Central Province); titik (Mt. Hagen, Western Highlands); kuligou (Rigo, Central Province).

English Names : copper leaf; beef steak plant; joseph's coat

Description. Perennial shrub, 2-4 m tall. Leaves simple, alternate, attractive, rather curved and coarsely crisped, ovate, elliptic or oblong-elliptic, dark to bright red, red-green or green, and often mottled or variegated with various shades of red, dark pink, white or bronzy green. Flowers inconspicuous, unisexual. Fruits unknown. Flowers throughout the year.

Habitat. Common to abundant in house yard gardens, often as a hedge or living fence, occasional in rural garden areas. It prefers partial shade or partial sun, with dry to moist soil.

Distribution. Native to Fiji, introduced into Papua New Guinea and common in tropics.

Constituents[1-3]. Alpha-amyrin, caffeic acid, chlorogenic acid, gallic acid, geraniin, chrysanthemin, quercetin, liquiritigenin, beta-sitosterol.

Biological Activity[2,4-7]. Antibacterial, antifungal, antiyeast, antinematodal, cytotoxic, apoptosis inhibition.

Traditional Uses[8-10]. Leaves are squeezed into water and the resulting solution drunk to treat diarrhoea and dysentery, while the fresh leaf juice is drunk for laryngitis. Leaves are boiled in water and used to massage the body of a fever patient. Fresh young leaves of *Acalypha wilkesiana*, *Ocimum basilicum*, *Hibiscus rosa-sinensis*, and *Euodia hortensis* are mixed together and placed in a bowl of hot water. Patient is exposed to hot vapour for relief from pneumonia, malaria, pain and fever. Leaves are chewed on as first aid for ruptured appendicitis. As abortifacient fresh shoots are squeezed into water and solution drunk.

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10) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Port Moresby, Papua New Guinea.

***Acorus calamus* L.**

***Acorus calamus* L.** **Araceae**

Local Names : lepe (Angi, Enga); lep, eseue (Mendi, Southern Highlands Province); wamala (Aroma, Central Province); titik (Mt. Hagen, Western Highlands).

English Names : sweet flag, sweet sedge, calamus, calamus root, flag root, sweet myrtle.

Description. A hardy perennial herb to 2 m tall, aromatic, rhizome forming, flag-like plant, flourishing in wet situations. Rhizomes are flesh-coloured, sweet scented, stout, pinkish, sub-spherical, fleshy, thick and rather spongy, and give off numerous rootlets. Leaves long, ¾ inches wide, radical, and sword-like, erect with prominent midrib, bright green, but reddish or pink at the base, where they are en-sheathing. The stalk is triangular, giving off from one side a spadix bearing thickly crowded flowers. The plant rarely flower or set fruit, but when they do, the flowers are 3-8 cm long, cylindrical in shape, greenish-yellow or brown and covered in a multitude of rounded spikes. The fruits are small and berry-like, containing few seeds. The genus *Acorus* is considered to be the most primitive extant monocot.

Habitat. Grows along the edges of lakes, streams, sides of creeks, in muddy places, and in swamps and meadows.

Distribution. Native to Asia, and now widespread throughout Papua New Guinea.

Constituents[1-5]. Acolamone, acoradiene, alpha-, beta-, and gamma acoradiene, acoragermacrone, acoramone, acorenol, acorenone, acoric acid, acorin, acorone, acoronene, acoroxide, acorusidol, acorusnol, azulene, alpha- and beta-bisabolene, cadala-1,4,9-triene, cadalatriene, cadalene, cadalene isomer, delta cadinene, cadinol, calcone, calcorene, calamendiol, calamine, calamenol, calameone, calamol, calamone, calamusenone, calarene, carophyllene, cedrene, cedrol, alpha-copaene, alpha-curcumene, beta-elemene, elemol, eudesmol, germacrene D, guaiazulene, guaienol, gurjunene, alpha-humulene, nerolidol, oplopanone, selinadienol, selinene, shoybunone, spathulenol, viridiflorene, viridiflorol, borneol, camphanone, camphene, camphene hydrate, camphor, carvone, para-cymene, 1,8-cineol, dipentane, hotrienol, limonene, linalool, menthol, myrcene, myrtenal, ocimene, pinene, piperitone, sabinene, terpinene, alpha-thujene, acoradin, galangin, lucenin, acetophenone, calmonic acid, arachidic acid, caproic acid, caprylic acid, heptylic acid, linoleic acid, myristic acid, oleic acid, palmitic acid, palmitoleic acid, stearic acid, asarone, asaraldehyde, asaronaldehyde, eugenol, butyric acid, choline, tannin.

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***Adenanthera pavonina* L.**

***Adenanthera pavonina* L.** **Mimosaceaea**

Local Names : kerenga (Central Province); divai na kalagar (Kokopo, East New Britain).

English Names : red bead tree, bead tree.

Description. Spreading tree, 15- 20 m tall. Leaves bipinnate, 2-5 inch long, leaflets 8-14, oblong. Flowers small, yellow in terminal racemose panicles, pedicels minute. Pods curved, 4-6 inch long, linear, acuminate at both ends, when ripe closely curled and splitting open exposing shining small hard red seeds. Flowers and fruit available throughout the year.

Habitat. Common along roadsides, sandy foreshores, open areas and forest from sea level to montane.

Distribution. Native to South-East Asia, but widely distributed in the South Pacific, including Papua New Guinea.

Constituents[1-5]. Lipids, chalcone, robinetin, loutein, ampelopsin, oleanolic acid, bita-sitosterol, 3-O-beta-D-glucospinasterol, stigmasterol, stigmast-7-enol, stigmasterol-3-O-beta-D-glucoside, isofucosterol, brassicasterol, daucosterol, dulcitol, O-acetylethanolamine.

Biological Activity[6-8]. Antibacterial, haemaglutinin, weak cytotoxic.

Traditional Uses[9]. A decoction of the leaves is used for gastric complaints, diarrhoea and dysentery.

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***Ageratum conyzoides* L.**

***Ageratum conyzoides* L.** **Asteraceae**

Local Names : kalese (Manus Island); sambura (Awala, Northern Province); akikikanabebe (Ravat and Vunamami, East New Britain).

English Name : goat weed, white weed.

Description. Coarse annual herb up to 1 m tall, stem erect, green or purple hairy stem, with a strong unpleasant smell. Leaves opposite, serrate-toothed, broadly ovate, crenate, coarsely hairy on both sides. Inflorescences or flowers in terminal corymbs, consisting of 18-15 heads, with colors of whitish to pale blue, 5-lobed. Flowers throughout the year.

Habitat. Common weed found in disturbed habitats, along roadsides and paths, forest margins and openings, clearings, grassland and cultivated areas from sea level to montane.

Distribution. Present throughout Papua New Guinea and the South Pacific countries.

Constituents[1-8]. Essential oil consisting of ageratochromene, deimethoxy-ageratochomene, cadinene, and carophyllene; chromene glucoside, isoflavone, kaempferol, its glucoside and rhamnoside, quercetin, quercitrin, scutellarein, eupalestin, chromenes, stigmast-7-en-3-ol, beta-sitosterol, stigmasterol, fumaric acid, caffeic acid, saponins, pyrrolizidine alkaloids, essential oils, oxygen heterocycles, ageratochromene derivatives, coumarin, alkanes.

Biological activity[1-2,9-13]. Insecticidal, antinematodal, analgesic, antipyretic, anti-inflammatory, antibacterial, antifungal, antibiotic, antimalarial, haemostatic, antispasmodal, bronchodilating and uterine activities.

Traditional uses[14-16]. Crushed leaves are mixed with water and the solution drunk by a patient with diarrhoea and dysentery. Crushed leaves are rubbed onto the forehead to treat a headache. Juice obtained from the crushed leaves is applied on to sores, cuts, bruises and wounds. Moist leaves are crushed and squeezed onto a sore eye. Sap from crushed leaves is also used to kill head lice in some parts of the country. Leaf juice is drunk to stop vomiting.

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***Albizia falcataria* (L.) Fosberg**

***Albizia falcataria* (L.) Fosberg** **Mimosaceae**

(syn. *Albizia falcata* (L.) Backer; *A. moluccana* Miq.; *Adenanthera falcataria* L.)

Local Names : iri (Agene, Northern Province), ele (Ubili, West New Britain Province.

English Name : white albizia, molucca albizia.

Description. Tall deciduous tree to 40 m tall, 1 m in diameter, bole branches for up to 20 m, and up to 100 cm or sometimes more in diameter. Leaves alternate, bipinnate, 23–30 cm long, pubescent, the pinnae 20–24, 5–10 cm long, each with 30–40 paired leaflets, sessile, obliquely oblong, 6–12 mm long, 3–5 mm broad, shortly acute. Panicles large, 20–25 cm long, lateral, the numerous flowers sessile, white, light yellow to greenish, ca 10–12 mm long; the calyx 5-toothed, corolla 5-lobate, ca 6 mm long; stamens filiform, more than 12 mm long; ovary narrow, the style filiform. Frit a flat pod, 10–13 cm long, 2 cm wide, winged along the ventral structure, flat, acute, green, turning brown, dehiscent. Seeds 15–20 per pod, reniform to oblong. Trees regularly produce large quantities of seeds after reaching 3 to 4 years of age. Fruiting in August.

Habitat. Occurs in primary, but most often in secondary, forest along river flood terraces from sea level up to 2300 m altitude.

Distribution. A common, wide-spread tree of the Moluccas, New Guinea, New Britain, and the Solomon Islands.

Constituents[1]. Syringaresinol (lignan).

Biological Activity. None reported.

Traditional Uses[2-4]. Dried bark extract is used to bathe topical ulcers. Water extract of the dried entire plant is drunk to induce sleep and treat venereal diseases. The dried scrapings of the inside of the bark are squeezed and mixed with food; the patient with a congested chest vomits to clear his chest.

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4) Holdsworth D.K., *Medicinal Plants of Papua New Guinea,* (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 8.

Aloe vera L.

Aloe vera L.
(syn. Aloe barbadensis Mill.)
Local Name : aloe
English Names : aloe, aloe vera

Description. Succulent herb with a single short, thick stem crowned by a large rosette of numerous leaves which are sea milkwort green, oval-lanceolate, of 40 to 60 cm by 10 to 12 cm, margins with spines and pointed apex. Red, tubular flowers, up to 4 cm long and borne on a terminal spike. Fruit a brown capsule 15-25 mm long with many small flattened seeds. Flowering and fruiting periods not known.

Habitat. Widely cultivated as a house plant.

Distribution. Native to North Africa, now introduced in the South Pacific region and grown widely as an ornamental and medicinal plant.

Constituents[1-6]. 1,8-dihydroxyanthraquinone, aloe emodin, chrysophanic acid, aloin, aloin derivatives, barbaloin, aloeesin, neoeloesin A, anthranol, enzothiazolone, isocitric acid, para-coumaric acid, cystine, amino acids, sugars, enzymes, dehydro-abietal, methyl ester of dehydro-abietic acid, acemannan, aloeferon, glucomannan, aloe peptides, cholesterol, campesterol, stigmasterol, lupeol, lipids.

Biological Activity[1, 7-12]. Analgesic, antipyretic, anti-inflammatory, toxic, mitogenic, anti-burn, wound healing, antibacterial, antileukopenic, antitumour, teratogenic, hypoglycaemic, antifertility, immunostimulant, antiedema, uterine stimulant, antiviral, hair stimulant, allergenic, anti-asthmatic, haemaglutinin, emollient, insecticidal, depressant, hypocholesterolemic, hypolipemic.

Traditional Uses[13]. The plant is primarily used as purgative. The sap from the fresh leaves is used to treat cuts, grazes sores and wounds, fungal infections of the skin, and to promote hair growth.

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***Alpinia oceanica* Burkill**

***Alpinia oceanica* Burkill** **Zingiberaceae**

Local Names : goragora or gorgor (Kuanua, East New Britain), audu (Ubili, West New Britain Province).

Description. Erect perennial herb to 3 m tall. Leaves green, sessile, lanceolate, acuminate, 30-70 cm long, 8-15 cm wide, glabrous. Inflorescence terminal, flowers whitish and sub-tended by large, pink to bright red bracts. Has a creeping, fleshy rhizome. Berry globose, 12-22 mm across, white, crowned by the persistent calyx. Flowering and fruiting periods unknown.

Habitat. Cultivated and wild in disturbed moist forests, old gardens, under-brush, thickets, along seashores and up to about 500 m altitude.

Distribution. Widely distributed throughout much of the Pacific and other tropical areas, including Papua New Guinea.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1]. Fresh leaves are chewed for sore tongue in children and adults. Leaves are also used for covering wounds and also as a wrapping of other plant materials for heating over a fire. Leaves and roots are used in sorcery preparations.

References:

1) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Alstonia scholaris* (L.) R. Br.**

***Alstonia scholaris* (L.) R. Br.** **Apocynaceae**

Local Names : sipuel (Manus Island); herina (Hisiu, Central Province); budo (Darubia, Normanby Island; Rigo, Central Province); kambu (Kanganaman, Sepik); watsil (Kokopo, East New Britain); puto (Alotau, Milne Bay).

English Names : dita-bark tree, devil's tree.

Description. Large evergreen tree about 15-50 m tall with white milky sap. Bark grayish-brown, thick, lenticellate, much fluted. Leaves oblong arranged in whorls of 4-7, glabrous, usually crowded at the end of branches. Flowers small greenish-white, strongly perfumed. Calyx toothed, corolla tube 8-10 mm, pubescent outside. Follicles long narrow. Seeds brown with hairs at both ends. Flowering season in April.

Habitat. A common lowland tree species in primary and secondary forest and in the lower montane rainforest. Also occurs in the monsoon forest and savannah woodlands.

Distribution. Common tree throughout Papua New Guinea, especially in lowland regions.

Constituents[1-7]**.** Akuammicine, akuammidine, alschomine, isoalschomine, alstonine, tetrahydoalstonine, scholaricine, pseudoakuammigine, angustilobine B, angustiboline B acid, ditamine, echiditamine, echitinine, echitenine, lagunamine, leuconolan, losbanine, (+) lochneridine, narceline, picraline, picrine, rhazimanine, scholaricine, scholarine, strictamine, tubotaiwine, vallesamine, triterpernes, a- amyrin, lupeol, alanine, cysteine, glutamic acid, methionine, proline, threonine, tryptophan, vanillic acid, aspartic acid, asparagine, astragalin, betulin, betulinic acid, ferulic acid, kaempferol.

Biological Activity[8-12]. Antibacterial, antifungal, antiyeast, anthelmintic, atimalarial, antitumour, hypotensive, antitussive, antitumour, antileishmaniasis.

Traditional Uses[13-18]. An infusion of the bark is used to treat diarrhoea, dysentery, and headaches. For severe fevers and malaria an infusion of the dried bark is drunk. Fresh bark is chewed and the juice swallowed to treat malaria fever. Shredded bark is mixed with water, shaken and the filtrate is drunk to relieve stomachaches. Stem sap is mixed with water and used to treat a cough. Women chew leaves as an oral contraceptive. Dried bark sap is taken 3 times a day to induce abortion. Bark sap is squeezed into water and drunk occasionally to combat anemia.

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***Alstonia spectabilis* R. Br.**

***Alstonia spectabilis* R. Br.** **Apocynaceae**

Local Names : tutu (Boku, Central Province); tutua (Rigo, Central Province); foro (Brown River, Central Province); tutuwana (Darubia, Normanby Island); inhopu (Awaiama, Milne Bay).

English Name : hard milkwood.

Description. Tree, 10-40 m tall, bole up to more than 60 cm diameter; leaves in whorls of 3-4, 10-30 cm long, oblong-lanceolate, petiole 2-8 mm long; calyx and corolla white, tomentose outside; follicles glabrous. The trunk is occasionally used for small carvings. Fruits and flowers available all through the year.

Habitat. Common in rainforest up to 450 m altitudes.

Distribution. Common in the lowlands, and in primary and secondary forest.

Constituents[1]. Indole alkaloids: angustilobine B, ditamine, echitamine, and echitenine.

Biological Activity[2]. Antibacterial.

Traditional Uses[3-7]. Decoction of the leaf is drunk to cure a bad cough and provide relief from asthma. Sap squeezed from the fresh stem and mixed with water is also used for bad cough. The stem sap is used externally on tropical ulcers. A hot water extract of the leaf is used as an abortifacient. Decoction from bark is taken orally for malaria. Fresh young leaves are boiled in water, solution cooled and drunk to treat cold, cough, fever and malaria. Plant is also reportedly used as an antifertility agent.

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***Amomum aculeatum* Roxb.**

***Amomum aculeatum* Roxb.** **Zingiberaceae**

Local Names : punuh parir (Kurti, Manus Province); hinigugau (Tawala, Milne Bay Province), iae (Ubili, West New Britain Province).

English Names : rambutan amomum.

Description. Perennial herb to 4-5 m tall. Stem glabrous, arising from the rhizomes. Leaves smooth, shiny, dark-green, alternate, lanceolate, acuminate, glabrous on both sides; base broad-cuneate to truncate, petiole 5-9 mm long, ligule 6-12 cm long. Inflorescence mostly underground, ovoid; bracts lanceolate, acute; lebellum rounded, concave, crinkled. Capsule erect, brownish red, all united to form a globose-ovoid inflorescence. Individual capsule ellipsoid, covered with fleshy prickles, pedicels 10-20 mm long. Stem sometimes bear fruits.

Distribution. Commonly found in all parts of Papua New Guinea.

Constituents[1,2]. Aculeatin A – D, 5-hydroxyhexacos-1-en-3-one.

Biological Activity[1]. Antimalarial.

Traditional Uses[3]. Shoots are collected together with those of *Costus speciosus* and crushed in water. The clear solution is drunk, and the remaining portion is used to wash the patient suffering from fever. The new shoot of *A. aculeatum* is heated on a fire and then squeezed onto fresh cuts and bleeding injuries to arrest bleeding and prevent from further infection.

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***Amorphophallus paeoniifolius* (Dennst.) Nicolson**

***Amorphophallus paeoniifolius* (Dennst.) Nicolson (syn. *Amorphophallus campanulatus* Blume ex Decne.)** **Araceae**

Local Names : makoa (Vanapa, Central Province).

English Names : elephant yam, elephant-foot yam, white spot giant arum.

Description. Tuber 30-40 cm across, weighing up to several kilograms, petiole to 13 cm in diameter and 2 m long, solitary blade resembling a small tree with hundreds of leaflets stretching over 1 m wide with rather close venation prominent below. Inflorescence comprises a large thick spadix crowned with a bulbous purple knob, encircled by a fleshy purple and green-blotched spathe up to 50 cm wide, 40 cm deep, bell-shaped, inrolled at the base, female flowers with long styles, stamens yellow, very numerous, crowded beneath the much enlarged, stinking purple appendix, peduncle and female zone of spadix lengthening greatly infructescence to 2 cm long. The plant can be propagated from offsets of the corm or by fresh seed. The wild plant is inedible, even poisonous, but the corms of other cultivars are edible.

Habitat. Especially seasonally dry areas, savannah and forest edges, in swampy forest near the sea and occasionally in the under-story of very disturbed forest.

Distribution. Wide spread in lowlands and occasionally in the lower montane zone.

Constituents[1,2]. Dimethyldisulphide, dimethyltetrasulphide, dimethyltrisulphide, alkaloids present.

Biological Activity[3-6]. Spasmolytic, antiviral, hypotensive, anti-inflammatory, antimycobacterial, antibacterial.

Traditional Uses[7,8]. The stem is cut and the inside flesh is eaten raw in attacks of snakebites. The sap from the petiole is fermented and drunk for treatment of diarrhoea and dysentery.

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***Annona muricata* L.**

***Annona muricata* L.** **Annonaceae**
(syn. *Annona macrocarpa Wercklé*)

Local Names : sow sop (Kebuguili, Milne Bay); kahiloko (Tawala, Milne Bay).

English Names : soursop, prickly custard apple.

Description. Three to 7 m tall. Leaves rather pale green, elliptic, rounded but apiculate or obtusely pointed at apex, rounded or narrowed at base, sepals quite thick, valvate; outer petals cordate at base. Flowers large, solitary, yellowish or greenish-yellow in colour. Fruit oblong or ovoid, somewhat curved (mango-shaped), sometimes as much as 30 cm long, the surface beset with regularly well-spaced short slightly curved spines, of moderately firm texture, green; flesh juicy, acid, whitish. Seeds abundant.

Habitat. Lowland areas below 1200 m altitude.

Distribution. Native of tropical America, it is now cultivated worldwide, including Papua New Guinea, for its fruit.

Constituents[1-4]. Annonaceous acetogenins: annocatalin, annohexocin, annomonicin, annomontacin, annomuricatin A & B, annomuricin A-E, annomutacin, annonacin, (multiple iso, cis, one, etc.), annonacinone, annopentocin A-C, *cis*-annonacin, *cis*-corossolone, cohibin A-D, corepoxylone, coronin, corossolin, corossolone, donhexocin, epomuricenin A & B, gigantetrocin, gigantetrocin A & B, gigantetrocinone, gigantetronenin, goniothalamicin, iso-annonacin, javoricin, montanacin, montecristin, muracin A-G, muricapentocin, muricatalicin, muricatalin, muri-catenol, muricatetrocin A & B muricatin D, muricatocin A-C, muricin H, muricin I, muricoreacin, murihexocin 3, murihexocin A-C, murihexol, murisolin, robustocin, rolliniastatin 1 & 2, saba-delin, solamin, uvariamicin I & IV, xylomaticin, annocatalin, annohexocin, annomonicin, annomontacin, *cis*-annomontacin, annomuricin A-E, annomutacin; campesterol, stigmasterol, isoquinoline alkaloids, tannin, lipid, carbohydrate.

Biological Activity[5-10]. Cardiac depressant, antiamebic, antibacterial, antifungal, serotonin (5-HT) receptor binding activity, antimalarial, toxic, molluscicidal, anticrustaceaen, smooth muscle relaxant, spasmogenic, urine stimulant, vasodilator, antileishmaniasis, insecticidal, antiparasitic, lipid peroxidase formation inhibition.

Traditional Uses[11,12]. Leaves are heated over a fire and inhaled to give some relief to an upset stomach. The heated leaves are pressed against the stomach and stroked downwards to provide relief from stomachache.

(continued on page 258)

***Antiaris toxicaria* Lesch.**

***Antiaris toxicaria* Lesch.** **Moraceae**
(syn. *Antiaris africana* Engl.; *A. macrophylla* R. Br.)

Local Names : kokui (Siwai, Bougainville); metkul (Kurti, Manus Province).

English Names : antiaris, upas tree.

Description. An evergreen tropical tree, to 30 m tall and 150 cm diameter, with a crown of short spreading branches, usually buttressed. Leaves entire, pubescent or very hairy, oblong elliptic, 10-30 cm long, tip acute, base obliquely sub-cordate or rounded. Bark grey brown, reddish brown with peeling papery bark when young, with vertical fissures; off-white exudates. Fruit drupe like, single seeded, ellipsoid, 2 x 1.5 cm, dark red when ripe.

Habitat. Grows in lowland and highland rainforest, on mainly clay soils and at foot of limestone hills.

Distribution. Not quite common, but well distributed in the Bismark Archipelago .

Constituents[1-5]. Cardenolides, antialloside, alpha- and beta-antiarin, dihydrobetanatiarin, toxicarioside A-C, alpha-antioside, deglucocheriotoxin, convallatoxin, convallatoxol, evomonoside, glucoperiphorrhamnoside, malayoside, flavonoids, (DL)-sigmoidin A, antiarone A-K, cinnamic acid, lupeol, phenylalanine betaine, tryptophan betaine.

Biological Activity[6]. Hypotensive.

Traditional Uses[7]. The ripe seeds are roasted over fire and eaten for small growths on the body. After removing the outer layer, the bark is chewed and the juice swallowed to treat disorders of the spleen. An aqueous decoction prepared from the inner portion of the bark is drunk to treat cancer, leukemia, and spleenomegaly. The milky latex is used as source of dart poison.

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***Areca catechu* L.**

***Areca catechu* L.** **Arecaceae**

Local Names : buai (Pidgin); gunantuna (Gazelle Peninsula, East New Britain); buatan (Gairi, Central Province); magi (Ubuia Island, Milne Bay); guria (Rigo, Central Province); meme na buai (Kokopo, East New Britain).

English Names : betel nut, betel palm, areca nut, areca palm, areca.

Description. An evergreen palm tree, 10-15 m high, trunk solitary, slender, and erect. Leaves 1-2 m long, pinnate; leaflets numerous, 30-60 cm, irregularly serrated at the tip, glabrous, the upper segments joined; petiole sheathed. Inflorescence paniculate with many branches, monoecious. Flowers yellowish-white, male flowers on the twigs, in two rows; female flowers on the wider basal parts of the twigs. Fruit a berry, fibrous, ovoid, of variable shape and colour, 4-6 cm long. The seeds are bluntly rounded, conical, about 15-30 mm wide at the base; the testa is brown and marked with a network of paler depressed lines. Kernel is chewed; the taste is astringent and slightly bitter. Flowering period is between May-December.

Habitat. The plant prefers dry deciduous forestland and rich moist soils in a protected shaded position. It grows in the savannah belt and in secondary clearings. It is commonly cultivated about the houses in tropical regions.

Distribution. It is distributed throughout the tropics and is a major crop in the New Guinea region.

Constituents [1-8]. Arecoline, arecaidine, guvacine, nicotine, nicotinic acid ethyl ester, nicotinic acid methyl ester, harman, norharman, piperdine and pyridine esters, alanine, phenylalanine, arginine, aspartic acid, glutamic acid, glycine, histidine, leucine, isoleucine, proline, serine, threonine, tyrosine, valine, stearic acid, alanine, phenylalanine, nondeconoic acd, oleic acid, palmitic acid, pentadeconoic acid, lauric acid, myristic acid, flavone, catechin derivatives, beta-sitosterol.

Biological Activity[9-16]. Euphoriant, psychotropic, antidepressant, antifatigue acivity, hypotensive, antispasmodic, antimycobacterial, antihepatotoxic, cytotoxic, embryotoxic, larvicidal, uterine stimulant, carcinogenic, antimutagenic, antioxidant, clastogenic, diabetogenic, contraceptive, antibacterial, cholesterol level decrease activity, bronchoconstrictor, antiscariasis, abortifacient, anthelmintic, hyperthermic, antinematodal, antifungal, antihalistosis, antiyeast, antiviral, teratogenic, chromosome aberrations induced activity, anticholinergic.

(continued on page 258)

***Artocarpus altillis* (Parkinson) Fosb.**

***Artocarpus altillis* (Parkinson) Fosb.** **Moraceae**

Local Names : kapiak (Pidgin); metkul (Manus Island); uda (Goodenough Island, Milne Bay); dacwa (Dobu Island, Milne Bay); gunu (Rigo, Central Province); nahua (Vanapa, Central Province).

English Name : bread fruit

Description. Monoecious tree up to 30 m tall with branches that can expand to 10 to 20 m in width. Trunk straight, often buttressed; twigs spreading very thick, with pronounced leaf and stipule scars and lenticels. Leaves alternate, ovate to elliptical in outline, undivided when young, older ones entire, or deeply pinnately cut into 5 -11 pointed lobes, thick, leathery, luxuriantly green with yellowish veins. Mature fruits (syncarps) relatively large with a green spiky oval shaped outer layer and whitish-brown fleshy inside with numerous moderate-sized seeds. The whole plant, particularly the fruit, exudes plenty of milky latex even with small incision. Ripe fruit available once a year.

Habitat. Grows well both in dry and cool places. Grows wild in rainforest, bush land and near river edges, but also now widely cultivated.

Distribution. Native to Papua New Guinea and now widely distributed throughout the South Pacific and other tropical areas.

Constituents[1-5]. Starch, pectins, alpha amyrin, triterpene, cycloart-23-ene-3-beta-25-diol, cycloart-24-en-3-beta-ol, cycloart-25-ene-3-beta-24-diol, flavonoids, artonin E, artonin V, cycloaltisin, morusin, cyclomorusin, isocyclomorusin, cyclomulberrin, isocyclomulberrin, oleic, linoleic, linolenic acids.

Biological Activity[2, 6-9]. Haemolytic activity (leaves); antibacterial, antitumour (root bark); anti-inflammatory (root); weak insecticidal activity, toxic (leaves).

Traditional Uses[10,11]. Crushed leaves are applied on to boils and swollen groins. The sap is diluted and drunk to treat diarrhoea and dysentery. The sap is also used on sores, boils and abscesses. Leaves of *A. altillis* and *Carica papaya* are crushed with lime until yellow and the mixture rubbed on to a swollen groin. A paste made from the young leaves is applied to sore eyes or eyes filled with dust. Decoction made from the bark is used to treat chest pains. Root decoction is used in shortness of breath, pneumonia, and breathing disorder. The dried rod-like flowerings are used as mosquito coils; they are burnt and the resulting smoke wards off the mosquitoes.

(continued on page 259)

***Barringtonia asiatica* (L.) Kurz**

***Barringtonia asiatica* (L.) Kurz** **Barringtoniaceae**
(syn. *Barringtonia speciosa* J. R. Forst. & Forst.)

Local Names : mwanumbu (Normanby Island, Milne Bay), mbrut (Kurti, Manus Province), putu (Ubili, West New Britain Province).
English Names : sea poison tree.

Description. Medium size tree to 20 m tall; trunk 1-1.5 m in diameter. Leaves large, sessile, obovate or obovate-oblong, entire, thick, shining, 20-40 cm long with obtuse apex and narrowed base. Flowers very large, borne on short, erect few flowered racemes. Calyx tube about 1 cm long; lobes 2 or 3 in number, oblong-ovate, concave, green and about 2.5 cm long. Petal 4, deciduous, thin, white becoming brownish, oblong, 7-8 cm long, and 3-4 cm wide. Stamens numerous, slender, united at the base, 10-12 cm long, white below and shading to purple above. Anthers small and yellow. Style slender, about 13 cm long and purplish. Fruit oblong or oblong -ovoid, sharply 4-rarely 5-angled, 8-14 cm long, 8-12 cm thick, containing a single large seed. Fruits have a typical tetragonal lantern shape and float on water. Flowers in June.

Habitat. Common along sandy and rocky shores, edges of mangroves and beach forests. Common on the seashores.

Distribution. Widespread in the lowlands, and throughout the tropical Pacific and Indian Oceans.

Constituents[1-3]. Bartogenic acid, 19-epibartogenic acid, anhydrobartogenic acid, hydrocyanic acid, saponins, gallic acid, monosaccharides.

Biological Activity[4,5]. Antiviral, antibacterial (equivocal), antifungal (equivocal), antiyeast (equivocal).

Traditional Uses[6-10]. Dried entire plant is used to stupefy fish and as a general fish poison. Aqueous extract prepared from dried kernel is drunk to treat coughs, influenza, sore throat, bronchitis, and also diarrhoea. Fresh leaves are heated on fires and tied on sores. The young leaves of *Barringtonia asiatica* and *Morinda citrifolia* are squeezed into water and drunk to relieve stomach-ache. Fresh leaves are heated and applied on fresh cuts and in chronic infected skin conditions. Sliced seed is also applied on sores. Dried seed is considered highly poisonous and consumed in suicide attempts.

(continued on page 260)

***Bidens pilosa* L.**

***Bidens pilosa* L.** **Asteraceae**

Local Names : matapikwa (Rigo, Central Province).
English Names : beggar's tick, spanish needle, cobbler's pegs, farmer's friend, pitchforks.

Description. Erect branched herb about 60-120 cm high, annual or perennial. Leaves are deeply divided into three toothed lobes, with the terminal lobe larger than the other two. Individual flowers are yellow, but are tiny, and held in dense terminal clusters in a widely branching flowering head. Each flower cluster has four or five short, broad, white 'petals' (rays), but these do not persist for very long. The seeds are black, about 1cm long, with 2 or 3 barbed awns at the tip. A number of varieties of *B. pilosa* have been developed.

Habitat. A prolific and persistent weed of vegetables and other crops. Common in disturbed or wasteland, neglected gardens, pastures, plantations, forest clearings, along roadsides, and on wasteland throughout the region.

Distribution. Pan-tropical; widely distributed along trails and roads, in cultivated areas, and on waste land. Grows well from low altitudes to over 2,000 m in Papua New Guinea.

Constituents[1-7]. Aesculetin, beta-amyrin, friedelin, friedelin-3-beta-ol, germacrene D, lupeol, lupeol acetate, squalene, borneol, limonene, phytol heptanoate, phytol, alpha-cadinol, beta-carophyllene, muurolol-t, aurone glucosides, acetylated okanin glucosides, lucoside, isoquercitrin, luteolin, 5-*O*-methylhoslundin, behenic acid, capric acid, elaidic acid, lauric acid, linoleic acid, linolenic acid, myristic acid, palmitic acid, palmitoleic acid, caffeine, daucosterol, squalene, beta-sitosterol, stigmasterol, precocene I, pilosola A, vanillic acid, benzenoids.

Biological Activity[8-13]. Antimalarial, antibacterial, antidiabetic, hypoglycaemic, antiyeast, antiinflammatory, antihypertensive, antimycobacterial, antiulcer, radioprotective, anticrustacean.

Traditional Uses[14,15]. The plant is used all over the world for various ailments. In Papua New Guinea, dried flowers are used to extract pus from boils. Fresh leaves are gently heated and placed over the affected eye to treat red or sore eyes.

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Bischofia javanica Blume

***Bischofia javanica* Blume** **Euphorbiaceae**
(syn. *Bischofia trifoliata (*Roxb.) Hook.)

Local Name : alok (East New Britain).
English Names : java cedar, vinegar wood.

Description. Evergreen tree 12-18 m tall with dense, rounded head, smooth branches, and reddish or milky sap. Leaves alternate, long petiol, trifoliate; leaflets shiny, oval-elliptic, 15-20 cm long, with toothed margin. Bark nearly smooth. Flowers minute, without petals, dioecious, greenish-yellow, in axillary raceme or borne in many flowered axillary panicles and inconspicuous. Fruit pea-sized, berrylike, fleshy, brown or reddish or blue-black, 3-celled. Flowers only once in a year, but fruit throughout the year, or from February to June.

Habitat. Common in old fields and disturbed wetland sites. Found mostly from sea level to mid montane in primary or secondary forest, forest edges, and thickets.

Distribution. Widespread in its native range of tropical Asia. Common in Papua New Guinea, grows wild in the mountains, sometimes cultivated as a shade tree.

Constituents[1-4]. Beta-amyrin, betulinic acid, friedelin, friedelinol, ursolic acid, bischofianin, corilagin, furosin, geraniin, punicalagin, chrysoeriol, cynaroside, fisetin, luteolin, quercetin, quercetrin, daucosterol, beta-sitosterone, beta-sitosterol, stigmasterol, ellagic acid.

Biological Activity[5-9]. Toxic, antifungal, antioxidant, antinematodal, anti-inflammatory, spasmolytic, antibacterial (equivocal).

Traditional Uses[10,11]. Fresh bark is used to treat aching stomach. Crushed leaves are rubbed on an aching stomach. Bark sap, mixed with lime, is used to treat sore feet.

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***Bixa orellana* L.**

***Bixa orellana* L.** **Bixaceae**
***(*syn. *Bixa acuminata* Bojer, *B. Americana* Poiret in Lam, *Bixa odorata* Ruiz & Pav. ex G. Don, *Bixa platycarpa* Ruiz & Pav. ex G. Don, *Bixa tinctoria* Salisb., *Bixa upatensis* Ram. Goyena, *Bixa urucurana* Willd., *Orellana americana* Kuntze, *Orellana orellana* (L.) Kuntze, *Bixa orellana* var. *leiocarpa* (Kuntze) Standl. & L.O. Williams)**

Local Names : tar (Kuanua, East New Britain); pop (Kurti, Manus Province).

English Names : annatto, anato.

Description. A fruiting shrub about 2-10 m tall. Leaves ovate, acute, entire, glabrous; base cordate to obtuse; petiole 4-9 cm long. Twigs rusty lepidote, glabrescent, spirally arranged, simple, ovate to broadly. Flowers bisexual in terminal, many flowered bracteate panicles or corymbs. Sepals, free, imbricate, ovate to orbicular, spoon shaped. Petals glabrous free imbricate, unequal, thin papery, ovate. Fruit 2-valved loculicidal capsule, ovate to broadly with rounded, acute to acuminate, apex, densely covered with bristles. Seeds numerous, obovoid angular, seeds covered with a reddish aril, which is the source of an orange-yellow dye. The annatto blooms pretty young (around 2 years old) and the 3-inch flowers (7 cm) are pink or white and have many stamens. The heart-shaped scarlet fruits turn brown or reddish brown at maturity, and are covered with short stiff hairs. When fully mature, the fruit split open exposing the numerous seeds. The small reddish-orange seeds inside the prickly heart-shaped pod are crushed and used as food and body coloring. Flowers and fruits available throughout the year.

Habitat. Found in gardens and secondary re-growth or disturbed forest on well drained areas or margins of swamps.

Distribution. Native to Brazil; found throughout Papua New Guinea up to an altitude of about 2000 m. The plant is cultivated for its flowers and especially for its seeds coated with a red pigment.

Constituents[1-5]. Bixaghanene, bixein, bixin, methylbixin, *trans*-bixin, zeaxanthin, cryptoxanthin, bixol, crocetin, ellagic acid, ishwarane, isobixin, norbixin, phenylalanine, salicylic acid, threonine, tomentosic acid, tryptophan, apigenin-7-bisulphate, cosmosiin, cynaroside, isoscutellarein, hypolaetin-8-bisulphate, geranyl-geraniol, geranyl-geranyl octadecanoate, gallic acid, pyrogallol, deltatocotrienol.

Biological Activity[6-8]. Antivenom, antibacterial, antiviral, antifungal, CNS depressant, gastric antisecretory, hypotensive, smooth muscle relaxant, insect repellant, insectidal, antioxidant, hyperglycemic, hypoglycemic, allergenic.

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***Blechnum orientale* L.**

***Blechnum orientale* L.** **Blechnaceae**

Local Name : awor (Bredabu, Central Province).
English Name : fern.

Description. A common tropical fern with arching fronds 1 m long. Thick rhizome rising to a short erect trunk. Pinnae distinct, 6 inch –1 feet long, ½ - 1 inch broad near the base, tapering to a long point, mostly cuneal at the base and attached by the midrib only, the numerous veins very fine, the margins entire. Sori close to the midrib and soon covering it. A few of the uppermost pinnae occasionally adnate and decurrently on the rachis.

Habitat. Terrestrial at middle to high elevations, usually found in exposed, drier areas, often in colonies.

Distribution. An attractive species that is common along road cuttings in rainforest and extending into drier areas.

Constituents[1-3]. Blechnic acid, 8-epiblechnic acid, brainic acid, 22-dehydrocampesterol, 24-alpha-ethyl-cholest-5-en-3-beta-ol, 24-alpha-ethyl-methyl-cholest-5-en-3-beta-ol, 24-beta-methyl-cholest-5-en-3-beta-ol, 24-alpha-cholest-5, 22-dien-3-beta-ol, chlorogenic acid.

Biological Activity[4]. Moulting activity (insect).

Traditional Uses[5,6]. Shade dried entire plant is used for sterilization of women. Complete sterility is claimed by women who eat the top new leaf of this fern each day for 3 days, then wait 2 weeks before repeating the treatment.

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***Breynia cernua* (Poir.) Muell. Arg.**

***Breynia cernua* (Poir.) Muell. Arg.** **Euphorbiaceae**

Local name : pil pil (Raluana, East New Britain); pipi-il (Kokopo, East New Britain).

Description. Shrub or small tree to 3 m high. Leaves alternate, distichous, glabrous, very thin, flaccid, medium to pale green, venation slightly prominent; margin entire. Flowers unisexual, very small, one to several per leaf axils; female yellowish, fleshy. Fruit a pink berry, spherical, with a 6-10 lobed cream "frill" (persistent calyx); flesh containing 6 black seeds in 3 groups of 2; 1 fruit per leaf axil.

Habitat. Grows mostly under primary forests, but sometimes cultivated around homes. Common on the hills in secondary forest.

Distribution. Java, Philippines, East Malesia to Northern Australia and Solomons.

Constituents[1]. Alkaloids absent.

Biological Activity[2]. Antimicrobial.

Traditional Uses[3,4]. Sap obtained from the crushed leaf is drunk with water to soothe a cough. Baked as well as fresh leaf is used to reduce intense body pains. Leaves are heated, mixed with lime and rubbed onto a sore or ulcer. A decoction prepared from the leaves is used to wash a sick child with high malarial fever.

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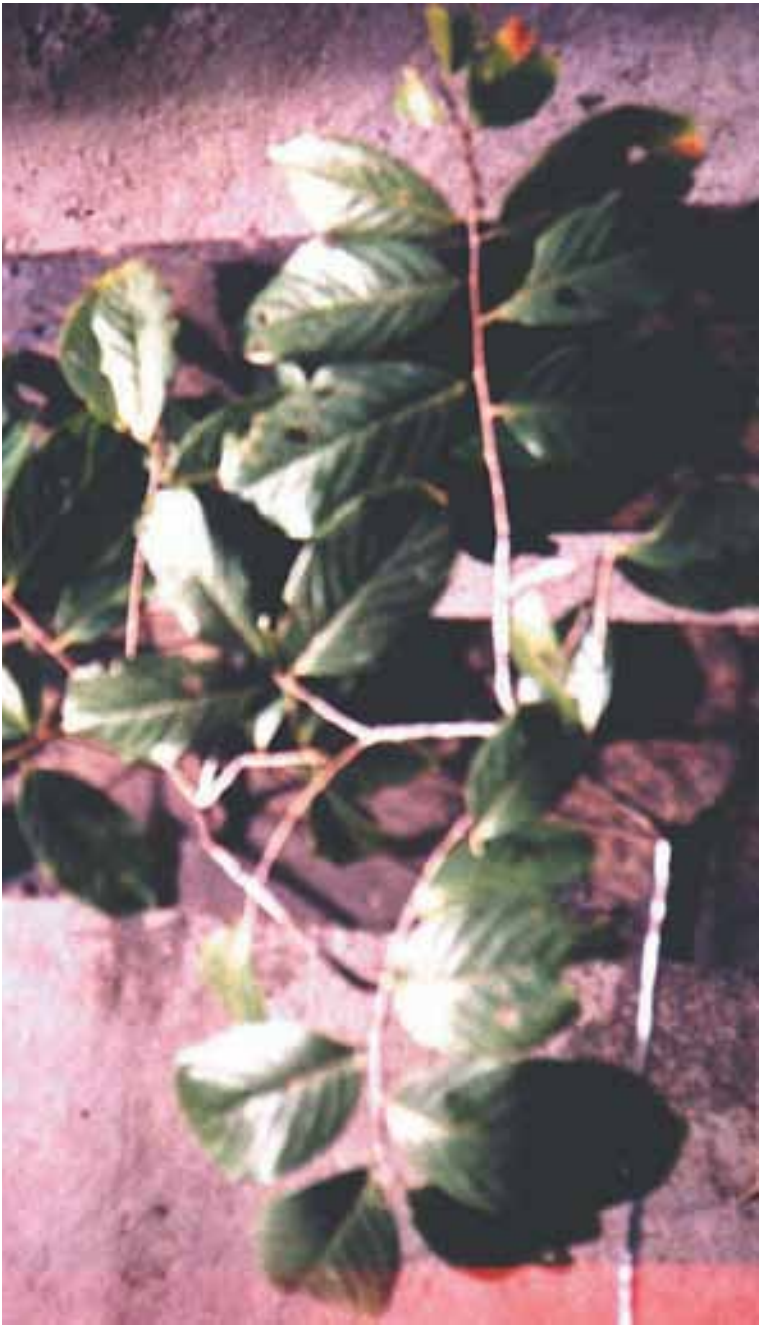

***Bridelia minutiflora* Hook f.**

***Bridelia minutiflora* Hook f.** **Euphorbiaceae**

Local Name : kasitabolo (Gaire, Central Province)
English Name : PNG ivorywood.

Description. Tree to 15 m tall. Branchlets glabrous, lenticels raised and very conspicuous on one but last generation branches. Leaves alternate, oblong-elliptic, when young a striking bright green. Flowers monoecious, very small, in axillary fascicles. Male flowers: Calyx and corolla 5-partile, stamens 5(-6), filaments united below to a column, which has a rudimentary ovary on its apex; upper filaments free. Female flowers: Perianth as for the male flowers; Ovary 2-celled, cells 2-ovulate, styles 2. Fruit berry-like, globose-ellipsoid, about the size of a small pea, black-violet.

Habitat. Lowland rainforests.

Distribution. South East Asia to Northern Queensland, Australia, and Solomon Islands.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1]. Leaves are heated over a fire until soft and applied to a sore or ulceration.

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1) Holdsworth D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 13.

***Bryophyllum pinnatum* (Lam.) Kurz.**

***Bryophyllum pinnatum* (Lam.) Kurz.** **Crassulaceae**
(syn. *Kalanchoe pinnata* (Lam.) Pers.

Local Names : moiatiti (Aroma, Central Province); solomon (Vanapa, Central Province); ine renge idu ndronndron (Kurti, Manus Province); maguliwai (Rigo, Central Province).

English Names : never die, wonder of the world, air plant, miracle leaf.

Description. A sub-shrub with succulent branches and leaves, 50-100 cm tall. Stem purple with green flecks, slightly woody. Leaves opposite, and usually in pairs, elliptic-ovate, margins crenate with regular, blunt or rounded teeth, about 10 cm long and 5-6 cm broad. Flowers large, nodding or pendulous, in cymose panicles, white, greenish or orange-red. Calyx cylindrical or 4-angled, inflated, shortly 4-lobed, spreading; corolla united, tubular, concentrated above the base, a little longer than the calyx, and also 4-lobed; stamens 8 in 2 whorls; carpel 4, each narrowed to a long style. Follicles 4, many-seeded. Flowering period is between December and March.

Habitat. More abundant in warm and dry areas; thrives in rocky terrain with little water.

Distribution. Widely distributed throughout Papua New Guinea, cultivated in gardens and around houses as ornamental trees and for medicinal uses.

Constituents[1-8]. Bryophyllin B & C, bryotoxin C, bersaldegenin-3-acetate, bersaldigenin-1,3,5-orthoacetate, 22-dehydrobrassicasterol, bryophyllol, campesterol, cholesterol, clerosterol, 24-epiclerosterol, clionasterol, codisterol, isofucosterol, peposterol, beta-sitosterol, stigmasterol, alpha- and beta-amyrin, bryphollone, bryophynol, pseudotaraxasterol, astragalin, para-coumaric acid, kaempferol, luteolin, quercetin, rutin, bufadienolide, acetic acid, alkanes, 4-hydroxybenzoic acid, caffeic acid, ferulic acid, fumaric acid, gallic acid, malic acid, oxalic acid, leucinopine, protocatechinic acid, succinic acid, syringic acid, *n*-triacontane.

Biological Activity[9-17]. Antibacterial, antiviral, cytotoxic, antimutagenic, vasoconstrictor activity, analgesic, antidiarrhoeal, antifungal, CNS depressant, antipyretic, anti-inflammatory, antileishmaniasis, immunosuppressant, antiulcer, spasmogenic, antitussive.

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***Calophyllum inophyllum* L.**

***Calophyllum inophyllum* L.** **Clusiaceae**

Local Names : calapuline; beach calophyllum (Pidgin); pudeu (Kurti-Andra, Manus); kwakwamu (Doubu, Milne Bay); vitau (Meramera, West New Britain); oroto (Kokopo, East New Britain).

English Name : alexandrian laurel.

Description. Medium sized tree, 10- 25 m tall; trunk short, 1-2 m in diameter, usually partly lying on the ground, the branches obliquely or horizontally extending over the sea. Trunk exudes white latex when bruised. Leaves opposite, leathery, shining, oblong-elliptical, round to cuneate at base, rounded, retuse or subacute at apex, lateral nerves very fine and parallel. Flowers in axillary racemes, white, 4 sepals and 8 petals. Fruit spherical to obovoid, globose, with fairly thin, compact outer layer, greyish- green. Flowers and fruits available throughout the year.

Habitat. Common along beaches and seashores but sometimes found inland on sandy soils up to about 200 m altitude.

Distribution. Distributed around coastal areas of Papua New Guinea and quite common on islands.

Constituents[1-5]. Amentoflavone, epicatechin, leucocyanidin, myricetin and glucoside, pyranoamentoflavone, quercetin, quercetrin, leucocyanidin, beta-amyrin, canophyllic acid, canophyllal, canophyllol, canophyllum, epifredelanol, friedelin, erythrodiol-3-acetate, sixteen xanthones including buchanaxanthone, calophyllumin A, caloxanthones A-E, euxanthone, jacareubins, macluraxanthone, apetalolide, calaustralin, calophyllolide, costatolid, inophyllolide, 12-dihydro-inophyllolide, inophyllums, ponnalide, calophyllic acid, isocalophyllic acid, peudobrasilic acid, calophynic acid, cinnamic acid, inophyrone, campesterol, cholesterol, beta-sitosterol, stigmasterol, inophenic acid, inophyllic acid, arachidic acid, erucic acid, oleic acid, palmitic acid, palmitoleic acid, stearic acid.

Biological Activity[6-10]. Antibacterial, antifungal, antiyeast, antiviral, anti-HIV, hypotensive, spasmolytic, semen coagulation, nematocidal (weak activity), fish poison, pisicidal, anticrustacean.

Traditional Uses[11-13]**.** The milky latex from the leaves is diluted with water and the solution applied to irritant eyes and even sore. Decoction prepared from the dried leaves is used externally for skin infection, cuts and sores. Fresh leaves are heated over a fire until soft and the warm compress is applied on to tropical ulcers and boils.

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***Canarium indicum* (L.)**

***Canarium indicum* (L.)** **Burseraceae**

Local Names : uele (Ubili,West New Britain); galip (Pidgin; Kuanua, East New Britain); angal (Tarawe, Siassi Island).

English Names : java almond, south-sea almond, nangai nuts, kenari.

Description. Tree, 15-30 m tall, with branchlets terete, thick, puberulent when young and glabrescent. Leaves and leaflets are oblong-obovate, oblong or oblong-lanceolate, alternate, imparipinnate, glabrous, base inequilaterally acuminate. The inflorescences terminal, broadly paniculate, minutely pubescent, penduncles more or less angular, up to about 0.7 cm thick. The male flower is about 1 cm long with the female flower about 1.5 cm long with a shallow receptacle. Infructescences large, with well developed fruits, pendicles thick, fruiting calyces spreading, often the margin slit up, densely, pubescent, especially on inner surface. Fruits ovoid, round or more or less triangular glabrous, purple to black when ripe, pericarp faintly coarsely wrinkled, thick and fleshy. Kernels edible. Tree flowers in June.

Habitat. Lowland, mixed forest hill and ridge forests.

Distribution. Grows wild and found almost everywhere in Papua New Guinea, sometimes cultivated.

Constituents[1]. Alpha- and beta-amyrin, car-3-ene, carvone, elemicin, elemol, limonene, terpineol.

Biological Activity[2,3]. Xanthine oxidase inhibition (weak activity), 5-alpha reductase inhibition, tyrosinase inhibition (weak activity).

Traditional Uses[4]. Dried old nut is ground with some cooked taro oil. Oil is drunk and remainder is eaten to induce sterility.

References:

1) Pernet, R., *Lloydia*, (1972), *35* (3), 280-287.
2) Shimizu, K., *et al., Planta Med.*, (2000), *66* (1), 16-19.
3) Shimizu, K., *et al., Planta Med.*, (1998), *64* (5), 408-412.
4) Holdsworth, D., *Int. J. Crude Drug Res.*, (1984), *22* (3), 111-119.

***Capsicum frutescens* L.**

***Capsicum frutescens* L.** **Solanaceae**

Local Names : lombo (Pidgin); ule hekini (Vanapa, Central Province); kodukarava (Rigo, Central Province).

English Names : chilli pepper, red pepper, paprika, cayenne pepper.

Description. Herbaceous, glabrous, coarse perennial erect herb or small subshrub, 1-2 m tall. Leaves alternate, simple, often –3 together and unequal, ovate-elliptic, and pointed with entire margins. Flowers are usually borne singly in leaf and branch axils, white to violet colour petal, five parted. Fruit erect, always shiny, a dry to fleshy red elongated berry with numerous flattened seeds which are hot tasting. Flowers and fruit available throughout the year.

Habitat. Gardens, disturbed sites, weedy habitats, clearing secondary sites, sometimes grown in house yards, often cultivated.

Distribution. Well distributed all over Papua New Guinea from sea-level to lower montane with well drain fertile soil.

Constitents [1-5]. Vitamins A & B, ascorbic acid, caffeic acid, chlorogenic acid, cinnamic acid, paracoumaric acid, ferulic acid, caproic acid, isohexanoic acid, lauric acid, palmitic acid, acetic acid, butyric acid, isobutyric acid, mevalonic acid, valeric acid, isovaleric acid, capsaicin and capsaicin derivatives, 3-acetamido-2-methyl tetradecane, novivamide, zucapsaicin, vanillylamine, capsicum sapogenin cay-1.

Biological Activity[6-15]. Causes sensitisation of the skin; diuretic, antinematodal, mutagenic, antibacterial, gastric secretory stimulant, antivenin (weak), antioxidant, antihypercholesterolemic, toxic, haemotoxic, clastogenic, spasmolytic, antifungal, molluscidal, insect feeding stimulant.

Traditional Uses[16-19]. The ripe, red fruit is squeezed and rubbed onto body pains, especially chest pain, to act as an analgesic. The fruit and leaves are made into poultices and used to treat ulcer and aching heads. The juice from pounded fruit is cooked and added to food to treat pneumonia, which develops following an attack of malaria. Mature fruits are soaked into cold water and solution drunk to treat asthma.

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***Carica papaya* (L)**

***Carica papaya* (L)** **Caricaceae**

Local Names : popo (Pidgin); kowai (Wagawaga, Milne Bay); wayoye (Goodenough Island, Milne Bay); pawpau (Vunaulela, East New Britain); bambusi (Agenehembo, Northern Province); mamioko (Darutue, Kieta, Bougainville Island); tapeka (Kokopo, East New Britain); loku (Rigo, Central Province).

English Names : pawpaw, papaya, melon tree.

Description. Soft-wooded, fast growing tree of 4 to 5 m high, swollen trunk, straight, branches out without explicit design, containing white latex in all parts. Stem with distinct leaf scares and spongy fibrous tissues; leaves spirally arranged palmately–lobed, clustered near apex of trunk. Flowers white, male or female or hermaphrodite, axillary, found on separate trees. Male flowers on axillary panicles and the female flowers solitary or in racemes. Fruit vary in size and colour, but usually large, fleshy, ovoid-oblong to nearly spherical, or pyriform, cylindrical or grooved, yellow to orange with numerous small black seeds. Fruit edible, sweet with mild and pleasant flavor. Fruits and flowers available throughout the year.

Habitat. Naturalized around gardens or clearing near homes, secondary forest, from sea levels to around 1600 m, widely cultivated singly or in plantations.

Distribution. Native to South America, now cultivated throughout the tropics including South Pacific for its fruit.

Constituents[1-9]. Papain, chymopapain, chymopapain A, lysozyme, papaya peptidase A, papaya proteinase inhibitor, protease, proteinase, caffeic acid, capraine, dehydrocapraine I & II, pseudocapraine, carpamic acid, carpasemine, myosmine, nicotine, nicotinic acid methyl ester, choline, pyridine, cystine, 5-hydroxytryptamine, carposide, 6,7-epoxylinallol, ascorbic acid, galacturonic acid, benzyl glucosinolate, benzylisothiocyanate, phenyl acetonitrile, campesterol, 5-dehydroavenasterol, 7-dehydroavenasterol, cholesterol, stigmasterol, quercetin, carotene, lycopene, cryptoxanthin, violaxanthin, pectin, cycloartenol, cyclobrenol, squalene, behemic acid, arachidic acid, caproic acid, lauric acid, hexadeconoic acid, lignoceric acid, linoleic acid, linolenic acid, myristic acid, myrstoleic acid, octadecadienoic acid, citric acid, octanoic acid, oleic acid, palmitic acid, palmitoleic acid, malic acid, tartaric acid, styrene, fatty acids, fixed oil.

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***Cassia alata* L.**

***Cassia alata* L.** **Fabaceae (Caesalpiniaceae)**

(syn. *Herpetica alata*; *Senna alata* (L.) Roxb.)

Local Names : kabaiura (Harigen, Sepik); aaku pero (Siwai, South Bouganville); orere (Awala, Nothern Province); wasemu (Ferguson Island, Milne Bay); levoauna (Gaire and Tubusereia, Central Province); tilivur (Kokopo, East New Britain Province); unahi maluana (Vanapa, Central Province).

English Names : ringworm bush, roman candle tree.

Description. Shrub or small tree 2-5 m tall, with horizontal branches. Leaves pinnate, pinnately compound or paripinnate, alternate, with 8–12 pairs of oblong to obovate leaflets. Twigs and petioles usually reddish-brown. Flowers in terminal racemes, corolla bright yellow to golden yellow, inward sloping, hemispherical. Fruit a legume (pod-like), 15-18 cm long. Seeds numerous and black. Flowers in the cold season (May – August).

Habitat. Grows wild in rainforest and wet habitats, swamp edges and road sides, sometimes cultivated in gardens.

Distribution. Common, widespread, established throughout the tropics and in Papua New Guinea from sea level up to about 1000 m altitude.

Constituents[1-7]. Chysophanic acid, isochrysophanol, physcion, emodin, aloe emodin, rhein, physcion monoglucoside, rhein methyl ester diacetate, alquinone, alarone, alatonal, kaempferol, luteolin, rhamnetin glycoside, rhein methyl ester diacetate, 4,5-dihydroxy-2-hydroxanthrome, 4,5-dihydroy-1-hydroxyanthrone, physcion monoglucoside, aloe emodin glucoside, beta-sitosterol, stigmasterol, kaempferol, 28-iso-avenasterol, luteolin, lectin, santal, astragalin, dalbergin, daucosterol, 2,6-dimethoxybenzoquinone, deoxycoelulatin, alatinone, linoleic acid, oleic acid, palmitic acid, glycerol.

Biological activity[8-12]. Purgative and laxative, antifungal, antibacterial, antitumor, analgesic, antiinflammatory, diuretic, wound healing acceleration, antihyperglycemic, antiyeast, antispasmodic, insecticidal, anticlastogenic, choleretic, antihistamine.

Traditional uses[13,14]. The use of this plant is widespread throughout Papua New Guinea. To treat g*rille* (*Tinea imbricta*), parasitic skin diseases, and ringworms leaves are squashed or crushed until soft and rubbed onto the affected skin area. For scabies and rashes crushed leaves are daily rubbed onto the skin. A decoction of the leaves, bark and yellow flowers is used to treat eczema.

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***Casuarina equisetifolia* L.**

***Casuarina equisetifolia* L.**

Casuarinaceae

(syn. *Casuarina litorea L. ex Fosberg & Sachet*)

Local Names : yara, yar (Pidgin); owalu (Ubili, West New Britain Province); musim (Kurti, Manus Province); manar (Yangoru, East Sepik Province).

English Names : casuarina, ironwood, australian pine, she-oak, horsetail tree, beefwood

Description. Medium large evergreen tree to 30 m tall; branches long, slender, the tips often drooping, pubescent. Leaves minute, scaly, giving the branchlets a pine-needle-like appearance. Bark initially smooth, later developing scaly strips, gray to reddish brown. Flowers unisexual, small, 1-6 cm long, and inconspicuous; male flowers borne in spikes, female flowers borne in globose heads. Fruit ovoid, cone-like, with numerous pointed scales, reddish-brown in colour, enclosing many small winged nuts 6-7 mm long. Flowers and fruit available throughout the year. This species is a flowering plant, but often mistaken for a type of pine tree.

Habitat. Found mostly on sandy beaches or on rocky coastal areas and often planted inland on the mountain areas. Common coastal species.

Distribution. South East Asia to Australia and the Pacific. It is now one of the most common trees on frost-free beaches anywhere in the world. It is distributed in all lowland regions of Papua New Guinea.

Constituents[1-8]. Beta-amyrin, 4-hydroxybenzoic acid, betulin, erythrodiol, germanicol, glutinol, glutinol acetate, glutinone, lupenone, lupeol, oleanolic acid, taraxerol, gallicin, campesterol, cholesterol, daucosterol, beta-sitosterol, stigmasterol, (+)-gallocatechin, juglanin, hyperoside, kaempferol and glycosides, miquelianin, nictoflorin, quercitrin, isoquercitrin, reynoutrin, rutin, trifolin, afzelin, (+) catechin, catechol, casuarine, protocatechuic acid, gallic acid, gentisic acid, hydroquinone, syringic acid, vanillic acid, para-coumaric acid, ellagic acid, glycine, leucine, tryptophan, valine, asparagine, glutamine, shikimic acid, tannin.

Biological Activity[6,9-11]. Hypoglycemic, antifungal, molluscicidal, cytotoxic, antiviral, xanthine oxidase inhibition.

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

***Catharanthus roseus* (L.) G. Don** **Apocynaceae**
(syn. *Ammocallis rosea* (L.) Small; *Lochnera rosea* (L.) Rchb.; *Vinca rosea* L.)

Local Names : pua na purpur (Kuanua, East New Britain); palwa theresia (Kurti, Manus Province); falava (Rigo, Central Province).

English Names : rose periwinkle, madagascar periwinkle, old-maid.

Description. Herb to 30 cm high, glabrous, subwoody at the base, and profusely branched. Leaves opposite, smooth, oblong-oval, blunt, or rounded at the apex, short petioled, 15-40 x 6-15 cm. The broken stem exudes a milky latex sap. Flowers borne in upper axils, tubular, 5-lobed; colour may be white with a yellow-eye, white with a crimson eye, or lavender pink with a crimson eye. Fruits green with longitudinal grooves. Flowers bloom all the year.

Habitat. Arid coastal locations; near houses and in coconut plantations.

Distribution. Native of Madagascar, the plant is naturalized in most of the tropical and subtropical world. It is naturalized and widely distributed and cultivated as an ornamental plant in Papua New Guinea. Cultivated widely in the tropics.

Constituents[1]. Plant contains over 100 alkaloids including vincristine, vinblastine, vinleurosine, vinrozidine, vincerine, catharanthine, ajmalicine, serpentine, vincadioline, vincaline, vincamicine, vincarodine, vincathicine, vinceine, vincolidine, vincoline, vincubine, vindolicine, vindolidine, vindoline, vindolinine, vindorosine, vinesesine, vinosidine, vinsedicine, vinsedine, virosine, vivaspine, yohimbine, etc.

Biological Activity[1]. Animal repellent, antibacterial, antidiuretic, antifertilty, antihypercholesterolemic, antihyperglycemic, antihypertensive, anti-inflammatory, antimitotic, antimutagenic, antispasmodic, antitumour, CNS depressant, hyperglycaemic, larvicidal, smooth muscle relaxant, toxic effect (general).

Traditional Uses[2]. Decoction of the leaves is taken orally to treat mouth cancer. Hot water extract of the roots is taken orally for stomachache. The whole plant is boiled in water, cooled and solution used to bathe a patient with scabies. Leaves are heated gently on a fire and massaged on the affected parts of the body to reduce swelling.

References:

1) Ross, I.A., Medicinal Plants of the World, (1999), Humana Press, Totowa, New Jersey; 109-118.
2) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Centella asiatica* (L.) Urban**

***Centella asiatica* (L.) Urban**

Umbelliferae

(syn. *Hydrocotyle asiatica* L.)

Local Names : yotubukona (Trobrian Island, Milne Bay); milaina, pal-a-karkar (Kokopo, East New Britain Province).

English Names: indian pennywort; asiatic pennywort, gotukola.

Description. Small trailing or prostate, perennial aromatic thin herb without stem with rooting at the joints. Short rhizomes and long runners present. Leaves round or kidney-shaped, crenate, with 7-9 forked nerves, forming rosettes, alternate, tufted at each node. Inflorescences 2 to 4, small white or reddish flowers on short stalks, in single umbels. Fruit a mericarp, tuberous, orbicular to ellipsoid, small and compressed up to 5 mm broad, yellowish-brown. Flowers and fruits are usually available throughout the year.

Habitat. Common in lawns, open areas, on sandy foreshores, pastures, shaded road and trailside, and fern-covered ridges from sea level to lower montane.

Distribution. Distributed throughout the tropical regions.

Constituents[1-5]. Asiatic acid, 6-beta-hydroxyasiatic acid, asiaticoside, asiaticoside B, betulinic acid, isobrahmic acid, brahminoside, brahmoside, centetellasaponin B to D, centelloside, centoic acid, indocentelloside, indocentic acid, ursane, madasiatic acid, madecassic acid, madecassoside, sceffoleside A, isothankunic acid, isothankuniside, beta-ascoradiene, bicycloelemene, beta-bisabolene, deltacadinene, caryophyllenoxide, alpha- and beta-chamigrene, alpha-copaene, beta-elimene, transbetafarnesene, farnesol, germacrene D, epiglobulol, nerolidol, beta-sesquiphellandrene, widdrene, borneol acetate, camphene, geraniol, limonene, linalool, myrcene, nerol, phellandrene, alpha- and beta-pinene, terpinene, terpineol, campesterol, daucosterol, beta-sitosterol, stigmasterol, stigmasterol glucoside, stigmasterone, astragalin, kaempferol, populnin, quercetin, isoquercetin, hydrocotyline, pyridine, vanillic acid, centellose, lipids.

Biological Activity[6-12]. Anti-inflammatory, wound healing, antibacterial, antimicrobial, antifungal, anticonvulsant, allergenic, antiamoebic, antifertility, antispasmodic, antiviral, analgesic, antipyretic, antileprotic, antistress, antidepressant, antitumour, antiulcer, CNS depressant, cytotoxic, hypotensive, antihepatotoxic, antidiuretic, vasodilator, anticonvulsant, antifilarial, immunostimulant, antimutagenic, insecticidal, skin impovement effect, larvicidal, hair growth stimulant, beta-glucuronidase inhibition.

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***Clematis clemensiae* Eichler**

***Clematis clemensiae* Eichler** **Ranunculaceae**

Local Names : tatratatara (Sasembata, Northern Province); didila apapena (Tawala, Milne Bay); saihuna (Yangoru, East Sepik Province).

Description. A slender vine, leaves opposite, dark green above, light green below. trifoliate, ovate, petioles to 3cm long, leaflets ovate, mostly 6-12 cm long, margins entire. Flowers in a diffuse panicle, sepals 4, white, about 1cm long.

Habitat. Found at forest margins, stream sides, or re-growth, and along roads.

Distribution. Endemic, widespread and common in Papua New Guinea from an altitude of 100 to 2000 m.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1-3]. Dried leaves are crushed and sniffed rapidly to relieve headache. The crushed leaves are sniffed to clear the nose. Fresh leaves are crushed in a small quantity of water, and the clear solution is drunk to treat a cough.

References:

1) Holdsworth, D. and Wamoi, B., *Int. J. Crude Drug Res.*, (1982), *20* (4), 169-181.
2) Holdsworth D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 16.
3) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Cleome viscosa* L.**

***Cleome viscosa* L.** **Capparidaceae**

Local Names : not recorded (Kamali, Central Province).
English Names : tick-weed, asian spider flower.

Description. An annual, sticky hairy weed, viscid, 40-80 cm high. Leaves alternate, palmately 3-5 foliate; leaflets oblong-obovate. Flowers yellow, solitary in the upper axils. Capsule glandular-hairy. Sepals 4, deciduous; petals 4, sub equal; stamens 4-20; ovary sessile. Fruit a many-seeded capsule, to 8 cm long, splitting longitudinally. Seed roughly circular, about 1.3 mm in diameter, seed coat brown, ridged.

Habitat. Along roadsides, pastures and abandoned gardens.

Distribution. Native in warm regions from Africa to Australia, and naturalized in America. A widespread weed occurring in most parts of Papua New Guinea at low altitudes.

Constituents[1-4]. Amino acids, beta-amyrin, lupeol, behenic acid, diterpenes, cleomaldeic acid, cleomeolide, (+)-cleomeolide, viscosic acid, viscosin, cleomiscosin A-D, fraxetin, linoleic acid, myristic acid, oleic acid, palmitic acid, stearic acid, glucocleonin, methyl isothiocyanate, glucocapparin, glucocleomin, stigmasterol, alpha-l-rhamnopyranoside-ergost-5-en-3-beta-ol, *n*-heptacosane, *n*-hexacosane.

Biological Activity[5-10]. Antibacterial, uterine relaxation effect (weak activity), analgesic, barbiturate potentiation, hydrocholeretic, antifungal, antidiarrhoeal.

Traditional Uses[11-12]. A woman can increase her fertility by chewing the leaves for a week. Childless women chew the leaves with betel nut to facilitate conception.

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3) Kosela, S., *et al., Aust. J. Chem.,* (1985), *38* (9), 1365-1370.
4) Srivastava, S.D., *Indian J. Chem.,* (1982), *21B,* 165-167.
5) Lin, S.R. and Chen, A.H., *Taiwan K'o Hsueh,* (1975), *29* (2), 40-44.
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8) Afaq, S.H., *et al., Indian J. Pharm. Sci.,* (1984), *46* (2), 91-93.
9) Songsak, T. and Lockwood, G.B., *Fitoterapia,* (2002), *73* (3), 209-216.
10) Parimala Devi, B., *et al., Phytomedicine,* (2002), *9* (8), 739-742.
11) Holdsworth, D. and Lacanienta, E., *Quart. J. Crude Drug Res.,* (1981), *19,* 141-154.
12) Holdsworth D.K., *Medicinal Plants of Papua New Guinea,* (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 17.

***Cocos nucifera* L.**

***Cocos nucifera* L.** **Arecaceae**

Local Names : kokonas (pidgin); chalikei (Bundralis, Manus); niu (Normanby Island, Milne Bay); lama (mature coconut) (Kokopo, East New Britain); tirip (young coconut) (Kokopo, East New Britain); umu (Agenehembo, Northern Province).

English Name : coconut

Description. Dioecious or monopodial palm tree with long, narrow, straight or curved trunk to 30 m tall. Foliage leaves all attached to the apex of the trunk with each leaf paripinnate and up to or exceeding 6 m in length. Flowers and fruit borne in drooping clusters arising from between the lower leaf petioles. Fruit a large green, brown, or reddish fibrous drupe up to or exceeding 30 cm in length. The seed is the coconut spherical in shape with a hard shell that encloses an oil rich albumen and the coconut milk. Flowers and fruits are available throughout the year.

Habitat. A lowland species that grows along seashore to moderate elevations about 1000 m in inland areas and most abundant near human settlement.

Distribution. Widely cultivated and grown mostly along the coastal regions of Papua New Guinea.

Constituents[1-6]. Saccharose, sucrose, glucose, myoinositol, scyllo-inositol, sorbital, diphenylurea, aliphatic alcohols, ketones, leucoanthocyanins, 2-propyleneglycol, stachyose, bongrek acid, xylan, glucosan, aliphatic fatty acids, polyphenols, ferricopnin, cocositol, mono and sesquiterpenes, alpha- and beta-amyrin, campesterol, stigmasterol, beta-sitosterol cycloartenol, 2,4-methylenecycloartenol, squalene, alpha-tocopherol, lipids, tannin, and alkaloids: ligustrazine and 2,3,5-trimethylpyrazine.

Biological Activity[7-14]. Diuretic (coconut milk), tumour-promoting effect, allergenic, arrhythmogenic, hemotoxic, hypotensive, weak nephrotoxic, hypercholesterolemic, cytotoxic (seed oil), pyretic, antiyeast, antifungal, weak antibacterial, spasmogenic, estrogenic, active as a short term rehydration treatment.

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***Codiaeum variegatum* (L.) Blume**

***Codiaeum variegatum* (L.) Blume** **Euphorbiaceae**

Local Names : kai (Manus Island); tubuloko (Koulupu, Central Province); marmara (Madine, New Ireland); baba'a (Vanapa, Central Province); simpika (Kieta, North Solomons Province); babaka (Alotau, Milne Bay).

English Name : croton.

Description. An ornamental shrub, 1-6 m tall. Leaves alternate, simple, leathery, of variable shapes, size and colour, depending on cultivar. Flowers if present are monoecious and borne in racemes. Fruit a subglobose, 3-lobed schizocarp. Seed black and shining. Flowers and fruit may not develop on some forms (cultivars), whereas others may bear flowers and fruit throughout the year.

Habitat. Cultivated only from sea level to mid montane, although a closely related variety *C. variegatum var. moluccanum* (Dec.) Muell. occurs commonly in the wild. Otherwise wide spread in undisturbed land and primary forest.

Distribution. Cultivated around village houses and widely distributed in all parts of Papua New Guinea.

Constituents [1-5]. Choline, acetylcholine, propionylcholine, cis- and trans-p-coumaric acids, cis- and trans- ferulic acids, 4-hydroxybenzoic acid, protocatechuic acid, vanillic acid, solanesol, ellagic acid, fructose, glucose, rhamnose, sucrose.

Biological Activity[3,6-10]. Antitumour, cytotoxic, virus activation, antifungal, molluscidal, antmycobacterial.

Traditional Uses[11,12]. The croton root is chewed with betel nut to treat stomachache and to give temporary relief from toothache when applied to the affected area. A patient with fever is made more comfortable when bathed with the green solution of the boiled leaves. Sores and fungal infections are treated by direct application of the sap squeezed from the leaf or obtained from incision of the bark. Snakebites are treated by giving the victim a drink of leaf sap and rubbing it into the bite after cutting the affected flesh with a sharp knife. Entire plant is said to produce abortion when taken as a drink. Croton leaves are chewed and swallowed by women as a contraceptive. Crushed root is mixed with volcanic sulphur and the mixture is chewed once with betel nut to induce sterility in a woman. Barks of the croton and *Albizzia falcataria* are scraped and mixed using water and solution drunk by patients suffering from prolapse of the rectum.

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***Colocasia esculenta* (L.) Schott**

***Colocasia esculenta* (L.) Schott** **Araceae**
(syn. *C. antiquorum* Schott)

Local Names : ki'ikata (Siwai, Bougainville, North Solomons Province); kerowai (Buin, North Solomons Province); maa (Wapenamanda, Enga); ina (Yabiufa, Eastern Highlands).

English Names : taro, wild taro, elephant yams, coco-yam.

Description. A variable species of perennial herb to 1.5 m tall with thick shoots from a large corm; slender stolons also often produced, along with off-shoot corms. Leaves all basal from a corm, fleshy, erect, ovate, acuminate, blades to 60 cm long and 50 cm wide, arrowed shaped, base cordate or hestate, upper surface velvety green to bluish-black between primary veins; petioles large, succulent, often purplish near top. Flowers tiny, densely crowded on upper part of fleshy stalk, with female flowers below and male flowers above. Fruit a small berry, in clusters on the fleshy stalk.

Habitat. Widely cultivated, occurs mainly in moist coastal areas, grows in colonies along creeks or the edges of swamp.

Distribution. Originating from tropical Asia, where it is commonly grown for food, taro is a very important plant in the Pacific Region and cultivated in all parts of Papua New Guinea.

Constituents[1-3]. Starch, vitamin C, thiamine, riboflavin, niacin, oxalic acid, calcium oxalate, pelargonidin, 3-glucoside, cyanidin 3-rhamnoside, apigen, cyanidin 3-glucoside, 3',4'-dimethoxyluteolin, hydroxycinnamoyl amides, benzaldehyde-3,4-di-*O*-beta glucoside, carotenes, colocasia sterols, fructose, glucose, and sucrose.

Biological Activity[4]. Corm contains oxalate, a throat irritant; antibacterial, hypotensive.

Traditional Uses[5,6]. Leaves are heated over a fire and applied directly to boils. Tuber is used for sores and burns. The tuber of a short-leafed variety of taro is heated over a fire, peeled and taken internally to relieve diarrhoea. The green stem of the wild taro is used to kill intestinal worms in the body. The leaves of wild taro are heated over a fire and massaged on swollen breasts.

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

***Cordyline fruticosa* (L.) Chev.** **Agavaceae**
(syn. *Cordyline terminalis* (L.) Kunth)

Local Names : tanget (Pidgin); tesewa (Lufa, Eastern Highlands); kava, kuatbu (Kanganaman, Sepik); si'i (Manus Island); elaivi (Central Province); rir tapisu (Buka, North Solomons Province); bidowi (Alotau, Milne Bay).

English Name : palm lily.

Description. A branched or un-branched shrub of about 2-5 m in height arising from a large edible tuberous roots. Leaves smooth, tough, shiny dark green to red coloured. Spirally arranged and borne in terminal clusters, elongate and lanceolate, parallel veined, slanting about 80 cm long from the midrib. Flowers borne in compound spikes or numerous in large panicles subtended by leafy pinkish bracts, white to pink colour. Fruit globose or a small red berry with small black seeds. Flowers and fruits available throughout the year.

Habitat. Common in garden areas, house yards, ceremonial grounds or as ornamental plants around house.

Distribution. Common from coastal to montane forest of Papua New Guinea**.**

Constituents[1-3]. Quinic acid, shikimic acid, linoleic acid, sarsasapogenin, smilagenin, tyramine, sterols, imidiazole alkaloids.

Biological activity[5]. Weak cytotoxic activity reported in the aqueous extract of the leaves.

Traditional uses[4,6-8]. Leaf petioles are crushed, diluted and drunk to control diarrhoea and dysentery, and to relieve stomachache. Leaf is squeezed with lime and rubbed onto sore breast. The plant is also used to heal wounds and stop stomach bleeding. Leaves and stem are heated and placed on fresh wounds. The roots are chewed with betel nut, lime and mustard and rubbed on the body of the patient suffering from any unexplained sickness.

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***Costus speciosus* (J. König) Sm.**

***Costus speciosus* (J. König) Sm.** **Zingiberaceae**

Local Names : tomtom (Kuanua, East New Britain); (Vunakaur, East New Britain); saiwaha (Yangoru, Esat Sepik Province); mang-mang (Siwai, Bougainville); totomuho (Tawala, Milne Bay Province); malamalai (Vunakaur, East New Britain).

English Names : crepe ginger, crape ginger, wild ginger, malay ginger.

Description. Perennial herb or shrub; stem 1-2.5 m tall, in the upper parts often spirally twisted. Leaves elliptic or obovate, alternate, up to 20 cm long or more, about 4-6 cm wide, pubescent beneath; shortly petiolate; inflorescence sub-terminal, large, to 10 cm long, with bracts about 1.5 cm long. Flowers white, the calyx red, corolla white, 5-6 cm long; stamen crest yellow; capsule red. Seeds black with white fleshy aril. Flowers in July / August. Fruits in August / September.

Habitat. Sub-margins and open places, abandoned garden sites and grassland with fewer trees; grows well in partial shade and well-drained moist soil.

Distribution. Native to Papua New Guinea, widespread in the tropics, and commonly found everywhere in Papua New Guinea.

Constituents[1-9]. Saponins and sapogenins, costusoside I & J, dioscin, dioscin prosapogenin A & B, protodioscin, diosgenin and diosgenin derivatives, gracillin, tigogenin, cadinene, carvacrol, 1,8-cineol, methyl ester paracoumaric acid, cycloartanol, cycloartenol, 31-norcycloartanone, cycloaudenol, lanosterol, daucosterol, beta-sitosterol, stigmasterol, lipids, lauric acid, linoleic acid, myristic acid, oleic acid, palmitic acid, stearic acid, plastoquinone, vanillic acid.

Biological Activity[10-15]. Antiviral, hypotensive, estrogenic, choleretic, CNS depressant, diuretic, spasmolytic, uterine relaxant, hyprercholesterolemic, hyperlipidemic, antifungal, hypoglycemic, antibacterial.

Traditional Uses[16-18]. Stem sap is squeezed into a cup with water and drunk to relieve constipation and catarrh. A similar preparation is drunk once daily for a week for the treatment of swollen breasts for females and swollen scrotums for the males. A handful of leaves is collected, rubbed between the hands and then dipped into the water; the solution is strained and drunk to treat constipation. The young leaves are heated over the fire, mashed and placed on a sore to heal. The roots are peeled and placed on the infected tooth for an hour to provide relief from toothache.

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***Crinum asiaticum* L.**

***Crinum asiaticum* L.** **Amaryllidaceae**

Local Names : morabau (Kabulula, Trobriand Islands); vule (Meramera, West New Britain); balel (Buka, North Solomon Province); gawagawa (Alotau, Milne Bay).

English Names : crinum, spider lily, antidote lily.

Description. Stout perennial herb or robust rosette-like herb arising from an underground bulb. Leaves fleshy, evergreen, linear, parallel veined, about 1 m long, margins entire and undulate, arising from a common atop a short erect rhizome. Inflorescence in terminal umbel with two spathaceous bracts. Stalk solid, slightly compressed; flowers large, tubular, white, fragrant, with yellow anthers and a purple style. Fruit subglobose, yellowish-green with large seeds. Flowers and fruits available throughout the year and most frequently from June to August.

Habitat. Seashores, upper reaches of sandy beaches, and commonly planted in villages or urban areas as ornamental plants.

Distribution. Widely distributed in the coastal areas in South Pacific; grows wild but also cultivated mostly for its showy flowers.

Constituents[1-8]. Ambelline, 1,2-beta-proxyambelline, isocraugsodine, criasbetaine, crinamine, crinasidine, crinasiatine, crinidine, crinine, flexinine, haemanthamine, hippadine, lycorine and its glucoside, pratorimine, trisphaeridine, ungeremine, criasiaticidine A, n-dimethyl galanthamine, powelline, crinisine, cycloartenol, cyclolaudenol, 31-norcyclolaudenol, securiosides A and B, 4'-hydroxy-7-methoxyflavan, stigmasterol, linoleic acid methyl ester.

Biological Activity[7,8-11]. Antitumour, antiinflammatory, antispasmodic, radical scavenging effect, and cytotoxic.

Traditional Uses[12-14]. Juice squeezed from fresh leaves is warmed and applied onto cuts and wounds while stem juice is used as a styptic on cuts. An aqueous extract of the root is drunk to induce labour in pregnant women. Root mixed with *Barringtonia sp*. is drunk for post partum haemorrhage. Leaves are heated and pressed on the swollen leg or other affected body parts. The inner part of the stalk is crushed and mixed with scaped coconut, mixture is then wrapped in the coconut leaf and heated on fire until the wrapping is burnt. The juice from the heated mixture is later applied on the scabies sores daily until the sores are healed.

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***Curcuma longa* L.**

***Curcuma longa* L.** **Zingiberaceae**
(syn. *Curcuma domestica* Valeton.)

Local Names : lavar (Kokopo, East New Britain Province)
English Name : turmeric

Description. Perennial herb up to 1 m in height, stout, fleshy. Leaves basal, petiole 40-80 cm long; lamina oblong-lanceolate, pointed at each end, up to 50 cm long and 7-25 cm wide. Flowers in racemes from the base; calyx tubular, unilaterally split, unequally toothed; corolla white, tube funnel shaped, limb 3-lobed. Stamens lateral, petaloid, widely elliptical, longer than the anther; filament united to another about the middle of the pollen sac, spurred at base. Rhizome lateral, tuberous or elongate, slightly bent, flesh orange in colour, aromatic. Flowers usually in months of May – June.

Habitat. Extensively cultivated and naturalized in lowland to lower montane areas.

Distribution. Widely distributed throughout the South Pacific and the tropics.

Constituents[1-6]. Zingiberene, curcumene, curcuim, alpha- & beta-turmerone, zedoarondiol, alpha- & delta- atlantones, bisaboladienones, bisabolenes, bisacumol, bisacurone, curlone, curdinone, curcumins and derivatives, curcumenone, curcumenol, caryophyllenes, curzerenones, germacron derivatives, beta-sesquiphellandrene, alpha-turmerine, turmeronols, beta-turmeroone, borneol, isoborneol, camphene, camphor, cineol, para-cymene, limonene, linalool, alpha phellandrene, terpinene, sabinene, alpha and beta pinenes, terpineol, caffeic acid, eugenol, guaiacol, cinnamoyl derivatives, cholesterol, campesterol, beta-sitosterol, stigmasterol, lignan, phenyl propanoids, oleoresins, prtocatechuic acid, cyclocurcumin, vanillic acid, tannins, turmerin, ukonans.

Biological Activity[1,7-13]. Anti-inflammatory, anti-ulcer, anti-dyspeptic, antibacterial, fungistatic, cytotoxic, increases bile production, uterine stimulant, weak antimycobacterial, antiyeast, insecticidal, antiamoebic, antiallergic, antinematodal, embryotoxic, antioxidant, antitumour, antiviral, anti-implantation, antihypercholesterolemic, antimutagenic, diuretic, immunosuppressant, anticoagulant, antihepatotoxic, allergenic, insect repellent.

Traditional Uses[14]. The dried rhizome is chewed and oily juice swallowed to treat stomach ulcer. Crushed fresh rhizome is mixed with lime and applied to body to improve body colour and as means of decoration. Rhizome is also used as a dye, and as a spice in curries.

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***Cyathula prostrata* (L.) Blume**

***Cyathula prostrata* (L.) Blume** **Amaranthaceae**
(syn. *Achyranthes prostrata* L.)

Local Names : kinjin (Gaikorovi, Sepik)
English Name : cyathula

Description. Perennial weed and herb. A leafy twig. Stems often tinged with red, obtusely quadrangular, densely clothed with fine hairs. Leaves opposite, rhomboid-obovate, base obtuse or acute, apex triangular, acute, tinged with red at young stage. Flowers in a terminal, erect raceme, 15-30 cm long, peduncle 1-12 cm long, rhachis pubescent. Fruits glabrous. Seeds shining brown. Propagated by seeds and stem fragments. Flowering period: October-May.

Habitat. Lowland tropical rainforest.

Distribution. Common in partially shaded localities, orchards, coffee plantations at a height of 1000 m.

Constituents[1]. Beta-ecdysone (steroid).

Biological activity[2,3]. Analgesic, antiinflammatory, antipyretic, antimalarial.

Traditional Uses[4,5]. The stalk is squeezed and juice drunk to terminate pregnancy.

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***Cycas circinalis* L.**

***Cycas circinalis* L.** **Cycadaceae**
(syn. *C. rumphii* Miq.)

Local Names : hatoro (Gaire, Central Province); mahita (Goldie River, Central Province); vatoro (Boku, Central Province); watolo (Rigo, Central Province); ketare (Nyamikum, Sepik); lou (Meramera, West New Britain).

English Name : tree fern.

Description. A slow growing perennial palm-like plant, 3 –10 m high, trunk cylindrical, mostly unbranched. Individual plant male or female. Leaves 1-2 m long and pinnate. Male flowers in an apical cone-like structure. Mature seed oval and brownish yellow.

Habitat. Naturally occurring in grassland, and persisting in grazing land. Grows throughout the year from sea level to about 700 m altitudes.

Costituents[1-5]. Seeds contain proteid including 2-amino-3-(methylamino)-propionic acid; cycasin, methylazoxymethanol. Leaves contain predominantly flavonoids: amentoflavone, 2,3-hydroamentoflavone, ginkgetin, hinokiflavone, 2,3-hydrohinokiflavone, sotetsuflavone

Biological Activity[6-11]. Carcinogenic, nuts poisonous, antifungal, antibacterial.

Traditional Uses[12,13]. The large seeds are crushed and applied to sores, cuts, wounds and ulcers. Boiled leaves are drunk to sooth cough.

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***Cymbopogon citratus* (DC.) Stapf.**

***Cymbopogon citratus* (DC.) Stapf.** **Gramineae**
(syn. *Andropogon citratus* DC.)

Local Names : kaukaul (Kokopo, East New Britain); tea (Vanapa, Central Province); gigi (Kokopo, East New Britain Province).

English Names : lemon grass, ginger grass, citronella grass.

Description. Perennial herbaceous plant with aromatic lemon flavoured green leaves in dense tufts that can reach 2 m in height. Leaves linear, amplexicaul, with rough edge or margins about 1 cm wide, glaucous green on both sides. Rarely produced flowers. Inflorescence in agglomerated clusters on a branched spike that overreaches the tuft of the leaves. Flowering period is usually between March and April.

Habitat. Occurs in coastal areas and up to at least 1400 m altitude. Grows well in fertile and well-drained soil. In wild, it grows on coral rocks, near the beach.

Distribution. Grown or introduced in all intertropical regions. Species commonly cultivated as a culinary herb and for medicinal uses.

Constituents[1-8]. Borneol, camphene, camphor, car-3-ene, cineal, citral, citronellal, citronellol, citronellol acetate, fenchone, geranial, geranic acid, geraniol, geraniol acatate, limonene, (+) limonene, linalool, linalool oxide, menthol, menthone, myrcene, beta-myrcene, nerol, nerol acetate, nerolic acid, perilla alcohol, alpha-pinene, beta-pinene, terpineol, terpinolene, oxo-alpha-bisaboline, beta(+)cardinene, farnesol, humulene, cymbopogonol, cymbopogone, 6-methylhept-5-en-2-one, 3-methylheptan-2-one, methylheptenol, methylheptenone, hexacosan-1-0l, triacontan-1-0l, cynaroside, luteolin, luteolin-7-0-neohesperidosid, isoorientin, caffeic acid, chlorogenic acid, paracoumaric acid, beta-sitosterol.

Biological Activity[9-17]. Antimutagenic, antibacterial, antifungal, antiyeast, serotonin release inhibition activity, analgesic, antiinflammatory, hypocholesterolemic, antiamebic, hypotensive, insect repellent, antifilarial, anxiolytic, diuretic, larvicidal, antitumour, urine stimulant, antispasmodic, acaricidal, antioxidant.

Traditional Uses[18]. Crushed leaves are boiled and steam inhaled for cold and cough. Leaves are boiled in water and solution drunk to treat sore throats and upper respiratory tract infections. Patients with high fever, usually due to malaria, are bathed with the decoction prepared from the leaf. Whole plant is washed, mashed and wrapped in a banana leaf and heated over a fire. The oily juice is squeezed out and administered orally for treatment against constipation, flu, headache and stomach ache. To improve eyesight leaves are boiled in water, cooled and eyes bathed with the solution.

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***Derris cf. trifoliata* Lour.**

***Derris cf. trifoliata* Lour.** **Fabaceae**

Local Names : marmar (Kokopo, East New Britain); dewa niwona (Tawala, Milne Bay).

Description. Climbing shrub to 6 m high; leaves imparipinnate, leaflets in 2-3 pairs (sometimes only 3 leaflets), ovate-elliptic, acuminate, somewhat leathery, shining. Flowers white to rose-red, 2-3 together on short spurs, on the lower axis these are more numerous, and racemose. Pod flat, roundish-elliptic, obtuse at both ends, 2 to 4 cm long, membranous, 1-2 seeded.

Habitat: Common on the foreshore, along creeks, and beside pools and swamps.

Distribution. Widely distributed throughout Papua New Guinea.

Constituents[1-2]. Campesterol, cholesterol, beta-sitosterol, stigmasterol, stigma-7-en-3-beta-ol, alpha- and beta-amyrin, lupeol, quercetin-3-0-beta-neohesperidoside, rhamnetin-3-0-neohesperidoside.

Biological Activity[3]. Cytotoxic.

Traditional Uses[4-5]. After scraping the outer bark of the stem, it is cut into small pieces, and either mixed with water or juice from a young green coconut and squeezed. The solution is drunk by a mother soon after postpartum to prevent infection. The drink prepared in the similar manner is taken by a person who has been in contact with a dead body during preparation and burial or by a person who has been in contact with any body fluids of a person with long term illness. To treat malaria a handful of leaves are added to a cup of boiling water and allowed to simmer, the solution is cooled, strained and drunk daily until symptoms disappear. Dried root is used as a fish poison.

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Desmodium umbellatum **(L.) DC.**

***Desmodium umbellatum* (L.) DC. Papillionaceae**

Local Names : urara (Barakau, Central Province); kewai (Kurti, Manus Province); tututu (Tawala, Milne Bay).

English Names : desmodium.

Description. Shrub or small tree, 4 m tall. Leaves trifoliate, leaflets ovate, obtuse to acute, 5-12 x 3-6 cm, the terminal leaflets usually the largest, above glabrous, beneath whitish hairy; the leaves are greenish, new leaves are pinkish, apex acute and the base obtuse. Flowers white, in axillary, stalked, 5-12 flowered umbellate inflorescences; peduncle 1-2 cm long. Fruit red-green, almost woody when mature, 2-7 articles, pubescent.

Habitat. Common on the foreshores; also inland, but rare in dry grassland.

Distribution. East Africa, Asia, Malesia, to Northern Australia.

Constituents. None reported

Biological Activity[1]. Antibacterial (weak activity).

Traditional Uses[2,4]. The crushed leaves and shoots are used to massage an enlarged spleen caused by malaria. A decoction of the leaves is used as a general sickness preventative; and the solution is used to bathe the body to prevent a slight chill developing into a fever. The new leaves and shoots are squeezed and mixed with a small quantity of seawater, the juice is extracted and applied externally to weeping and infected sores, boils and abscess. The young leaves are crushed in water and the solution drunk to treat an enlarged spleen particularly in young children.

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***Dioscorea bulbifera* L.**

***Dioscorea bulbifera* L.** **Dioscoreaceae**

Local Names : poepoe golagola (Tawala, Milne Bay); puka (Kuanua, East New Britain Province); kutukutu (Nupura, Eastern Highlands); kwai kwasi (Solomon Islands).

English Names : aerial yam, air-potato, bitter yam, potato yam.

Description. Herbaceous, perennial, tuberous twining vine to 3 m long. Stems generally bearing bulbils (aerial tubers), twining to the left (clockwise), globose or pear-shaped, sometimes lobed, smooth-surfaced; flesh yellowish. Leaves simple, alternate blades, prominently nerved, entire margin, broadly cordate, 20-30 cm long, 20-30 cm wide, 5-nerved, lower surface duller green than upper, short to long petiolate. Flowers small, fragrant, male flowers on pendent inflorescence, from bracteate (rarely leafy) stems, up to 50 (even 100) cm long; whitish or pinkish; female flowers on pendent axillary inflorescences. Fruit a capsule, ca. 2-5 cm long, 3-lobed; seeds 1-2 per cell, winged on basal side only, 15-18 mm long. The plant is propagated by seed and planted as a supplementary crop along fences.

Habitat. Common in plantations and secondary forest. It grows mainly as undergrowths in coconut plantations but can also climb on to other smaller shrubs and trees.

Distribution. Native of tropical Africa and Asia, the plant is found from sea level to 900 m. It is cultivated and also naturalized.

Constituents[1-8]. Benzenoids, batatasin I, demethylbatatasin IV, caryatin, 3',4',5,7-tetrahydroxyflavan-3-ol, 3',4',5-trihydroxy-3,7-dimethoxyflavone, 4',7-dihydroxy-3,5-dimethoxyflavone, hyperoside, kumatakenin, myricetin, myricetin-3-*O*-beta-D-galactoside, myricetin-3-*O*-beta-D-glucoside, myrecitin-3-0-galactoside, daucosterol, stigmasterol, d-sorbitol, beta-sitosteol, diosgenin, dioscin prosapogenin A, taccaoside, diosbulbin, diosbulbin A-H, diosbulbinoside D & F, neodiosbulbin, gibberellin A-19, gibberellin A-24, dioscorine, 5-ureidohydantoin, protocatechinic acid, shikimic acid, starch.

Biological Activity[9-14]. Diuretic, vasoconstrictor, hypoglycaemic, molluscicidal, antimutagenic, hyperglycaemic, hepatotoxic, antitumour.

Traditional Uses[15,16]. Leaves are used to treat colds and coughs internally and body aches externally. Leaves are crushed in small quantity of water and the clear solution is drunk once for three days to treat lesions of genitals, particularly of promiscuous males and females.

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***Dodonaea viscosa* (L.) Jacq.**

***Dodonaea viscosa* (L.) Jacq.** **Sapindaceae**

Local Names : kelnge, kelne (Minj, Western Highlands); lokai (Wapenamanda, Enga); olga (Mt. Hagen, Weatern Highlands); ioia (Erave, Southern Highlands).

English Names : sticky hopbush, giant hopbush, hopseed bush, native hop.

Description. Erect fast growing evergreen shrubs to 5 m high. Shrub, 3-5 m tall. Leaves alternate, oblong-obovate to lanceolate, obtuse, acute or acuminate, entire margins, glabrous, 7-12 x 2-4 cm, sticky when young; base long-cuneate; petiole very short or absent. Sepals 3-4, petals absent. Flowers greenish yellow, on pedicels, 4-6 mm long arranged in terminal panicles. Fruit rounded, winged, with a glabrous surface, emarginated at base and apex, mostly 2-celled, rarely 3-celled. Cells with 1-2 seeds. Flowers appear in spring.

Habitat. Grows mostly in highland grassland; prefers full sun and wet soil.

Distribution. Widespread, often seen in desert landscapes. Also used in mass plantings, foundation plantings, or in screens.

Constituents[1-8]. Aliarin, avicularin, acacetin-7-methylether, eriodictyol, hyperoside, (+) leucocyanidin, kaempferol, kaempferol ethers, kumatakenin, narcissin, penduletin, pinocembrin, quercetin, isorhamnetin, rutin, sakuranetin, santin, viscosol, aromadendrene, alpha-bisabolane, ciscarophyllene, betaeudesmol, guail, longipinene, barrigenol derivatives, dodonoside A & B, doviscogenin, jegosapogenol, car-3-ene, (+) car-4-ene, citronellol, geraniol, limonene, linalool, linalool acetate, myrcene, beta-pinene, alpha and gamma terpineol, dodonic acid, hautriwaic acid, clerodane diterpenoids, chlorogenic acid, cleomiscosin A & C, fraxetin, fraxoside, daucosterol, beta-sitosterol, alpha-spinasterol, stigmasterol, syringic acid, linoleic acid, oleic acid, palmitic acid.

Biological Activity[9-15]. Antiviral, smooth muscle relaxant, spasmolytic, antibacterial, antimalarial, antiascariasis, uterine relaxant, taenicide, anticrustacean, antimutagenic, antifungal.

Traditional Uses[16, 17]. Leaves are used by a woman to become sterile. Leaves are rubbed over womb after she has eaten *Colocacia antiquorum* or *Ipomoea batatas*. The heated leaves are made into a poultice for boils, sores and tropical sores. A decoction of the bark is drunk to treat dysentery.

(continued on page 271)

***Dracaena angustifolia* Roxb.**

***Dracaena angustifolia* Roxb.** **Agavaceae**

Local Names : saiheva (East Sepik); si-ei (Kurti, Manus).
English Names : dragon's blood palm.

Description. Many-branched climbing shrub, 6 m tall, with weak pendulous twigs, showing well-marked leaf scars. Leaves linear-lanceolate, acuminate, 15-30 cm long, 2-4 cm wide, sessile, margin entire. Flowers 2-5 together, yellowish-white in terminal wide-spreading panicles. Perianth tubular, funnel shaped. Stamens 6, joined at their bases. Berry compressed globose, 3-lobed, 3-seeded, or globose and 1-seeded, when fully developed, 20 mm in diameter, smooth, shining orange-coloured to red.

Habitat. Grows wild in the rainforest near rivers and streams.

Distribution. Abundantly distributed in re-growth and lowland primary forests, sometimes planted around villages.

Constituents. Sapogenins, namogenin A-C, namonin A-F, pregna-5-16-dien-1-beta-3-beta-diol.

Biological activity[1,2]. Antispasmodic, anti-proliferation activity.

Traditional Uses[3]. Juice squeezed from the boiled leaves is drunk for asthma and shortness of breath. Leaf decoction is given to patients suffering weight loss and poor appetite.

References:

1) Aswal, B.S., *et. al., Indian J. Exp. Boil.,* (1984), *22* (6), 312-332.
2) Tran, Q.L., *et al., J. Nat. Prod.,* (2001), *64* (9), 1127-1132.
3) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

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

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

Local Names : hiroi (Agenehembo, Northern Province); kiroi (Kurereda, Northern Province); iquazi (Quaqua, Morobe Province).

English Names : crowfoot grass, crab grass, wire grass, yard grass.

Description: Coarse, annual or short-lived perennial herb or grass, 30- 60 cm high, branching erect or occasionally prostrate in tufts, clump-forming, branching from the base; leaves narrow, arranged in two rows, leaf blades flat or sometimes folded, 15-30 cm long, 4-6 cm wide; spikes mostly 2-6, usually 5 (4 digitate and 1 arising slightly below the apex of the peduncle), 4-10 cm long; spikelets 4.5-5.5 mm long, the florets closely imbricated, dark green, disarticulating at maturity, leaving glumes overlapping in 2 rows on one side of the flattened rachis. Fruit oblong, nearly trigonal. The plant is a prolific seed producer. Flowering and fruiting period is usually between April to July.

Habitat. Commonly found on clearing or disturbed areas, especially as lawn grass, along drain sides, roadsides, etc., in partial or wetter locations.

Distribution. Sea level to 2, 000 m in Papua New Guinea.

Constituents[1-3]. Steroid (daucosterol, beta:6'-0-palmitoylsitosterol), flavones (vitexin, vitex), alkaloids present.

Biological Activity[4]. Tyrosinase inhibition (weak).

Traditional Uses[5,6]. Leaves and stems are boiled and the solution drunk to ease vaginal bleeding. Whole plant is chewed and swallowed to treat diarrhoea and dysentery. Plant is pounded and filtered through coconut fibre and filtrate applied to wounds. Decoction of the leaves and stem is drunk to regulate menstrual period or cycle.

References:

1) Nguyen, P.H., *et al., Planta Med*., (1994), *60* (5), 498-.
2) Kaneta, M., and Sugiyama, N., *Agr. Biol. Chem*., (1973), *37*, 2663-2665.
3) Coe, F.G., and Anderson, G.J., *J. Ethnopharmacol*., (1996),*53*, 2663-2665.
4) Shin, N.H., *et al*., *Nat. Prod. Sci*., (1997), *3* (2), 111-121.
5) Holdsworth, D.K., *Medicinal Plants Of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 27.
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***Emilia sonchifolia* (L.) DC.**

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

Local Names : hanga-an (Kurti, Manus Province).

English Names : red tassleflower, lilac tassleflower, floras paintbrush, cupid's shaving-brush, emilia, purple sow thistle, sow thistle.

Description. Erect herb, 40-100 cm tall. Stem round or slightly grooved, often bluish-tinged, hairy. Leaves alternate, thin, acute-toothed, lower ones stalked, upper ones sessile and clasping stem, with a few scattered hairs. Capitula in a loosely branched, terminal inflorescence; involucral bracts covering the flowers which are white at the base and pinkish-violet at apex; bracts strongly reflexed when in fruit.

Habitat. Sea level to about 900 m as a weed in cultivated areas, villages, along roadsides, on open hillsides, and sometimes in forested areas.

Distribution. Native to eastern and southern Asia and western Pacific. A common, pantropical and plantation weed. Common in sunny disturbed places.

Constituents[1-4]. Dronine, senkirkine, hyperoside, quercetin, quercitrin, trifolin, rutin, beta-sitosterol, stigmasterol, palmitic acid, triacontanoic acid, ursolic acid, simiaral.

Biological Activity[3,5-7]. Antitumour, antibacterial (weak), anti-inflammatory, antioxidant.

Traditional Uses[8]. Leaves are rubbed in the hand with a pinch of lime and applied around the infected, red, inflamed or sore eye. Juice squeezed from the heated leaves is applied to fresh cuts, as well as infected sores.

References:

1) Cheng, D.L. and Roder, E., *Planta Med.*, (1986), *52* (6), 484-486.
2) Nair, A.G.R., *et al., Indian J. Chem.*, (1982), *21B*, 979-980.
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4) Gao, J.J., *et al., Zhongguo Zhongyao Zazhi*, (1993), *18* (2), 102-103.
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6) Muko, K.N. and Ohiri, F.C., *Fitoterapia*, (2000), *71* (1), 65-68.
7) Shylesh, B.S. and Padikkala, G., *Fitoterapia*, (1999), *70* (3), 275-278.
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***Epipremnum pinnatum* L.**

***Epipremnum pinnatum* L.** **Araceae**

Local Names : garegaigi (Kurereda, Northern Province); galgalut (Raluana, East New Britain); galogalomi (Tawala, Milne Bay).

English Names : swiss-cheese plant, dragon tail plant.

Description. An epiphytic climber or a vine on tree trunks, 30-50 m high. Irregular shaped leaves, lanceolate-ovate or lanceolate-elliptic, 60-80 cm long, 20-30 cm wide, acuminate. Petiole about the same length. Young leaves are pale green but as they mature they become dark green. Spadix cylindrical. Flowers bisexual, only a few of the lower flowers are female. No perianth, stamen 4; ovary 1, one-locular or rarely 2-locular. Berries united to a composite fruit, red. Flowering and fruiting season not recorded.

Habitat. Common in the New Guinea region, in coconut plantations; easily the most attractive foliage plant of the region.

Distribution. Widespread, especially in the lowlands.

Constituents[1,2]. Benzenoid (11-phenyldecanoic acid, 15-phenylpentadecanoic acid, 13-phenyltridecanoic acid), alkaloid (tongine).

Biological Activity. None reported.

Traditional Uses[3,4]. Leaves are taken internally to treat chest pains. A mixture of young leaves of *Epipremnum pinnatum* and *Imperata cylindrica* is crushed into water or coconut juice and solution drunk to treat gonorrhoea. A drink prepared by boiling the young leaves in water is taken to treat diabetes and malaria, and to alleviate toothache. Juice extracted from a crushed inner part of stem mixed with water is drunk to treat joint problems, dislocation, and broken bones.

References:

1) Schmid, P.C., *et al.*, *Phytochemistry*, (1997), *45* (6), 173-1175.
2) Willaman, J., and Schubert, B.G., *ARS, USDA Tech. Bull.Suppl. Documents*, (1961), Govt. Print Off. Washington, D.C.
3) Holdsworth, D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 27.
4) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Erythrina variegata* (L.)**

***Erythrina variegata* (L.)** **Fabaceae**

Local Names : ivini (Hula, Central Province); lalawa (Wagawaga, Milne Bay); balbal (Raval, East New Britain); bubukai (Kokopo, East New Britain); lehelehe (Lontis, Buka, North Solomons Province).

English Names : coral tree, indian bean, indian coral bean.

Description. A medium sized to large deciduous tree about 25 m in height with coarse spikes on trunk and branches. Leaves variegated along major veins or not, trifoliate with broadly triangular ovate leaflets, variable in size. Flowers bright orange to showy red, claw- and pea-flower like, in dense racemes, borne in densely flowered inflorescences up to 50 cm long. Fruit a pod (legume) with large red seeds. Flowers and fruits avialable from July to September. Flowering period is from March to May.

Habitat. Common in rural agricultural areas along fence lines and roadsides, and occasional in house yards and gardens.

Distribution. Probably found in lowland coastal regions.

Costituents[1-10]. Alkaloids (erysotine, erysopine, erysotramidine, erysotrine, erysotrine-N-oxide, erysovine, iso-coccolinine, erythraline, erythrartine, erythratidine, erythrinitol, erythrocarine, erythromotidienone, erythrosotidiemone, L-stachydrine, hypaphorine, choline), capric acid, ferulic acid, caffeic acid, stigmasterol, campesterol, daucosterol, cycloartenol, epilupeol, fatty acids, flavones, laburnetin, quercetin, rutin.

Biological Activtiy[8,11-14]. Antibacterial, antifungal, antiulcer, anti-inflammatory, smooth muscle relaxant, and antispasmodic.

Traditional Uses[15-20]. A mixture of bark scrapings and lime is applied to reduce swellings. Leaves are crushed with seawater and drunk daily to relieve stomachache. Heated crushed wet leaves are rubbed over the head and body of a person with fever. The extract from crushed leaf mixed with water is drunk to relieve cough. Leaf juice is used to heal sores. The root decoction is used as a gargle for loose and aching teeth. The inner bark is scraped and mixed with little water, the juice squeezed and drunk to treat a cough with sore throat.

(continued on page 271)

***Euodia anisodora* Laut. & K. Sch.**

***Euodia anisodora* Laut. & K. Sch.** **Rutaceae**

Local Names : wajo (Nyamikum, Sepik); maig (Kuanua, East New Britain Province); tarripo (New Ireland Province).

Description. Small tree to 3 m tall; twigs terete, mealy, thickened and flattened at the nodes. Lower leaves simple, 8-10 x 4-5 cm, on petioles 3-4 cm long; upper leaves trifoliate, on petioles 13-18 cm long, leaflets 15-25 x 7-15 cm. Panicles axillary, many flowered, glabrous, mostly shorter than the petioles, about 6-10 cm long. Petals 2 mm long.

Habitat. Grows in primary and secondary forest, also cultivated around gardens.

Distribution. Malesia to the Pacific.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1,2]. Dried leaves are heated over a fire and the sap is taken orally to treat tuberculosis. Leaves of the plant are used together with the leaves, bark and fruit of *Citrus* species for treatment of stomach pain, constipation, diarrhea, and for removal of intestinal worms.

References:

1) Holdsworth, D.K., *et al., Q. J. Crude Drug Res.,* (1980), *18* (3), 131-139.
2) Holdsworth D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 29.

***Euodia elleryana* F. Muell.**

***Euodia elleryana* F. Muell.** **Rutaceae**

Local Names : kurih (Siwai, Bougainville); sehit (Kurti, Manus).
English Names : pink euodia or pink evodia.

Description. Large, fast growing, spreading tree with a light coloured trunk, straight, smooth, covered with deciduous white bark, 15-20 m tall; leaves dark green trifoliate arranged in decussate; leaflets elliptic to oblong, entire, shortly acuminate, 10-20 x 5-10 cm, mostly with sinuate margin. Flowers in many-branched, dense panicles arising on the leafless twigs; sepals rounded; petals dark-red (similar to the flowers of *Syzygium malaccense).*The wood is soft, white, and has an unpleasant musty smell. At flowering time in June, the tree is frequented by small parrots and honey-eaters.

Habitat. A common species found mainly in secondary forest in both low and high altitude.

Distribution. Distributed in all regions of Papua New Guinea.

Constituents[1-3]. Elleryone, essential oil, evellerine, skimmianine, 7-*O*-demethylevolitrine, evodione, alloevodionyl, palmitic acid, flavonol.

Biological Activity[4]. Antibacterial, antitrichromonal.

Traditional Uses[5,6]. Decoction prepared from the dried bark is used for malaria. The juice squeezed from the fresh bark is mixed with water and taken as a contraceptive for a few days; contraceptive effect is strong and reported to last 2-3 years. A patient with fever is washed with the leaves mashed in water.

References:

1) Johns, S.R., *et al. Aust. J. Chem.*, (1968), *21*, 1897.
2) Kirby, K.D. and Sutherland, M.D., *Aust. J. Chem.*, (1956), *9*, 411.
3) Wang, E., *et al, Aust. J. Chem.*, (2001), *54*, 12, 739-741.
4) Khan, M.R., *et al, Fitoterapia*, (2000), 71 (1), 72-74.
5) Holdsworth, D. and Wamoi, B., *Int. J. Crude Drug Res.* (1982), *20* (4), 169-181.
6) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Euodia hortensis* Forster**

***Euodia hortensis* Forster** **Rutaceae**
(syn. *Evodia hortensis* Forster)

Local Names : wareba (Northern Province); karongon (Kokopo, East New Britain Province); mamata (Rigo, Central Province).

Description. Small shrub or tree about 4-6 m in height. Leaves opposite, pungently aromatic, trifoliate (or simple), if compound, each leaflet oblanceolate, or if simple, the blade lanceolate. Flowers in clusters, small, white cream-coloured, fragrant and borne in erect panicles arising from leaf axils, with a single seed in each segment or small subglobose capsule containing four shiny black seeds. Flowers and fruit available throughout the year.

Habitat. Commonly planted as ornamental around the house yards, gardens or villages and sparingly naturalised in rural agricultural areas and as under story shrub in thickets, secondary forest and tree groves perhaps as a relict of former cultivation.

Distribution. Widely distributed from sea -level up to about 500 m.

Constituents[1-3]. Alkaloids (berberine, furoquinoline, acridone), essential oils (caryophyllene, alpha-copaene, arcurcumene, evodone, menthofuran, hortensol).

Biological Activity[4,5]. Spasmolytic, prostaglandin inhibition synthesis.

Traditional Uses[6-8]**.** The shredded leaves are shaken in water and the filtrate drunk to relieve a cold. Leaves and roots are cleaned and chewed daily to combat malaria. Young leaves of *Euodia hortensis , Hibiscus rosa-sinensis, Acalypha wikesiana, and Ocimum basilicum* are placed together in hot water and the patient exposed to hot vapour for treatment of pneumonia, malaria, pain and fever.

References:

1) Cambie, R.C., and Ash, J., *Fijian Medicinal Plants*, (1994), CSIRO, Australia, 274-275.
2) Brophy, J.J., *et al*., *Flavour Fragrance J*., (1985), *1* (1), 17-20.
3) Mc Candlish, L.E., and Stout, G.H., *Acta Crystallogr. Ser.* B, (1976), *32*, 1788.
4) Cox, P.A., *et al*., *Econ. Bot*., (1989), *43* (4), 487-497.
5) Dunstan, C.A., *et al*., *J. Ethnopharmacol*., (1997), *57*, 35-36.
6) Holdsworth, D., and Balun, L., *Int. J. Pharmacog*., (1992), *30* (3), 218-222.
7) Holdsworth, D.K., *Q. J. Crude Drug Res*., (1980), *18*, 33-34.
8) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Euphorbia hirta* L.**

***Euphorbia hirta* L.** **Euphorbiaceae**
(syn. *Euphorbia pilulifera* var. *hirta* (L.) Griseb.; *Chamaesyce hirta* (L.) Sm.)

Local Names : gigirogo (Rigo, Central Province); tantade, tade (Kuanua, East New Britain); wilai (Yangoru, East Sepik Province).
English Names : asthma weed, cat's hair, pillsbearing spurge, hairy spurge, garden spurge.

Description. Annual herb to 70 cm tall, erect or ascending. Leaves opposite, sessile or shortly stalked, lanceolate-oblong, oblong-elliptic or ovate-lanceolate, 1-5 cm long, 5-13 mm wide, apex acuminate or obtuse, base slightly oblique, serrulate or entire, pubescent on both surfaces. Stems simple, hispid. Inflorescences axillary, composed into cymes 1-2 on 4-15 mm long stalk; male flowers several, slightly attaining margins of involucres; female flower 1, with short pedicels, exceeding involucres; styles 3, free; stigma shallowly bifid. Capsule 3-lobed angular. Seeds pale brown, oblong, acutely angled. Flowering and fruiting period is from June to December.

Habitat. Common in wastelands, roadsides, gardens, and fields.

Distribution. Common weed of plantations and gardens.

Constituents[1-7]. Afzelin, cyanidin-3,5-*O*-beta-diglucoside, euphorbianin, kaempferol, leucocyanindin, myricetin, myricitrin, pelargonidin-3,5-*O*-beta-D-diglucoside, quercetin, quercimeritrin, isoquercitrin, phenyl acetate, rutin, xanthorhamnin, beta-amyrin, beta-amyrin acetate, lupeol, cycloartenol, 24-methylenecycloartenol, euphorbol hexacosanoate, friedelin, taraxenol, taraxerone, choline, diterpenes, tinyatoxin, ingenol triacetate, neochlorogenic acid, phorbic acid, protocatechuic acid, shikimic acid, beta-sitosterol, ellagic acid, gallic acid, euphorbin A-E, geraniin, tannic acid, terchebin, oleic acid, linoleic acid, melissic acid, palmitic acid, l-inositol, myo-inositol.

Biological Activity[8-22]. Immunostimulant, antihistaminic, smooth muscle relaxant, spasmogenic, antiamebic, antiinflammatory, estrogenic, antinematodal, antiviral, antitumour, hypoglycaemic, hypotensive, galactagogue, antispasmodic, analgesic, antiedema, antipyretic, CNS depressant, sleep time increase, antidiarrheal activity, histaminergic, antifungal, diuretic, wound healing acceleration, angiotensin-converting enzyme, antidypsetic, antiulcer, antibacterial.

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***Euphorbia thymifolia* (L.)**

***Euphorbia thymifolia* (L.)** **Euphorbiaceae**
(syn. *Chamaesyce thymifolia* (L.) Millsp.)

Local Names : none recorded.

English Names : spurge, thyme-leaf spurge.

Description. Annual herbs to 20 cm long, prostrate, contains a milky juice. Stem prostrate, slender, purple and downy. Leaves opposite, oval shaped, obscurely serrulate, slightly pubescent beneath. Inflorescence in few flowered axillary cyme. Capsule hairy. Seeds quadrangular, glabrous. Flowers pinkish red. Flowering starts from May to October.

Habitat. Grows wild on pasture land, on road side embankments and in gardens.

Distribution. Found throughout Papua New Guinea.

Constituents[1-5]. Tannins, bixanin, casuarin, corilagin, 1-degalloyleugeniin, pedunculagin, isomallotinic acid, geraniin, triacontanol, alkaloids, diterpenes.

Biological Activity[6,7]. Antimalarial, antibacterial, anticrustacean, antifungal, antiviral.

Traditional Uses[8,9]. Fresh sap is squeezed into the eye to treat eye swellings and discharge. Milky latex is also used to treat conjunctivitis.

References:

1) Lee, S.H., *et al., Phytochemistry,* (1990), *29* (11), 3621-3625.
2) Nguyen, N.S., *et al., Tap Chi Hoa Hoc,* (2000), *38* (1), 9-11.
3) Coe, F.G. and Anderson, G.J., *J. Ethnopharmacol.,* (1996), *53*, 29-50.
4) Lee, S.H., *et al., Phytochemistry,* (1990), *29* (11), 3621-3625.
5) Baslas, R.K., and Agarwal, R., *Indian J. Chem.,* (1980), *19B*, 717-718.
6) Misra, P., *et al., Int. J. Pharmacog.,* (1991), *29* (1), 19-23.
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9) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Excoecaria agallocha* L.**

***Excoecaria agallocha* L.** **Euphorbiaceae**

Local Names : sismet, sisimet (Kurti, Manus Province).

English Names : milky mangrove, blind-your-eyes mangrove.

Description. Bushy tree to 5 m high. Exudes milky sap. Twigs smooth, brown, glabrous. Leaves alternate, glabrous, dark or green above, paler below; venation obscure, margin crenulate. Petiole yellowish, with 2 glands on upper surface at junction with blade. Dioecious. Flowers small. Young male inflorescence yellow-green, cone like at apex of twigs or in leaf axils, later elongating; flowers minute and in slender racemes. Female inflorescence branched. Fruit 3-lobed, smooth, green. Acrid milky juice will ooze out from the broken parts of the tree and is poisonous and blisters the skin.

Habitat. It grows mainly on the edge of mangroves and fresh water swamps.

Distribution. The plant is native in the Indo-Malaysian region, as well as Australia and Papua New Guinea. Common in mangrove forests.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1,2]. The stem sap is used as a poison antidote; the sap when swallowed causes vomiting. The milky sap can cause temporary blindness and skin irritation. The sap obtained from the crushed leaves is rubbed around the ring of the tip of the penis and left for three days. It is believed that this causes enlargement of the penis. The plant is also used as a fish poison, when leaves are crushed and dropped in water fish are stupefied and float to the surface.

References:

1) Holdsworth D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 29.
2) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Ficus copiosa* Steud.**

***Ficus copiosa* Steud.** **Moraceae**

Local Names : kumu mosong (pidgin); kagua (Raluana, East New Britain); surosai (Siwai, Bougainville).

English Names : plentiful fig; fig.

Description. Small tree, up to 5(-10) m tall, evergreen. Leaves alternate, crowded at the apices of stems, scabrid by many bristles, especially below; petiole 2-10 cm long; leaf-blade oblong-ovate, rounded or cordate at base, margins coarsely serrate-dentate, apex shortly acuminate. Fruit a fig, fascicled on the twigs borne on the stem and old branches, globular, 1-2 cm in diameter, greenish brown. Fruits edible and found all year around.

Habitat. Found in mixed forest, regrowth, up to 2200 m altitude.

Distribution. Common throughout Papua New Guinea, Celebes to Solomon Islands, and Queensland, Australia.

Constituents[1]. Alkaloids absent.

Biological Activity. *None reported.*

Traditional Uses[2-5]. Unripe fresh fruits or fresh leaf mixed with root are chewed to relieve stomach ache. Sometimes stomach is massaged with fresh leaves to relieve pain. Leaf is eaten as a poison antidote to excrete toxins. The scrapings from the bark are chewed together with lime, and the mixture is applied on a boil. Fresh fruit latex is used to treat a boil.

References:

1) Arbain, D., et al., *Econ. Bot.*, (1989), 43 (1), 73-78.
2) Holdsworth, D., *Int. J. Pharmacog.*, (1992), 30 (3), 185-190.
3) Holdsworth, D. and Balun, L., *Int. J. Pharmacog.*, (1992), 30 (3), 218-222.
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***Ficus pungens* Reim. ex Blume**

***Ficus pungens* Reim. ex Blume** **Moraceae**

Local Names : baguai (Harigen, Sepik); wopope (Lontis, Buka, North Solomons); ohohone (Sui, Northern Province); limiengkuilre (Yangory, East Sepik); niyaniya (Tawala, Milne Bay Province).

Description. Tree, up to 13 m tall, containing white latex. Branches armed with sharp spines. Leaves large, ovate, 14-28 x 12-30 cm, light green when young, shortly acuminate, densely acute-toothed; base cordate; petiole 3-10 cm long. Fruit a fig, glabrous, small, in clusters on long peduncles hanging from the trunk, dirty greenish-yellow, finally red.

Habitat. Grows near streams and drains, up to 1800 m altitude.

Distribution. Common throughout the lowlands of Papua New Guinea.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1-4]. Coughs are treated by swallowing the sap obtained from the root. The leaves of *Ficus pungens* are crushed together with the leaves of a species of *Mallotus*, and mixed with water. The solution is said to relieve a bad cough. Leaves are heated over a fire and applied to body pains. Bark is crushed and squeezed, the solution is taken orally for a week for treatment of asthma. Fresh leaves are used in the treatment of inguinal hernia (swelling of testicles) by brushing the leaves upwards against the testicles.

References:

1) Holdsworth, D. and Balun, L., *Int. J. Pharmacog.*, (1992), *30* (3), 218-222.
2) Holdsworth, D.K., *Q. J. Crude Drug Res.*, (1980), *18*, 33-44.
3) Holdsworth D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 31.
4) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Ficus septica* Burm.f.**

***Ficus septica* Burm.f.** **Moraceae**

Local Names : mamanu (Malasang, Buka, North Solomons Province); gipilapala (Kriwina Island, Milne Bay); bahuerueru (Vanapa, Central Province); anda (Mundala, Morobe); matabahi (Tawala, Milne Bay).

Description. A small shrub or tree about 3-6 m tall. Fruit greenish white, ribbed, up to 25 cm in diameter, figs flattened-globose with 10 distinct longitudinal ridges. No latex. Leaves drying green. Fruits found all year rou nd.

Habitat. Found in low secondary growth, rainforest, savannah, old garden clearings.

Distribution. Everywhere in Papua New Guinea, to an altitude of about 1500 m.

Constituents[1-5]. Antofine, ficuseptine, septicine, tylocrebrine, (+) tylocrebrine, tylophorine, (-) tylophorine, ficusin A, ficusin B, gnistein.

Bilogical Activity[2,6]. Antibacterial (weak), antifungal.

Traditional Uses[2,7-12]. Fresh root sap is taken orally for treating whooping cough. Leaves are chewed and saps swallowed to relieve cough. Fresh leaves are used for headaches, and decoction of the dried leaf is taken to prevent fever. Leaf buds are eaten for treating upset stomach and to prevent diarrhoea. Leaves are crushed mixed with seawater and the solution is drunk to treat stomachache. Crushed leaves are applied on sores and to treat fungal infections. Moistened leaves with salt are used as a hot compress to the forehead; other body pains are treated in similar manner. Fresh root sap is used orally as poison antidote. Leaves mixed with coral lime and water is rubbed on the body to treat aches and pains normally experienced with fever.

References:

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4) Willamn, J.J., and Li, H.L., *Lloydia*, (1970), *33 S*, 1-286.
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9) Holdsworth, D.K., *Sci. New Guinea*, (1974), *2* (2), 164-171.
10) Holdsworth, D., *Papua New Guinea Med. J*., (1975), *18*, 142-148.
11) Holdsworth, D., *et al*., *Int. J. Crude Drug Res*., (1989), *27* (1), 55-61.
12) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Ficus wassa* Roxb.**

***Ficus wassa* Roxb.** **Moraceae**

Local Names : avavaia (Nangananga, East New Britain); gaba-jekni (Nyamikum, Sepik).

Description. Shrubby tree, about 2-4 m tall, grayish bark, flaky, scaly, branches brown with grayish patches, gray hairy below younger leafy parts; leafy twigs reddish brown scabrid with upturned short, stiff hairs, leaves opposite, lanceolate, sinuate, remotely serrate, apex acuminate, base cuneate, with a gland at the angle of each of the basal lateral veins, scabrid; receptacles clustered at the axils and around leafy twigs; receptacles globose, pink, turning creamy yellow when dry with brown dots, scabrid; pedincle reddish, glandular and scabrid.

Habitat. Lowland rainforest, especially on hill slopes and re-growth forests.

Distribution. Moluccas to Solomon Islands and Vanuatu.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1,2]. The scraped bark is chewed to give a quick relief from dysentery. Roots are used as a contraceptive.

References:

1) Holdsworth, D., *Int. J. Pharmacog.*, (1992), *30* (3), 185-190.
2) Holdsworth D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 31-32.

***Flagellaria indica* L.**

***Flagellaria indica* L.** **Flagellariaceae**

Local Names : soangang (Keregie, Morobe); mung (Nasingalatu, Morobe); suwagin (Smquany, Morobe); mingop (Yambo, Morobe); vuvu (Meramera, West New Britain); guiaiti (Kangnaman, Sepik); gwana (Rigo, Central Proince).

English Names : whip vine, supple jack.

Description. Climbing perennial, stem 10-15 mm thick, 3-6 m long, simple or branched. Leaves with large leaf-sheaths and very short petioles, lanceolate, ending in a long spirally-rolled point or tendrils. Flowers in terminal panicles, bisexual. Fruit a berry, globose, 1-seeded, seldom 2-seeded, smooth pink drupe 0.6 mm in diameter. Flowering and fruiting occurs throughout the year.

Habitat. Common in secondary forest, along forest borders and the inner margins of mangrove forest.

Distribution. Throughout the tropics and most parts of Papua New Guinea.

Constituents[1]. Flavonoids.

Biological Activity[2]. Antioxidant (weak activity), radical scavenging effect.

Traditional Uses[3-5]. Fresh stalk is chopped into small pieces in water and the filtrate drunk to relieve stomachache, darrhoea and dysentery. Plant is used as a contraceptive, and stem eaten to cause sterility. Fresh young leaves are boiled, cooled and solution drunk to treat asthma, shortness of breath, and fever.

References:

1) Woodley E.(ed.); *Medicinal Plants of Papua New Guinea, Part 1*: Morobe Province; (1991), Wau Ecology Institute Handbook No.11,62-64.
2) Masuda, T., *et al*., *J. Agr. Food Chem*., *47* (4), 1749-1754.
3) Holdsworth, D., and Balun, L., *Int. J. Pharmacog*., (1992), *33* (3), 262-264.
4) Holdsworth D.K. (ed.), *Medicinal Plants of Papua New Guinea,* (1977), South Pacific Commission Technical paper No.175, Noumea, New Caledonia, 32.
5) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Flemingia strobilifera* (L.) J. St.-Hil**

***Flemingia strobilifera* (L.) J. St.-Hil** **Fabaceae**
(syn. *Moghania strobilifera* (L.) J. St.-Hil.; *Flemingia strobilifera* (L.) R. Br.)

Local Names : arana (Rabagi, East New Britain); kabur na rar (Kuanua, East New Britain).

English Names : luck plant, wild hops.

Description. Erect shrub to 2 m tall; twigs white hairy. Leaves unifoliate, leaflets ovate to elliptic, entire, acute or acuminate, above glabrous, beneath fine hairy; petiole 1-4 cm long. Inflorescence racemose or paniculate, conspicuous by the double row of large, kidney-shaped, cutaneous, folded bracts; flowers single, enclosed by the bracts, greenish-yellow. Calyx with 5 acute teeth. Stamens diadelphous, 9 + 1. Ovary 2-ovulate, with a filamentous style. Pods oblong, inflated, 6-14 mm long, 3-5 mm wide, dehiscent, the valves twisting; seeds 2, ovoid, 3 mm long, brown-black with red mottling.

Habitat. Abandoned pastures and other disturbed areas, often forming dense thickets. Common, particularly on dry soil; lacking in swampy places.

Distribution. Common throughout South Pacific region and considered an invasive species.

Constituents[1-5]. Ascorbic acid, dihydroxychalcone, flemiculosin tetramethoxy flavonoid, galacturonic acid, mannose, fructose, inositol, leptosin, lignoceryl lignocerate, naringin, floridzin, raffinose, ribose, beta-sitosterol, *n*-tritriacontane, *n*-triacontane, *n*-heptacosane, *n*-hexacosane, *n*-nonacosane, *n*-octacosane, *n*-dotriacontane, *n*-hentriacontane.

Biological Activity. None

Traditional Uses[6,7]. The women chew a seed each month as a contraceptive. A handful of fresh leaves are rubbed between hands and the juice squeezed. The juice is then applied on a person's body to "chase off" spirits and help him overcome his fear and confusion.

References:

1) Nigam, S.S. and Saxena, V.K., *Planta Med.,* (1975), *27*, 98.
2) Bhatt, S., *Indian J. Chem.,* (1975), *13*, 1105.
3) Saxena, V.K., *et al., Planta Med.,* (1976), *29*, 94.
4) Khattri, P.S., *et al., Heterocycles,* (1984), *22* (2), 249-252.
5) Chen, A.H., *et al., J. Chin. Chem. Soc.,* (1976), *23* (2), 111.
6) Holdsworth D.K., *Medicinal Plants of Papua New Guinea,* (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 32.
7) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Harrisonia brownii* A.H.L. Juss.**

***Harrisonia brownii* A.H.L. Juss.** **Asteraceae**

Local Name : iburo (Delama, Central Province).

Description. Scandent shrub. Stem brown with numerous lenticels and paired spines at base of older leaves and leafless twigs. Leaves alternate, trifoliate, terminal leaflet larger, dull mid-green above, slightly hairy on both sides. Margins irregularly crenate towards apex of leaflets. Flowers in axillary cymes, tiny, 4 petals, 8 stamens. Fruit a drupe with shiny black exocarp and purple flesh, slightly 4 lobed containing 4 seeds.

Habitat. Common in scrub, especially at margins.

Distribution. Central Malesia to South East New Guinea and Northern Australia.

Constituents[1-4]. Brownin A – H (triterpenes).

Traditional Uses[5-7]. The leaves are boiled until they turn yellow, and the bitter solution is drunk to treat malarial fever or asthma. Shaded dried entire plant is also used to treat malarial fever. Leaf decoction is drunk to treat a variety of conditions including diarrhoea, cough, asthma, and malaria.

References:

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2) Mitsunaga, K., *et al., Tetrahedron Lett.,* (1993), *34* (40), 6415-6418.
3) Mitsunaga, K., *et al., Phytochemistry,* (1994), *35* (2), 451-454.
4) Mitsunaga, K., *et al., Phytochemistry,* (1993), *37* (5), 1443-1446.
5) Holdsworth, D., *Int. J. Pharmacog.,* (1991), *29* (3), 231-236.
6) Holdsworth D.K., *Medicinal Plants of Papua New Guinea,* (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 33.
7) Nick, A., *et al., J. Ethnopharmacol.,* (1995), *49* (3), 147-156.

***Hibiscus rosa-sinensis* L.**

***Hibiscus rosa-sinensis* L.**

Malvaceae

Local Names : banban (Hisiu, Central Province); hibiscus (Waiwa, Central Province); gelegwaugwau (Rigo, Central Province); ovaova vava'a (Vanapa, Central Province).

English Names : red hibiscus, rose of china, chinese hibiscus.

Description. Shrub up to 4 m high. Leaves simple and or lobed, alternate, ovate, coarsely toothed, petiolate, the blades with conspicuous serrated margins. Flowers large, variable in form (including "double-flowered" forms), consisting of 5 large petals (corolla) with a stalk protruding out from the centre. Flowers attractive with petals ranging from red to orange to yellow. Fruits a capsule with many small black seeds. Flowers and fruits available throughout the year.

Habitat. Mostly cultivated as ornamental plant near homes, gardens and plantations; grows well both in cool and dry places.

Distibution. Widely distributed in the tropics and throughout Papua New Guinea.

Constituents[1-7]. Beta-sitosterol, campesterol, stigmasterol, cholesterol, ergosterol, lipids: arachidic acid, behenic acid, oxalic acid, palmitic acid, octanoic acid, stearic acid, sterculic acid, tricosanoic acid, tridecanoic acid, undecanoic acid; citric acid, tartaric and, fructose, glucose, sucrose, flavonoids and flavonoid glycosides, hibiscetin, cyanidin and cyanin glucosides, chrysanthemin, qercetin; alkanes.

Biological Activity[8-12]. Antipyretic, analgesic, anti-inflammatory, anticonvulsive, antispasmodic, CNS depressant, hypotensive, hypothermic, antiestrogenic, antispermatogenic, antiimplantation, abotifacient, uterine stimulant, hypotensive, embryotoxic, hypothermic, antihepatotoxic, insect attractant, anti-fungal.

Traditional Uses[7,13-17]. Extract from crushed roots and leaves is drunk to treat diarrhoea and dysentery. Sap from the flower bud is squeezed onto a sore eye. Juice from the crushed leaves mixed with salt water is taken to relieve stomachaches. Infusion of the young flower shoot is drunk for shortness of breath, minor body aches, and pains associated with fever and menstrual irregularity. An aqueous extract of flower is taken to regulate menstruation. Flowers and leaves are soaked in coconut juice for several hours and the solution given to pregnant woman to induce labor. Leaf decoction is also drunk to induce labor. Young leaves of *Hibiscus rosa-sinensis*, *Acalypha wilkesiana*, *Euodia hortensis* and *Ocimum basilicum* are placed in hot water and the patient exposed to the steam for treatment of pneumonia, malaria, pain and fever.

(continued on page 273)

***Hibiscus tiliaceus* (L.)**

***Hibiscus tiliaceus* (L.)** **Malvaceae**

Local Names : varvar (Gunantuna, East New Britain); banj (Gaikorovi, Sepik); pow (Manus Island); valu (Hula, Central Province); loge (Buka, North Solomon); luwalage (Tawala, Milne Bay).

English Name : beach hibiscus

Description. Spreading medium sized tree up to 15 m tall. Leaves alternate, petiolate, broadly ovate to cordate and palmately veined. Flowers large and showy, 5-merous, corolla yellow, deep maroon in the center, and conspicuous staminal column arising from base of the ovary. Fruit a subglobose capsule up to 25 cm long with numerous small seeds. Flowers and fruits available throughout the year.

Habitat. Commonly found on beaches, in thickets, weedy forest margins of swamps and rivers. Also used as ornamental plant around the house yards.

Distribution. Found almost everywhere in Papua New Guinea, and particularly on the foreshore, on river banks and around estuaries.

Constituents[1-3]. Para-coumaric acid, fumaric acid, hyperoside, cyanidin-3-sophoroside, lapachol, beta-sitosterol, gemlophuran, gossypol, hibiscolactone A, hibiscone A, hibiscone B, hibiscoquinone A, hibiscoquinone B, hibiscoquinone C, hibiscoquinone D, mansonone D, mansonone E, mansonone F.

Bilogical Activity[4-6]**.** General CNS effects, antioxidant, cytotoxic (weak).

Traditonal Uses[7-9]. Young leaves are crushed and squeezed into a small amount of water and drunk to facilitate childbirth. Juice prepared in the similar manner is also used to treat itchiness (urticaria), sore throats and cough. Solution prepared from bark is taken orally to relieve coughs and tuberculosis. Young leaves are heated over a fire and applied to sores.

References:

1) Subramanian, S., and Nair, A.G.R., *Curr. Sci*., (1973), *42*, 770.
2) Ali, S., *et al*., *J. Chem. Soc. Perkin Trans I*, (1980), 257-259.
3) Lowry, J.B., *Phytochemistry*, (1976), *15*, 1395-1396.
4) Cox, P.A., *et al., Econ. Botany*, (1989), *43* (4), 487-497.
5) Masuda, T., *et al., J. Agr. Food Chem*., (1999), *47* (4), 1749-1754.
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8) Holdsworth, D., and Balun, L., *Int. J. Pharmacog*., (1992), *30* (3), 218-222.
9) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Homalanthus novoguineensis* (Warb.) K. Schum.**

***Homalanthus novoguineensis* (Warb.) K. Schum. Euphorbiaceae**

Local Names : ngohou (Kurti, Manus Province); hikumutu (Siwai, Bougainville).

Description. A shrub or tree to 10 m high. Leaf shape cordate or deltoid, margin entire, acuminate apex, broad lamina, base truncate or cordate, surface smooth. The wood is soft and has a lot of sup. The sup is very poisonous to the eye. Bark green coated with a powdery white substance. Flowers yellow campanulate, unisexual, monoecious or dioecious, very variable in construction and form sometimes with a calyx or corolla or only a perianth or naked and then united to a small, flower like inflorescence. Stamens 1-1000; ovary sessile or stalked, usually formed from 3 carpels, 3-lobed and 3-celled, rarely 1-2-4 or 5-celled, styles as many as the carpels. Fruit usually dry (capsular), dividing into 3 cocci, falling away from a persistent central column, rarely a drupe or berry.

Habitat. Abandoned garden sites and secondary forest.

Distribution. Found almost everywhere. Common in both low and high altitude areas.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1,2]. The plant is generally considered poisonous. The new leaves and shoots are gently heated on fire and massaged on the stomach of children affected by spleen disorders. Leaf sup is mixed with water and drunk for 3 days as a strong contraceptive. The woman menstruates, but does not conceive. Bark scrapings are mixed with water and solution drunk for heartburn.

References:

1) Nick, A., *et al., J. Ethnopharmacol.*, (1995), *49* (3), 147-156.
2) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Impatiens hawkerii* Bull.**

***Impatiens hawkerii* Bull.** **Balsaminaceae**

Local Names : nagatumo (Kabiufa, Eastern Highlands); kolumbata (Marawaka, Eastern Highlands); imda (Aseki, Morobe).

Description. A perennial herb about 0.5-1 m tall, its stem is decumbent to erect, sometimes rooting at the lower nodes, pale to deep green, often tinged with red-purple. Leaves arranged in whorles of 3-7, petioled. Flowers solitary, one to each leaf axil, on upper part of stem, white, pink, lilac, purple, orange pale red, scarlet, crimson or magenta. Fruit a capsule. Flowers and fruits found all year round.

Habitat. Found in moist, shaded or semi-shaded places in montane or sub-montane forest, particularly along stream and river margins, among damp rocks or by track side. Often found in altitude ranging from 200- 400-3150 m.

Distribution. Well distributed around Papua New Guinea.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1-2]. Fresh leaves of *I. hawkeri* mixed with those of *Coleus scutellarioides* is rubbed on the stomach of a pregnant woman to give some relief from labour pains. Young leaves are chewed with traditional salt to induce labour. Leaves are eaten to promote pregnancy. The whole plant is cooked and eaten by children with stomachache. The juice from the fruit and leaves is rubbed onto the legs of small children who are retarded in their walking.

References:

1) Holdsworth, D., *Int. J. Cude Drug Res.*, (1989), *27* (2), 95-100.
2) Holdsworth, D. K., *Medicinal Plants Of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 36.

***Inocarpus fagifer* (Parkinson) Fosberg**

***Inocarpus fagifer* (Parkinson) Fosberg** **Fabaceae**
(syn.* Inocarpus edulis *J.R. Forst. & G. Forst.)

Local Names : aila (Pidgin); ela (Kuanua, East New Britain), gete (Ubili, West New Britain Province), Ip (Torawe, Siassi island).
English Names : tahitian chestnut; polynesian chestnut.

Description. A large perennial tree, 30 m tall, with conspicuous buttresses, leaves alternate, short petiolate, oblong, acute to acuminate, entire, base obtuse or slightly cordate, up to 30 cm long; flowers with white petals, fragrant, small, borne in axillary spikes, 3-6 cm long; fruit a yellowish kidney-shaped drupe, 1-seeded with a leathery surface. Seed edible when boiled and common in local markets. Tree bears fruit in April.
Habitat. Common; the tree grows from sea level to 400 m in altitude in coastal and near-coastal locations, usually near villages or in woody regrowth.
Distribution. Widely distributed in the low lands on the northern side of Papua New Guinea and on all island groups. It is most important in the Bismarc Archipelago and on the islands and mainlands of Milne Bay Province. It is also found throughout the South Pacific.
Constituents[1]. Lipids.
Biological Activity [2]. Spasmolytic, CNS effect (weak activity).
Traditional Uses[3]. Juice squeezed from the fresh leaves is mixed with water and drunk daily to bring down high malarial fever.

References:

1) Sotheeswaran, S., et al., *Food Chem., (1994),* 49, *11-13.*
2) Cox, P.A., et al., *Econ. Bot., (1989),* 43 *(4), 487-497.*
3) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

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

***Ipomoea batatas* (L.) Lam.** **Convolvulaceae**
(syn. *Ipomoea fastigiata* (Roxb.) Sweet)

Local Names : kaukau (Pidgin); kukule (Ubili, West New Britain Province); serimbat (Tarawe, Siassi Island); marpu (Wapenamanda, Enga Province); kanuwa (Gamadodo, Milne Bay).

English Names : sweet potato, camote, kumara.

Description. One of the more important root crops that yield sweet potatoes. Tuberous-rooted perennial, usually grown as an annual; top herbaceous, drying back to ground each year; stems forming a running vine up to 4 m long, usually prostrate and slender, with milky juice, lateral stem-branches arising from the short stem and usually not branched. Leaves ovate-cordate, borne on long petioles, palmately veined, angular or lobed, depending on variety, green or purplish flowers rare, inflorescence axillary, pedicle stout, angular, glabrous or hairy like the stem, shorter to much longer than the petiole. Corolla campulate to funnel shaped, gradually attenuate towards the base, and pale violet. Pods round; seeds 1–4 per pod, flattened, hard-coated, angular. Flowers and fruits throughout the year.

Habitat. Mostly cultivated in the gardens.

Distribution. Native to the American tropics, now planted throughout the warmer regions of the world for the edible tuber. Well-distributed in the Pacific islands, including Papua New Guinea.

Constituents[1-9]. Abscisic acid, 9-hydroxyfarnesol, 9-oxofarnesol, 6-hydroxydendrolasin, 6-oxodendrolasin, 4-hydroxymyoporone, friedelin, gibberellin, aesculetin, flavonoids, ombuin, paeonidin, querecitin, rubrobrassicin, cyanindin derivatives, lucoside, calystegine A-3, calystegine B-1, calystegine B-2, campesterol, daucosterol, beta-sitosterol, stigmasterol, alpha- and beta-carotene, chlorogenic acid, beta-cryptoxanthin, deca-12-15-dienoic acid, ellagic acid, scopoletin, suberin, starch, succinic acid, simonin I-V.

Biological Activity[11-15]. Wound healing acceleration, antihyperglycemic, desmutagenic, antimutagenic, antioxidant, antifungal, antibacterial, fungal stimulant.

Traditional Uses[16]. The white sap from the stem is used on sores which are then covered by the leaf. Cuts are treated by the juice from the heated tuber which dries to a rubber-like gum that holds the skin together. The leaves are boiled and drunk to relieve stomach-ache. The red-leaved variety, ‘wane’, is used with wild tobacco leaves to treat eye infections and alone to prevent sores on a baby’s skin.

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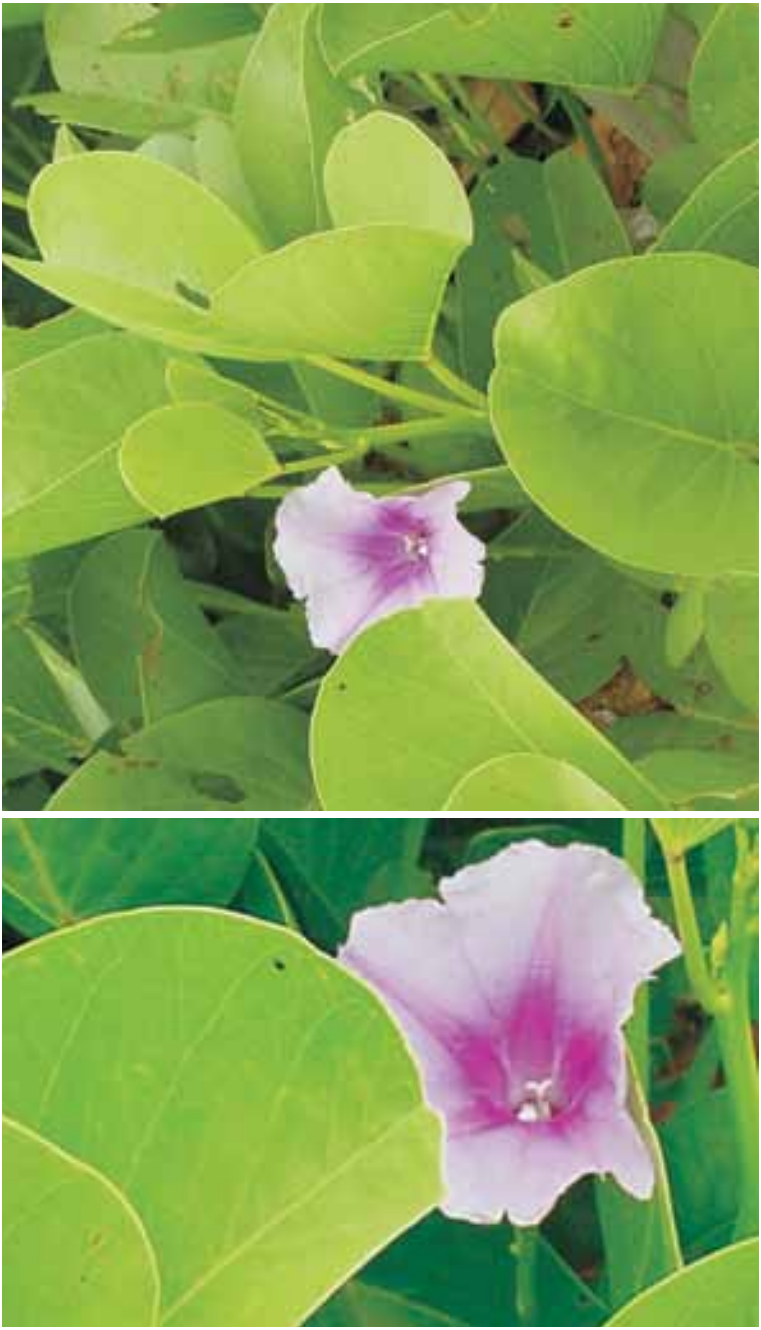

***Ipomoea pes-caprae* L.**

***Ipomoea pes-caprae* L.** **Convolvulaceae**

Local Names : vulagagaga (Ubili, West New Britain Province); lalatalinga (Buka, North Solomon Province); m'buwch (Manus Island); kokolauna (Hula, Central Province); akaris (Mumeng, Morobe Province); kwakwomo (Ferguson Island, Milne Bay); oopurauna (Hisiu, Central Province).

English Name :beach morning glory.

Description. A perennial herbaceous vine with a thick taproot. Stem long, hollow, trailing and rooting at the nodes, or occasionally twining, terete, angular, or flattened, glabrous, containing a milky juice. Leaves deeply 2-lobed, with rounded lobes, leaf-base cuneate to attenuate into the petiole, acuminate apex. Outer sepals about 9 mm long, corolla is about 6mm long. Corolla funnel shaped, 3-5 cm long glabrous, pink, reddish purple or violet, darker inside at the base, rarely white. Flower and fruiting throughout the year.

Habitat. Common along the beaches, sandy and coral bedding, and sometimes along drains.

Distribution. Widespread throughout the South Pacific and other tropical areas. In Papua New Guinea, it is found mostly on coastal lowland up to approximately 600 m in altitude.

Constituents[1-8]. Behenic acid, caproic acid, caprylic acid, melissic acid, myristic acid, pescaproside E, (-) mellein, hyperoside, quercetin, isoquercetin, fumaric acid, malic acid, butyric acid, citric acid, succinic acid, tartaric acid, paracoumaric acid, ferulic acid, benzoic acid, 2-4-dihydroxy-6-methoxybenzenoid, salicylic acid, syringic acid, vanillic acid, damascenone, beta-damascenone, alpha-amyrin, alpha-amyrinacetate, beta-amyrin, beta-amyrin acetate, betulinic acid, glochidone, sericic acid, eugenol, ipomea pes-caprae steroid, ipomea pes-caprae sterol, beta-sitosterol, stigmasterol, ipomea pese-caprae amide, ergotamine.

Biological Activity[4-5,9-13]. Analgesic, abortifacient, antiedema, antihistamine, antivenin, antispasmodic, anti-inflammatory, hypoglycaemic, anticholinergic, antitoxic, wound healing acceleration, platelet aggregation inhibition, serotonin release inhibition, antioxidant.

Traditional Uses[14,15]. Leaves are chewed to give relief for stomachache, and young leaves are heated over a fire until soft and applied to sores. The sap from the stem is rubbed onto sore eyelids and boils, and also used to treat earache. Decoction of the leaves is drunk to treat gonorrhoea. Decoction prepared from mature fresh leaves is taken daily to treat HIV infection and AIDs.

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***Kleinhovia hospita* L.**

***Kleinhovia hospita* L.** **Sterculiaceae**

Local Names : powi'i (Manus Island); amaeka (Koulupu, Central Province); mulumulu (Dobu and Goodenough Island, Milne Bay); mamua (Kokopo, East New Britain).

Description. Tree, usually of 6-10 m tall, but in ate secondary forest 20-30 m tall. Leaves alternate, roundish-cordate, acuminate, entire, 10-25 cm long and wide; petiole 5-20 cm long. Flowers bisexual, sepals 5, petals 5, united below to the staminal tube, 15-17 mm across, rose-red, the tip pf the tubular petal yellow. Petals and sepals about equal in length. Capsule 15-20 mm long and as wide. Flowers twice a year, in January and July/August.

Habitat. Common in secondary forest and in overgrown plantation.

Distribution. Widely distributed throughout Papua New Guinea.

Constituents[1,2.] Triterpenes (betaamyrin, bauerenol, baurenol acetate, betulin, lupeol acetate), fatty acids, flavonol (kaempherol, nicotiflorin, querecetin, rutin, vitexin), coumarin (scopoletin), steroid (betasitosterol).

Biological Activity[3-5]. Anti-tumour, weak antibacterial, chronotropic, histaminergic, general CNS effects (weak), spasmolytic.

Traditional Uses[6,7]. Bark is scraped, mixed with water, filtered and drunk to relieve coughs and tuberculosis. The crushed leaf is used to treat skin diseases, and rubbed on the forehead to relieve a headache. Juice extracted from young leaves and mixed in water is drunk to treat bee stings.

References:

1) Dan, S., and Dan, S.S., *Fitotherapia*, (1988), *59* (4), 348-349.
2) Ramesh, P., and Subramanian, S.S., *Arogya*, (1984), *10* (1), 76-77.
3) SundarRao, K., *et al., Int. J. Pharmacog*., (1993), *31* (1), 3-6.
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5) Cox, P.A., *et al*., *Econ. Botany*, (1989), *43* (4), 487-497.
6) Holdsworth, D. K., *Medicinal Plants Of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 39.
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***Laportea decumana* (Roxb.) Wedd.**

***Laportea decumana* (Roxb.) Wedd.** **Urticaceae**

Local Names : salat (Pidgin); nik (Mendi, Southern Highlands); nondi (Ialibu, Southern Highlands); niki (Tari, Southern Highlands); youta (Wagawaga, Milne Bay); yagwata (Tawala, Milne Bay); gofe (Kabiufa, Eastern Highlands); pisi (Kenemote, Eastern Highlands); nunt (Mt. Hagen, Western Highlands); nontz (Minj, Western Highlands); nakau (Wapenamanda, Enga).

English Name : stinging tree.

Description. Monoecious perennial herbs, sub-shrubs or shrubs to 2 m high. Stem woody, wood soft, brittle, well branched, densely armed with long rigid irritant hairs, especially at the apices, without glandular hairs; stipular and petiolar scars fairly conspicuous. Lamina 20-25 cm long, 6-18 cm broad, ovate, rarely elliptic; leaves rugose, dense with long irritant hairs present on both surfaces, more on the lower; base round to cordate; apex long, acuminate; margin of lamina serrulate to denticulate, stipules to 2 cm- long, subcoriaceous, lightly bifid, stigma to 3 mm long, male interfloral bracts longer than male flowers.

Habitat. Prefers shady places and grows well in wet but will-drained soil.

Distribution. South Borneo to all parts of Papua New Guinea.

Constituents. No information available.

Biological Activity. No information.

Traditional Uses[1-3]. The nettle-like leaves are used externally on the body to alleviate body pains, fatigue, headache, stomachache, joint and muscle pains, and bruises. A leaf, with its lower surface held towards the body, is gently stroked over the site of pain. As leaves are rubbed on aching area a stinging sensation is felt at first, but numbness and anaesthesia eventually develops. For treatment of asthma, leaves are rubbed on the chest.

References:

1) Holdsworth, D., and Balun, L., *Int. J. Pharmacog*., (1992), *30* (3), 218-222.
2) Holdsworth, D., and Rali, T., *Int. J. Crude Drug Res*., (1989), *27* (1), 1-8.
3) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

***Ludwigia adscendens* (L.) H. Hara**

***Ludwigia adscendens* (L.) H. Hara** **Onagraceae**

Local Name : No local name known.
English Name : floating malayan willow-herb.

Description. Prostrate–ascending herb, floating by means of aerophores. Petiole 0.5-4 cm long, lamina broadly oblong-elliptic; base normally acute; apex acute or obtuse. Sepals and petals 5. Petals white, yellow at base, obovate; apex rounded. Stamens 10; style 4-6 mm long; stigma globose, shallowly 5-lobed. Fruit capsular, linear, cylindrical, 1-4 cm long, 10 ribbed, thick walled, longitudinally ridge. Seed 1-rowed in each locule, firmly embedded in dense corky endocarp, breaking up into corky pieces, each of which encloses a single seed. Flowering period in between June and August.

Habitat. Lowland fresh water pools and swamps, pools, edges of rivers and lakes, and in ditches and canoe channels, up to 760 m altitude.

Distribution. Africa, Asia, throughout Malesia to Australia. A common weed found everywhere in ponds, swamps, shallow water of streams and rivers.

Constituents[1]. Astragalin, hyperoside, myricetin-3-*O*-beta-D-glucoside, myricitrin, quercetin, isoquercetin.

Biological Activity[2,3]. Water extract of leaf and stem is drunk as a contraceptive by women.

References:

1) Huang, S., *Shih Ta Hsueh Pao (Taipei)*, (1985), *30*, 547-569.
2) Holdsworth, D. and Balun, L., *Int. J. Pharmacog.*, (1992), *30* (3), 218-222.
3) Holdsworth, D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 40.

***Luffa aegyptiaca* Mill.**

***Luffa aegyptiaca* Mill.** **Cucurbitaceae**
(syn. *Luffa Cylindrica M. Roem.)*

Local Names : kakapula (Tawala, Milne Bay); vuvup (Kuanua, East New Britain).

English Names : sponge gourd, vegetable sponge, wash rag.

Description. A large climbing vine, with a thin, but very tough, light green succulent stem, attaining a length of from ten to thirty feet. Leaves alternate, palmately lobed, of a light green color and almost destitute of taste. Flowers monoecious, petals five, united below into a bell-shaped corolla; anthers cohering in a mass; ovary two-celled, style slender, stigmas three. Fruit elliptical ovate, fleshy and indehiscent, with a green epidermis, longitudinally marked with black lines, varying from ten to fifteen in number; under each of these lines is found a tough woody fibre. Fruit six to twenty-five inches in length. When the epidermis is removed it presents a layer of interwoven woody fibres, which may be used like a sponge, being hard and rough when dry, and soft when soaked in warm or cold water; they absorb the latter with the same facility as the ordinary sponge, and have the advantage over the sponge not to wear out by ordinary use for a number of years; seeds numerous, almost flat, broadly ovate, three-eighths of an inch long. Testa blackish brown and rough, cotyledons almost flat, of a yellowish brown color and oily.

Habitat. Grows on garden fences and in taro plantations.

Distribution. Abundant and widely distributed at bush margins, etc.

Constituents[1-8]. Aegptinin A & B, androseptoside A, 3-*O*-beta-D-glucopyranosylarjunolic acid, bryonolic acid, cucurbitacin B, ginsenoside RE and RG-1, gypsogenin, gypsogeninlactone, lucyin A, lucyoside A-P, 22-dihydrobrassicasterol, campesterol, 24-methylenecholesterol, clerosterol, codisterol, isofucosterol, 25(27)-dehydrofungisterol, cystine, 5-methylcytrisine, meta-carboxy-phenylalanine, citrulline, leucine, luffin, luffin A, luffin B, luffin S, alpha- and beta-luffin, lysine, fixed oil, lufa protein.

Biological Activity[9-13]. Antimycobacterial, antiviral, interferon production stimulation, skin depigmentation effect, cell proliferation inhibition, antimalarial, uterine stimulant, antiimplantation effect, abortifacient, fibronolytic, antihyperglycemic.

Traditional Uses[14]. A part of the vine is used as a string and worn as a belt by the patient with inguinal hernia until the swelling subsides.

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***Mallotus philippensis* (Lam.) Müll. Arg.**

***Mallotus philippensis* (Lam.) Müll. Arg. (syn. *Croton philippensis* Lam.)** **Euphorbiaceae**

Local Names : tore (Vanapa Bridge, Central Province); mamad (Kuanua, East New Britain).

English Names : kamala, kamala tree, red kamala, monkey face tree.

Description. Tree to 25 m tall with a bole up to 50 cm in diameter. Branches slender with pale bark. Leaves alternate and simple, articulate petioles, 1 to 2 inches long; rusty tomentose, blade 3 to 6 inches long, ovate with two obscure glands at base, entire, acute or acuminate at apex, coriaceous, upper surface glabrous, veins very prominent on under surface. Petiole 1-4 cm long, puberulous and reddish-brown. Flowers dioecious and yellowish brown; male flower terminal and axillary, 2-10 cm long, each flowers with numerous stamens, small; female flowers in spike or slender racemes, each flower with stellate-hairy, 3-celled ovary. Fruit a depressed-globose, 3-lobed capsule, 3-seeded. Seeds sub-globose and black.

Habitat. In re-growth rainforest or on forest margins and sometimes in open forests, also occurs in scrubby vegetations and on open rocky ground. Found at altitudes between 0-1600 m.

Distribution. The plant is cultivated and found commonly throughout Papua New Guinea.

Constituents[1-6]. Aloe emodin, bergenin, tergallic acid dilactone, 6-*O*-galloylbergenin, 3-*O*-galloylbergenin, norbergenin, 3-*O*-galloylnorbergenin, 6-*O*-galloylnorbergenin, brevifolin carboxylic acid, 2',4'dihydroxy-6'-methoxy-3'-prenylchalcone, 5,7-dihydroxy-6-methyl-8-prenylflavanone, kamalachalcone A & B trichomes, mallotus A & B, iso-rottlerin, corilagin, furosin, geraniin, mallotinic acid, mallotusinic acid, coroglaucigenin, coroglaucigenin l-rhamnoside, corotoxigenin, corotoxigenin l-rhamnoside, friedelin, kamaldiol-3-acetate, benzenoids, lipids.

Biological Activity[7-11]. Laxative, anthelmintic, fish poison, taenifuge, irritant, antispasmodic, hypoglycemic, antitumour, cytotoxic, hypoglycemic, antifilarial, antifertility, antibacterial.

Traditional Uses[12,13]. The solution obtained by boiling the leaves is drunk three times a day to treat diarrhoea. Root scrapings are chewed with betel mixture as a contraceptive by women.

(continued on page 275)

***Mangifera minor* Blume**

***Mangifera minor* Blume** **Anacardiaceae**

Local Names : saka (Nyamikum, Sepik); koai (East New Britain); uwii (Kurti, Manus Province); kongsi'i (Siwai, Bougainville); wel mango (Pidgin); vao (Ubili, West New Britain Province).

English Name : wild mango

Description. Tree, up to 32 m tall, trunk 30-120 cm diameter, sometimes with buttresses. Leaves alternate, entire, elliptic to lanceolate, 12-19 cm x 3-6 cm, petiole 1-3 cm. Panicles up to 30 cm long, glabrous. Petals 5, linear-lanceolate, flowers yellowish, fragrant, calyx 5-lobed, stamens 5, 1 fertile. Fruits smaller and of inferior quality than that of the cultivated species, oblong to ovoid, 5-10 cm x 4-7 cm, flesh thin, and fibrous. Fruiting season from October to January.

Habitat. Grows wild in lowland primary and secondary forest up to 750 m altitude; prefers damp and even wetland, and abundant near foreshore.

Distribution. Tropics; common in the lowlands.

Constituents. None reported.

Biological Activity. None reported.

Traditional Uses[1,2]. The wild mango bark is heated over a fire and then quickly placed onto a centipede bite to relieve the pain. The inner portion of the bark is squeezed in water and drunk to remove sputum and mucous due to asthma and tuberculosis. The inner portion of the bark mixed in lime is applied to swollen lymph nodes to alleviate pain. The scrapings from the bark are mixed with lime and rubbed onto the leg when there is severe itchiness.

References:

1) Holdsworth D.K., *Medicinal Plants of Papua New Guinea*, (1977), South Pacific Commission Technical Paper No. 175, Noumea, New Caledonia, 41.
2) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.

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

***Merremia peltata* (L.) Merr.** **Convolvulaceae**
(syn. *Merremia borneensis Merr.*; *Ipomoea peltata* (L.) Choisy.

Local Names : valeara (Kuanua, East New Britain); nangulenkik (Yangoru, East Sepik); hogouna (Siwai, Bougainville); palai (Kurti, Manus Provine).

English Names : merremia; mile a minute vine.

Description. A stout, subwoody twiner, with large tuberous roots, 15-50 m high, milky sap. On prostrate stems the leaves may be ovate or lanceolate, leaves roundish, short-acuminate, peltate, 12-20 cm across. Sepals 5, enlarged in fruit, corolla funnel-shaped, with a short tube; capsule globose ovoid, its upper part detaching as an operculum, the lower part then splitting irregularly into 3-4 valves. Both yellow and white flowered forms are known. The vines are used as a rope and binding material by villagers. It is easily the most abundant liane.

Habitat. Grows all over the grass or shrubs in reforested areas.

Distribution. Widely distributed and abundantly found.

Constituents. None reported.

Biological Activity[1]. Antiviral (weak activity).

Traditional Uses[2-4]. Fresh stem sap or crushed stem is applied on cuts, boils and wounds. Stem sap is also applied for sore breasts and for swellings. Stem pieces are applied onto fresh cuts to arrest bleeding. A new leaf is said to give relief when placed over a skin sore. The stem is crushed, juice squeezed and diluted with water and drunk for whooping cough. The juice from the new shoot is applied to eye inflammations. Small pieces of vine are heated over a fire and air is blown into bullet wounds.

References:

1) Yamamoto, T., *et al., Natural Med.,* (1997), *51* (6), 541-546.
2) Paijmans, K., (editor) 1976. *New Guinea Vegetation,* (1976), CSIRO. Australia, pp 136.
3) Holdsworth, D., *Int. J. Crude Drug Res.,* (1984), *22* (3), 11-119.
4) Traditional Medicine Database, (2002), National Department of Health, Govt. of Papua New Guinea, Waigani, N.C.D., Papua New Guinea.