



Australian Plants

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Conservation Strategy

A major Society objective with a specific plan of action

The Australian flora and fauna is a unique component of the world's natural treasure. Since 1788, 20 species of mammals and at least 100 flowering species have become extinct. With accelerating pressures on the environment, principally by human activities, the entire flora is under threat, some 200 plant species facing extinction in the immediate future. Living creatures and plant life are critically dependent upon one another, the whole being known as **biodiversity**; living organisms with interdependent life cycles.

As the creatures that remain, the birds, reptiles, mammals etc., are so dependent on the native flora, the Society has decided upon a long-term plan of natural conservation with specific objectives for the year 2001. See page 273.

"There are two major reasons for conserving biological diversity; one moral and the other practical. The practical reason is that the quality of human life depends on biological diversity. From the world's species come our foods and many of our medicines and industrial products. For example, drugs extracted from Queensland rainforest species are effective in the treatment of motion sickness and lymphoid leukemia. Given that only a small proportion of Australia's species have been investigated, the potential to discover many more useful products and drugs in the future is great." From Biolinks see page 273.

CONTENTS OF THIS ISSUE

Edible Plants — A series on plants of Northern Australia	Harry Dick	239
Red Ginger, <i>Hornstedtia scottiana</i> , page 239 — Green Ginger, <i>Amomum dallachyi</i> , page 242 — Blue Ginger, <i>Alpinia caerulea</i> , page 242 — The Ginger Family, page 243		
Cluster Fig, <i>Ficus variegata</i>	Harry Dick	254
Peanut Tree, <i>Sterculia quadricifida</i>	Harry Dick	255
Yellow Walnut, <i>Beilschmiedia hancroftii</i>	Harry Dick	258
Pepper Vine, <i>Piper novae-hollandiae</i> , <i>P. rothiana</i> , <i>P. caninum</i> , <i>P. subpeltatum</i>	Harry Dick	262
Scrub Lasiandra, <i>Otanthra bracteata</i>	Harry Dick	263
Native Monstera, <i>Rhaphidophora pinnata</i>	Harry Dick	266
Pothos, <i>Pothos longipes</i>	Harry Dick	267
Velvet Apple, <i>Diospyros hebecarpa</i>	Harry Dick	270
The Ginger Family in Australia, <i>Zingiberaceae</i>	R. M. Smith	245
Wine Making with Davidson's Plum	Irene Kajewski	250
Fancy a Feast — Try a Fig — <i>Ficus</i> sp. Lenore Lindsay, Aust. Plant Food Study Group		251
The Genus <i>Beilschmiedia</i> — classified by fruits	B. Hyland	259
Davidson's Plum, <i>Davidsonia pruriens</i>	Nan and Hugh Nicholson	267
My Garden in Ingham, Queensland — No. 12 — My Garden Series	H. R. Bosworth	269
More <i>Diospyros</i> — <i>Diospyros pentamera</i> , <i>D. mabacea</i> and <i>D. major</i> ... N. and H. Nicholson		270
Other <i>Diospyros</i> from the Flora of New South Wales	Gwen J. Harden	271
Aboriginal Food of the N.T. Top End — <i>Antidesma parvifolium</i>	John Brock	272
Conservation of our Australian Flora	A major Society objective	273
A Tropical Garden	Peter Ball	274
Planting a Native Garden in North Queensland	Yuruga Nursery	275
Wildflower Arrangement Activity	Editor	259 & 284

COVER PLATE — *Davidsonia pruriens* var. *jerseyana* — Photography by H. Nicholson.

The fruit is used for jam making, page 267; wine making, page 250; or a dessert, page 269; excellent plant for a rainforest garden, and a magnificent specimen plant.

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Red Ginger

Hornstedtia scottiana

A series on Edible Plants*

The Gingers, by Harry Dick, Cooktown, Queensland

The Plant Family ZINGIBERACEAE

A very common plant of the tropical rainforest, particularly of elevations below 500 m. Red Ginger will grow almost anywhere that is moist and receives a reasonable amount of light, along creeks and rivers, in flood damaged areas, where the canopy is broken by fallen trees, and along the sides of roads through the rainforest. It is also a pioneer in regenerating rainforest where the soil has not been badly depleted. The fronds of this species will grow to a length of 5 m in favourable conditions. See photograph on page 241.

After the small, red flowers (sketch on page 249) have bloomed, and the fruit begin to mature, the cone-shaped cluster of red and white bracts begin to swell. It is not until the summer months that the seeds have matured. The bracts forming the cones may then be pulled apart and perhaps a dozen papery capsules are found, each about the size of the end of the finger. These contain a mass of brown seeds stuck together with a very small amount of white flesh. They may be eaten without preparation. The flavour is most pleasant and, though it could never serve a hungry person, still the Aborigines were extremely partial to these fruit — if they could be called such.

The tender growing ends of the rhizome may be used as a vegetable and the leaves are useful in which to wrap food to be baked in the ashes. This ginger, along with the green variety, *Amomum dallachyi*, are sought by scrub turkeys and scrub fowls which scratch open the fruiting bodies to obtain the seeds.

These three gingers, *Alpinia caerulea*, *Amomum dallachyi* and *Hornstedtia scottiana*, will grow in almost full sun so long as their roots are kept cool either by mulching or low ground cover. They are easy to grow in tropical and sub-tropical areas, as understorey plants for anyone endeavouring to regenerate rainforest. They are, in fact, so typical of rainforest, particularly tropical rainforest, that they, more than the regenerated trees, give the area the sense of lushness and its rainforest atmosphere. All will grow readily from seed, taking about three years to reach maturity. A piece of rhizome taken in the late spring or early summer is much quicker.

*A series on Edible Plants

This commences a new series on "Useful Australian Plants" by Harry Dick. He intended the series to be a new book but others have beaten him to the market and publishers have turned him down. Very generously, he has donated his work for production in *Australian Plants*. It is immediately apparent that the work far exceeds, in value, work already published.

Australian Plant Gardening In The Tropics

And Rainforest Gardens

Our last issue dealt with gardening in the tropics and this is continued here. Residents in the tropics are referred to page 275 for practical details for creation of a wildflower garden. The plants of this issue will be of interest to those rainforest gardeners.

Experience over many years has shown that the plants of Northern Australia find wider application, the trees becoming excellent specimen plants in temperate areas, and shrubs perform well in southern rainforest simulated situations or as container, even indoor plants. Personal observations of gardens in all parts of Australia indicate that the garden/horticultural scene is not much different. The plant species are different but the principles are the same.



***Amomum dallachyi* — Green Ginger**

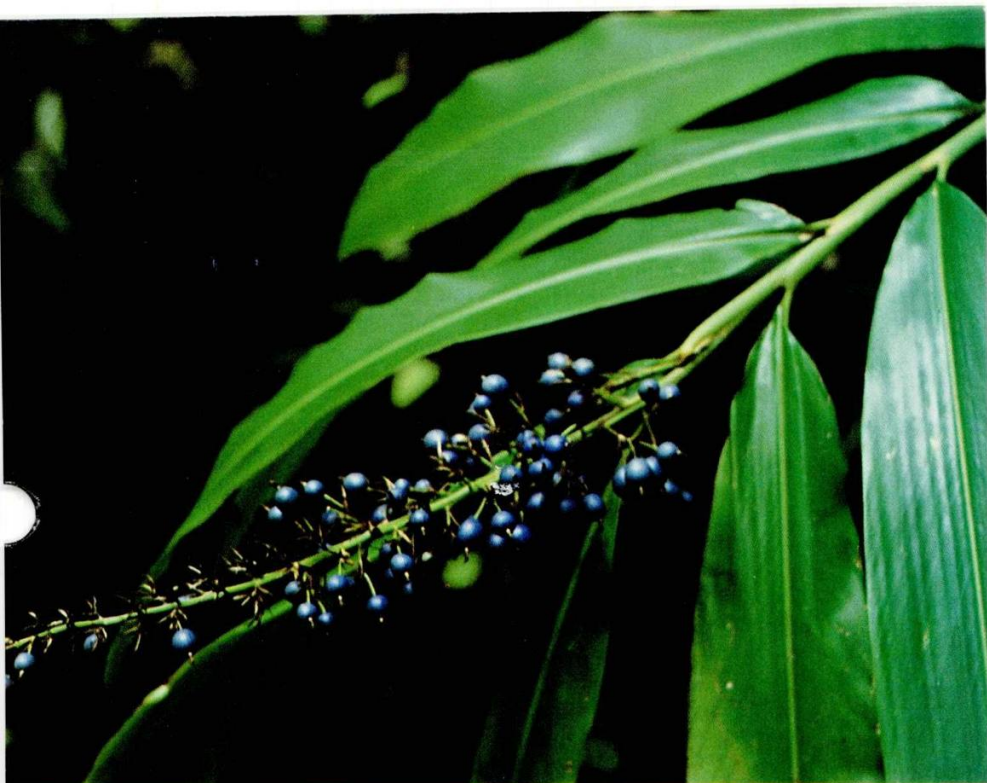
△ flowers

▽ plant in fruit

Photography by Harry Dick

Species of *Amomum* produce their flowers at ground level separate from the leaves. As the flower matures, the outer papery bracts fall off and the fruit develops (sketch page 249) as a tight bunch of green capsules becoming slightly yellow as they ripen. See page 242 for use of fruit and roots.





Alpinia caerulea △
Blue Ginger

Photography by
Harry Dick

▽ *Hornstedtia scottiana*
Red Ginger



Green Ginger

Amomum dallachyi

This is a lowland species which, occupying areas drier than *Hornstedtia scottiana* but wetter than *Alpinia caerulea*, is often found in company of one or the other of these species. However, in this species the whole of the frond or cane will be found to be a dark, shiny green and smooth to the touch, whereas the other species have much light brown colour in the canes which are rather harsh to the touch. The canes will attain a length of 3 m, though a little less is more usual. Photographs on page 240 and sketches on page 249.

The attractive yellow flowers bloom in ones and twos from a cluster of papery bracts arising at the base of the plant. When all have bloomed the bracts disappear and the fruit develop as a tight bunch of green capsules with fleshy "spikes". The green fruit become slightly yellowish as they ripen — ripening a few at a time from the base of the cluster. The ripe capsules are easily broken off and opened with the finger nail, the capsule splitting naturally into three sections. The white, more or less translucent, jelly-like pulp containing many brown seeds has a very good flavour — a flavour, said by one taster to resemble American white raspberries. This is a fruit which I am sure would have some commercial value.

Tender pieces cut from the growing ends of the much branched rhizome when it is growing actively during spring and summer may be cooked as a vegetable, while the pleasantly aromatic leaves, when used to wrap food that is to be cooked either in the ashes or in an oven, will often enhance the flavour.

This plant is quite attractive as a garden plant in tropical and sub-tropical areas, tolerant of full sun for, at least, half the day. Providing the lush understorey look in a rainforest, the addition of flowers and tasty fruit make it well worthwhile. It responds to extra water in the dry, and in mulch and manures. It will grow readily from seed, but will take about three years to reach maturity. A piece of rhizome taken in the spring is much quicker.

Blue Ginger

Alpinia caerulea

A quite common species in drier areas of rainforest and often in open forest that is undisturbed by fire and is beginning to be colonised by rainforest species. It is seldom found at elevations above 300 m. Although this is a lowland species, it is common from northern New South Wales to north Queensland. A clump may have 20 to 30 fronds. The leaves have a colour phase being purple on the underside. Photograph, page 240, sketch, page 249.

Like the other gingers mentioned below, the growing tips of the rhizomes make an acceptable cooked vegetable if taken during the spring and summer growing period. However, it has another virtue that the ordinary bushwalker, etc. may find easier and more acceptable to exploit. This is the seeds which, when crushed, have a flavour so resembling cardamom that they quite adequately replace this spice. These seeds are contained in dry, sky-blue fruit a little over one cm across carried on a spike on the ends of the canes. The seeds from fresh fruit have a damp appearance and are slightly sticky. If these seeds are sucked the dampness will be found to have a beautiful flavour — but that is all — a flavour — nothing else.

This plant may be found fruiting at any time from November to March.

The Ginger Family

by Harry Dick

All except *Etlingera* and *Curcuma* are clumps of fronds appearing to rise straight out of the ground. In fact they arise from much branched underground rhizomes like some ferns, with closely spaced nodes so that the "fronds" or "canes" emerge rather close together in a roughly circular area. Fronds or canes are very poor terms to use as the stem of the frond is made up of tightly "wound" leaf sheaths like a banana plant. The leaves are alternate on the frond and are carried in one plane, more or less horizontally. They bloom in summer and fruit in autumn.

Red Ginger, *Hornstedtia scottiana*, may produce clumps two metres across with perhaps 100 fronds. The others are not so rampant. A clump of *Alpinia caerulea* may have 20 to 30 fronds, *Alpinia arctiflora* and *Amomum dallachyi* up to 12 and *Pleuranthodium racemigerum* up to 6.

Etlingera australasica has a creeping though still underground rhizome with the nodes from which the fronds arise spaced no closer than 30 cm so that the fronds are scattered. Also the flowers are always some distance from individual fronds so that one who is unfamiliar with this ginger may not relate the flowers to the plant. Fronds of this species may be scattered through the undergrowth over a fairly wide area, 30 metres perhaps, but it is difficult to say how many plants are involved. Sketch, page 249, photo, page 253.

Curcuma australasica is common in the open forest around Cooktown. The rhizome is very short. A single plant may produce, at the most, three or four tufts of leaves (with three or four leaves in each tuft). It forms small oval "tubers" on the roots which are said to have been eaten by the blacks. Perhaps they were but they taste pretty dreadful to me. These "tubers" are obviously reserve food for the plant as they will not grow. The plants die back in autumn and shoot again in spring. Often flowers will appear before the leaves. Colour ranges from pale pink to dark red and about here it is called Pink Lily, often corrupted to Pig Lily. It would make an attractive garden plant that demands nothing and I believe it has been successfully grown as far south as NSW. ■

Cultivation of Native Ginger, *Alpinia caerulea*

Australian Rainforest Plants*

As a lush, glossy foliage plant, Native Ginger can be grown indoors or outdoors, even in cool southern climates, but to look its best it needs humus-rich soil, shelter and plenty of water. Full sun and light frost, although tolerated, will burn the leaves. The bright blue fruits remain for months during autumn and winter and, if planted fresh, will germinate within two months. Alternatively, the rhizome can be divided to make new plants.

Native Ginger was used by Aboriginal people who ate the flesh surrounding the seeds as well as the gingery tip of the roots. They also used the broad leaves to wrap meat for cooking and interlaced them to make shelters.

*Australian Rainforest Plants

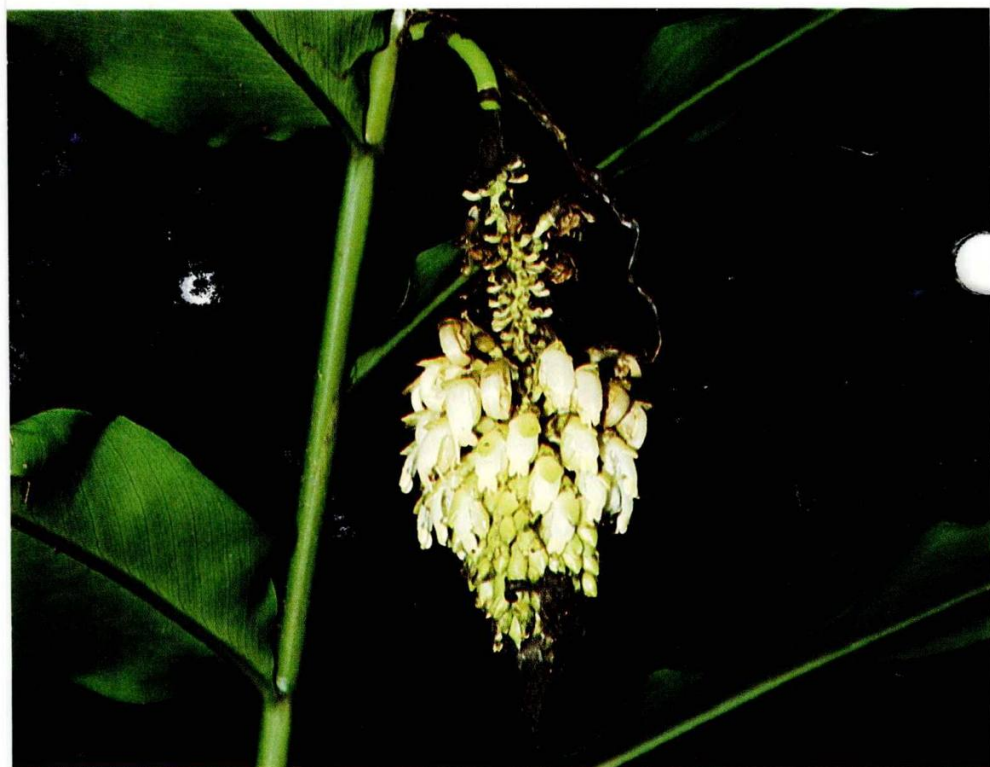
by Nan and Hugh Nicholson

Volume 3 of this exceptional series of small books is now available. Each volume comprises 72 pages (24 × 17 cm). In this issue are articles and colour photographs similar to those in the series. Judge for yourself. The plant descriptions are just the way you want them, easily read and interesting. The colour photography is superb as you can see on page 237. There is much interest in rainforest plants and so little is known about them. This series is produced in small volumes, although large pages, due to the financial restraint of the authors who produce at their expense. At least it makes the price per volume small at \$11.65, 250 gms.



Curcuma australasica △
Photography by Garry Sankowsky

▽ *Pleuranthodium racemigerum*
Photography by David Hockings



The Ginger Family

by R. M. Smith

Australian Zingiberaceae — The Ginger Family

Key to Genera

1. Stem very short, leaves appearing tufted with loosely clasping leaf sheaths; bracts of the inflorescence forming pouches *Curcuma*
1. Stem well developed, frond-like with closely clasping leaf sheaths; bracts of the inflorescence never forming pouches 2
2. Inflorescence terminal on the leafy shoot 3
2. Inflorescence borne separately from the leaves at ground level, sometimes partially subterranean 5
3. Flowers often entirely replaced by bulbils, if present then filament long exserted and anther with two appendages on each side *Globba*
3. Flowers never replaced by bulbils; filament not long exserted, anther without lateral appendages 4
4. Lip strongly cup-shaped; fruit red, splitting to the base into three equal parts when ripe *Pleuranthodium*
4. Lip never cup-shaped; fruit round and blue or oblong-ovoid and greyish purple/brown, never splitting as above *Alpinia*
5. Inflorescence partially subterranean; central part of lip much elongated *Etlingeria*
5. Inflorescence above ground; central part of lip not elongated 6
6. Inflorescence surrounded by an involucre of rigid sterile bracts *Hornstedtia*
6. Inflorescence without an involucre of rigid sterile bracts *Amomum*

Curcuma australasica

A very short stemmed herb of up to about 60 cm, with large (to 45 cm long) long stalked, ovate-lanceolate leaves which appear tufted. The striking, cylindrical inflorescence arises in the middle of the cluster of leaves; it consists of prominent pouch-like bracts; those in the lower 2/3 of the spike are green and subtend pale yellow flowers; at the top the bracts (coma) are flowerless and pale rose in colour. This species is also found in New Guinea.

Curcuma longa is naturalised in north Queensland. It is cultivated throughout the tropics as the source of turmeric.

Pleuranthodium racemigerum (*Alpinia racemigera*)²

Herb 3–4 m tall with frond-like leafy shoots as shown in the photograph opposite. The inflorescence is pendulous, hanging as shown in the photograph, to 30 cm long with a pubescent axis bearing numerous white flowers, sketches, page 247. The bracts fall quickly revealing the flowers and there are no bracteoles. The flowers are up to 2 cm long and the lip is strongly cup-shaped. The ovoid, orange red fruits are 2 cm long, and break to the base into three equal segments when ripe. Restricted to north Qld and New Guinea.

¹**Flora of Australia** — This article was prepared for Australian Plants and uses the sketches from Vol. 45 of Flora of Australia, with permission. Volumes published to date are available from the book service on the inside of the rear cover as follows — Vol. 3 Hamamelidales to Casuarinales \$26.95, 1 kg; Vol. 18 Podostemaceae to Combretaceae \$40.45, 1.3 kg; Vol. 19 Myrtaceae \$40.50, 1.5 kg; Vol. 22 Rhizophorales to Celastrales \$21.95, 1.5 kg; Vol. 25 Melianthaceae to Simaroubaceae \$21.95, 1.5 kg; Vol. 29, Solanaceae \$21.95, 1.5 kg; Vol. 45 Hydatellaceae to Liliaceae \$40.50, 1.5 kg; Vol. 46 Iridaceae to Dioscoreaceae \$21.95, 1.5 kg.

²*Pleuranthodium racemigerum* (F. Muell.). R. M. Smith in *Edinb. J. Bot.* (in press).

Twenty-two species (most of which occur in New Guinea) hitherto placed in *Alpinia* have been transferred to *Pleuranthodium* (K. Schum.) R. M. Smith. They are separated from *Alpinia* on the cup-shaped lip, clavate stigma and the fruit which splits to the base with age, see page 247.

Alpinia caerulea

Herb up to 2 m tall with frond-like leafy shoots. The congested inflorescence is borne at the top of a leafy shoot and may be up to 30 cm long. The flowers arise in fascicles (cincinni) of six, they are c. 2.5 cm long, with 1–2 cm stalks, and each is subtended by a tubular bracteole. A typical flower cluster (fascicle) is shown in Fig. H opposite, the lowermost flowers having fallen, their stalks remaining and poking out from the bracteoles. There is a bud at the top of the cluster which will develop into a flower. The lip of the flower is white with purple markings and a two-lobed tip. The round fruit is brilliant blue when ripe and c. 1.5 cm in diameter. Occurs north from Newcastle, New South Wales to the islands of Torres Strait. Photograph, page 241; use as a ginger, page 242.

Alpinia arundelliana

This species has been treated as a variety of *A. caerulea* and the two may be found in the same localities. It has similarly structured flower clusters to *A. caerulea*, one of which is shown in Fig. M opposite. It can, however, be distinguished by the shorter inflorescence, much shorter (to 4 mm) flower stalks and the entire lip. The mature capsule is blue. Occurs north from Sydney, New South Wales, to south-eastern Queensland.

Alpinia modesta

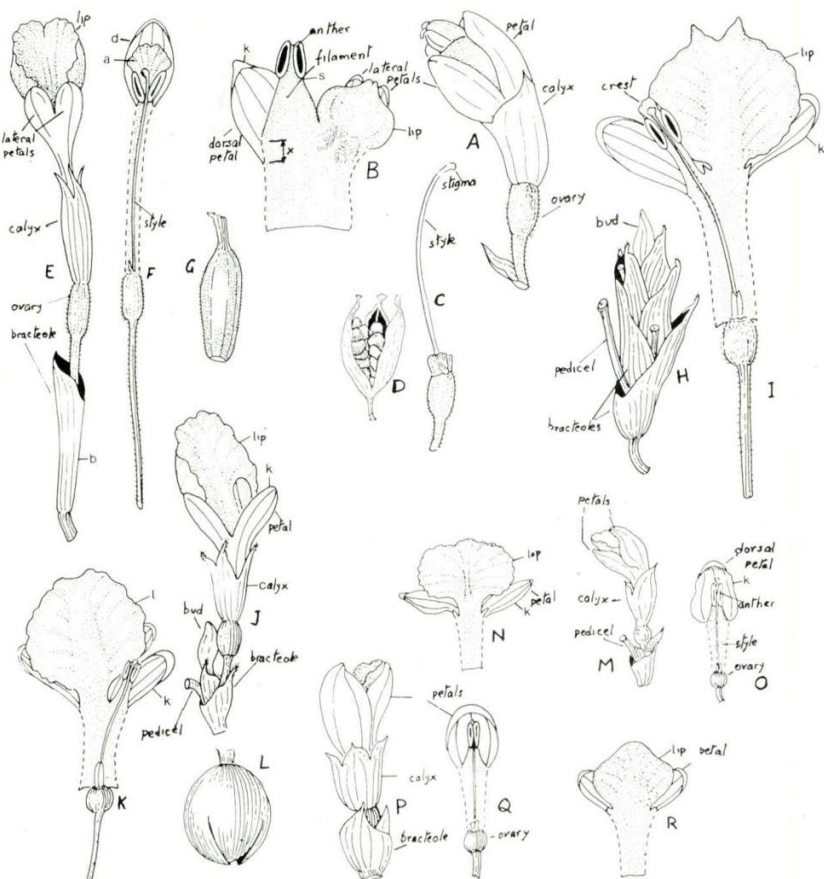
Herb of up to 1.5 m with frond-like leafy shoots. Inflorescence to 7 cm; bracteoles ciliate margined. Flowers in fascicles of c. 4, c. 1.5 cm long, with 2 mm stalks. Lip pink and white, more or less round. Fig. J shows a cluster of flowers (fascicle) with their bracteoles at the base of each; the first (lowest) flower has fallen but its stalk (pedicel) may be seen on the left, the second flower is fully mature and the third is still an unopened bud. Fruit bright blue. Restricted to the lowland and highland rainforest between Daintree River and Rockingham Bay, northern Queensland.

Alpinia hylandii

Similar to the above in habit, but easily distinguished by the shortly stalked leaves, more condensed inflorescence (2–3 cm) and glabrous bracts and bracteoles. Fig. P shows a cluster of flowers (fascicle) maturing one at a time, the new one growing out the top, but in this case the number of flowers is reduced to two. Fruit dark blue. Found in moist shady highland rainforest of northern Queensland.

Alpinia arctiflora

A very robust herb forming large clumps to 4 m in height, with frond-like leafy shoots. The leaves are shortly stalked and hairy on the lower surfaces which in some forms is purple. The inflorescence is borne at the top of a leafy shoot and is hairy throughout, up to 20 cm long, and bearing conspicuous pink bracts up to 6 cm in length, each of which subtends fascicles of at least six long stalked white flowers, each flower accompanied by a tubular bracteole. The flowers are about 6 cm long with a 2 cm rounded lip. The stamen has a large (4–6 mm) petal-like crest. In Fig. E the flower cluster is concealed by the tubular bracteole (b) about 6 cm long, borne at the top of a leafy shoot. The first flower to mature is shown growing out of the bract/sheath, a partial dissection of this flower showing its part in Fig. F. The fruits are rather oblong, up to 4.5 cm long and greyish purple brown. Occurs in coastal and tablelands rainforest of northern Queensland.



Pleuranthodium racemigerum — Fig. A, one of the singly borne flowers; B, a flower dissected to show the characteristic features, petals, lip and stamen (s); C, the pistil, comprising the ovary, style and stigma; D, a mature capsule, 1.5 cm long, orange red and splitting to the base. Until recently this plant was known as *Alpinia racemigera* but has been referred to *Pleuranthodium* because of the strongly cup-shaped lip (the bases of the lip and filament are joined above the insertion of the petals by the dimension $\times$ as shown), and the capsule which splits almost to the base with age, detail D.

Alpinia arctiflora — Fig. E, the flower clusters are first protected by bracts about 6 cm long, borne at the top of a leafy shoot. The first flower to open is shown, the remaining buds being concealed by the tubular bracteole; F, a partially dissected flower showing the dorsal petal (d), anther and prominent petal-like anther crest (a), and style; G, a mature capsule, greyish purple brown, 3–4.5 cm long.

Alpinia caerulea — Fig. H, an old cluster of flowers at the top of a leafy shoot. The lowermost flowers have matured and fallen leaving only their pedicels or stalks poking out from the bracteoles. There is a bud at the top of the cluster which will develop into a flower; I, a flower dissected.

Alpinia modesta — Fig. J, a cluster of flowers with their bracteoles; the first flower has fallen but its stalk (pedicel) may be seen on the left; the second flower is fully mature and the third is still an unopened bud; K, a dissected flower; L, a mature capsule, blue and 1–1.5 cm in diameter.

Alpinia arundelliana — Fig. M, a similarly structured flower cluster with matured flower; N, a dissected flower.

Alpinia hylandii — Fig. P, a similar pattern of flower clusters but the number of flowers is reduced to two; Q, a dissected flower and R, a dissected flower showing the corolla opened out.

Amomum queenslandicum

Species of *Amomum* produce their flowers at ground level, separate from the leaves as shown in the photograph on page 240. The flowers are each protected by large bracts that are not sterile as in *Hornstedtia*.

Herb to 3 m tall with frond-like leafy shoots. The leaves are long-stalked and densely hairy on the lower surfaces. The tightly congested 5 × 3 cm inflorescence arises separately from the leaves at ground level and is protected by ovate, c. 4 cm long bracts, each subtending a white flower, several of which may open at a time. The 2.5 cm long lip bears dark bluish veins and is blotched with yellow in the throat. The entire flower head (inflorescence) is shown in Fig. E and an individual flower in Fig. F. The fruits are flask-shaped, 3–4 cm long with nine, toothed, wings. Occurs in Nth. Qld. rainforests and in New Guinea.

Amomum dallachyi

Differs from the above in the glabrous, stalkless leaves, bright yellow flowers and prickly fruits. In the wild, when not in flower or fruit, it may easily be mistaken for *Pleuranthodium racemigerum* except that the latter prefers moister and denser shade. This species is also found in the same area.

Hornstedtia scottiana

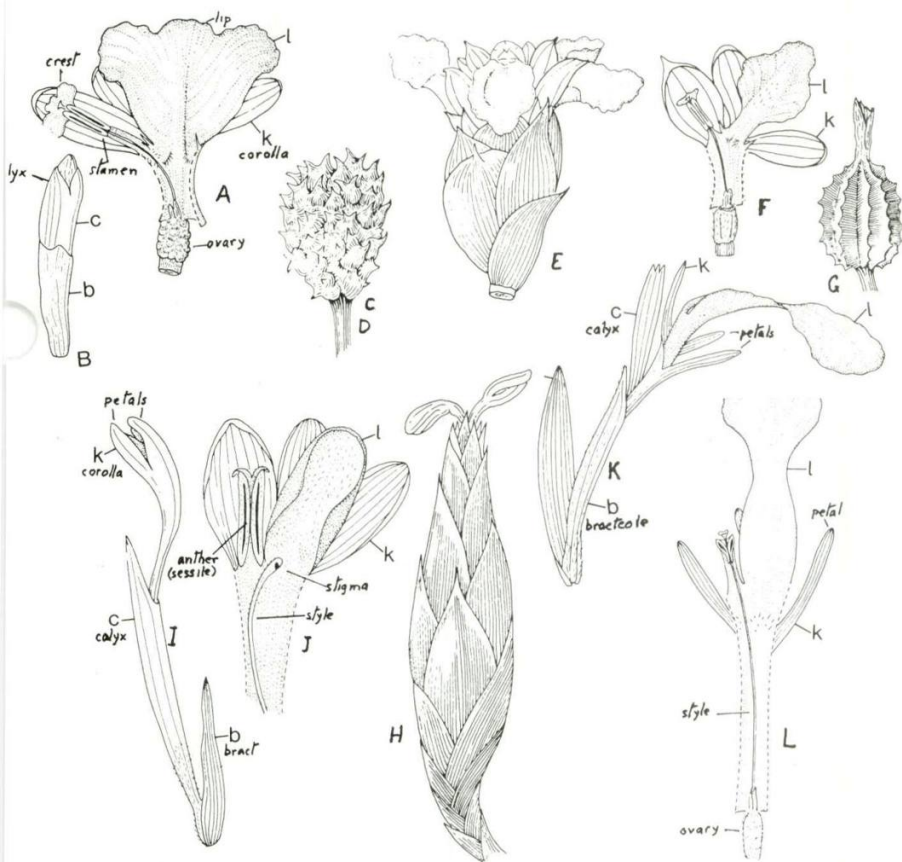
A robust herb up to 4 m tall with frond-like leafy shoots. The cone-like inflorescence, which may be up to 12 cm long, arises separately from the leaves just above ground level and is protected by rigid red bracts. These are shown well in the photograph on page 241 and in Fig. H as a cone-like structure with two flowers appearing at the top. The long tubed flowers, which are usually red, but occasionally white, appear from the top of the cone, two or three at a time; only the upper part emerging from the bracts. The small oblong lip is hidden by the petals. One flower is shown in Fig. I and this is dissected in Fig. J. This species occurs in rainforests in Nth. Qld and New Guinea.

Etlingera australasica

A large herb with frond-like leafy shoots up to 3 m high. The inflorescence arises separately from the leaves at ground level, its basal part embedded in the litter. Only four to six flowers are produced, but they are very conspicuous and bright red in colour. One flower is shown in the photograph on page 253 and in Fig. K, it being drawn again in Fig. L, dissected, to show its parts. Four to six red flowers are usually produced. The most prominent feature is the horizontally spreading elongated lip which is about 4 cm long. It occurs on the edge of rainforests of the Cape York Peninsula. It could be mistaken for *Hornstedtia scottiana* when not in flower or fruit except that it does not clump. The canes are scattered, usually no closer than 50 cm.

Globba marantina

A slender herb of up to 30 cm with small yellow flowers borne in the axils of broad green bracts. The flowers are characterised by the long arching filament and the lateral appendages of the anther, but frequently none are produced and they are replaced by bulbils. These bulbils are often mistaken for fruit, but are, in fact, a means of ensuring reproduction by vegetative means. Plants grow in colonies near the sea. They die back to a rhizome during the dry season. The occurrence of *G. marantina* on Murray Island is the most southerly occurrence of the species found in New Guinea and the Philippines.



Amomum dallachyi — Fig. A: A dissected flower to show ovary, style and stamen; B, a single unopened flower; and C, a characteristic spiny fruit. Photograph on page 240.

Amomum queenslandicum — Fig. E, an entire flower head (an inflorescence of flowers); F, a single flower dissected to show the style arising from the ovary with stigma at the top after passing through a stamen; G, the nine-winged capsule which yellows as it ages.

Hornstedtia scottiana — Fig. H, the entire flower head (inflorescence) which is protected by rigid red bracts forming a cone-like structure with two red or occasionally white flowers appearing at the top; I, a whole flower removed from the head of flowers, the red bracts being removed to show a bracteole (b), the tubular calyx (c), and the corolla (k) comprising three petals and a labellum; J, the upper part of the corolla dissected to show the short style, a constant characteristic feature of this species, and a stamen. Photograph on page 241; its use as Red Ginger on page 239.

Etlingera australasica — Fig. K, the flower arising from leaf litter on the ground, its basal parts embedded in the soil; L, a flower dissected to show the style arising from the ovary to the stamen, the three narrow petals and large conspicuous labellum. Photograph on page 253.

Wine-Making with Davidson's Plum

by Irene Kajewski
Wild Food Cookbook*

The fruit of various North Queensland rainforest trees may be used to make wine. These include *Aceratium*, *Syzygium* (Lily-Pilly) and *Diploglottis*. However, of all those tried, the best flavoured wine is produced by the Davidson's Plum (*Davidsonia pruriens*). It is a full-flavoured, dry, red wine.

General Recipe

2 kg fruit; 1/4 teaspoon nutrient salts; pectonase; citric acid; 6 cups sugar; 1/4 cup yeast; 4 litres boiling water.

Fruit Preparation — Clean and chop the fruit. Discard the seeds. Deep freeze (Davidson's Plums are very hard and by freezing more flavour is obtained from the fruit).

Yeast — Different yeasts give different tastes. Suitable yeasts are CW 67 all purpose, Sauterne, Port, Danish all purpose and Burgundy. The CW 67 is easy to make up, and if time is short can be used without a starter bottle. Make up what is called a starter bottle using the directions on the packet. Keep it in the fridge and bring it out when a batch of wine is to be made. When removing yeast from the fridge, add a teaspoon of sugar and let it stand in a warm place until it begins to work. Before returning it to the fridge add the juice of an orange and a teaspoon of sugar, boiled together and cooled.

Utensils — To start with, you need a bucket, towel, and stocking top. All utensils must be clean. Use meta-bisulphide, 1 teaspoon to 4 litres.

Procedure — Place fruit and sugar in bucket. Pour over boiling water, stir with wooden spoon until sugar dissolves, cover and cool.

When cool, add yeast and nutrients. Cover. Stir twice daily for seven to nine days. Keep well covered in a non-draughty place. Strain into a 5 litre bottle. Airlock.

Store in a cool dark place for six weeks. Strain, taste and airlock for three months. After three months, strain, taste, and make decision whether to drink or airlock another three months. Some wine can be used in six weeks if so desired. This depends entirely on your own taste.

Additives such as banana juice, raisin juice, and cold tea (for white wines) add body or give better flavours.

Sweetening — Should the wine be too dry, add sugar syrup made with water in the ratio 2:1. Only small amounts added to the wine can improve the flavour. When topping up bottles from one racking to the next, most people use water, but you may also top up with poorer flavoured wines to retain the flavour of the fruit used. ■

Fancy a Feast? — Try a Fig

Lenore Lindsay
Australian Plant Food Study Group*

All figs are edible, but some are considerably more palatable than others. There are about 40 species of *Ficus* native to Australia, the fruits ranging from pea sized to larger than a plum, white through all shades of pink, orange, yellow, red, purple, and brown to black, and from hard and gritty through bland and mealy to sweet and juicy. Variations within a species are partly the result of the amount of rain received while the fruit is forming.



Creek Sandpaper Fig — Sketch by Shona Sadlier.

A leafy branch with fruit showing the under leaf venation, a seedling, an immature male gall fig (not edible) showing the male flowers lining the cavity. A female gall will be lined with female flowers eventually fertilised by a tiny wasp to become a gall flower in the edible fruit.

The fruit of all varieties must be thoroughly ripe, and the flesh soft and pulpy, to be worth eating. There is naturally much competition from birds, bats and possums, not to mention fruit flies and other insects, for the ripe fruit. The Aborigines either ate the fruit raw, or squashed and mixed the resulting mass with water, and sometimes honey, to a paste. This vastly improved the palatability of most types, but particularly those small, dry and relatively tasteless kinds. The explorer Leichhardt was very fond of cluster figs, though from his accounts they did not always agree with him. They were much prized also by European settlers for jam and jelly, and the flavour not only of the cluster figs, but most others also, is improved by cooking in some way.

The pointed growing tip of young folded fig leaves may be cooked as a green vegetable, though the sandpaper figs should be avoided. Their rough, abrasive leaves were instead used by the Aborigines to smooth spear shafts and boomerangs. The irritating milky latex from broken fig leaves or stems was used for treatment of wounds and infections such as ringworm and warts.

***Australian Plant Food Study Group** — This study group is run by the S.G.A.P. group in Rockhampton, Queensland, the contact being Lenore Lindsay, 323 Philp Avenue, Frenchville, Qld 4701. The annual subscription is \$5.00 and includes the supply of an interesting newsletter plus advice, seed, etc. The group's objectives are "to study cultivation of and promote improvement of Australian Food Plants," facilitate communication between/among individuals and groups who share these aims, and encourage an atmosphere in which knowledge is freely shared and advanced. Will all those with knowledge of useful plants please contact the group.

There are a number of *Ficus* species which occur naturally in the Rockhampton district, and these and others are represented in cultivation in the Kershaw Gardens. They may conveniently be divided into the cluster figs,¹ the sandpaper figs,² the rock figs³ and the strangler figs.⁴

Ficus racemosa — Cluster Fig: A substantial tree with large pinkish brown fruits carried in dense clusters from the trunk and main branches. The quality of the fruit varies considerably, tending towards the bland and mealy. They cook up very well, making excellent fig jam, jelly, and stewed fruit and pie fillings.

Ficus sp. 'Byfield' — Byfield Sandpaper Fig: This species has large coarse leaves but the fruit, yellow when ripe and the size of a large marble, is borne along the trunk and main branches like Cluster fig, which it resembles in taste.

Ficus opposita — Sandpaper Fig: This is the common local fig, occurring naturally along creek banks, on vacant land, in chook yards, etc. The ripe reddish purple, marble sized fruit are usually sweet and palatable, especially after a good season. They make good jam too. In my opinion, this is one of the best eating of the native figs.

Ficus coronata — Sandpaper Fig: Differing from *F. opposita* in having alternate leaves and very hairy "crowned" fruit. The fruit is generally palatable and cooks well, and the leaves can substitute as sandpaper.

Ficus sp. (possibly *F. fraseri*) — Red Sandpaper Fig: A rich, sweet fruit full of tiny seeds and dark red juice — quite different inside from the other sandpaper fruits, though fairly similar in external appearance. The shrub is open and rather straggly, growing in full sun in rocky situations. The one in the Kershaw Gardens was propagated from a cutting, and fruited for the first time this year. An excellent eating fruit.

Ficus platypoda — Rock Fig; Small Leaved Rock Fig; Small Leaved Moreton Bay Fig: Bears small, dry, reddish fruits, which can be acceptable when completely soft and ripe, particularly after a good season.

Ficus macrophylla — Moreton Bay Fig: A large and handsome tree, much used as a shade tree in parks and on properties. Its fruits are larger, but similar to *F. platypoda*, and are edible if unexciting when ripe and purplish.

Ficus virens — White Fig: A large, spreading tree of rocky habitats with distinctive softer, pointed leaves. Its fruit is small, dry, pale pink/apricot in colour, but not worth fighting the pigeons for.

Ficus microcarpa: Small reddish fruits not worth using.

Ficus benjamina — Weeping Fig: Beautiful shade tree, with tiny, hard, dry, gritty fruit, black when ripe. Not worth trying to eat.

Ficus obliqua — Small Leaved Fig; Strangler Fig: A heavy cropper, bearing numerous small, soft, orange/red, palatable fruits.

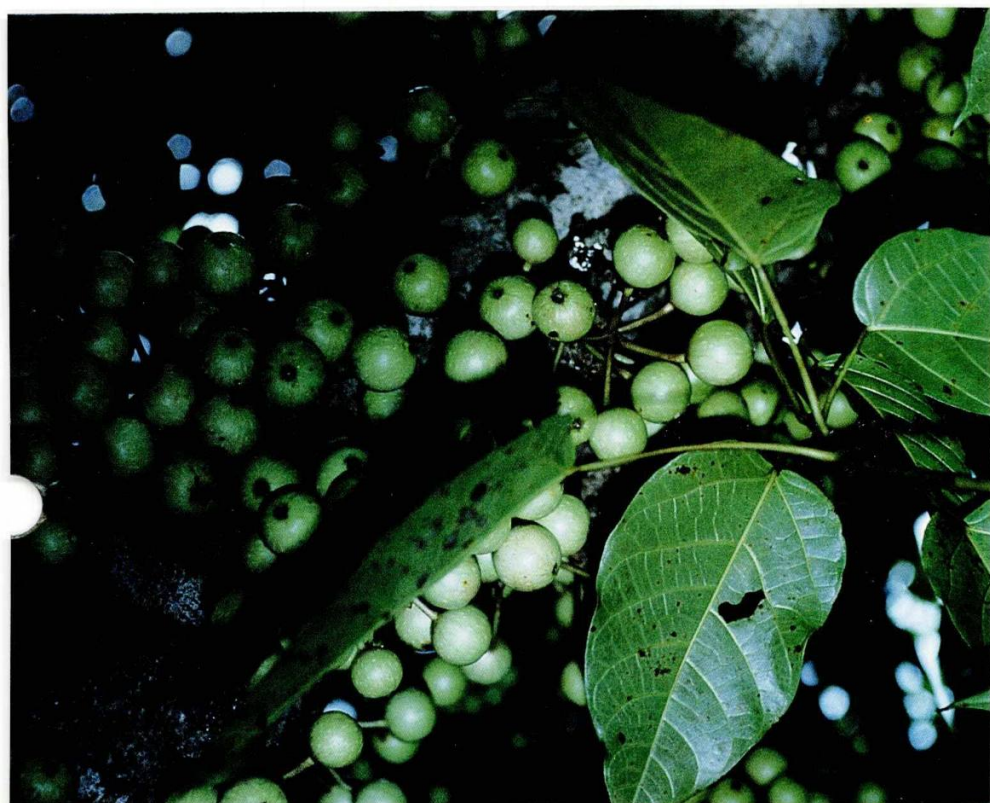
Ficus watkinsiana — Strangler Fig; Nipple Fig: This species, whose fruits are black and "spotted" when ripe, and of reasonably acceptable flavour, is from the northern rainforests. ■

¹Cluster figs are those species of *Ficus* which bear their fruit from the trunk and main branches.

²Sandpaper figs are characterised by rough, abrasive, large, coarse leaves.

³Rock figs are generally those which, in nature, favour a rocky habitat.

⁴Strangler figs are those which often begin life as a seedling lodged in the branches of another tree, but whose aerial roots eventually reach the ground, finally enveloping and strangling their host.



Ficus variegata △

Photography by Harry Dick

▽ *Etlingera australasica*



Cluster Fig

A series on Edible Plants
by Harry Dick, Cooktown, Queensland

The name "cluster fig" is applied to a number of species of figs that carry their fruit in large clusters or bunches on the limbs, trunk or even exposed roots. *Ficus variegata* is just one of these. Although found at most altitudes it is mainly a tree of the lowlands, preferring the banks of creeks and rivers. Photograph, page 253. The trunks of these trees may become massive with buttresses reaching to the lower limbs. It will also self-sow and grow very well at the edge of, or in, clearings. In such a situation the trunk, instead of growing to 10 or 15 m with the branches reaching upward, grows to only 2 or 3 m before sending out horizontal branches to 10 m in all directions so that the tree assumes the shape of a large, shallow dome. This great spread of tree produces shade dense enough to inhibit the growth of grass, but which offers a good start to other rainforest species. In fact, as flying foxes and some fruit-eating birds are attracted to these trees, they often become a sort of nursery area for fruit-bearing rainforest trees, the seeds of which have been dropped by the bats and birds.

The young leaves of this species make a good green vegetable. In the rainforest these are most readily obtained from young specimens starting to grow in damp open places near creeks where the soil is deep and rich.

As the name implies, this species is extremely variable. The fruit, borne sometimes on the trunk, sometimes on the branches, sometimes on both, may be yellow, green or reddish-brown, a mixture of any two of these colours, or of all three. When mature they may become soft or they may remain hard. They may become sweet and juicy, they may be acidy, they may be bland or they may contain large amounts of latex. The only way to find out what the fruit of any particular tree is like is to try one that has fallen. (There is no chance of poisoning yourself, but you could get a nasty taste in the mouth.) If it is not suitable to eat raw it can be cooked. If the fruit is acidy, boil it till tender — about 30 minutes — then add a little sugar. The result is a very tasty sweet. If the fruit is bland, boil with salt and use as a vegetable.

The fruiting season is also variable. The main fruiting is in summer, beginning in September. There is a second, not quite so prolific fruiting, in May. Some trees fruit at both times, some at one or the other, while others seem to fruit at any old time. In short — if there are a number of trees about it would be possible to collect a few fruit at almost any time of the year.

When these figs are fruiting the great amounts of fallen fruit rotting beneath the trees lead one to the opinion that nothing at all eats them. Such an opinion is excusable. Although the sweet variety of *Ficus variegata* are foraged extensively by flying-foxes, climbing kangaroos and wild pigs, only very small quantities of the other varieties are eaten. Which makes one wonder why it is that as the sweet variety are preferred by those animals which would disperse the seed, the sweet varieties are not more plentiful than they actually are. The sweet varieties are really rather rare. ■

Peanut Tree

by Harry Dick

Sterculia quadrifida

The Plant Family STERCULIACEAE

Like many small rainforest trees, the peanut tree has no trunk or bark features which can be used to identify it. It joins the seemingly innumerable trees with featureless, grey bark, round trunk and the beginnings of three or four half exposed roots radiating from the butt. This can make identification difficult when it is remembered that, in the rainforest the first three or four metres of trunk is all that one usually has for identification, because, even with a small tree like this which only attains 10 or 15 m in height, the leaves are almost indistinguishable against the glare of the sky or among the leaves of the surrounding trees. The leaves, if one can get hold of them, are about 15 cm long, half as wide, oblong to elliptical with truncate bases. Photo, page 256.

Peanut trees grow in the dryer areas of rainforest where the canopy is rather low or open. They are deciduous and grow in the company of other deciduous species – *Albizia*, *Terminalia*, *Melia*. They drop their leaves during August and September and immediately begin to produce flowers in large quantities. The flowers are a yellowish-green to begin with, turning a dull reddish after a few days – not at all showy, but quite sufficient to identify the tree, especially as there will most likely be a few ripening fruit among the flowers.

The fruit are pods about 10 cm long and half that in width, coloured brick red and carried in twos, threes or fours radiating from the ends of stems. As they ripen they will split open to reveal the bright red lining of the pod and eight or ten black seeds hanging from the lips. The pods, mere lumps 3 or 4 mm across at the ends of twigs, begin to develop in June. They will have matured and fallen by the time flowering is over, by which time the tree will again be covered with leaves and bearing the embryo fruit of next season.

The seeds are about the size of a peanut and have a very similar flavour. The covering or shell of the seed is rather close fitting and can be difficult to remove. It will be found more convenient to heat them in a dry saucepan or similar container. They do not pop in the manner of pop-corn, but they expand so that they burst the shell making it easy to remove.

This tree is very easily grown from seed and does not mind full sun, dry conditions and rather poor soil. In fact, it will do quite well in most cleared and impoverished rainforest soils. In the garden it grows steadily – though not fast – blooms regularly, usually sets at least a few of its spectacular fruit, gives no trouble and makes no demands. ■

Study Group Report

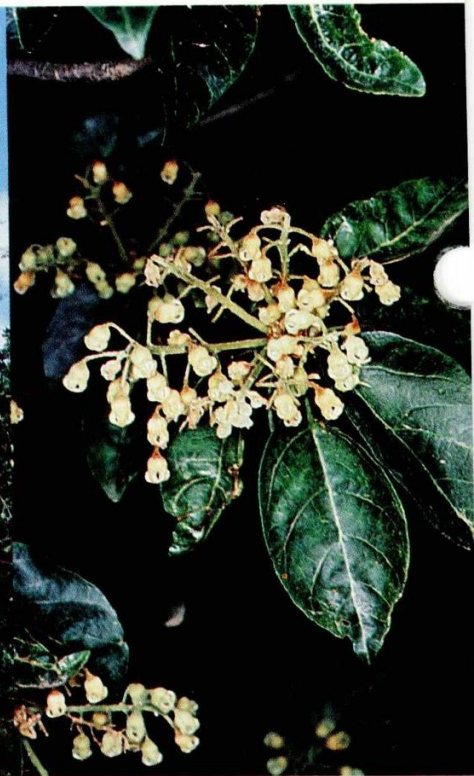
In cultivation this semi-deciduous tree grows to 6–9 m with smooth grey bark and soft, heart-shaped leaves 5–15 cm in length, on long slender stalks. Leaves on juvenile plants may be palmate. Inconspicuous, creamy-green, bell-shaped flowers are produced in short sprays amongst the upper leaves during spring and summer. The male and female flowers are carried on separate trees. Female trees produce large, reddish, woody, boat-shaped follicles, 5–8 cm long, that split open along one side to reveal up to eight satiny black seeds nestled against the beautiful bright red interior. Care must be taken to remove both seed coats; the rather slimy coating between them is rather unpleasant both in taste and texture. These seeds are about the size of peanuts and taste like a cross between peanuts and macadamia nuts. I have only eaten them raw, but would imagine they could be used like peanuts in cooking. Fruits ripen in summer. Propagation is from fresh seed.



Sterculia quadrifida, Peanut Tree

fruit △, tree and flowers ▽

Photography by Harry Dick

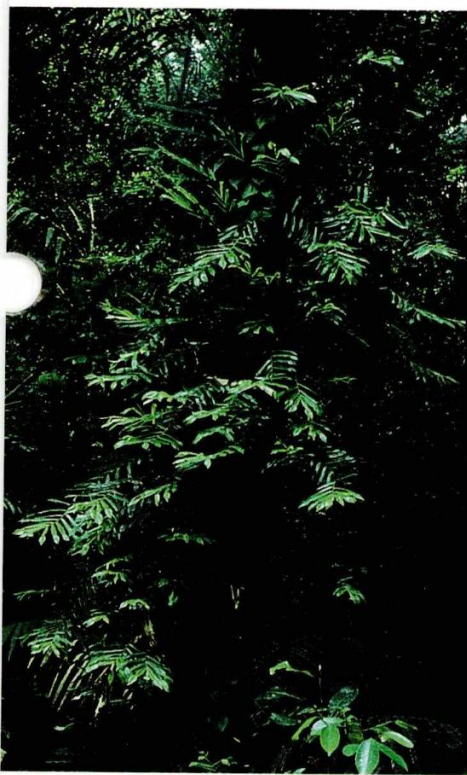




Pothos longipes

fruit △, flowers and tree ▽ See page 267

Photography by Harry Dick



Yellow Walnut

by Harry Dick

Beilschmiedia bancroftii

The Plant Family, LAURACEAE

This is a large tree growing at elevations from sea-level to 800 m that was a valuable cabinet timber. The trunk of these trees will often be 15 or 20 metres to the first branch. The only identifying features are grey-green bark and irregularly shaped trunk. The large nuts — from 4 to 6 or 7 cm across — are the most sure identification. These nuts are quite round and have a more or less sharp point at each end. When they are freshly fallen the nuts are contained in a yellow-green 'rind' which is so ill-fitting that the nut will often rattle within. Often the 'rind' has been broken by the fall.

Nuts of this tree may be found at any time from September to April, though they are most plentiful from November to February. Photograph, page 277.

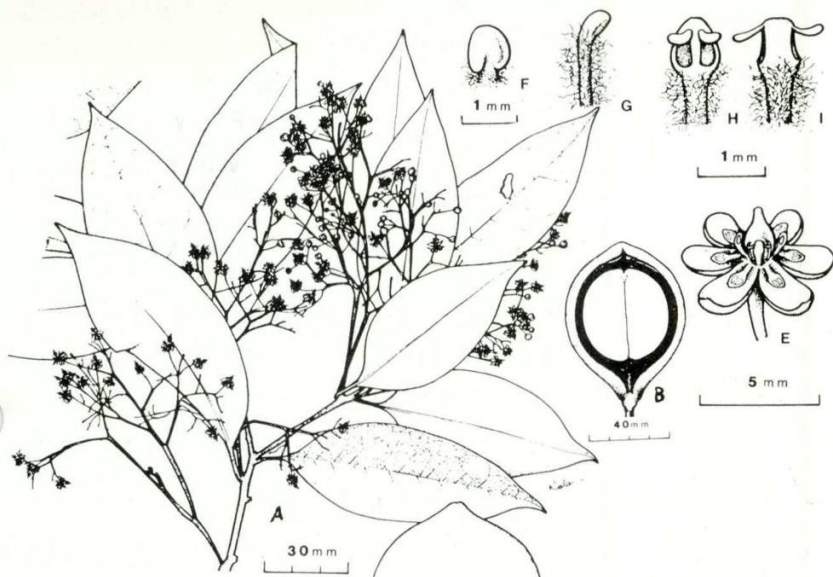
These will usually sprout if the shell is removed and the seed is planted with the embryo downward, but once the food contained in the cotyledons is exhausted they lose all enthusiasm. I doubt whether this tree would grow away from established rainforest.

This was a most important food of those Aborigines who had access to rainforest, because of the large amounts of starch which the nuts contain. The nuts require some treatment, but I am of the opinion that the treatment was to render them more palatable, not to rid them of toxin.

The treatment is simple. The shells are first removed and the kernels pounded and ground between stones — a meat mincer works almost as well — until they are reduced to what looks like wet meal. This is then placed in a container with three or four times the quantity of water, stirred well and allowed to stand for an hour or so. At the end of this time one will find at the bottom of the container a most disgusting white slime. Don't be discouraged. Carefully pour off as much water as possible, pour the slime into folded wild banana leaves that have wilted over the fire — or aluminium foil — seal carefully and bake in the ashes. After half an hour in the ashes it becomes a solid, pudgy mass that may be eaten as it is. It is enhanced if salt and some chopped vegetables — young tree fern frond, commelina species, etc. — are added before cooking.

The above methods of cooking are all right if one has no other facilities for cooking or has aspirations of returning to nature, but a steamer will be found to be much more satisfactory. In the bush, use a small billy with a lid hung inside a larger billy holding water. With such an arrangement and a few yellow walnuts one may produce a quite good plum pudding.

Grease the smaller billy and pour into it a quantity of uncooked, soaked yellow walnut meal. Add a pinch of salt, some sugar and dried fruit — quantities are unimportant — and stir well. Half fill, or a bit more, the larger billy with water and placing the smaller billy, with its lid on, inside the larger one, hang both by their respective handles above the fire. Keep the water in the larger billy boiling for an hour and a half or two hours, by which time the pudding should be cooked. ■



Beilschmiedia bancroftii — A, typical habit of a plant showing the leaves 7–15 × 2–3 cm and clusters of small flowers; B, a fruit; E, the flower with three sepals and the petals, with outer anthers H, inner anthers I, each filament with two stalked glands at the base. Reproduced from Australian Systematic Botany, Vol. 2, 1989 and a review of the species in the plant family Lauraceae. The following guide to species based upon fruiting material will be of interest.

***Beilschmiedia*, The Genus — A Guide Based Upon Fruiting Material**

by B. Hyland

Fruits more than 30 mm dia.

Beilschmiedia volckii — cotyledons burgundy in colour when freshly cut.

Beilschmiedia castrisinsensis — fruits wider than long.

Beilschmiedia bancroftii — fruit longer than wide, brownish or orange brown when ripe.

B. oligandra and *B. tooram* — fruit black, blue-black or purplish black when ripe.

Fruits less than 30 mm dia., all black or blue black on maturity.

Beilschmiedia elliptica — fruit 12 mm dia.; *B. peninsularis*, fruit 13–15 mm dia.; *B. brunnea*, *B. collina* and *B. obtusifolia*, fruit 20 mm dia.; *B. recurva*, fruit 25 mm dia. ■

Flower Arrangement with Australian Wildflowers

see rear cover

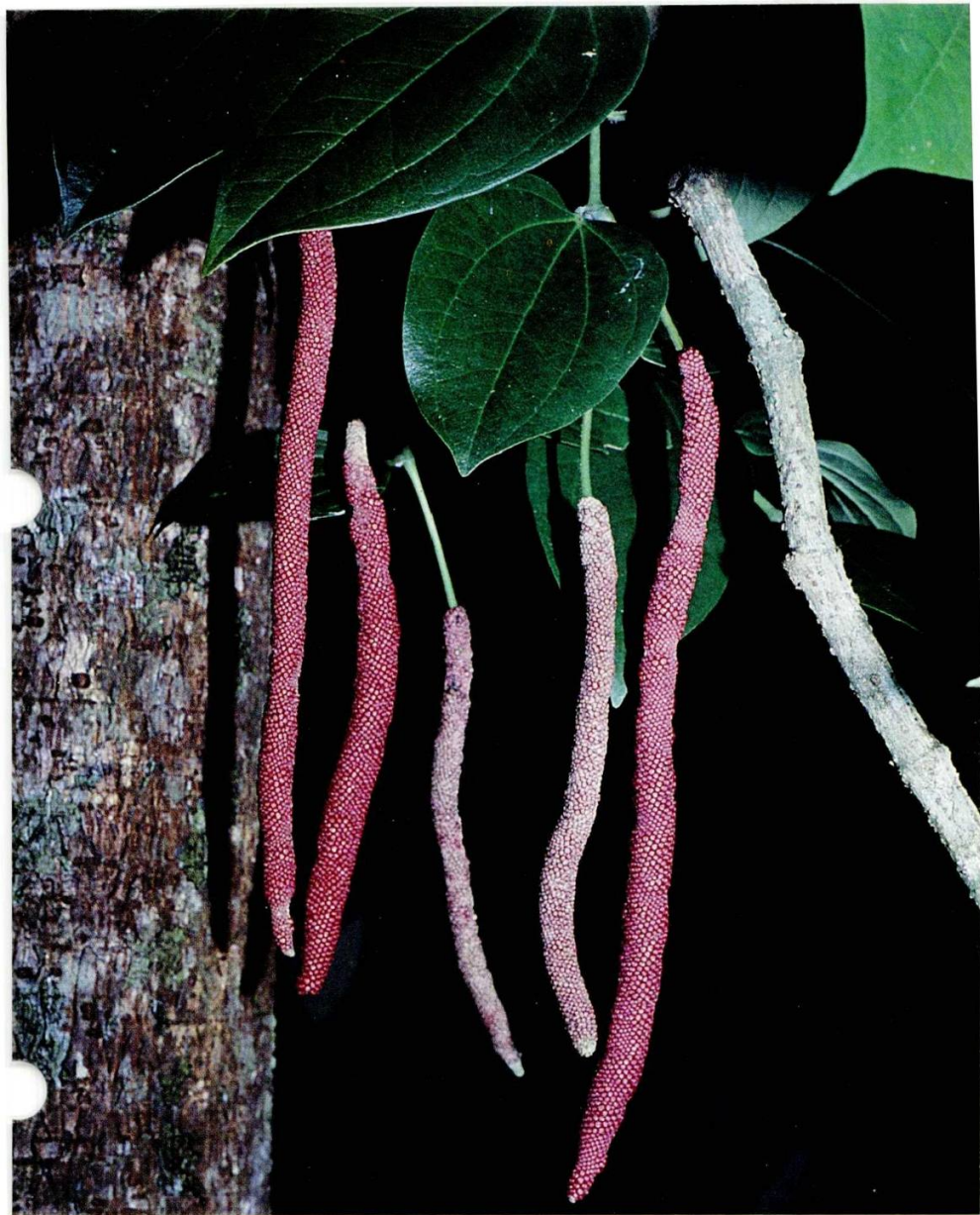
There is a continuing workshop/competition on the pleasing arrangement of Australian wildflowers in/on a container to adorn our homes. Those interested may create their arrangements when convenient or when the flowers are available, photograph them and send the photographs to the editor. Colour slides are preferable but prints will do. The winning arrangement for 1991 is shown on the rear cover and this was from a print. As received the photographs will be submitted to a competent judge and helpful comments made on how each arrangement could be improved, the comments being sent to the member concerned. In each six month period a winner will be selected and published on the rear cover of *Australian Plants*. ■

Syzygium wilsonii

Rear cover, flower arrangement winner, Irene Cullen

This rainforest shrub is widely grown in rainforest type gardens from Sydney to the far north. Flower arrangement series – 1





Piper rothiana △

Photographs by Harry Dick

Unlike other *Piper* species, the many small fruits are fused into a single fruit 1.5 cm thick and up to 20 cm long. The flavour is sweet and spicy.

Piper novae-hollandiae (opposite top). The fruit shown here are 4 mm dia. on thin stems. Dried and ground they may be used as pepper.

Piper caninum (opposite lower left). The leaves, characteristic of *Piper* species, with five prominent veins and oblique bases are clearly shown. The bunches of fruit are first bronze, ripening to red.

Piper subpeltatum (opposite lower right). The description on page 263 of southern forms does not match this photograph of the north Queensland form with leaves up to 30 cm across with a spicy smell and taste. A botanist in Atherton advises it was known as *Macropiper*.

Pepper Vine

by Harry Dick

Piper species

The Plant Family, PIPERACEAE

There are a number of *Piper* species in the Queensland rainforests, all very similar and all known by the common name of pepper vine. Being root climbers they ascend the supporting tree by means of numerous short roots which, as the plant ages, cease to function so that the vine hangs free. These vines commonly attain a thickness of ten centimetres. They are not woody, but rather ropery, being quite supple and fibrous. Pepper vines may be readily identified by the sharply raised sections indicating the nodes.

Leaves of all native peppers are roughly similar. They have five prominent veins and oblique bases. The shape varies from heart shaped and up to 15 or 20 cm across in mainly immature leaves on the main stems, to rhomboid and only half that size in the leaves on the mature branches. The crushed leaves of all species give off an aromatic scent. The tiny flowers appear on a spike very similar in appearance to the spadix of species of *Araceae* except that there is no spathe. After the flowering these spikes produce many small, red fruit. Field identification depends very much on these spikes of fruit.

Although *Piper* sp. have the capacity to become large vines which one would think capable of engulfing the whole allotment if grown in a suburban garden, this is not the case. Being root climbers they are not able to twine or even scramble so that, when the thin branches of the support tree are reached, be this only 2 m high, long, almost leafless shoots will be sent in search of further suitable support. These shoots extend to the ground where it would be expected to creep off in search of another tree. What usually happens is that, upon contact with the ground the growing tip is killed by abrasion caused by the movement of the vine in the wind. The hanging portion will then branch profusely. This is an attractive habit particularly as these hanging stems fruit very freely.

Seeds sprout readily enough though it will be found that cuttings strike very quickly and surely. But take the cutting from the growing end of a leader – not a branch. According to advice to commercial pepper growers, the growing tip and seven nodes are required for a suitable cutting. The difference in habit of the commercial pepper, *Piper nigrum*, and the native peppers is negligible.

With *Piper novae-hollandiae*, which is found from northern New South Wales to north Queensland, the 4 mm diameter fruit are carried on comparatively long, thin stems radiating from a short spike about 1 cm long. The dried fruit (resembling commercial peppercorns) may be ground and used as pepper. It is not as “hot” as the commercial pepper which is produced from *Piper nigrum* of south east Asia, but has a pleasant spicy flavour. This species very closely resembles *Piper betle* both in the shape of its fruit spikes and the flavour of its fruit and leaves. The fruit of *P. betle* is used as a flavouring with betel nut in many places where betel nut is chewed. Photograph, page 260.

Piper rothiana, unlike the forgoing pepper species, does not bear a spike of many separate fruit each carrying a single seed; in this species the many small fruit are fused into a single fruit 1½ cm thick, which may be as much as 20 cm long. The seeds are much reduced in size and the whole resembles an elongated mulberry, though the core will be found to be rather thicker. The flavour is sweet and spicy with the spicy flavour varying with different plants from pleasant to overpowering. Photograph, page 261.

The Peppers

From Rainforest Plants, see page 243
by Nan and Hugh Nicholson

Piper caninum is most common at sea level though it will be found at up to 800 m in drier areas of rainforest. Not as large a vine as *P. rothiana* and *P. novae-hollandiae*, it branches into a fluffy mass on the trunk of the supporting tree. When it reaches the sun it flowers and fruits freely. The fruit colour soon after developing (May) and remain on the vine until Nov. or Dec. Quite attractive, the fruit are first a bronze colour, ripening in ones and twos to a red colour. For some reason, the species will often cover the ground with masses of much branched stems, rooting with a leaf at each node. When growing like this the leaves retain their heart shape instead of their mature rhomboid shape.

Piper subpeltatum is an erect shrub to a little over two metres high often with four or more stems from just above the ground. The leaves are rounded to 2.5 cm across. Fruit, which are crowded into a spike, resemble tiny monstera and do not colour when ripe. Unlike other *Piper* species, the stem carrying the flowering stem may branch three to four times. The fruit has a pleasant spicy flavour. In the Solomon Islands, natives sometimes carry a similar fruiting spike behind their ear to use to flavour with betel nut *Piper pothomorpha*? ■

Study Group Report. *Piper novae-hollandiae* and *P. mestonii* are growing in members' gardens and are quite attractive vines in a rainforest section. They are easy to strike from cuttings.

Scrub Lasiandra

by Harry Dick, Cooktown, Qld

***Otanthera bracteata* of the plant family Melastomataceae**

In the shade it is a straggling plant of 2.5 m or more. In sunlight it is a compact, much branched shrub of a metre and a half. The opposite leaves have three prominent veins. They are of a dull colour, stiff and covered with numerous bristles which make them quite rough to the touch and lead one to the opinion that they are out of place in the rainforest. In strong sunlight the young stems are often red and the leaves have a red tint or reddish areas. Older stems are almost white. Photograph on page 281. The flowers are white and similar in form, but being only 2 cm across, are much smaller than the purple flowers of its flamboyant relative in the open forest, *Melastoma affine*. The fruit, which may be found at any time from September until March, are red or brown and covered with bristles similar to those on the leaves. These bristles, being neither hard nor sharp, are not at all a problem when eating the fruit which contains a white flesh and has a very pleasant sweet-acid flavour.

From a little above sea-level to 1,000 m it grows in damp spots beside creeks or in springs in the rainforest where the canopy is open enough to admit some sunlight. It appears to favour decidedly clayey soils, often in the company of the clubmoss, *Lycopodium cernuum*, and the fern *Selaginella lycopinna*. ■



△ *Diospyros hebecarpa* — Velvet Apple

See page 270 for use of fruits

Photography by Harry Dick

▽ *Diospyros pentamera* — Myrtle Ebony

Article on cultivation, page 270

Photography by H. Nicholson





△ *Diospyros fasciculosa* — Grey Ebony Photography by Murray Fagg, Aust Nat. Botanic Garden

▽ *Diospyros mabacea* Readers please advise of fruit and cult. Photography by H. Nicholson



Native Monstera

by Harry Dick

Rhaphidophora pinnata

The Plant Family, ARACEAE

This handsome plant gets its common name from the cultivated *Monstera deliciosa* to which it is very similar except that leaves and fruit are rather smaller and, instead of scrambling about on the ground, it is a root climber able to ascend to the top of the tallest rainforest tree. When it reaches the light the vine grows much slower so that the nodes are closer together and it appears more leafy. It is here, high above the floor of the rainforest, in or above the canopy, that the fruit are borne.

Obviously the fruit, 20 cm long and 4 cm in diameter, are hard to come by, but they are well worth while, being superior to the cultivated sort both in flavour and lack of the crystals of *Calcium oxalate* which often leaves one with a prickling sensation in the mouth after eating the cultivated variety. The fruit pictured – it was being eaten by birds – has orange coloured flesh. Along the Mossman River I have obtained Monsteras with pink flesh.

As with many rainforest plants the fruit takes a considerable time to mature. In the case of the monstera, the flowers appear during February and March while the fruit ripen in November and December.

These plants are quite easy to establish. The tiny brown seeds sprout readily enough and grow rather quickly. However, it is most likely that the majority of established plants in the bush grew, not from seed, but from runners.

Once a plant becomes established on a tree it sends pencil-thick roots to the soil from an area two metres or so above the ground. The stem below these roots then atrophies. From the area where the roots emerge new shoots emerge and proceed up the tree. Occasionally, instead of growing up the tree, a shoot will grow horizontally away from the tree. Soon it arches to the ground by its own weight and goes wandering off looking for another tree to climb, helping with its sustenance with a root into the ground from each node.

These shoots were baked in the ashes and eaten by the Aborigines and are very close, both in flavour and texture, to asparagus; but the taste treat is not worth the prickling, burning sensation in the mouth and throat that one has to suffer to eat them.

A half metre length of one of these runners that has an active root system will grow quite successfully. Given full sun and a low support – 2 to 3 m – it will produce masses of foliage but growing in this manner they will seldom, if ever, produce fruit. ■

Study Group Report

Jan Sked, Brisbane

I have this one growing and it has practically taken over one corner of the garden. It is trained up a large *Eucalyptus torelliana*, but is trying to spread over everything surrounding it. I have seen fruits on my plant in January, but have never been able to reach them to find out if they are edible. They look much like the fruit of *Monstera deliciosa*, and I wouldn't be surprised if they taste something like it too. I think our possum eats them. One thing I find unpleasant about this plant, is that when I cut pieces off it or handle parts of it, it irritates my skin quite considerably. I do not know if it is the sap or a dust that comes off the leaf base that causes this irritation.

Pothos

by Harry Dick
The Plant Family, ARACEAE

Pothos longipes is an unusual and attractive root climber which is easily identified by the apparently double leaves which are really a flattened leaf-stem terminating in a true leaf. The thin stem which clings to the tree-trunk by numerous short roots, may reach a height of 10 to 15 m, and as it sends out many short branches that, instead of clinging, droop down and away from the supporting tree with the ends turning outward horizontally, a most pleasing effect. It is found from sea-level to elevations of 800 m. Photograph, page 257.

The spadix, with its narrow, green spathe that folds down out of the way, appears in late summer near the ends of older branches. The red fruit, about a centimetre long and a little over half as wide, which subsequently form along the spadix, are commonly cited as being "edible but insipid". This must apply to places other than North Queensland as all that I have tried have been quite sweet, but the prickling, burning sensation caused by the crystals of calcium oxalate which all the Araceae family contain in varying quantities, render them decidedly unpleasant. The Aborigines used to eat them, but still do?

Pothos may be grown from either seed or cutting. If from a cutting, the growing portion of a leader must be used as branches do not take root. If given a support one to two metres high (posts or stones) it will form a thick, handsome mass which will eventually cover the support completely. ■

Study Group Report

Used as an attractive garden vine, it can be easily distinguished by its curtain of shiny dark green leaves festooning rocks and tree trunks. The leaves are quite distinctive, because the leaf stalk is flattened and winged and is separated from the true leaf only by a deep constriction, giving the look of a double leaf. It has minute pale flowers on a fleshy spike up to 5 cm long. The bright red, fleshy fruits, egg-shaped and about a centimetre long, often mature on the same spike while flowers are still present. It seems to flower and fruit throughout the year. I have tasted the fleshy outer layer of the fruits. It doesn't have very much flavour, but seems to be palatable.

Rainforest Plants

by Nan and Hugh Nicholson
See page 243 for review

Davidsonia pruriens

Davidson's Plum

A brilliant red pulp, rather sour but delicious when made into jam or wine, is contained in the clustered fruits of this species. They are all coated with fine golden hairs — *pruriens* means itching. There are two varieties, that shown on the front cover being the variety *jerseyana*. This occurs only in riverine rainforest of the Brunswick and Tweed Valleys of NSW. Mature trees form a clump of stems 4–6 m high, with a crown of striking, highly ornamental leaves.

The type variety *pruriens* occurs from sea-level to 1000 m in the wet north-east of Queensland. This slender tree reaches 10 m under a canopy but 4–5 m in the open. This plant has larger leaves than the southern variety, up to 1 m in length, with more soft hairy leaflets. A feature of this beautiful tree is its symmetrical crown that flushes frequently with beautiful pink new growth. Long panicles of the small pink flowers are followed in winter by impressive bunches of purple fruits, shown in the photograph on page 237.

In the garden: Prefers warm conditions but will tolerate cooler southern climates. Tubbed plants make superb indoor plants, adapting to low light.



Syzygium suborbiculare — Lady Apple

Photography by H. R. Bosworth



My Garden¹ in Ingham, Queensland

by H. R. Bosworth

Our soil here is good, fairly sandy caneland, and I do very little other than plant things and water in the dry. If you wanted to grow vegetables, you would have to manure, water and keep weeds under control. I do very little fertilising but when I do I use Q5, a cane planting mixture. I supply it to most plants about once a year.

I do not try to grow plants that are not suitable for a warm humid area so stick to tropicals. Plants that I have tried but failed with, presumably due to the warm humid weather would be *Acacia dunnii*, some *Leptospermum*, *Baeckea* and *Lysiphyllum hookeri*. I cannot grow bottlebrushes because the grubs keep the tops eaten off and I never get flowers². Bottlebrush grow naturally in the ranges and rivers nearby and people in Townsville etc., grow them well. I am trying to grow all the Australian cycads³ but find some of them are difficult.

I have about fifty different Australian Palms⁴. These are fairly easy to grow though several of the *Livistona* can be touchy.

It is not wattle country. *Acacia dimidiata* and *A. mountfordae*⁵ are fairly good but *Acacia dunnii* just refuse to grow for me. These wattle grow better for me on a property we have on a beach on the coast.

Syzygium suborbiculare, Lady Apple, is a very attractive shade tree that I would think would be very suitable for beach planting. Other native fruit trees that we grow are *Antidesma bunius*⁷ and *Davidsonia pruriens*,⁸ the Davidson Plum. This latter I consider the best of all Australian fruits. The big plums are cut up and stewed with plenty of sugar and served with ice-cream.

Plants I have growing are: *Alyxia ruscifolia*, *Antidesma dallachyanum*, *Aphananthe philippinensis*, *Amorphophallus galbra*, *Barringtonia acutangula*, *B. calyptrata*, *B. acutangula*, *Cerbera manghas*, *Cordyline murchisoniae* etc., *Crinum pedunculatum*, Cycads, many species, *Darlingia darlingiana*, *Davidsonia pruriens*, *Elaeocarpus bancroftii*, *Syzygium luehmannii*, *S. suborbiculare*, *S. wilsonii*, *Euodia elleryana*, *Proiphys* (prev. *Eurycles*) *amboinensis*, *Gmelina fasciculiflora*, *Grevillea glauca*, *G. hilliana*, *Hibiscus divaricatus*, *Hoya* species, *Leptospermum polygalifolium*, *Microcitrus inodora*, *Mackinlaya macrosciadea*, *Mimusops elengi*, *Mucuna gigantea*, *Neofabricia myrtifolia*, *Ochrosia elliptica*, *Orthosiphon aristatus*, Palms about 50 ssp, *Polyscias murrayi*, *Podocarpus elatus*, *Stenocarpus sinuatus*, *Tapeinochilos ananassae*. ■

¹My Garden No. 12 in a series presenting reports on successful home gardens. These gardens are a valuable guide as to what will grow in various areas and readers are invited to send a few notes, with photographs, on their garden.

²The bottlebrush flowering plants are particularly hardy reliable shrubs for a very wide range of conditions. Recent issues describing, and illustrating in colour, dozens of these shrubs of varying heights are Nos 126, 127 and 128, the No. 127 being directed particularly at bottlebrush plants for the Queensland gardens. Many of these originate from the Great Dividing Range throughout the length of Queensland, particularly inland from Ingham. Hopefully some readers will write to me and advise how Mrs Bosworth can get over her bug problem.

³Our No. 101 issue was devoted to the Australian cycads.

⁴Australian Palms. All species were described in our last issue with cultivation details.

⁵Wattles of Northern Australia. An issue is in preparation; please advise your cultivation experiences.

⁶*Syzygium*. Most species previously known as *Eugenia* are now *Syzygium*, see Vol. 14: 70–88.

⁷*Antidesma dallachyanum*, photograph on page 281. A similar species is on page 272.

⁸*Davidsonia pruriens* — photograph, page 237; description and cultiv., page 267; a wine, page 250.

Velvet Apple

by Harry Dick

Diospyros hebecarpa

The Plant Family, EBENACEAE

A small to medium tree growing to a height of 15 m at elevations from sea-level to 600 m. The bark is very dark, though the older parts between the expansion cracks more often have a thin covering of pale green lichen. If the thin outer covering of lichen and dead material is scratched away the colour of the surface bark will be seen to be black. The inner bark is whitish when first exposed, but soon oxidises to a bright yellow. The small leaves, 5 to 6 cm long and half as wide, are a dull, dark green above, lighter below and have the edges curved sharply downward. Photograph on page 264.

The fruit, which ripen at any time from August to January or February, may be up to 5 cm diameter. They have a velvety feel and retain a large, green calyx of four lobes. Within the soft, yellow pulp there are three or four shiny, brown seeds shaped like the sections of an orange. The fruit will fall when a dull red colour, but must be kept until almost black. Before this stage they have an extremely unpleasant flavour similar to an unripe persimmon to which they are closely related. The fully ripe fruit are very sweet to eat, but the thin skin which is rather hard and dry, must be discarded.

As the family name indicates, the tree producing ebony wood is of the same family. These trees will sometimes produce a small amount of black wood. Though I have heard of a number of rather large trees of this species being cut I have not seen or heard of any that produced a useful amount of "ebony" wood. Saplings were favoured by tin-scratchers (alluvial tin miners) for handles for their long-handled shovels and stone forks. A very slow grower that may be reared from seed and that will tolerate quite dry conditions. ■

Diospyros pentamera — Myrtle Ebony

by N. and H. Nicholson

These fruits may be yellow or red and ripen in winter or spring when few other fruits are available. They are an important food for fruit-eating pigeons, although in some years no crop occurs. The fruit contains 2–5 tough, yellow-brown seeds with a veined surface. Small white flowers, sweetly scented, are borne in spring or summer. Zig-zag stems bear dark and moderately shiny leaves, pale creamy-grey below, with clearly divisible veins. The leaf underside, very similar to Black Plum, *Diospyros australis*, is yellower and does not have discernible veins. The dark grey or black fluted trunk of Myrtle Ebony supports a narrow tight crown. Its distinct peaked top can be seen in many rainforest types from the Illawarra in south-east New South Wales to the Atherton Tableland in north-east Queensland. The largest trees grow to 40 m though most are only half that size.

In the garden: As a specimen or in a group this is a handsome tree and worth growing for the pigeons alone. It grows best in rich soils but adapts to less than perfect conditions. Frost and full sun are tolerated, though they retard growth, which is always rather slow. Seed may not germinate for over a year, if at all.

Diospyros mabacea — Red-fruited Ebony — is a rare and endangered tree from the Tweed Valley in north-east New South Wales. Only a few wild specimens remain and these are threatened by further clearing and degradation

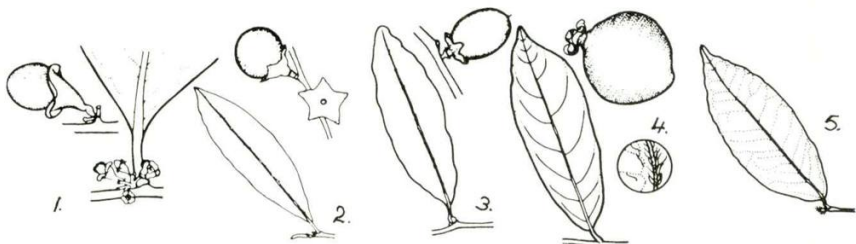
of their habitat. They are rather non-descript trees with simple alternate leaves and most are small, though a 25 m specimen has been recorded. Stems are crooked with dark fissured bark, inside which is the sooty-black layer which characterises this family, Ebenaceae. Silky hairs cover the new shoots, branchlets, veins on the underside of the leaf and the backs of the small male flowers. The striking red fruits are round or egg-shaped, 3–4 cm across, and contain about four long, brown three-sided seeds. This species belongs to an ancient family, widespread in tropical regions of the world and known for the famous wood Ebony, *Diospyros ebanum* and other species, as well as the cultivated Persimmon, *Diospyros kaki*. In the garden, it is slow-growing and need some care. The hard seeds may take a year to germinate. ■

Flora of New South Wales

Other *Diospyros* species by Gwen Harden

The New South Wales species are divided into two groups in the flora.

1. Species with leaves, a yellowish green on the lower surface — *Diospyros fasciculosa*, *D. pentamera* and *D. australis*, see photographs on page 265.
2. Leaves not yellowish green on the lower surface — *Diospyros mabacea* and *D. major*, see photographs on pages 264 and 265.



1. *D. fasciculosa* 2. *D. pentamera* 3. *D. australis* 4. *D. mabacea* 5. *D. major*

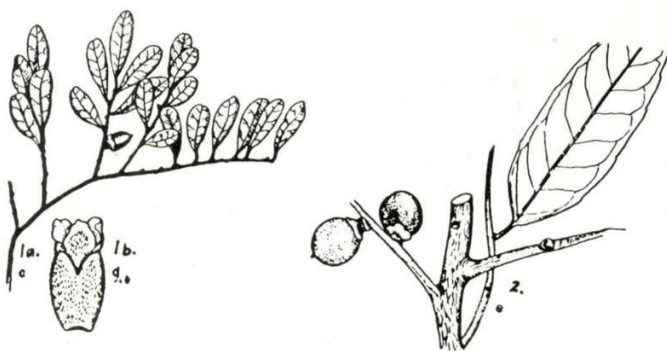
*The style of the books is to illustrate each species with sketches, as shown above (though much reduced), showing the distinguishing characters and the relative sizes of the leaves, fruits, etc., of the different species, along side a complete description of each species as follows.

***Diospyros fasciculosa*, Grey Ebony.** Small to medium-sized tree. Leaves elliptic to oblong-elliptic, usually 6–15 cm long, 1.5–6 mm wide, glabrous, upper surface dark green and glossy, lower surface pale green to yellowish; petiole 5–10 mm long. Flowers mostly 3-merous, in dense sessile, axillary clusters. Fruit obovoid, 12–15 mm long, yellowish turning black, in enlarged cupular calyx, calyx lobes short, broad, recurved; often only one fruit from each cluster developing; fruits winter. Grows in subtropical rainforest, especially near the sea, north from Iluka, NC-NSW; Qld; Pac. Is.

Flora of New South Wales*

Editor Gwen J. Harden

Produced by the Royal Botanic Gardens, Sydney, this series to describe all the plants occurring in New South Wales is now available in two volumes, a total of four volumes is planned. Without a doubt it has the best presentation of any of our state floras, remarkable, not only for its excellent visual impact with layout, copy arrangement, colour, etc., but because it is the first scientific book I have seen that may be readily referenced by someone without botanical knowledge. As indicated above, you may possibly identify a species from the sketches alone. The text as quoted above, appears quite scientific, but, if you really look at it, it is very easy to follow. The scientific terms are kept to a minimum and a feature of this series is the glossary describing these terms. The botanical reference glossary is easily the best one I have ever seen, using many sketches to visually present the botanical language anyone can readily understand. We can supply these by mail, each volume \$71.95, 2.4 kg.



The Plant Family Ebenaceae

In Australia, this is confined to the genus *Diospyros* with the species *D. australis*, *D. bundeyana*, *D. calycantha*, *D. compacta*, *D. cordifolia*, *D. cupulosa*, *D. ellipticifolia*, *D. fasciculosa*, *D. ferrea*, *D. hebecarpa*, *D. littorea*, *D. longipes*, *D. mabacea*, *D. major*, *D. maritima*, *D. montana*, *D. nitens* and *D. pentamera*. Male and female flowers are produced on different plants, the former usually in small clusters, the female flower larger usually occurs singly.

Diospyros ferrea is illustrated by a fruiting branch, hence of a tree with female flowers. A typical flower is shown, the petals are enclosed by a silky hairy calyx where the sepals are fused, cup-shaped. The female calyx persists, enlarging at fruiting time. This species provided edible fruit for the people of Arnhem Land during the dry season.

Diospyros maritima is illustrated by a fruiting branch.

Diospyros hebecarpa was used for fishing. The leaves, and sometimes the fruit, were pounded between stones, the pulp placed in woven bags and swirled in fresh or salt water creeks. As the water changed colour, the fish became stupefied and rose to the surface where they could readily be speared.

Aboriginal Food of the NT Top-end

by John Brock — Top End Native Plants*

***Antidesma parvifolium* —** The fruit of this spreading shrub was eaten raw by the Aborigines. It was also used to provide a purple dye for basket weaving. The purple-black fruit is small but useful for jam making. The plants grow in sandstone country and in monsoon forest associated with streams or in drier vine-thickets on slopes and open shrubby woodlands, extending across from Northern Territory to Queensland.

A spreading shrub or small tree 1.5–3 m high with quite dense foliage; semi-deciduous with male and female plants. The bark is tight, smooth and grey. The leaves are small, crowded, smooth, oval to roundish, blade 0.8–2.5 × 1–2.3 cm, light green with a rounded or slightly indented tip.

The male and female flowers on separate plants are very small, pale green-yellow, the male flowers on axillary spikes 1–2.5 cm long; the female flowers on racemes 0.5–1.5 cm long produced terminally or in upper leaf axils. The fruit are smooth flattened fleshy drupes 0.4–0.6 cm long, purple-black when ripe with a thin flesh enclosing a single hard-shelled seed. Flowering is Nov.–Jan.

***Antidesma dallachyanum* —** The fruit of a similar species found in Queensland is shown in the photograph on page 281 and its use is mentioned on page 269.

*Top End Native Plants by John Brock — An excellent book describing the plant communities, trees and shrubs of the top-end of the Northern Territory. For each of the 450 species described in simple but accurate terms, there is an excellent colour photograph, a map of its distribution, cultivation details and often an account of the use by Aborigines. \$40.50, 1.5 kg. ■

Conservation of our Australian Flora

A major Society
objective¹

The Society is formulating a number of specific objectives for the centenary year of 2001 that will represent a major step in the permanent conservation of our national heritage, the wildlife of Australia. The following quotations from "Biolinks"² are a suitable introduction.

"The scientists lump the combined treasure of living things under the term 'biological diversity'. They define this as 'the variety of all life forms: the different plants, animals and micro-organisms, the genes they contain and the ecosystems they form. It is not a fixed entity, but a constantly changing pool that is increased by new genetic variation and reduced by extinction and habitat degradation'. For us lesser mortals, this just means that there is a limited range of life forms (including humans) on this planet, all dependent upon each other for survival and the loss of various life forms in this chain of survival is alarming."

"There are two major reasons for conserving biological diversity; one moral and the other practical. The practical reason is that the quality of human life depends on biological diversity. From the world's species come our foods and many of our medicines and industrial products. For example, drugs extracted from Queensland rainforest species are effective in the treatment of motion sickness and lymphoid leukemia. Given that only a small proportion of Australia's species have been investigated, the potential to discover many more useful products and drugs in the future is great."

"The ecosystems in which we live also provide invaluable 'services' such as clean water, soil formation, climate regulation and the breakdown of pollutants. Genetic diversity provides the foundation for agriculture, forestry, and livestock breeding programmes."

"Morally, all species and communities have an inherent right to exist. They form part of a world which is an interdependent whole, belonging to the future as well as to the present, and which no one species can claim as its own. Finally, the actions of any species, including humans, are, or will be, guided by ecological limits."

¹The 1991 Federal Conference of The Society for Growing Australian Plants, in Perth, WA, approved a national conservation strategy for the period to 2001. The general policy of the Society is to support initiatives concerned with conservation/preservation principally by support/participation of groups formed to campaign for specific, usually local, objectives. On the national level, the major objectives adopted concern the conservation of the flora on a long-term basis.

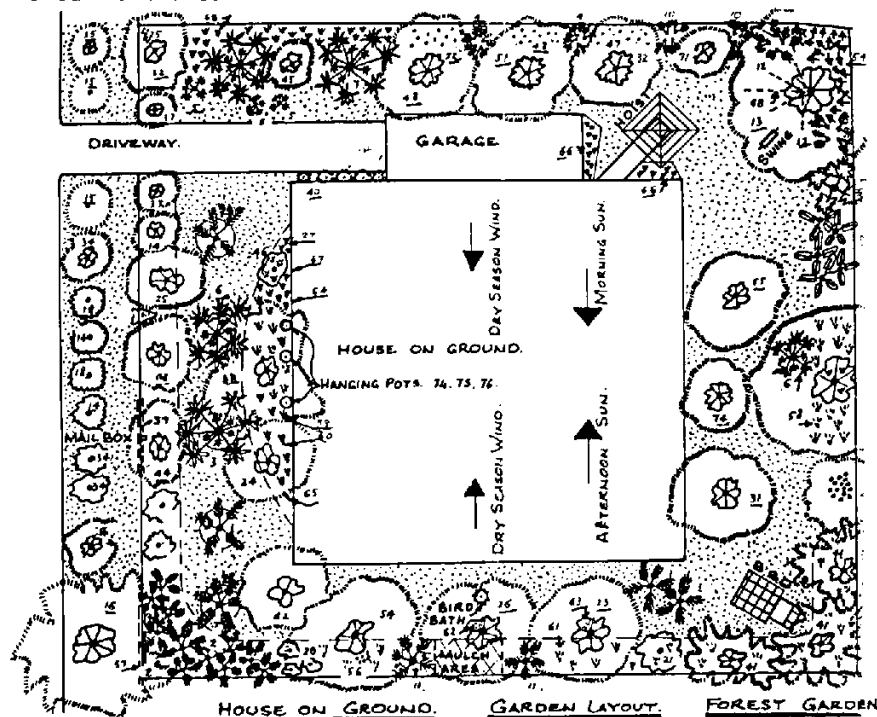
²Biolinks (the "Newsletter on Biological Diversity Conservation Actions" apparently the "mouthpiece" of the Biological Diversity Advisory Committee (BDAC)) is produced by the Department of the Arts, Sport, the Environment, Tourism and Territories, GPO Box 787, Canberra, ACT 2601. It is opportune that we should be commencing our series on useful plants in this issue. —Editor.

Fortunately our government has finally become aware of a national/global catastrophe racing towards us. It has formed a Biological Diversity Advisory Committee (BDAC) with some very well qualified (scientifically) members, to develop a "National Strategy for the conservation of Australia's biological diversity" as a national emergency measure. Hopefully, the results will not just be a mass of words, a series of conferences and reports where everyone has a good time or justifies their existence, with nothing practical accomplished. The conservation strategy, 2001, adopted by the Society, is a practical plan for conservation of life forms (biological diversity) in Australia as will be unfolded in the coming issues. It will be based upon scientific research under the guidance of The Australian Flora Foundation, and parallel to and supportive of the conclusion of the BDAC. ■

A Tropical Garden

by Peter Ball

The following garden is an alternative layout to that shown on page 195 of our No. 129 Issue for an elevated house in Darwin.



Palms

1. *Archontophoenix cunninghamiana*
2. *Carpentaria acuminata*
3. *Corypha australis*
4. *Hydriastele wendlandiana*
5. *Livistona humilis*
6. *Livistona benthamei*
7. *Livistona mariae*
8. *Livistona 'Red'*
9. *Normanbya normanbyi*
10. *Ptychosperma bleeseri*
11. *Ptychosperma elegans*
12. *Ptychosperma macarthurii*

Trees and Shrubs

13. *Acacia auriculiformis* — tree
14. *Acacia humifusa* — shrub
15. *Acacia gonocarpa* — shrub
16. *Acacia moulfordiae* — tree
17. *Acacia producta* — shrub
18. *Acacia nuperrima* — shrub

19. *Asparagus racemosus* — scrambler
20. *Bambusa arnhemica* — bamboc
21. *Cajanus acutifolius* — shrub
22. *Calytrix brachychaeta* — shrub
23. *Carallia brachiata* — tree
24. *Psychodactylus lamprophyllum* — tree
25. *Cayratia clematidea* — vine
26. *Syzygium operculatus*
27. *Dianella caerulea* — herb
28. *Peomele angustifolia* — shrub
29. *Euodia elleryana* — tree
30. *Exocarpos latifolius* — shrub
31. *Ficus racemosa* — tree
32. *Flagellaria indica* — vine
33. *Grevillea heliosperma*
34. *Grevillea goodii* sso. *pluricaulis*
35. *Grevillea refracta*
36. *Grevillea decurrens*
37. *Grevillea heliosperma*
38. *Hibiscus thibaeus* — tree
39. *Hoya australis* — vine
40. *Leea rubra*
41. *Leptospermum longifolium*

42. *Melaleuca leucadendron*
43. *Melaleuca minutifolia*
44. *Melaleuca viridiflora*
45. *Melaleuca 'Red'*
46. *Marinda citrifolia* — tree
47. *Myristica insipida* — tree
48. *Parinari nonda* — tree
49. *Piper novae-hollandiae* — vine
50. *Pongamia pinnata* — tree
51. *Portulaca* ssp. — herb in pot
52. *Smilax australis* — vine
53. *Stephania japonica* — vine
54. *Syzygium armstrongii* — tree
55. *Terminalia sericocarpa*
56. *Tinospora smilacina* — vine
57. *Tylophora flexuosa* — vine

Ferns

58. *Acrostichum speciosum* — fern
59. *Blechnum orientale* — fern
60. *Christella dentata* — fern
61. *Cyclosorus interruptus* — fern
62. *Lygodium japonicum* — fern

Planting a Native Garden

In North Queensland

from Yuruga Nursery,* Atherton Tablelands, Qld.

To grow a good native garden, follow these hints:

1. **Dig up the soil thoroughly.** The growth rate of your plants is directly proportional to how easily the roots can grow out into the surrounding soil. Lots of loose soil means strong, fast growth; a small hole in hard ground means slow, lanky growth. **Do not use a post-hole digger** to plant your plants.
2. Provide a **thick layer of organic mulch.** On a small scale, a good mulch is grass clippings, or fallen leaves (gum leaves are excellent). On a large scale, the best mulch is peanut shells, or mulching hay, or bagasse. Mulch has several beneficial effects:
 - it keeps the soil moist by reducing evaporation;
 - it controls weed growth;
 - it keeps the soil cool;
 - it conditions the soil as it breaks down.
3. Plant in **groups** in well dug up **garden beds.** Native plants in groups nearly always do better than as solitary specimen plants — as a group they break up the wind and harsh sunlight, create humidity and dappled shade, harbour insect-eating birds, and have more loose soil for the roots to grow into than you are prepared to give a specimen plant in the middle of your lawn. And, there's sometimes a "runt" in a batch of plants — as an individual specimen this is a disaster, but in a shrubbery area it is barely noticeable.
4. If you want a **specimen plant in your lawn**, give it as much **well dug-up loose soil and mulch** as possible — say, 1 metre by 1 metre as a good guide. Keep the grass well away from the base of the plant, as the growth of young trees is greatly reduced if turf is allowed to grow close to them. Growth reduction is due partly to toxins released by grass roots, and partly to competition for nutrients and water.
5. **Don't skimp on soil preparation.** The success of your native garden depends on the time and effort you put into preparing the soil before you even plant your first plant. The two secrets to success are:
 - digging up the ground thoroughly,
 - providing a thick layer of organic mulch.

*Yuruga Nursery is situated on the Atherton Tablelands, P.O. Box 220, Walkamin, Qld 4872, and can supply, by mail, all your needs in the northern areas of Australia. This article is mainly a reproduction of sections of their catalogue to indicate the type of valuable information supplied. You will note that the best garden practices are identical to those recommended for use throughout Australia.

A Tropical Garden Key — continued

Ferns — continued

63. *Lygodium microphyllum* — fern
64. *Microsorium scolopendria*
65. *Nephrolepis biserrata* — fern
66. *Nephrolepis cordifolia* — fern

67. *Pteris orientalis* — fern
68. *Stenochlaena palustris*

Fruit Trees

69. Bananas

70. Bread fruit
71. Custard Apple — tree
72. *Colocasia esculenta* — herb
73. Mango
74. Sour sop

Native plants are hardy, but not so hardy that you can shove them in a small hole in hard ground and expect them to grow well. Treat them like roses, petunias or vegies, and you will have a lush, vigorous native garden.

6. Your plants **must be watered for the first month or so** after planting until they are established. After that, they should be watered as often as you would water any other garden. Thick mulch considerably reduces the need for watering.
7. Be careful with **fertilisers** — some general fertilisers are unsuitable for dryland native plants (especially Proteaceae) as they contain too much phosphorus. This does not apply to rainforest plants which can tolerate most general fertilisers. If your garden is well mulched you should not need fertiliser, but if you do decide to fertilise, make sure the fertiliser you choose is suitable for the particular type of natives you are growing. For dryland *Grevillea* and *Banksia*, a low phosphorus type should be used.

Height of Plants

It is extremely difficult to state with certainty the mature size a plant will reach in a garden situation, since it depends on so many factors — soil type, soil preparation, climate (temperature, humidity and rainfall) and the quality of garden maintenance. North Queensland has a huge range of soil types and climates. A tree that grows to 25 m in the rainforest will not reach more than 10 m when grown in an open situation. In the wild, rainforest trees do not bush out till the canopy is in the full sun and when planted in a high light situation this occurs straight away. Without mulch and in a drier environment than their natural habitat the mature height is reduced even further. Plants will grow much larger on rich alluvial coastal soils than they will on the poor stony soils found in some dry areas of the Tablelands.

Dryland Shrubs (Non-Rainforest)*

Acacia are wattles. They are generally very fast growing plants, and therefore are very useful for quickly softening the harsh conditions found on a bare block. By growing quickly they break up the wind, create dappled shade and humidity, and provide shelter for birds. Other plants often do better where a few *Acacia* have been scattered amongst the planting.

Acacia are ideal plants for difficult situations. It is important however to select your species carefully. Species from southern Australia tend to be very short lived and reluctant to flower, and are usually quite unsuitable.

Acacia dunnii. Elephant Ear Wattle. Medium to large shrub with broad phyllodes and large pods. From N.T. and suitable for dry inland areas. Spectacular yellow flowers.

***Rainforest Gardening** — Ann and Peter Radje suggested that I reproduce their rainforest list which is more extensive than the "dry area" species listed above. The above plants were listed with a purpose to indicate the plants used in northern gardens, being generally smaller, less leafy and generally, more showy flowerers. Rainforest plants may be used as specimen shrubs or grouped to provide shade and shelter. For those interested in rainforests, you may like to join our Rainforest Study Group run by David Jenkinson, "Booyong", RMB 155D, Byabarra 2446. The newsletters produced are very interesting providing a guide to interesting areas, nurserymen for plants, and advice on their cultivation. — Editor.



△ *Beilschmiedia bancroftii* — Yellow Walnut

See page 258 for recommended treatment.

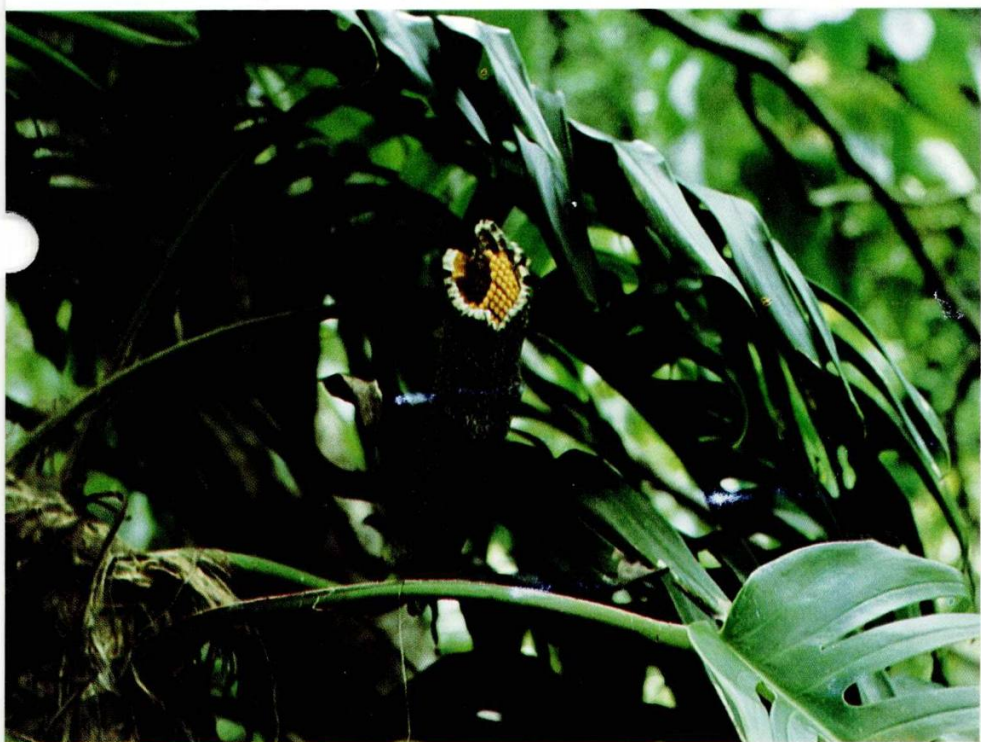
Photography by Harry Dick

▽ *Rhaphidophora pinnata* — Native Monstera

The fruit below has been eaten by birds exposing the orange coloured flesh.

For eating of fruits and asparagus-like root shoots, see page 266.

Photography by Harry Dick



Acacia holosericea. Silky Wattle. Shrub to 3 m with striking, large, silver-grey, furry phyllodes (leaves). Excellent for poor soils and dry situations.

Acacia homaloclada. Ghost Wattle. Medium to large shrub with white trunk and blue/green leaves. Spectacular bright yellow flowers. Not suitable for high rainfall areas.

Acacia leptoloba. Irvinebank Wattle. Tall bushy shrub or small tree with attractive purple new growth. White ball flowers in profusion in summer.

Acacia macradenia. Zig-zag Wattle. Fast growing, hardy, tall, spreading shrub with zig-zag branchlets. Yellow flowers in profusion in spring. Excellent for a quick screen.

Acacia nuperrima subsp. *cassitera*. A small well-shaped shrub to .5 m high, with a "table top" form. Bright green phyllodes and bright yellow flowers. A rare plant.

Acacia perangusta. Brisbane Wattle. Fast growing, very large shrub to small tree with attractive weeping foliage and form. Excellent for a quick screen. The closely related wattle *Acacia fimbriata* is very similar.

Acacia podalyriifolia. Queensland Silver Wattle. Fast growing large spreading shrub to small tree with striking furry, silvery phyllodes and bright yellow flowers.

Acacia rothii. Medium to large shrub with broad phyllodes and large pods. From Cape York and suitable for dry inland areas.

Acacia simsii. Sim's Wattle. Shrub to 1.5 m high. Bright green foliage and shapely form. Very showy yellow flowers.

Asteromyrtus brassii. Tall shrub to small tree from Cape York Peninsula. Spherical red flowers.

Asteromyrtus lysicephala. Bushy medium shrub from Cape York Peninsula. A pretty shrub with dainty white flowers. Requires regular tip pruning to promote a good shape.

Asteromyrtus symphyocarpa. Shrub to small tree from Cape York Peninsula. Yellow-orange spherical flowers are borne on the old wood.

Backhousia myrtifolia. Medium shrub with white flowers. Very hardy and will withstand harsh conditions.

Baeckea 'Clarence River'. Medium shrub with fine dainty foliage and weeping form. Dainty white flowers.

Baeckea 'la Petite'. Dwarf version of *Baeckea virgata*, to about 1 m high.

Baeckea 'Miniature'. Beautiful rounded compact shrub .5 m high. Ideal rockery plant.

Baeckea virgata. Medium shrub with weeping form, fine foliage and dainty white flowers. Tolerates part shade and heavy pruning.

Banksia dentata. Cape York Banksia. Medium to large shrub with stiff, serrated leaves. Cream brushes. Hardy, but slow growing.

Banksia ericifolia. Medium to large shrub from coastal areas of New South Wales. Large spectacular orange to red banksia flowers. This species is one of the few non-Queensland banksias which do well in north Queensland.

Banksia robur. Swamp Banksia. Medium shrub with large serrated leaves and unusual green banksia flowers. Does best in wet or well watered spots.

Banksia spinulosa var. *spinulosa*. Medium shrub with large yellow, or yellow and purple, banksia flowers.

Callistemon are shrubs with showy "bottlebrush" flowers, hence their common name "Bottlebrush". All those below have red flowers except *C. salignus* (usually cream), *C. 'Eureka'* (purple), and *C. pachyphyllus* (green or red). The flowers are rich in pollen and nectar and therefore attract birds. *Callistemon* are tolerant of a wide range of conditions from wet climates to low rainfall areas (provided they are watered until established), and

are therefore hardy and reliable garden subjects. To obtain a well-shaped plant, tip-prune regularly when young, and cut off old flowers when they are finished. Most *Callistemon* make good screens.

Callistemon 'Captain Cook'. Compact, well-shaped shrub to 1.5 m high.

Callistemon 'Dawson River'. Tall slender weeping shrub.

Callistemon 'Endeavour'. Medium, thick shrub. Flowers deep red to crimson.

Callistemon 'Eureka'. Tall upright shrub. Brilliant purple flowers in profusion in spring.

Callistemon 'Guyra Hybrid'. Medium shrub with red flowers.

Callistemon 'Hannah Ray'. Attractive soft weeping shrub.

Callistemon 'Injune'. Medium shrub with pale pink flowers.

Callistemon 'Kings Park Special'. Bushy shrub to 4 m with large bright red flowers.

Callistemon 'Mauve Mist'. Medium shrub with beautiful mauve flowers.

Callistemon pachyphyllus. Erect open shrub to 2 m with very striking large flowers. There is a red form, and a form with unusual green flowers. Prune to a good shape.

Callistemon polandii. Compact well shaped medium shrub. Spectacular large flowers, deep red with gold tips to the stamens.

Callistemon 'Prolific'. Tall shrub with masses of flowers in spring.

Callistemon 'Reeves Pink'. Medium shrub with pink/red flowers.

Callistemon salignus. Tall shrub to small tree with bright pink new growth. Good screen. White brushes.

Callistemon 'Tinaroo'. Tall shapely upright shrub with deep red flowers.

Callistemon 'Tinaroo Dazzler'. Sprawling shrub with deep red flowers.

Callistemon viminalis. Weeping Bottlebrush. Large shrub to small tree. Weeping foliage. Good screen. Flowers on and off throughout the year.

Callistemon 'Wildfire'. Thick bushy shrub. Large bright red flowers.

Cassia magnifolia. Shrub 1.5 to 2 m with large dark green pinnate leaves. Spectacular yellow flowers are borne in large erect racemes. An unusual plant.

Dodonaea polyandra. Large bushy shrub from Cape York Peninsula. Flowers are insignificant, but are followed by masses of very unusual and showy green and purple seed pods. Fast grower and a good screen.

Eustrephus latifolius. Wombat Berry. Rambling climber which, if given no support, falls back on itself to form a very attractive little clump about .5 m high. A small dainty plant. White flowers and showy orange berries.

Grevillea are very popular garden plants since they are hardy, reliable, fast growing and flower profusely for a large portion of the year. However, if they are not given attention when young, they can grow into disappointing scraggly specimens. Constant tip pruning in the first year is important to develop a bushy well shaped shrub. *Grevillea* need an open, full sun position, otherwise they become lanky. While they respond well to regular watering, they generally do poorly in high rainfall drizzly areas. They are best suited to sunny climates. *Grevillea* flowers are rich in nectar and therefore attract birds.

Grevillea banksii. Bushy medium shrub. Red or white flowers all year round. Hardy.

Grevillea decora. Shrub 1.5 to 2 m. Bright red very showy flowers. Grey leaves. Needs a well drained very sunny spot.

Grevillea dryandri. Very attractive small shrub to .5 m high. Finely divided foliage. Spectacular red or pink flowers in large toothbrush spikes.

Grevillea glauca. Bushman's Clothes Peg. Shrub to small tree. Hardy. Grey foliage with bronze new growth in the "wet". White flowers and large very decorative woody seed pods.

Grevillea glossadenia. Very attractive and hardy shrub to 1.5 m. Leaves green, silver beneath with bronze new growth. Orange flowers amongst the foliage.

Grevillea 'Honey Gem'. Large very attractive bushy shrub with finely divided foliage and large yellow/orange flowers all year.

Grevillea 'Misty Pink'. Hardy, bushy, medium shrub with pink flowers all year.

Grevillea 'Pink Surprise'. Hardy, tall shrub with large showy pink and white flowers.

Grevillea pteridifolia. Open wispy small tree or tall shrub. Bright orange toothbrush flowers in profusion. Fast growing.

Grevillea 'Robyn Gordon'. Small shapely shrub to 1 m high with deep red flowers. *Grevillea* 'Superb' is very similar. *Grevillea* 'Ned Kelly' is slightly larger with bright orange-red flowers. *Grevillea* 'Coconut Ice' has pink and white flowers.

Grevillea 'Sandra Gordon'. Large bushy shrub to small tree with bright yellow flowers. Hardy and fast growing.

Grevillea sessilis. Fast growing tall shrub. White flowers. Grey foliage with bronze new growth.

Grevillea venusta. Large bushy shrub with attractive lobed green leaves and very unusual yellow and green flowers.

Grevillea whiteana. Large shrub with silvery, finely divided foliage and upright habit. Large creamy white brushes all year.

Hakea trineura. Tall shrub. Interesting green flowers and spectacular bronze new growth. A rare plant from the Rockhampton area.

Hibbertia banksii. Beautiful, small shrub with thick furry leaves and bright yellow flowers.

Hibbertia scandens. Fast growing twiner which falls back on itself to form a clumping shrub if given no support, or if pruned. Bright yellow flowers.

Leptospermum are shrubs with (usually) white flowers, commonly called "tea trees". They are very attractive shrubs which are tolerant of a wide range of conditions. Flowering is usually in spring with a spectacular burst.

Leptospermum brachyandrum. Tall shrub to small tree with silvery new growth. The old bark peels off to reveal an attractive pink-purple trunk.

Leptospermum 'Cardwell'. Beautiful weeping shrub to 2 m.

Leptospermum 'Copper Glow'. Rounded medium shrub with coppery tinge to the foliage.

Leptospermum polygalifolium ssp. *tropicum*. Handsome shrub to 2 m. Hardy and adaptable to most situations.

Leptospermum petersonii ssp. *lanceolatum*. Two forms, one from near Herberton and the other from Big Tableland. Shrub to 3 m. Very attractive foliage and pink new growth. Flowers may be white or pale pink.

Leptospermum petersonii ssp. *petersonii*. Lemon Scented Tea Tree. Very attractive medium shrub. The foliage has a delightful lemon scent when crushed. Can be pruned heavily.

Leptospermum parviflorum (*longifolium*). Attractive weeping shrub with greyish foliage and smooth white trunk. A form of this plant is commonly referred to as the N.T. Weeping Tea Tree.

Leptospermum 'Pacific Beauty'. Small spreading shrub to 1 m high. Masses of flowers in spring. Excellent border or rockery plant.

Leptospermum 'Pink Cascade'. Similar to 'Pacific Beauty' but with pink flowers.

Leptospermum purpurascens. Purple Stemmed Turkey Bush. Shrub or small tree with tiny leaves and beautiful smooth, purple trunk. Very hardy.

Leptospermum 'Sugar Plum'. Ornamental shrub to 1.5 m. Masses of flowers in spring.

Leptospermum wooreoonocoran. A plant from the top of Mt. Bellenden Ker. Makes a medium compact shrub in cultivation. Has attractive foliage and is fairly hardy.



△ *Otanthera bracteata* — Scrub Lasiandra

See page 263 for eating of pleasant tasting fruit.

Photography by Harry Dick

▽ *Antidesma dallachyanum* — Herbert River Cherries

Fruit from the garden of H. R. Bosworth, see page 269.

Photography by Harry Dick



Kimberley Rainforests of Australia Edited by N. L. McKenzie, R. B. Johnston and P. G. Kendrick

A major work of 490 (30 × 21 cm) pages, this is a valuable scientific reference. In effect, it is a chronicle of a recent scientific exploration of the Kimberley area of north-western Western Australia with the specific task of mapping and surveying the rainforest areas for the flora and fauna. The flora is recorded under designated area types based on the locality and the dominant species. The moving creatures are reported in chapters headed mammals, spiders, snails, earthworms, birds, etc. For those who need it, the book is a valuable reference being available only from Surrey Beatty & Sons P/L, 43 Rickard Road, Chipping Norton, NSW 2170 for \$93 + \$9.75 postage in Australia.

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Syzygium wilsonii

See page 259 for Flower Arrangement with Australian Wildflowers.