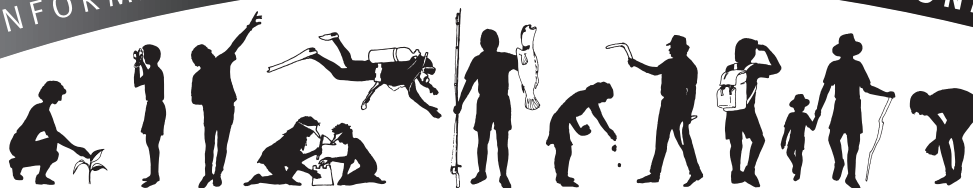


TROPICAL TOPICS

AN INFORMATIVE NEWSLETTER ABOUT THE ENVIRONMENT



Notes from the Editor

Welcome to the new look *Tropical Topics*. From now on those issues dealing with wet tropics material will feature the new design which includes a special 'Fact sheet' in the centre pages.

As mentioned in last year's survey, the format of the newsletter has also changed and now includes a greater variety of articles, rather than most material relating to a specific theme (although 'orange' – dry tropics – issues will remain theme-based).

Material included reflects the interests of readers who returned their survey forms and indicated topics on which they would like more information. There was a strong interest in bush tucker and bush medicine, so this newsletter features a 'Fact sheet' on bush tucker in the centre as well as a special warning on page one. The next green issue will feature a fact sheet on bush medicine.

Contents:

Page 1: Toxic tales
Page 2: Death on the roads
Creature feature: Bandicoots
Page 3: Palms
Weed corner: *Limnocharis*
Pages 4&5: Bush tucker
Page 6: Questions & answers
Sideline: The acid-eaters
Tourist Talk
Page 7: Out and about
Page 8: Bookshelf

Toxic tales

It is extremely dangerous to experiment with bush tucker. Botanist and bush tucker enthusiast Tony Irvine recalls an incident which reminded him of the importance of being cautious.

"Fellow botanist, Bernie Hyland, and I had just returned to the laboratory at CSIRO in Atherton with a collection of *Triunia erythrocarpa* fruit. The species is related to macadamia; it is in the same family, Proteaceae. The fruit is spherical, 18-40 mm in diameter, and orange red with a longitudinal groove on one side. The flesh is white and contains an ovoid brown seed, about 15 mm wide.

"Bernie nibbled a small part of the seed, said it tasted okay and then spat it out. I also nibbled a small part of the seed. It had a similar taste to macadamia. I rolled it around in my mouth for a few minutes and decided, as it had a pleasant taste, to swallow it.

"I then went to do some sowing of seed in the potting shed. While I was working, I began belching a bit and then felt that I needed to go to the toilet but I didn't perform. I felt briefly that I wanted to vomit but again didn't perform. So I continued my seed sowing. It was an overcast day and a comfortable temperature but I noticed that my arms were beginning to sweat. I thought that was strange as it wasn't very hot. Within minutes, sweating began to increase over all parts of my body and shortly my clothes became saturated. I looked as though I had dived fully clothed into water for a swim. It was at this time, that I thought I should seek some medical attention.

"While waiting at the doctor's surgery I was sweating so much I began to shiver from loss of heat. As soon as the doctor saw me, he

examined my heart beat and immediately gave me an injection of atropine to stimulate my heart muscle as the effect of the toxin in the seed was to slow my heart beat down. I was sent straight to hospital where they monitored my condition. I received one more injection overnight when they felt that my heart rate had dropped too low for safety. The next morning when I woke up, I walked the three kilometres home.

"The total amount of the seed that I ate was equivalent to about nine cubic millimetres or 0.3 grams in weight. I was very fortunate the sampling had occurred at the office. If I had consumed it in the bush, I could have been in severe trouble. Imagine what would have happened if I had ingested a whole seed on the basis of its pleasant taste.

"The plant is commonly known as 'spice bush', a name that is also applied to *Triunia youngiana*, a species from southern Queensland and northern New South Wales with which it was confused. This is a dangerously misleading name for both species as it suggests edibility and human use. A far better common name for *T. erythrocarpa*, based on the above experience, would be 'toxic seed tree'. On looking through an array of references on common names, I cannot find any other plant in Australia with this common name, which makes the case for its use more compelling. It goes to show that pleasant tastes can be deceptive."



WET TROPICS
MANAGEMENT AUTHORITY



Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service



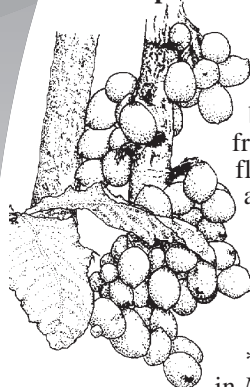
Australia's Tropical Rainforests

WORLD HERITAGE

F A C T S H E E T

Bush tucker

Bush tucker has become big business. Restaurants are serving entire menus based on Australian native foods and it is now possible to buy a number of preparations made from native plants in supermarkets.



Davidson plum (*Davidsonia pruriens*) produces large blue-black plum-like fruit on the trunk and branches. Although very bitter, these fruits make excellent jam and a 'full-flavoured, dry, red wine'*. They are also being used as a flavouring in commercial yoghurt, and can add flavour and colour to icecream, drinks and sauces. The juice can even be used in the place of vinegar in salad dressing.

*A recipe for the wine can be found in *North Queensland Native Plants* published by the Society for Growing Australian Plants. Wines can also be made from the fruits of lilly pillies (*Syzygium* spp.), carabeen (*Aceratium* spp.) and tamarind (*Diploglottis* spp.).



The **flowers** of a very large number of Australian plants are pollinated by birds and produce abundant nectar to attract them. Humans too, enjoy this sweet treat, obtained by licking the flowers of grevilleas, banksias, tea trees, eucalypts and even grass trees. Swishing the flowers in a container of water produces a sweet drink – or soak them for a few hours in the fridge (to stop them from fermenting). Alternatively, dip a bunch of flowers in your billy tea instead of using sugar.

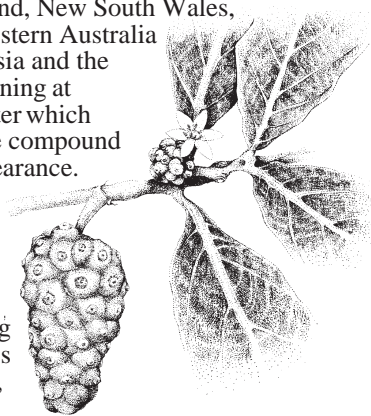
The yellow, white or pink flowers of the **native rosella** (*Hibiscus heterophyllus*), can be eaten raw in salads – although they have a rather slimy texture and may carry a load of insects. This shrub, found in coastal and drier rainforest, is a versatile one. The flower buds can be eaten raw or stewed and made into jam – hence the common name. The leaves can be eaten raw when young or cooked and used in the same way as spinach or cabbage. The roots can be cooked and used like parsnips. Flowers and young leaves of the related, and similar, cotton tree (*Hibiscus tiliaceus*) – found in coastal districts, can also be eaten.



The yellow flowers of the **kapok tree** (*Cochlospermum* spp.) are edible and said to be tasty, if slimy, to eat. They have a reasonably high vitamin C content. The main root can also be eaten after roasting.

Cheesefruit (*Morinda citrifolia*) has a wide distribution, growing in north Queensland, New South Wales, Northern Territory and Western Australia as well as many parts of Asia and the Pacific. White flowers, opening at different times, form a cluster which eventually becomes a large compound fruit with a distinctive appearance.

Up to 8cm across, it is pale green with a bumpy, shiny surface. The fruit is edible, but usually eaten unripe because it has a strong, unpleasant smell like rotting cheese when ripe. Devotees say it is perfectly palatable, as long as you hold your nose, tasting of blue cheese with a touch of hot mustard. It is sometimes combined with macadamia nuts and sold as a salad dressing. The fruit has a high vitamin C content and is said to have medicinal benefits.



The fruits of **lemon aspen** (*Acronychia acidula*) are very sour, but can be stewed with sugar, used in tarts and puddings, made into jams and sauces or the juice used in salad dressings. It is a popular flavouring in commercial yoghurt made in north Queensland.

Fair dues

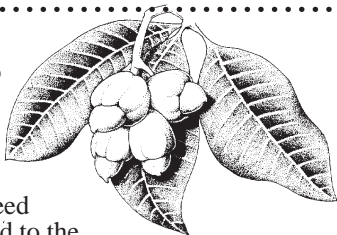
There is concern that indigenous people, who did all the original research to discover what is edible and what is not – and a lot of our rainforest plants are extremely toxic – are not going to benefit from the economic boom.

However, some projects aim to turn that around. Six indigenous TAFE trainees have been employed in Innisfail to collect rainforest fruits and propagate them for a bush tucker nursery and orchard. The plan is to plant these beside exotic fruit trees so the fruit can eventually be harvested and processed for sale by the Mamu Aboriginal Corporation.

A scholarship at James Cook University in Cairns is being offered for an Indigenous post-graduate student to work for three years on the domestication of bush tucker species with commercial potential. The project will involve interaction with the Djabugay Community at Kuranda, west of Cairns.

Millions of years in the making. Protected forever.

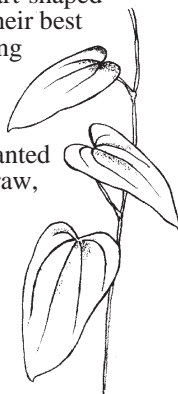
The **tar tree** (*Semecarpus australiensis*) is related to the cashew tree. It produces yellow or red fleshy fruits (which, strictly speaking, are thickened stems) with a seed (actually the fruit) attached to the end of each. This tree produces a toxic sap which can cause severe blistering of the skin and should never be touched. The 'fruits' and 'seeds' are also toxic. However, the latter can be eaten after processing. The poisonous skin must be burnt off – taking care not to be affected by the smoke – and peeled off without touching. The cooked seeds are very tasty. The fleshy orange 'fruit' parts are said to be sweet and are eaten, but only after baking. The skin may be toxic and Aboriginal people when handling it protect their hands with clay. This is definitely a tree to be wary of.



Toxic plants abound in the rainforest, but many such as black beans and cycad seeds have been used as staple foods by Aboriginal people, following a lengthy processing involving cooking, scraping and leaching with running water. The abundance of these foods and the high carbohydrate content make this worthwhile. Excess, processed food could be wrapped and stored in cool streams. Use of these toxic foods may have enabled large groups to gather for ceremonial and social purposes.

No one knows where this knowledge originated or when, but recent archaeological investigations have discovered nut shells dating back 1000 years alongside artefacts which were probably used for processing. A number of these shells were of toxic species, such as black bean, black and yellow walnut and black pine. Their use may have encouraged settlement within rainforests; while there is evidence of occupation at Mt Mulligan, west of Mareeba, 35,000 years ago, investigation of rainforest sites have provided dates of around 5000 years ago. Did use of toxic foods as staples allow occupation of rainforests?

Wild **yams** are the potatoes and carrots of bush food. Long yam (*Dioscorea transversa*) is a common traditional staple food across the tropics where it grows at rainforest edges. The plant is a twining vine with heart-shaped leaves (right). The yams are said to be at their best when the leaves have turned yellow. Finding the root involves searching for the point where the plant enters the ground and then digging down for maybe a metre. The top of the tuber and the vine stem are replanted for future crops. Small yams may be eaten raw, but most are boiled or roasted in the fire or oven after being washed and rubbed to remove the hairs on the skin. Not all yams are as edible. Some are toxic and must be leached in water before they can be eaten.



An indigenous QPWS staff member recalls that "Christmas wasn't Christmas without a **brush turkey egg**," and still hankers after this taste from her childhood. The eggs were used in Christmas puddings but apparently tasted best after being baked in the coals of the fire. Weighing an average 180g each, this took an hour or so.

There are about sixty **lilly pilly** species in Australia, all with edible fruit. **Riberry** is the name given to the fruit of *Syzygium luehmannii*, one of the tastier of the rainforest lilly pillies and one which is finding popularity as a commercial bush food with trees now being grown in orchards. A large proportion of the fruits are seedless so can be used whole and are popular due to their red colour and spicy flavour – the plant is related to the clove tree which is a *Syzygium* species from Indonesia. The fruits can be made into jam or sauces to be served with meat or with puddings or ice cream. They can also be cooked in tarts or used raw in fruit salads.

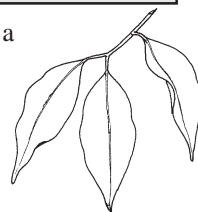
Cedar bay cherry (*Eugenia reinwardtiana*) produces a red cherry-sized fruit which is one of the nicest bush fruits. It has a large seed and a thin, but very tasty flesh which can be eaten raw.

Safety First

As is the case with fungi, while some rainforest plants are edible others can be deadly poisonous, even in tiny quantities. Even experienced bush tucker enthusiasts have been caught out (see page 1). Do not experiment.

Please also bear in mind that all plants and animals in national parks are protected and cannot be collected without a permit.

Lemon myrtle (*Backhousia citriodora*) is a bushy shrub with lemon-scented leaves which contain citral, an essential oil used in perfumed soaps and cooking. Indeed, it makes up 90 percent of the oil, compared with just 3 percent in lemon oil. Endemic to Queensland, it can survive as far south as Melbourne and is now being grown commercially. Fresh leaves can be used to make lemon tea. Dried leaves can be used to flavour fish or chicken, in deserts such as custards and sorbets, and to make tangy sauces or replace lemon grass in Asian recipes.



Kernels of the widespread **candlenut tree** (*Aleurites moluccana*) are about 60 percent oil. In many countries this is extracted and used in paints and varnishes, as a wood preservative and for lighting. The nuts themselves will burn with a sooty flame and can be pulverised and moulded into a candle. Aboriginal people found them useful when lighting fires in wet weather and the oil is useful for fixing ochre for painting.

The nuts are also extremely nutritious, containing more than 4200 micrograms of thiamine per hundred grams. Only certain processed yeast products such as vegemite contain more. However, the raw nuts have a reputation for causing stomach upsets and are avoided by some

Aboriginal groups. Others, however, roast them in the fire to render them edible. This destroys a toxin in the oil, although some nuts contain cyanide, so should be treated with care. The nuts are ground and used in Asian cooking, notably in laksa. For Aboriginal people, the rotting wood of this tree is known to be a good source of very popular grubs – edible moth larvae. Sometimes the trees were ring-barked to hasten this process.

