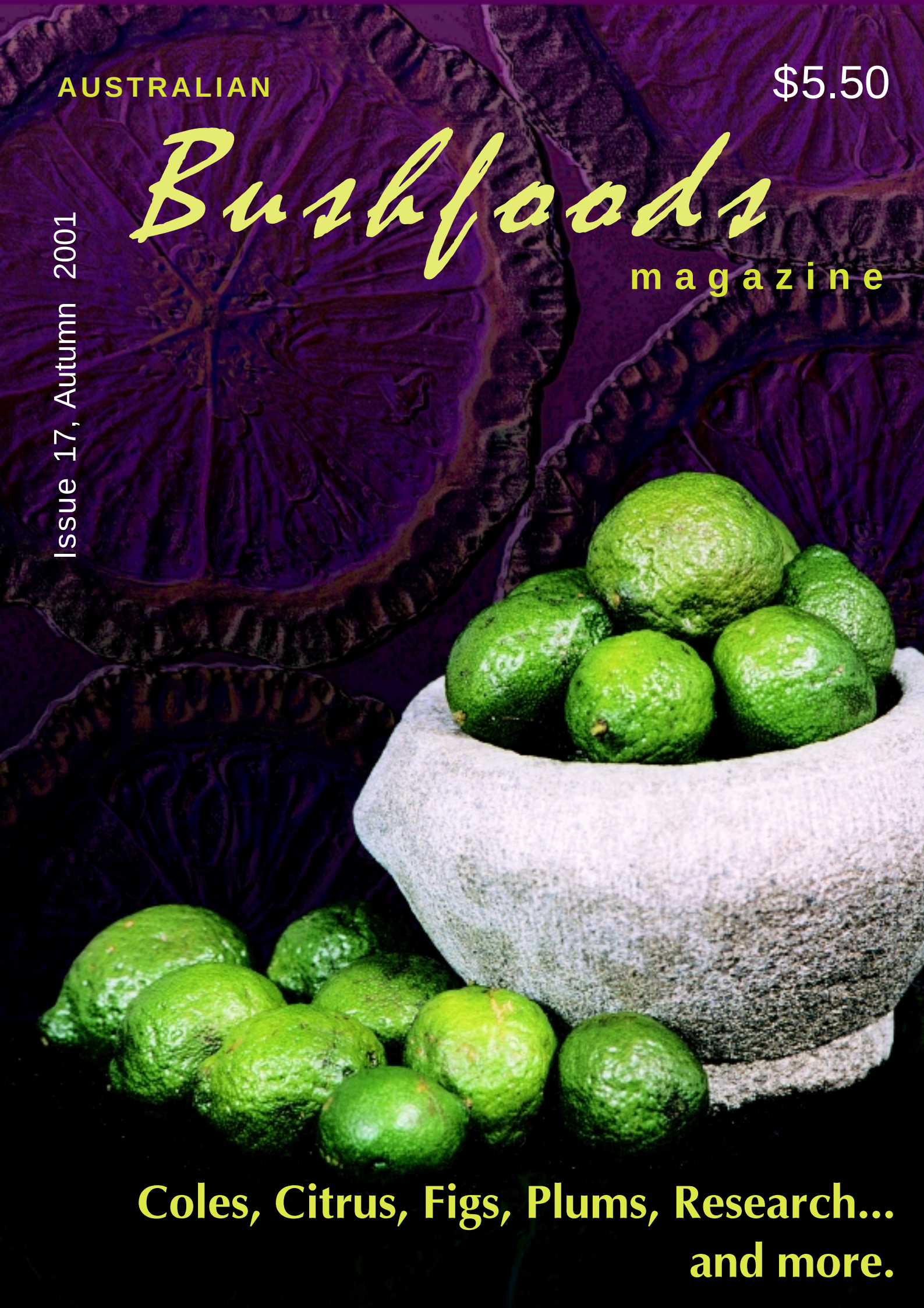
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magazine
Issue 17, Autumn 2001
Coles, Citrus, Figs, Plums, Research...
and more.

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Let us take care of country

Cover photo - Round lime (*Citrus australis*) by Brian Rogers

Australian
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magazine

In this issue...(17)

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My very grateful thanks to the many people who contribute their time and expertise to each issue of this magazine - without you it wouldn't happen.
I would also like to thank the advertisers who support the magazine - may my circulation and your sales prosper and grow!
To end - let us all acknowledge the Indigenous people and their prior knowledge. May we move forward together.

From the Editor

Lights, camera — more lights! more camera! But where's the action?

Five years ago, I believed there would be a sudden and glittering debut for bushfoods - a sort of glorious launching at which Australia (and the world) would suddenly discover the joys of our native foods and the industry would move, not into mainstream, but perhaps maintributary.
It didn't seem to happen - or did it? Over the last 12 months there has been a movement beneath our feet which has moved the industry forward with a subtle but noticeable lurch.
A simple search of the net reveals a swag of new processors and restaurants using our native foods, Coles has now entered the sector with a joint venture with Aboriginal groups. Demand for many species is growing and, perhaps more importantly, commercial quantities of some species is on the rise. There is also (though this is not based on formal research) growing interest from the 'conventional' primary production sector. This can only be good for us all in the long run.
Many important research projects funded by RIRDC (about the only body funding bushfoods research at present) are now complete and available to all.
So where to from here?
If I knew that, I would be forming a dot.com to take advantage of my foreward knowledge. As I don't, I am quite content to continue publishing a magazine which is, increasingly, having trouble keeping up with 'the news'.
It's a nice problem to have.
On another note - this may seem a very wordy issue but there are some important issues on hand at present and it would behove us all to stay abreast of these things. And to contribute to the debate.
Happy planting to you all.

Eratum

(just had to mispell that so I could correct it in the next oops box!)

Diemen Pepper

Issue 15 of the magazine - page 32. Thanks for the plug for our Tapas Oil.
One small thing which might frustrate people trying to get in touch: our email server is **tassie.net.au**, two 's's. Best regards, Chris, Diemen Pepper

LETTERS

Dear Erika,
I enjoyed reading your recent article on Australian Native Citrus in Australian Bushfoods Magazine (Issue 16, Summer 200l) and I thought your photograph of fruits was an excellent choice for the cover.

In reading the article, I noticed that the parentage of Australian Blood lime was reported incorrectly as an open-pollinated selection from a cross thought to be between Ellendale tangor and a seedling of the red-pulp finger lime (*Citrus australasica, var. sanguinea*). The Blood lime was actually selected as a natural hybrid between a zygotic Rangpur lime seedling and seedling of Citrus australasica var. sanguinea as reported in the Australian Bushfoods Magazine (Issue 3, Aug-Sept 1997, p15).

We thought we should bring this to your attention in the event of any future articles in which the origins of this variety are reported.

With best wishes,

yours sincerely,

Steve Sykes

Subprogram leader, CSIRO Plant Industry Horticultural Unit

Dear Sammy,
In the June-July 1999 issue of the Australian Bushfoods Magazine, we placed an article asking for expressions of interest to form a Solarium centrale Association. Over the following few months we received a number of replies including one from yourself.
However much has happened since then which has caused us to reconsider being involved in a *Solanum centrale* Association.
We have been trying to grow *Solanum centrale* at McLaren Flat for 5 years as our original advice was that the plant would thrive in such a location.
Unfortunately we are now convinced that without providing an artificial environment such as a hothouse, *Solanum centrale* cannot be grown successfully at McLaren Flat. Our summer is too short and the winters too wet and cold for this desert plant. Pretty obvious really, in hindsight.
The plant is supposed to be perennial - however we found that few will tolerate our winters. Consequently we see a very small number of second and third year plants. New plantings thrive well, however before much of the crop can be picked we have rains in late Autumn - early Winter which causes the fruit to split and become infected with a sooty mould. Hence our decision is to put our efforts into the growing of *Kunzea pomifera* (Muntries or Munthari).
We have a list of 13 growers, students and associations interested in the formation of a Solanium Association. If you are interested in taking up the challenge of forming this association, let us know and we will forward the names and addresses to you.
Thank you for your attention and we look forward to hearing from you soon.
Ray Rogers

Hi Sammy,
Willow Creek Farm has been going for 5 years and in the last 12 months we have brought Australian bushfoods into our product range with a lot of help from Brian & Di King, growers in SA.

Over the last 3 months, our sales have increased - we find the main market is in tourist areas. We sell in the Barossa Valley S.A. Stanley Brothers Winery, Pitted Olive Gawler SA, Canberra ACT Harcourt Winery and Bowerbird Native Nursery in Qld just to name a few.

At the moment we are hoping to export to the UK.

The main problem we have found is the labelling which we have changed several times as we feel the packaging is what sells the product.

I believe bushfoods sales will increase over the next few years if growers can supply the produce and if the prices are reasonable.

Our price range start from $1.60 - 40g jar to 120g jar $3.50 wholesale other sizes available.

We have a range of products.

I have sent a price list hoping you can open it. The prices are wholesale.

If you have any queries please do not hesitate to contact me.

Regards,

Lyn Hurst

(see Plants, Products and Prices, Page 40, the Ed).

Marketplace

Pepperberry vinegar, Kakadu plum jelly and ironbark honey are just a few of the products which will soon be on supermarkert shelves under this scheme to promote native foods. Coles' idea to raise Australians awareness of native foods began on a visit to Arnhemland last year by Managing Director Alan Williams.

Alan was at Galiwinku (Elcho Island) to sign a retail training agreement with the Arnhemland Progress Association (ALPA) which involves Coles sharing retail and training resources and staff exchanges between remote grocery stores in Arnhem Land and Coles stores.

The idea gathered impetus when Alan outlined his thoughts to the Aboriginal Development Forum chaired by Galarrwuy Yunupingu and ACT Chief Minister Denis Burke.

Coles made a commitment to this Forum to encourage its suppliers to establish links with Aboriginal communities who supply native ingredients and to help distribute and promote awareness of Australian native produce. The Forum's objective underpinning this is to provide Aboriginal people with the opportunity to develop their own communities commercially and socially.

These links are being established and today's Coles Taste Australia launch of products nationally should help create greater awareness of the unique and magnificent flavours of Australia's indigenous foods.

Former Australian of the Year, Mandawuy Yunupingu, representing the Yothu Yindi Foundation of north-east Arnhem Land, has given his support to an initiative that involves indigenous communities in central Australia, Victoria, the top end, central Queensland and the Cape and Gulf country.

"We welcome initiatives utilising traditional knowledge that promote sustainable businesses for Aboriginal people and their communities," he said.

"For tens of thousands of years Aboriginal people have relied on the fruits of this land for their dietary and medicinal properties.

"We welcome processes that further the economic development of Aboriginal communities. We also appreciate the fact that a proportion of sales will go to the Fund to be devoted to the development of indigenous food production in the communities.

"It's exciting that our fellow Australians can now share in the tastes we've enjoyed for millennia."

Discussions with growers, manufacturers and the CSIRO all pointed to sustainable commercial harvesting and cultivation if manufacturers were to secure long term supply.

To ensure Aboriginal groups would have a share in this, Coles suggested diverting a portion of sale proceeds to a fund to be used by Aboriginal communities to improve harvesting and cultivation practices.

Coles and three of its suppliers; Robins Australian Foods, Australian Native Produce Industries and Taylor's Foods, agreed to contrib-ute a portion of their product profit margins towards this fund, known as the Coles Indigenous Food Fund. Coles will contribute 25 cents per product and the manufacturers will contribute varying amounts.

In the first year it is expected to raise in excess of $100,000. Coles is establishing the fund with an initial $20,000 donation.

Once established, Aboriginal communities seeking to improve their supply arrangements with Coles' suppliers will be able to make applications to an advisory committee for grants. The advisory committee will consist of representatives from Coles, suppliers and Aboriginal groups.

"To encourage continuing Aboriginal involvement in harvesting and cultivation, the Fund will provide grants enabling plant species research, horticultural training and irrigation to enable expansion.

"Coles is committed to the Indigenous Food Fund for the long-term and we believe our customers will be very impressed by the quality, flavours and textures of these uniquely Australian products."

The Coles Taste Australia range is available in over 100 Coles' stores across Australia. Products include relishes, chutneys, jams, simmer sauces, chilli and other flavoured sauces and dried native herbs.

Marketplace

Jaggard Spirits feature bushfood flavours.

If the name alone, *Jaggard: Spirit of the Outback,* doesn't make you want to jump on a horse and round up some cattle then take a swig of this potent drop and maybe you'll change your mind. These alcoholic beverages are 100 per cent Australian and a blend of aniseed myrtle from sub-tropical rainforests in NSW and pure alcohol. This drink is for those that have steel stomachs!

With an alcohol content of 30 per cent, it's for serious drinkers only. It's smooth and tasty and just the thing for a cool night.

Flavours include Jaggard original and Jaggard lemon myrtle, mixed with quandong, a native Australian fruit high in vitamins B and C.

Simple yet stylish packaging makes this spirit a great Australian-made gift for lovers of good alcohol.

From 'The Australian', Aug 26 2000

The Perfect Potion - oily, environmental and very nice.

Did you know that eucalyptus essential oil is purifying balancing and energising?

Brisbane-based The Perfect Potion now has a range of Australian native oils, including aniseed myrtle, lemon-scented eucalyptus, lemon myrtle, nerolina, Australian sandlewood and white cyprus.

Supplied by Australian essential oil farmers, who use renewable resources and environmentally friendly agricultural practices, these oils have wonderful healing and soothing qualities.

The Perfect Potion also makes every kind of skin and body care, not to mention all sorts of smelly stuff, and is committed to using environmental practices, such as recycling, in stores.

The Perfect Potion has outlets in Brisbane, Townsville, Melbourne and Sydney, or call for info on

07-3256-8500.

Information Evening

On Tuesday, 27 March, DPI Johnstone (Qld) held an information evening on the bushfood industry. After a welcome from Ruth Lipscombe, Jenny Smith (DPI) spoke on 'Background and introductions'.

Guest Speaker, Graeme Ison (Tableland Economic Development Corporation) spoke on 'Marketing Bush Tukka - Issues & Information'.

The second guest speaker, Craig Squire of Red Ochre Grill closed with "Bushfood Presentation & Tasting".

The evening ended with a bushfood supper.

The evening was, by all accounts, a great success and generated a great deal of interest from local farmers, landholders and others.

Tune in, speak out -

Join the bushfood discussion group:

260* people sharing information

If you're on email, you can be part of the bushfoods discussion group. Here people ask questions, share information, buy and sell, debate policy and, sometimes, enter animated discussions on bushfood topics!
Subscribing is not only easy - it's free.
Email the magazine to be signed up for the discussion group:

bushfood@hotkey.net.au

*this figure was correct at the time of publication

Australia's Bushfoods -

Some thoughts about embracing and enhancing the Indigenous perspective. Ron Mitchell, Moreton Institute of TAFE

Why should we plant natives?

In these times there is an increasing emphasis on cultivating native plants in our suburban parks, gardens and farms. The use of native tree and shrub species in revegetation projects on post-mining and degraded farming landscapes is now a well established protocol in the South East region. In the urban landscape, the practitioners of amenity horticulture utilise native plants in two main ways: by planting selections of natives (and exotics) as the 'soft' component of landscaping projects into cleared sites; or by the retention of remnant semi-natural and natural vegetation on sites undergoing development and within or adjacent to cleared open space and cultivated gardens.

There are a number of very sound ecological reasons for the planting or retention of native species in the urban landscape. Native plants provide food and shelter and the preferred habitats for our native fauna. The importance of the hollows in large trees is but one of the essential habitat requirements for many species of native fauna that should not be neglected. Native plants have evolved over millions of years in response to Australia's unpredictable and unreliable rainfall and generally nutrient-deficient soils; because of this there are inherent tolerances and adaptations of many native plant species to various types of environmental stress when planted in difficult sites.

The planting or retention of native plants in buffer zones and corridors environmentally enhances the health and vigour of ornamental plants by creating a diversity of habitats for the natural enemies of serious insect pests. Planting natives into the urban landscape is also a way that we can ensure the survival of certain species that are threatened or endangered in the wild. Native plants within their natural range of distribution will generally not escape cultivation to become bushland weeds.

The cultivation of native plants also makes sound economic sense for urban gardeners and landscapers. Native species are generally easier to plant and maintain, and less demanding of water and nutrients than exotic species. The retention of the undisturbed understorey of large eucalypts creates a 'low maintenance' environment that can inhibit the growth and spread of garden weeds. Native plant species are considered pest and disease hardy, and generally their cultivation and maintained health is less reliant than exotics on pesticides. Native planting material is now readily available, and at reasonable cost from specialist plant nurseries. There is a steadily increasing availability of specific information and industry expertise and advice relevant to native plants.

There are also a number of functional and aesthetic reasons for planting native species. A large number of native plants have ornamental attributes; the spectrum of our native flora includes a diversity of size, shape, colour and appearance. Many native sclerophyllous species are cultivated for export as Australian wildflowers. Native rainforest plants are well known and popular in cultivation because of their glossy foliage in spreading canopies, colourful and fleshy fruits, and attractive flowers.

One of the great traditions in the Australian urban landscape is the 'native garden'. It is a relatively recent tradition however. By the mid nineteenth century in Australia, the advent of the gardening tradition for a increasing influential and affluent 'backyard' culture, coincided with the re-introduction of formality into landscape design in Europe. The 'native garden' tradition is well established in Australian horticulture.

Why did it take us so long to plant natives?

At first of course the emphasis in gardening and farming for European settlers on in Australia was purely on survival. While many settlers welcomed and felt secure with the appearance of the woodland and grassland landscapes created by indigenous 'firestick farmers', the denser 'bush' instilled a classical Judeo-Christian fear of the wilderness and an inherent instinct to manipulate and dominate natural ecosystems.

Meanwhile the settler's garden

Our Natural and Cultural Heritage

styles for the affluent reflected a European focus on the classical tradition, with its rigid structure and order, architectural symmetry and the intensive maintenance of easily manipulated manicured domesticated exotic plants.

Under this formal condition, it was thought that the urban landscape should be as perfectly composed as a painting.

Apart from the indigenous araucarian conifers, most of the Australian native plants seemed alien to the gardening ethos of our colonial horticultural forebears because of their harsh and disordered appearance in the wild.

It is probably fair to say that for a long time after initial European settlement in Australia, the native flora species, including 'bushfoods', were ignored. To European eyes the native Australian landscape was as inhospitable and alien as perhaps Mars is to us today. In order to seek familarity and order in the new landscape a long way from home and with little prospect of return to the 'old country', the European settlers relied almost exclusively on Northern Hemisphere biota in farming and gardening. The 'acclimatisation societies' of the 1860s reinforced the zeal of many Europeans to recreate their European home here with imported economic and ornamental plants and animals to an almost obsessional and evangelical extent and to as we now know, the ever lasting detriment of our native biodiversity.

The late nineteenth century witnessed the increasing influence of the middle class and the democratisation of gardening. The greater public interest in horticulture and the freedom from stylist restraint and architectural pragmatism ensured a more eclectic approach so that formality or informality in garden design was now a matter of choice. The widespread embrace of the Australian 'cottage garden' style with its characteristic crowded simplicity and diversity of useful and functional plants, promoted probably our out shear necessity for the first time the study of the horticultural attributes of the indigenous flora. At this time, landscape designers were also increasingly influenced by earlier informal traditions of the eighteenth century.

The 'wild garden' style was rediscovered and popularised by the influential European landscape designers William Robinson and Gertrude Jekyll. With its emphasis on the planting of hardy indigenous species in a free-growing created wilderness, the 'wild garden' tradition was reflected in a more naturalistic garden design in Australia, and the intentional incorporation for the first time of native species in landscape design. Into the early twentieth century, the utilisation of native plants became more widespread, although plant selection lists were still dominated by exotics. It wasn't until the 1930s that native plants were readily available to hobby gardeners from plant nurseries.

Perhaps the most important advocate of the use of native plants in the urban landscape this century was the Australian landscape designer Edna Walling, who in the post-war era established a tradition of utilising native Australian plants in totally informal 'bush gardens'. These gardens stated to include Australian native food plants.

After all, it makes sense to plant natives ...

Certainly the original European settlers not only misread the climate and the soils of Australian landscapes, but also ignored and underestimated the attributes of native plants.

The movement to grow exclusively Australian native plants in gardening did not originate until the 1950s and 1960s.

It was largely encouraged by the formation of the Society for Growing Australian Plants (SGAP) formed in 1957.

Since that time the development of the 'native garden' in landscape design and as a garden style in its own right, provides a contrast to other highly developed and intensively maintained garden styles dominated by exotics, and has aroused and perpetuated a sense of 'Australiana' in the urban landscape and popular culture.

Cont'd Page 8

Australia's Bushfoods - Our Natural and Cultural Heritage cont'd

After all Australian natives have a quiet and understated beauty and an asymmetry in form that blends in with the existing bushland, and distinguishes them from the more ordered, spectacular and flashy exotics.

Increasing environmental awareness during the 1990s and a reaction to the excesses of unbridled development, has seen a greater emphasis on the cultivation of native plants in the urban landscape, not just because they blend into the natural landscape, but also for their scientific, conservation and fauna habitat value.

The 'low maintenance' and 'lazy gardener' aspects of easily established and maintained time-efficient native gardens are also important considerations. Don Burke, Peter Cundell and others advocate that appropriate organic mulching will diminish the requirement for expensive and time-consuming on-going inputs of weed control, fertilising and irrigation in native gardens. The present trend of 'low maintenance' native gardens in landscape design has been enhanced by busy lifestyles, an awareness of the ecological and economic costs of reticulated water, and the increasing influence of the landscape design profession.

Lawns do not have a role in native gardens...

being exotic in origin, and excessive consumers of irrigation water and inorganic nutrients far in excess to the growth requirements of native plants.

There is also a re-examination of the horticultural attributes of natives in the need to conserve water. Many native species are truly drought tolerant and suitable,

along with exotic xerophytes, for water-efficient xeriscape plantings.

The term 'dry' garden usually infers the use of 'drought tolerant' species from dry sclerophyll, woodland and heath vegetation communities. The best known tree and shrub genera representative of these vegetation communities - including *Acacia, Eucalyptus, Hakea, Grevillea, Banksia, Callitris* and *Casuarina* - with their characteristic foliage and flowers, probably best epitomise the unique and harsh Australian bush environment.

The term 'native garden' can also include native rainforest plant species in cultivation, many of which and perhaps surprisingly are remarkably hardy and adaptable - far more so than many people realise - even though the various rainforest ecosystems from which they are derived are fragile and often finely balanced. In particular the well known native 'vine scrub' species including Kurrajong (*Brachychiton populneus*), Silky oak (*Grevillea robusta*) and Bunya pine (*Araucaria bidwillii*) are remarkably drought tolerant and water efficient in cultivation. The range of available native rainforest species, apart from their aesthetic and functional attributes, also has a number of advantages compared to bushfire-prone sclerophyllous plants. Rainforest plants, with their non-flammable foliage and moist leaf litter upon maturity and canopy closure, are important functionally, and provide a fire-retardant buffer zone.

Why 'bushfoods' are an important component of our natural heritage

Our island continent has a unique predominantly endemic floral biodiversity. Historical development of the 'native garden' concept, particularly in the past 20 years, has promoted the utilisation of a large range of native plants - not just 'bushfoods'

Our Natural and Cultural Heritage cont'd

but also wildflowers, herbs, groundcovers, climbers, trees, shrubs, fruits, ferns, palms, cycads, orchids, conifers, ornamental grasses and water plants - with the horticultural attributes and versatility to qualify their contribution to the urban landscape and the world of ornamental horticulture.

With the new millennium, there is an ever-increasing interest in, and emphasis on, planting natives.

'Bushfood' species are representative of practically all of the vegetation communities in Australia, and there is now also an increasing commercial interest in the domestication and improvement of selected species of Australian native plants as 'bushfoods'.

There are about 250,000 species of higher plants in the world. Given this biodiversity it is perhaps surprising that with 10,000 years of settled agriculture and 'civilisation' only about 100 species have been developed as commercially significant food plants, and only about 20 of these constitute the staple foods of the developed and developing world. These commercial food plants have had a history of selection and improvement in continuous cultivation from the time of the agricultural revolution. However most of the world's traditional wild foods, and particularly those associated culturally with the world's indigenous peoples, have been virtually ignored in terms of research and development, and have been generally excluded from agricultural commerce.

Australia's biological resources are unique, and Australia has an international obligation as a responsible world citizen and signatory to relevant international conventions (such as the 1992 Biodiversity Convention) to enact legislation to protect endangered ecosystems and species and to conserve our unique genetic resources.

In fact Australia is one of the 12 'mega-diverse' regions on the Earth, which account for 70% of the world's total biodiversity

Australia has about 10% of the world's biodiversity of higher plants (upwards of 20,000 species) in natural ecosystems. Some 85% of these species are endemic (meaning that they occur nowhere else). Australia's natural biodiversity and high rate of endemism is a result of a geological history characterised by evolution in isolation, as much as the continent's extensive latitudinal spread creating a range of climatic zones. During its 40 million year post-Gondwanan geological history, marine barriers isolated Australia and prevented genetic exchanges with other continents. Furthermore the eastern and western coasts of Australia were isolated from each other because of an internal desert barrier.

Most commercial food plants cultivated in the world today are of Mediterranean or tropical origin, and are not inherently adapted to the harsh climates and variable soils of Australia.

The cultivation of these exotic crops demands high inputs of irrigation, nutrients and pesticides and in combination with imprudent Eurocentric land management practices and attitudes over the past 200 years or so has been associated with the 'mining' of water and soil resources, thus resulting in severe land degradation.

Apart from their enhanced and concentrated nutritional qualities, wild foods under commercial cultivation are most often a genetic reservoir of inherent adaptability to environmental change, hardiness to adverse climate and soil conditions, and tolerance to native and exotic pests and diseases.

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Next Issue - Part Two:

Potential for sustainable bushfoods industry
Aboriginal participation
Intellectual copyright

The Native Citrus Tag

Anthony Hele, Industry Development Consultant - Native Foods

There has been discussion of late in Bushfoods magazine and else' where about some presumed confusion in citrus nomenclature or classification arising from the release of the CSIRO-bred native citrus hybrids Australian Blood LimePBR and Australian Sunrise LimePBR.

The botanic taxonomy and horticultural nomenclature of citrus generally is complex, but not necessarily confusing to those in the industry. Firstly it should be remembered that citrus classification schemes may be either botanical (and aim for scientific accuracy) or horticultural and aim for commercial utility). While there are several classification schemes around, the industry basically divides commercially important citrus into eight common horticultural and botanical groupings -

Sweet Orange (Citrus sinensis)

Mandarin (Citrus reticulata)

Grapefruit (Citrus paradisi)

Pummelo (Citrus grandis)

Lemon (Citrus limon)

Sour Lime (Citrus aurantifolia)

Citron (Citrus medica)

Sour Orange (Citrus aurantium)

While the above scheme seems relatively straightforward, the complexity in citrus naming and classification and differences in botanical and horticultural designations largely arise from the plants' ability to readily hybridise. Botanical classifications attempt to recognise these hybrids by employing terms such as tangor (mandarin-orange hybrid), lemonime (lemon-lime hybrid), lemonange (lemon-orange hybrid) and lemandarin (lemon-mandarin hybrid). However these terms are not generally employed as horticultural or commercial designations. The most common and notable examples of how this factor influences citrus tags are found in the mandarin group. where varieties such as Ellendale and Murcott are actually tangors and Fairchild, Nova, Osceola and Robinson are hybrids between mandarins and tangelos (i.e. hybrids between mandarin and grapefruit). In each of these cases these cultivars are generally known and traded as mandarins, despite their hybrid origin and botanical designations. Some exceptions do exist however, several mandarin-grape-fruit hybrids, such as Minneola and Seminole, are both botanically and horticulturally known as tangelos. In this case marketing considerations, rather than any concern for botanical accuracy, has been the likely motivation for the common adoption of this name. Even the Meyer lemon, well known to many home gardeners, is not a true lemon, most likely being a hybrid between lemon and either an orange or a mandarin. It is never sold as a 'Meyer lemonange'or 'Meyer lemandarin'. An even more curious situation occurs in the US, where a particular tangor cultivar is known and marketed as Temple orange when grown in Florida and as Royal mandarin when grown in California. If we go back further and look at the basic groups themselves it becomes even more complex. For example the sweet orange is probably the result of natural pummelo-mandarin cross and the grapefruit from a cross between pummelo and sweet orange. The lemon is a more complicated hybrid, possibly involving the lime, citron and perhaps pummelo. Even the most pedantic is Linlikely to argue that, to avoid confusion and misrepresentation, oranges should really he known as pummelarins and lemons as limronelos. So how does this potential complexity impact on citrus science culture and trade? And how does it effect the likely horticultural classification of Australian native citrus species, cultivars and hybrids? In terms of horticultural

The Native Citrus Tag cont'd

classifications the key lies in the common sense approach used by the world citrus industry. As Robert Hodgson (former Professor of Subtropical Horticulture at the University of California, Los Angeles) explains in his chapter on Horticultural Varieties of Citrus iii Volume I of 'The Citrus Industry' (The Bible) - 'the horticultural classification employed is ... both arbitrary and empirical... Since the classification is based primarily on resemblance, it has been best to place known and presumed hybrid varieties in the groups they most resemble, irrespective of parentage, known or presumed'. This rule - if it most closely resembles a mandarin, call it a mandarin - is a profoundly logical approach to dealing with what could be overwhelming complexity. Moreover, within his classification he does explain the parentage of each cultivar, so ultimately there can be no confusion or misrepresentation, and more complex botanical designations and classifications can still be employed when the context is appropriate.

Currently there are, as far as I am aware, only four cultivars and hybrids of Australian native citrus commercially available (although doubtless there are others waiting in the wings). Two are pure species cultivars, namely Rainforest PearlPBR Citrus australasica var sanguinea) and the Australian Outback LimePBR (Citrus glauca). The other two are hybrids and are known as the Australian blood LimePBR - a natual hybrid of the sour-fruited mandarin -like Rangpur, (Citrus limonia) and Citrus a australasica var.sanguinea; and the Australian Sunrise LimePBR - an open- pollinated seedling selection of the faustrimedin. The faustrimedin is a hybrid of Citrus australasica and calamondin - itself a hybrid of mandarin and cumquat. It seems a totally logical and acceptable practice to apply Hodgson's maxim in this situation and at this stage to horticulturally classify all these cultivars under the heading of 'Australian native citrus', and as long as an explanation of the parentage of each variety is readily available there can be no question of confusion or misrepresentation. Further, 'foreign' citrus species have been present in Australia for more than 200 years and readily hybridise with native species to produce offspring that often strongly resemble their native parent. Attempting a practical horticultural classification based on some concept of 'genetic purity' seems to me to open up an unnecessary can of worms and raises the spectre of DNA testing of every new 'native' variety offered for sale. However, in practice the real bottom line is this - it is the citrus industry and market that will ultimately decide whether 'Australian native citrus' stands as a horticulturally and commercially distinct group and what species, cultivars and hybrids are in- cluded. Experience shows that botanical designations and concepts of 'genetic purity' are unlikely to he significant factors in this decision.

Lesser Known Species - 2

Sandpaper Fig (Ficus opposita)

By Greg Calvert, reproduced from 'The Native Gardener', newsletter of SGAP Townsville

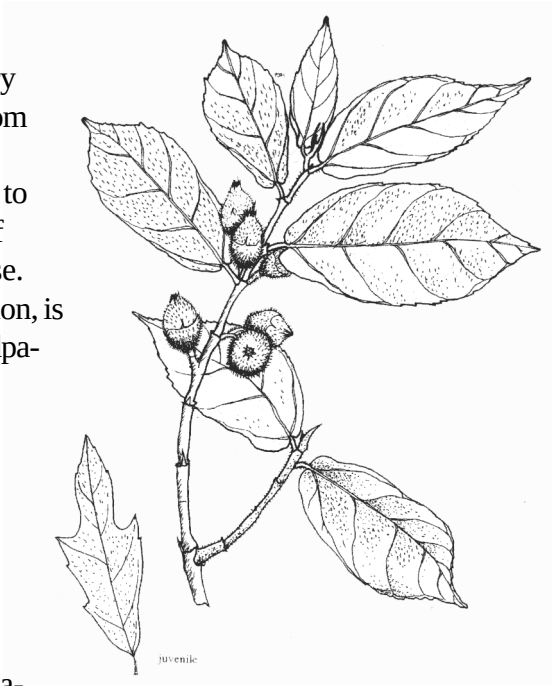
I am disappointed in the fact that many people seem to regard the Sandpaper Fig as a bit of a weed. In a well designed garden which attracts lots of birds, the Sandpaper Fig will often appear.

It doesn't take an expert botanist to identify a Sandpaper Fig. In fact, most people can do it blindfolded, due to the rough coarseness of the leaves. The leaves do vary considerably in shape, from a pretty standard sort of broadly lanceolate shape to a sharply pointed thin leaf with long lobes at the base. Botany student, Dale Dixon, is currently examining Sandpaper Figs at James Cook University and will hopefully be able to shed light on why the leaf shape varies so much at some stage in the future.

I was always at a loss to explain why some Sandpaper Figs grew into large, shady trees while others remained small shrubs, until Dale found that Sandpaper Figs were not bisexual like many of their close relatives, but had male and female on different trees. Since then I have made some closer observations and found the following:

Very large trees never seem to set ripe fruit. I had always assumed the birds were taking them before they ripened, but now I believe they are male plants and the fruits never get past the hard, green stage.

Smaller plants are females. They produce soft black fruit with a skin so thin you often break it just by touching it. At full maturity the fruit exudes a clear substance and at this stage the fruit is one of the nicest eating bush tuckers and surprisingly rich in Vitamin C, energy and most minerals, with moderate levels of other nutritional elements.



Ficus coronata - Creek sandpaper fig. From Janet Hauser and Jan Bick's fabulous' Fragments of Green'

The term "fruit" is actually incorrect. Botanists prefer to call them "syconium" or "fleshy receptacle", as they contain the flowers of the plant which must be pollinated by tiny, specialised wasps. A true fruit should derive from the ovary of a pollinated flower, rather than containing the flower itself.

Aborigines found many other uses for Sandpaper Figs apart from eating those heavenly syconiums.

Of course, they used the leaves for polishing wooden objects, such as spears and boomerangs, and a quick look around will often find several plants with different coarseness of leaves.

This was also used as a cure for ringworm. The skin would be abraded with the leaves and the milky latex applied to the area requiring treatment. This is apparently quite effective.

Dry straight stems of this tree were used for fire sticks and it is one of the few plants suitable for this purpose. If you do not have the right wood to start with, you will not even get the wood warm, let alone start a fire! The inner bark can also be used to make string.

So there you have it; a supermarket tree. It attracts birds, can be used for shade, food, medicine, tools, fire and string to make nets and traps. And some people call it a weed??

Warning! Warning! Tax Office Approaching!

Colin Goodwin

You'd have thought that, with the trials and tribulations of introducing the GST, and inflicting Business Activity Statements (BAS) on Australian businesses, that the Tax Office would leave people alone for a bit.

But wait ! There's more! Let me introduce you to the joys of the "New Business Tax System (Integrity Measures) Bill 2000".

This little gem became law on the 30th. June 2000; and what it basically means is that - unless you are willing to be very organised, and fight the Tax Office - your small business will probably be automatically categorised as "non-commercial" (i.e. a hobby), and any expenses will have to be deferred until your business becomes "commercial".

In other words, you will receive no tax relief while you are getting your business off the ground, but will only be able to claim the costs of establishing your business when you have substantial revenues and profits. This is a far harsher set of conditions than big business has to operate under!

If you look at our bushfood industry, probably the majority of people are supporting themselves with income from some other job while their plants and businesses mature. (Existing farmers - much as we love'em - are not yet leading the bushfood industry.) In the past, the bushfood pioneers could at least claim the costs of establishing their bushfood business as a tax deduction against their total income (not just bushfood income). Now you (probably) can't!

So let's look at some of the details; what does a business have to do to be judged as "commercial"?

The Australian Tax Office considers a business as commercial if it passes one of the following tests:

- Earns an assessable income of at least $20,000; or

- Earns a taxable income in three of the past five years, including the current year; or

- Uses real property excluding dwellings with a value of at least $500,000; or

- Uses other assets, excluding passenger vehicles, with a tax (written down) value of at least $100,000.

Failing these tests, the business has to satisfy the Tax Commisioner that either,

- The business failed to meet the tests due to special circumstances outside the operator's control (for example natural disasters); or

- The business is in the start-up phase.

It is with this very last point that there may be some hope. There are a number of primary industries (e.g. plantation forestry) where there are substantial costs up front, with profits only being realised after ten or twenty years. IF a bushfood producer can demonstrate (in their business case) that they can reasonably expect to deliver revenues and profits in the future, then perhaps the tax office will allow early deductions. Whether this will in fact happen will depend on the industry and how well it engages politicians.

Artists and performers tackled this problem and were able to get the mild concession that artists with non-arts income of less than $40,000 are not affected. A similar special case is noted for primary producers with assessable income from non-primary production less than $40,000.

It is clear that this legislation is based on some highly undesirable prejudices.

- It promotes passive investment and penalises active business ventures.

- It maintains favourable tax concessions for big business, but penalises small entrepreneurs.

- It absurdly assumes (contrary to everyday experience) that Australians have only a single job or career, whereas almost all Australians today have a portfolio of paid and unpaid occupations.

There are a couple of things worth doing to try and deal with this situation. The first is to contact your local member, and help them understand how unhappy you are at the Government's attempts to destroy your business. And the second is to contact your accountant and alert them to the problem (unfortunately many accountants will be unaware of the situation), update your business case, and get ready to demonstrate to the tax office that you have (or will have) a "commercial" business and not a hobby!

(For more details go to

http://www.treasury.gov.au/publications/taxationpublications/thenewbusinesstaxsystem/factsheets/707.asp)

Colin Goodwin

The Conservation and Utilisation Potential of Australian Dryland Acacias 13-14 July 2001

A symposium on the conservation and utilisation of dryland Acacias will be held in Dalwallinu, WA, on July 13th and 14th this year.

This symposium aims to explore the environmental and economic potential of Australian dryland Acacias and in particular the role that these species may play in helping solve some of the serious problems currently confronting many rural communities and ecosystems, both within Australia and abroad. Many areas in southern Australia are currently experiencing serious land degradation and increasing salinity, caused primarily by past clearing of native vegetation for agriculture. Acacias may have an important role to play in reversing this cycle of land deterioration.

The symposium will look at Acacia usage in:

- multipurpose tree crop systems (salinity control, bioenergy, etc)
- landscape amelioration & nature conservation; Sandalwood silviculture; tourism & horticulture
- seed for human consumption
- secondary plant products (tannin, gum)

For further information and to register your interest in attending, contact: Bruce Maslin

Ph. 93340510
Email: brucem@calm.wa.gov.au or Shire of Dalwallinu
Ph 9661 1001

Email: dallyshire@wn.com.au

www.dalwallinu.wa.gov.au

Analgesic Plants

From the New Crops Newsletter

It's an old one but still very pertinent...

The Australian New Crops Newsletter Issue No 10, July 1998.

The editors of this newsletter have recently received an enquiry which sought to identify Australian native plants likely to have been used by the Australian aborigines for analgesic purposes. An initial search of a number of sources has identified the following species:

Acacia ancistrocarpa or Fitzroy wattle; *Acacia auriculiformis* or northern black wattle; *Acacia cuthbertsonii* or Cuthbertson's wattle; *Acacia lysiphloia* or turpentine bush; *Acacia melanoxylon* or blackwood; *Alocasia macrorrhizos* or cunjevoi; *Alphitonia excelsa; Avicennia marina* or white mangrove; *Calophyllum inophyllum* or beaty leaf; *Calytrix exstipulata* or turkey bush; *Canavalia rosea* or beach bean; *Capparis lasiantha* or nipan; *Capparis umbonata* or northern wild orange; *Cardiospermum halicacabum* or balloon vine; *Carissa lanceolata* or konkerberry; *Cleome viscosa* or tick-weed; *Clerodendrum floribundum* or lollybush; *Codonocarpus cotinifolius* or desert poplar; *Crinum angustifolium* or onion lily; *Cymbopogon ambiguus* or lemon-scented grass;

Dendrocnide moroides or stinging tree; *Dodonaea lanceolata* var *lanceolata* or yellow hop-bush; *Duboisia hopwoodii* or pituri; *Eremophila fraseri* or turpentine bush; *Eremophila freelingii* or rock fuschia; bush *Eremophila longifolia* or weeping emu bush; *Erythrophleum chlorostachys* or ironwood; *Eucalyptus camaldulensis* or river red gum; *Eucalyptus globulus* or blue gum; *Eucalyptus microtheca* or coolabah; *Eucalyptus miniata* or northern woollybutt; *Eucalyptus tetrodonta* or stringybark; *Excoecaria parvifolia* or gutta percha tree; *Ficus opposita* var *indecora* or sandpaper fig; *Galactia varians* or wild bean plant; *Gyrocarpus americanus* or stinkwood; *Hakea arborescens* or yellow hakea; *Melaeuca argentea* or silver cajuput or river paperbark; *Owenia reticulata* or desert walnut; *Pandanus spiralis* or screw palm; *Pittosporum phylliraeoides* or native willow; *Prostanthera striatiflora* or jockey's cap; *Santalum acuminatum* or quandong or native peach; *Santalum lanceolatum* or black plum; *Santalum spicatum* or sandalwood; *Strychnos lucida* or strychnine tree; *Tinospora smilacina* or snake vine; *Ventilago viminalis* or supplejack.

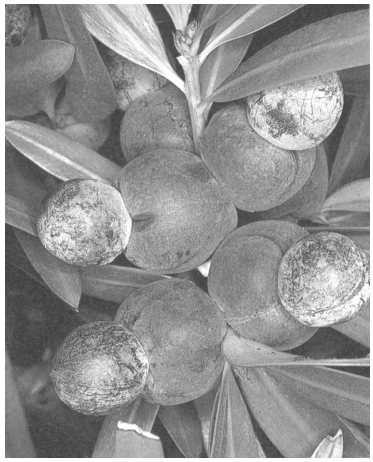
The method of treatment and the preparation used varied widely.

All these species have been claimed to have been used for some kind of analgesic treatment. We would be interested in any others, or any comments as to the accuracy of this list.

Brown Pine

by John Wrench (taken from his notes on 'Bushfood and walkabout' for the Brisbane Inst. of TAFE, Ithica Campus.

Podocarpus elatus - Brown pine, Plum pine, Illawarra plum,
Family: Podocarpaceae



A gymnosperm, a conifer, one of our earliest large plants, in a family present since before the Gondwana break-up in the Miocene period, perhaps for 150 million years.

In recent times it has been a member of rainforest communities at both low and higher levels along the eastern coast, between Nowra and the Queensland border highlands, with pockets in the Moreton area, the Mary Valley and others further north. So, Illawarra Plum is somewhat apt as a vernacular name.

Being a gymnosperm, this plant does not produce fruit as modern plants do, but does develop a fleshy swelling of the stalk immediately behind the small cone, resembling a small, dark, plum in shape, colour and waxy bloom. The generic name '*Podocarpus* 'is derived from two Greek words pous (podos) a foot and 'carpos' a fruit, alluding to the fleshy footstalk of the cone. The flesh has a mucilaginous texture and a resinous or piny flavour, without much obvious sugar or any acid.

Although this non-fruit has obviously no seeds, the firm tissues of the stem (e.g.. the vascular bundles) remain through the axis, and provide a slightly fibrous residue when the flesh is processed.

When processed in either a blender or a food processor, the fruit develops the consistency of a flummery. However used, the colour is striking - purple-blue when raw, more reddish when cooked with acid e.g., in making sauces or jam.

The mucilaginous flesh probably contains some pectin-like substances, suggesting a suitability for making jams or jelly, with the addition of acid (e.g.. citric or tartaric, up to 5% w/w) and an equal weight of sugar. For such preparations. Begin with minced or blended pulp, but in jam include a few whole fruit or larger pieces for a surprise.

Possible uses

1. Eat raw, fresh (be adventurous)

2. Freeze for use out of season

3. Make jam. Try a combination with Riberry or other rainforest fruits.

4. Sauces, with the addition of acidic juices or fruits, native if possible. e.g.. Riberry. Davidson's Plum, Burdekin Plum, various native limes, etc.

5. Drinks, either alone, with the addition of acid and sweetening (any way' you choose) or (better) by admixture with other rainforest fruits etc.

6. In cakes and puddings with or without other rainforest fruits. Rich plum cake is magnificent.

7. Sorbets, with other rainforest fruits, especially riberry and native limes. (Refer to the article in Australian Bushfoods Magazine No.3, 'Dinner at 14 Ennerdale Street'.

8. All the other exciting things suggested by Vic Cherikoff

Refer:

Cherikoff, V. Uniquely Australian. A Wild Food Cookbook Bush Tucker Supply Australia 1994

Cherikoff, V. & Isaacs, J. The Bush Food Handbook, Ti Tree Press

Food of the Rainforest

By Roger Goebel, DPI

Davidson Plum

Oo-ray or
Sour Plum
Davidsonia pruriens -
Family: *DAVIDSONIACEAE*

Features:

Outstanding features of this plant include -

Fruit

Relatively large fleshy fruit rounded to oblong, up to 50mm in diameter are dark purple to black when ripe with bright rich red/maroon coloured juicy pulp. The fruit only have a couple of seeds, which are three winged and easily separated from the pulp. On the skin are fine hairs that are easily wiped off with a rag. The pulp is acid/tart and makes excellent wines and jams. Fallen fruit is eaten by a range of animals including Cassowaries.

Fruits ripen throughout the year but peak availability is Spring and early Summer.

The Plant

The plant, a small to medium sized tree up to 12m in height is sometimes multi-trunked. The leaves when mature are dark green up to 50cm long and of a quite distinctive shape. The felted pink/tan new growth is very attractive and adds to the demand for plants for their ornamental value in protected sites in larger gardens.

Natural Locations

The Northern form of the Davidson Plum is common to the lowland and highland rainforest areas of Northern Queensland. A less common variety called *Jerseyana* is native to rainforest areas of Northern New South Wales and South East Queensland.

Growing Requirements

The plant grows well in locations protected from strong winds and full sun, specially during its first few years of planting out. Soil that is moderately fertile with good organic content and kept moist will encourage steady growth. Once the tree is established it can tolerate more open conditions. Remnant trees are sometimes seen along roadsides and in pasture paddocks with fringing rainforest.

Propagation

Seeds extracted from freshly fallen fruit (you have to be quick to beat the fauna) can be planted in seedbeds or pots. It need not he buried but just covered with peat 'floss or light potting mix. Only a small amount of the seed is fertile and even the fertile seed will take weeks to germinate. Young plants are very sensitive to drying, hot sun and strong fertilisers. Other methods of propagation have not been observed or read about but layering or marcotting could he useful where plants of superior character are found.

Issues

The botanical name 'pruriens' means causing itching or stinging. This relates to the fine hairs on parts of the plant, particularly on the skin of the fruit. These fine hairs could cause problems to some people especially if the trees are grown close to living areas. A range of leaf eating insects may attack Davidson Plum plants. Growth of young plants will be retarded by their attack so fine netting may have to be used till the plants are established.

Uses

Past -

The Name 'Oo-ray' was the name used by the Tully River Aboriginals. Early settlers found the wood

to be close grained, hard, tough and durable. It was used for tool handles and mallet heads.

Present -

Nutritional (source 1:50 000 Snack Map, Mena Creek)

%Water - 91.5

% Protein - 0.41

% fat - 1.7

Energy/Kj/100g - 130.8

The book "North Queensland Native Plants' SGAP Tablelands Branch 1988, has a detailed recipe for a full-flavoured, dry red wine using 2 kg's of fruit to make around 4 ltrs of wine.

This book has hints on jam making, preserving, tart fillings and drinks. Mungalli Creek Cheese of Millaa Millaa produce a 'Davidson Plum farmhouse yoghurt', a product which further demonstrates the versatility of this fruit as a flavouring.

Future

Indications of significant variation in fruit quality and quantity should lead to seedling selection and propagation of higher quality fruit. Already this plant is a regular feature of revegetation projects. The plant is an important food source for native animals so the increased demand should he taken from planting's instead of being taken as current wild harvesting.

Postscript

The Griffith University Project - I have been told that the tissue culture Davidson plants have now been transferred to pots and are doing well. More on this as the project continues.

From the net - a request from the Big Apple

The following was forwarded to the bushfood discussion group by a listee in the UK who received it as a result of his Finger lime web page:

"I am a purchasing director for a large caterer in the New York City area and my chef is interested in the finger lime. Can we get some? Are they available to be purchased oin a large scale? Please get back to me. Thanks."

Jay Scwartz

jrshospitality@email.msn.com

The finger lime web page can be found at:

www.saalfields.freeserve.co.uk/AusNatCitrus.htm

Canberra Group to form?

I received the following and pass it on for those who might be interested in a bushfoods group in the Canberra region:

Sammy,
we are looking at becoming a regional group of the Southern Bushfood Association. The email list works great.
I didn't realise SBA (Southern Bushfoods Association) had regional groups, and when Julie-Anne saw my message she let me know and is sending some info soon. I had some response from people around here but need a few more so a small article would be beneficial I'm sure.
Bye for now,
Margie Burk

rattlepod@swelldesign.com.au
Phone: 0262 465 283

Latin Names and their Pronounciation

by Jim Hansen

The 18th Century saw the development of a system of scientific name classification for all living things by the Swedish naturalist, Linne, C. (1707-78) whose name is usually given the Latin form *Linnaeus*. He gave a name for each group (Genus) and within that group a name for each species - hence this is referred to as a binomial system.

This double name system works well as it is understood world-wide and avoids frequently duplicated and confusing common names, some of which not only have the same name for many different plants (e.g. Christmas Bush) but also, in many cases, multiple names given according to local dialects, areas and apparent relationship to other plants which bear no actual family relationship (e.g. Blue Quandong Blueberry Ash, Blueberry Fig are three of about eight common names for *Elaeocarpus grandis*, which is not a Quandong Ash or Fig or related to any of those families).

The plant kingdom was divided into:

Angiosperms (all flowering plants)
which were then subdivided into **Monocotyledons** and **Dicotyledons.**
Monocotyledons have parallel venation in their leaves
Dicotyledons *never* have parallel venation in their leaves
then **Families** e.g. *Moraceae, Myrtaceae, Sapindaceae*.
All families have the ending

'-aceae'. The last two letters - 'ae' are the Latin ending indicating the feminine plural form as well as the feminine singular possessive (= of_____) but it is the plural which is intended because the families usually contain several Genera,

then **Genus**

which (in singular form) is masculine gender usually ending - us, e.g., *Ficus*

or feminine (singular) gender with the ending 'a' e.g., *Acacia*

or neuter (singular) gender with the ending 'um' e.g., *Dendrobium*, respectively.

then **Species**

which for the masculine, singular possessive form is e.g. *fraseri* (= of Fraser)

the feminine singular possessive form is *victoriae* (= of Victoria) and
neuter singular possessive form is e.g. *beckleri* (=of Beckler)
or *fairfaxii* (=of Fiarfax)

This form often came about in an attempt to form a Latin word from one which quite obviously is not of Latin origin.

It was hypothesised that if Fairfax were to have been a latin word its first person form (as in subject of a sentence) would have been *Fairfaxius* or if an adjective to agree with *Dendrobium*, then *fairfaxium* would be the appropriate form to agree with the neuter gender. In both eases (*Fairfaxius* and *fairfaxium*), it was the singular possessive form which was required, so and *fairfaxii* becomes correct (note that the ending for the possessive form of the masculine singular and the neuter singular are both the same.)

The Linnaean system of classification required that all plants (and animals) have both Genus and species as their identifying name this is described as a binomial system. The species name usually refers to a particular feature of the plant, its natural location or is named in honour of a particular person or after the one who first recorded it.

Some examples:

Backhousia citriodora where citriodora refers particularly to the scent of *citrus* (citri=of citrus and dora = scent). Mr Backhouse fully deserved this recognition for his effort in collecting many specimens and forwarding them to the Kew Gardens for scientific classification and recording. Lucky Mr Backhouse had many sweet-smelling plants named after him as he has a complete Genus bearing his name, but note that Backhouse has been converted to a Latin name with a singular, feminine ending and the species name agrees with it in both number and gender as both words end in 'a'.

Elaeocarpus eumundi being 'of Eumundi'. Strictly, one would expect that this should have been eumundus to agree with *Elaeocarpus* or *eumundii* to properly indicate 'of Eumundi', the area which comprises its natural habitat. (Eumundi is of course, an Aboriginal word).

Acacia victoriae understandably has this spelling of *victoriae* as the

tree was named in honour of Queen Victoria and not after the State of Victoria (as this plant is native to Queensland and the Northern Territory).

I am indebted to Mr. Paul Forster of the Queensland Herbarium for the research into the naming of *Citrus garrawayi*, (including a 1912 American reference) as it was named after a north Queensland botanist who collected many plant specimens for identification and recording. (The often seen but misspelt *garrawayae* is incorrect because it was not named after Mrs. Garraway).

The examples are legion where mistakes were made in having the Latin adjectival form for species agree with the form for Genus in both number (singular and plural instead of both singular) and gender.

Even so, there is a good understanding around the world as to which plant is being referred to even if the Latin species ending is not technically correct.

A good reference book by Debenham, C. 'The language of Botany', Society for Growing Australian Plants, is one where the author has gone to considerable trouble to ensure the correct Latin form is used in botanical examples.

There are many botanical names in Greek-derived Latin to further confuse and complicate the subject.

Now to a few notes on pronunciation.

Many Latin words formed the basis for later words in French, Spanish. German and English. The Australian/English use of long syllable sounding diphthongs in words like bite and plate easily give a false impression as to the Latin pronunciation where most vowels were short. The current (English) word 'epicentre' gives the same Latin short sound for the first two 'e' sounds and the 'i'.

The usual split of syllables required the following syllable to commence with a consonant and not a vowel. Thus 'i' as in 'it' or 'bit' and Latin is pronounced 'La' tin' and not 'Lat'n' as is usually heard. C was always hard like a 'k'. So the pronunciation of Ficus should be 'Fi' - kits' with the short 'P and 'u' sounds. Easy really isn't it?

Syzygium luehmannii would be pronounced as 'Si-zidg-eee-um loo-man-ee -ee'

(my use of 'ee' to show the 'i' as in 'it' or a slightly longer sound and the bold letters to indicate the usual Australian/English emphasis on the second syllable.)

Where there were adjoining consonants in each syllable, the pronunciation was based on simply splitting then, as this smoothed the flow of speech and added colour and fluency to the classical poets' works as they were read or spoken, eg., in English, the word 'planting would be pronounced in Latin as plan- ting but still pronounced as one word. So an easy botanical example is Eu—ca-lyptus (lyp' pronounced as if 'lip' in this case).

Often longer vowel sounds, were represented by two letters, e.g. 'ae' pronounced as if 'ee' as in feet. By comparison, look at 'paediatrician' as an obvious English word of Greek origin and ponder the different pronunciation for 'ia' within the same word! In fact the 'i' in the second 'ia' through evolutionary language usage has become so short as to disappear in pronunciation with the soft 'c' sounding like s-sh.

J.C.D. Hansen (Jim)

Export of Australian Native Plants, Wildflowers and Products made from Native Plants.

Notice No 29 . From the net - the Environment Australia site (http://www.biodiversity.environment.gov.au/). I include this as it is of importance to all who grow and process our native foods. I encourage you to find out more as I found it confusing - and a little worrying! The Ed.

About Wildlife Import and Export Controls

* The Act controls the export of most Australian native animals and plants and fulfils Australia's legislative requirements as a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Export of native Plants

* Trade in most Australian native plants (including products made from plants) is strictly regulated. To export any Australian native plant a permit must be obtained from Environment Australia - Wildlife Protection, in Canberra

Personal Exports

* A permit is not required for artificially propagated plants which are the personal property of a person departing Australia and which are not intended to be used for any commercial purposes, including sale, lease, hire or exchange; and
* A permit is not required for plants taken under an approved management program in Western Australia which are the personal property of a person departing Australia and which are not intended to be used for any commercial purposes, including sale, lease, hire or exchange.
* A permit is required for all other personal exports of plants and plant material, other than the exemptions listed below. The conditions for exporting plants are as per commercial exports below.

Commercial Exports

* The export of Australian native plants may be permitted when the plants have been taken from an artificial propagation or harvesting operation approved by Environment Australia.

Exemptions

Certain Australian native plant specimens may be exported without a permit or an authority. These are listed on Schedule 4 to the Act and include the following:

* all seeds (excluding foxtail palm Wodyetia bifurcata seeds), spores, pollen, tissue culture or flasked seedling culture.
* fruit (whether or not containing seeds or spores) not attached to any part of a plant of a species not listed on Schedule 2.
* timber, bark and wood chips.
* an article derived from timber.
* oil distilled or otherwise extracted from a plant of the genus *Eucalyptus.*

A plant specimen that has been granted protection under the Plant Breeders Rights Act 1994 (as amended from time to time), except for species included in Schedules 1 and 2 of this Act.

A specimen that is, or is derived from, a plant that is an artificially propagated hybrid of one or more Australian native species where the parental plant species do not naturally hybridise.

A plant specimen that is, or is derived from a plant of a species specified in Part V(A) (cultivars).

Artificially propagated native flowers and foliage, or wild harvested native flowers and foliage from Western Australia or Queensland limit: three bunches per person

Products that are processed and contain 'bushfood', made from fruit, nuts or foliage of Australian native plants.

Plus -

Acacia baileyana
Araucaria heterophylla
Hardenbergia violacea

Oil derived from the processing of the leaves, or other parts, of:

Acacia dealbata
Acacia decurrens
Backhousia citriodora
Boronia megastigma
Callitris collumellaris
Callitris glaucophylla
Callitris endlicheri

(There were a very large number of *Eucalyptus, Melaleucas and*

Export of Australian Native Plants cont'd

Leptospermum listed - I have not included them here).
Santalum spicatum
Syzygium oleosum = Syzygium luehmannianum
Oil, fruit, husks and shells derived from:
Macadamia integrifolia
Macadamia tetraphylla
Macadamia integrifolia x tetraphylla
Acacia paradoxa

The import and export of wildlife and wildlife products may also be subject to controls administered under the Quarantine Act. Information about quarantine matters may be obtained by contacting the Australian Quarantine and Inspection Service (AQIS), phone (02) 6272 3933.

For Further Information Please Contact

The Director
Wildlife Protection
Environment Australia
GPO BOX 787
CANBERRA ACT 2601
Telephone: 02 6274 1900;
Facsimile 02 6274 1921

Native Foods in Dubai

Chef and contributor the magazine, Brian Lizotte, has just returned from an Australian Native Food Promotion in Dubai. Brian was a guest chef for two weeks at the Hilton Dubai and found the response from other chefs and diners was 'astounding'. Of the 36 international chefs Brian worked with, only 1 had ever come across Australian native produce previously. Brian, who owns and run Lizotte's on the Bay in Hardys Bay (NSW) was bubbling on his return, 'They were just astounded at what we had and how little people know of it. Their enthusiasm was just amazing. I can really foresee big things for our native foods here.' Brian said. The promotion was so successful that it may become a twice yearly event. Whether it does or not, the two week native food promotion will do great things for our bushfood industry.

From the Hilton menu:

Baked ricotta with bush tomato
Wattle seed and orange hummus
Crispy emu proscuito with sweet grilled melon
Freshly steamed asparagus spears with Lemon myrtle hollandaise
Salad with a range of dressings - Lemon aspen, Forest berry, Sesame wild lime and soy, Macadamia nut and Kakadu plum
Lemon myrtle chicken curry on Munthari rice pilaf
Charred kangaroo fillet with Dorrigo pepper and red wine jus or quandong chilli sauce
Riberry and white chocolate bombe
Wild lime and blue gum honey cheesecake
Munthari bread and butter pudding, Lemon ironwood syrup and wattle cream...
and more. Brian can be contacted on 02 4360 1600 or brian@lizotte.com.au.

'Bushfood' Industry Marketing Report: Part 1

The following is an edited version of the report prepared for RIRDC

This report was undertaken with RIRDC funding by Vic Cherikoff and Dangar Research**.**

Outcomes and deliverables of the project

* To evaluate the market's awareness and current perceptions of bushfood (native food) to ascertain whether the image of bushfood (native food) needs to be repositioned
* To contribute to an industry strategy to align efforts in addressing the image change and future marketing directions.
* To describe critical considerations which motivate commercial customers to use bushfood (native food).

Preamble

Native foods have now grown well beyond 'hobby' status to a broadly based industry including:

* approximately 100 growers and a diminishing number of collectors (still in their 100s when Aboriginal communities are considered as several still harvest cash crops and are moving into commercial production through plantations
* several (less than 10) production nurseries, primarily focussing on regional species
* numerous boutique manufacturers of ice creams, gelato, cakes, biscuits, chocolates, preserves, sauces and other condiments, cheeses, flavoured oils
* several mainstream manufacturers (both locally and overseas) with products in supermarkets, retail butcheries, on airlines and in specialty outlets
* other value-adders eg restaurateurs, caterers, educators and promoters, amongst others.

There are now established grower associations in most States.

The net worth of the industry is variously valued at between $10 and $16m and growing in spikes and swings with impetus from food service opportunities provided by the Olympics and a growing awareness by Australians in regional cuisines and a continuing overseas interest in Australia, primarily at retail level. Additionally, the level of food innovation in Australia is at a high with native foods introducing a uniquely Australian signature to otherwise international dishes and products.

Current industry positioning

The production of bushfood (native food) has steadily grown over the last 5 years. However, demand has not matched this growth and some growers have already been re-assessing their involvement and reducing numbers of plants, scaling down plans or abandoning them altogether. In order to address this imbalance sooner rather than later, research into the broader food industry's awareness, attitudes and current perceptions of bushfood (native food)s was undertaken to ascertain whether the image of the category needed to be re-positioned. Additionally, an industry strategy was to be explored in an attempt to align efforts in addressing the image change and future marketing directions.

The study demonstrates that there is an industry image change required, which better suits the sophisticated culinary scene in Australia. There are a range of options available to continue to drive the change and build opportunities for native food growers and the food industry.

RIRDC's involvement in this project is part of the Corporation's New Plant Products Program.

Executive Summary

The bushfood (native food) industry covers plant and animal products which are derived from Australian indigenous species. The main focus in this report is on the plant products. To date, the bushfood (native food) industry has developed quite a strong presence in the broader food industry and many hundreds of participants would describe themselves as a part of this segment of the food market. However, it is now at a hiatus needing a uniform and firm image and positioning to take it through to the next growth phase. While some stocks of several species are in oversupply and concerns exist from the impact of recent product and company disappearances. Some growers are already facing inadequate markets for their products and cottage users cannot absorb the excess product nor can specialty manufacturers. The current bushfood (native food) range is limited for the fresh fruit market due to the intensity of taste in most of the products. Meanwhile, market research has shown there is considerably more potential and interest yet to be tapped. Demand must expand to the mid-

dle market with some urgency and mainstream products established before the Olympics, which provides a strategic link to continued overseas expansion.
As identified in RIRDC Research Report No 97/22, the determination of the current perception of bushfood (native food) is crucial to developing successful marketing strategies.
The two markets of food service and manufacturers are the volume areas for short to medium returns and building these markets, indirectly addresses the more difficult (and expensive) task of educating the general consumer and building retail.
Clearly, there are markets for native foods, existing dedicated suppliers, developed distribution chains and some momentum from past growth. The next step is to fine-tune and then exploit the potential from an expanded marketing effort.

Current industry positioning
Research into the food industry's awareness and current perceptions of bushfood (native food) was undertaken to ascertain whether the image of the category needs to be re-positioned. Additionally, an industry strategy has been presented for consideration by the industry in an attempt to align efforts in addressing the image change and future marketing directions.

Research results summary (from Consultant's report):
The overall outcome of the research is encouraging: All the indications are that native ingredients have considerably more market potential if appropriate strategies are used.
* There is at least a segment of top class chefs and influential food writers who are enthusiastic about and strongly believe in native foods, which they see as underdeveloped. This is critical since it is very clear that there is a powerful top-down impact on the broader market's food adoption trends.
* The category has inherent distinctive and powerful values, which could be further exploited to better advantage; those opinion leaders who support native foods, focus on two essential and strong benefits which should underpin wider marketing activity.
1. A number of the ingredients are perceived to have real food interest.
2. Native foods are also thought to have the capacity to bring another dimension, an exciting and unique Australian flavour to the country's rapidly evolving cuisine.
* There is strong interest at the consumer level in "the new bush flavours". Admittedly, this is greatest amongst those with a keener interest in food (the foodies). However, their early adoption of the new, often migrates to the broader market, even if sometimes simplified.
For native ingredients to be popularised and flourish, there are a number of inhibitions and barriers to overcome: Critically and fundamentally, an unequivocal finding is that "bush foods" and especially "bush tucker" are inappropriate terms which will inhibit the growth of the industry. 'Australiana' is another term with mixed appeal and could be included in the inappropriate term category. However, some food categories suit the pioneer or outback image, for example, there is the success of the Bush Breads of Australia. There will no doubt be others. Additionally, tourist markets find these labels entirely appropriate maintaining opportunities for boutique product ranges. Chefs and food writers are familiar with these labels and strongly resist them, insisting that a more contemporary image is needed. Supermarket consumers are no less dismissive of these descriptors when it comes to everyday foods.
From a number of descriptors assessed, Native Australian Foods (or Australian Native Foods) appears to be the most positive. It does not necessarily come across as a new term but still has an authentic ring and readily fits with the idea of natural or wild herbs, fruits and nuts.
The whole category not only needs a new name, it requires a new positioning. The first area looked at was the opportunity to link the foods to their Aboriginal heritage. However, while there is certainly increasing interest in and respect for many aspects of indigenous culture, this does not extend to food. Mainstream Australia has no affinity with many of the images conjured up by Aboriginal diets - kangaroo, goanna, witjuti grubs and a nebulous array of 'yams and things' - and they have few taste cues and little appeal. Additionally, there is no general knowledge of the culinary styles of the various Aboriginal groups and even less appreciation of the many methods they used to prepare their foods. Unfortunately, it is clear that the association

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'Bushfood' Industry Marketing Report: Part 1

The following is an edited version of the report prepared for RIRDC

with Aboriginal fare is not the way to go for the broader native food industry. There is undoubtedly still opportunity for Aborigines, themselves, to bring their cuisine styles into the public mind along similar lines to the Maori hungi. Traditional earth oven and paperbark cooking, ingredient pairing (eg. meats with fruits) and so on, will in time, redress the public's complete lack of awareness of Aboriginal culinary history. This study may equally provide some insight to the possible imagery for these endeavours which will probably remain as opportunities for Aboriginal groups in tourist establishments for some time.

A new positioning must imbue native foods with a number of values for modern consumers: These include prestige, modernity, food interest, flavour appeal and a growing pride in local produce. Additionally, the foods offer a uniquely Australian dining experience. Something along the following lines would be in order:

"Native Australian fruits, nuts and greens, aromatic herbs and pungent spices have tantalising unique flavours. They offer new, delicious taste sensations and enhance the quality and bounty of the country's food and produce."

Another prime barrier to overcome with native foods is lack of visibility and accessibility.

Even though some ingredients may now be impinging upon consumers' consciousness, the perspective on the overall category generally remains very blurred and certainly few would know where to access products. (This has an inhibiting effect on food editors who are reluctant to run articles with ingredients "people can't buy"). Researcher's note: *An interesting comparison can be made with Japanese ingredients which became supermarket lines after years as being only procurable through less than a dozen specialty outlets.*

However, in order to raise visibility and galvanise interest in the wider market, a multiple approach must be taken.

While some opinion leaders are keen on native ingredients, there is still considerable work to do here and particularly with chefs. The issues are more complex than sheer awareness, although in the final analysis, they basically come down to two fundamental problems which need to be addressed:

1. The lack of familiarity with the ingredients and the limited resources chefs have at their disposal to work with the ingredients to assimilate them into their portfolio of flavours. There are no popularly disseminated recipes and methods available or widely taught such as those which support Western and Asian foods and disseminate knowledge about the traditional harmonies of flavour.

2. The category lacks authority. This is despite the fact that many of the top opinion leaders can see more potential in it. Moreover, the fact that certain top flight, even revered, chefs do use some native ingredients (but rarely mention it) is still not sufficient. There are still no recognised champions from the "inner circle". As a consequence, some opinion leaders consider the whole category short on prestige.

To gain more credibility and to fire the enthusiasm and imagination of chefs, consideration should be given to the following:

The appointment of a spokesperson - a highly qualified and well regarded chef:

* To act as a legitimiser of native ingredients by lending personal authority.
* To help "educate" chefs and the media. An awareness of the natural companions of the individual ingredients needs to be credibly developed within the broad context of the contemporary 'fusion' cooking style.

Running a major competition amongst chefs for invention of 'seminal' dishes.

Setting up a Master Class or Chef's Dinners along the lines of the very well attended Le Torque Blanche in Melbourne.

Mounting joint promotions with game and other produce suppliers to restaurants.

Effort is now needed

1. to increase the profile of the native Australian food industry and establish the industry's preferred image

2. to create the groundwork to realise many of the opportunities provided by the Olympics as well as building on the achievements of the past.

The full report can be found at www.rirdc.gov.au/99comp/npp2.htm#BUS-1A or simply go to www.rirdc.gov.au and follow the links.

Native Food R&D Plan Reviewed

The Rural Industries Research and Development Corporation has been providing funding for native food R&D under a four year (1998-2002) industry plan. At a meeting in Canberra in March of this year, members of the industry reviewed this plan. This revised plan covers the next five years, although it is reviewable.

This was an important meeting as it brought together a very wide representation of the industry in one place for two days.

Attendees:

Keith Alcock, Australian Bushfoods & Products Coop Ltd
Margaret Bailey, grower, NNSW
Juleigh Robins, Robins Bushfoods
Anthony Hele, Australian Native Produce Industries
Michael Brandwood, Southern Vales Bushfood
Terence Carpenter, South East Sustainable Bushfood Group
Vic Cherikoff, Cherikoff Pty Ltd
Gil Freeman, Southern Bushfood Association
Ian Farquhar, Diemen Pepper
Mark Henley, Australian Quandong Industry Association
Sibylla Hess-Buschmann, Australian Rainforest Products
Rod Horner, Buyer & supplier, NT
John King, Queensland Bushfood Association
David Noel, Tree Crops Centre
Chris Read, Diemen Pepper
Sammy Ringer, Australian Bushfoods Magazine

Geoff Pryor was the workshop facilitator and the following RIRDC personnel attended for some or all of the time:

Beth Woods, Chair, RIRDC Board
Peter Core, Managing Director, RIRDC
Max Bourke, Research Manager, RIRDC
David Evans, Research Manager, RIRDC
June Murphy, Program Assistant, RIRDC

The review resulted in some changes which should benefit the industry's future commercial development.

Among the plan's changes were

• A change in industry designation from 'Bushfoods' to 'Native Foods'.
• A clear emphasis on commercially focused R&D.
• A focus on R&D in a selected range of 'best-bet' crops.
• A funding emphasis on production technology, followed by plant improvement.

As well, a 'weighting' was given to the objectives as follows:

most important:
Objective 4 (To improve production efficiency while maintaining ecological integrity).

The following were given equal weighting:
Objective 1 (To understand, strengthen and develop markets)
2 (To improve existing products and develop new one) and
3 (Enhance the ability of the industry to provide products that meet appropriate safety and food standards)
and
Objective 5 (To enhance the human resources of the industry) was the least favoured.

A break for lunch - workshop delegates in Canberra

The net result of these changes is a shift in emphasis towards more mainstream and higher potential crops, production methods, producers and processors. These changes should ultimately be of benefit to ANPI, our commercial grower-suppliers and the wider industry.

During this meeting, a new Native Food Industry Advisory Group (which will help determine project funding and research priorities for the next two years) was chosen.

It comprises:

Anthony Hele,
Vic Cherikoff,
Sibylla Hess-Buschmann,
Merryn Carey (South East Sustain Bushfoods, Cobargo) and
Chris Read

A synopsis of the revised R&D plan has been included with the magazine, with a request that readers comment upon it.

The Witjuti Column - Autumn - Citrus

Graeme White and Veronica Cougan

Graeme and Veronica run the 'Witjuti Grub Bushfood Nursery in Kenilworth, SE Qld. This article first appeared in the 'Mary Valley Voice'.

Exotic citrus species were first introduced into Australia in 1788 by members of the First Fleet. But it wasn't for another 100 years that colonial botanists had 'discovered' that there were six species of native citrus endemic to Australia. Aborigines have traditionally included native citrus fruit as part of their diet. However by the mid 19th century European settlers had recognised their potential and were using the strange fruit to make jams, cordials and desserts.

Of the six endemic citrus species, five occur only in the rainforests of the east coast. The sixth, Eremocitrus glauca the desert lime is endemic to the semi-arid regions of Eastern Australia.

The five rainforest species were originally classified as *Citrus* then reclassified as *Microcitrus* due to the relatively small size of their flowers and fruit. But recently they were changed back to *Citrus* due to the fact that no two botanists can agree with each other for more than five minutes.

Of the five rainforest species, two naturally occur in south east Queensland. These are the Finger lime, *Citrus australasica* and our local round lime also known as the Gympie lime, *Citrus australis* or Dooja by the Aborigines.

The Finger lime is found in the wild from Northern New South Wales to Mt Tamborine. The fruit is unique in the Citrus family because it is finger shaped, or 'Cylindric-fusiform" if you are one of those botanists. The pulp of the fruit, which may vary in colour from green to pale pink through to crimson, has the unique characteristic of separate juice vesicles which have the appearance of caviar. When eaten these vesicles burst pleasantly at slight pressure from the teeth to provide a welcome refreshing sensation on the tongue.

The Gympie lime is the most vigorous of the native citrus, growing to a height of 9 to 18 metres in the rainforest or to about 5 metres in cultivation. This species flowers in spring and in March/April bears golf ball sized fruit with rough thick skin. The fruit contains a pleasantly acid juice similar to the Finger lime, but does not have the round pulp vesicles or variations in colour.

The Gympie lime will develop into a well shaped compact tree in your bushfood garden, whereas the Finger lime grows to a dense spiny shrub with enormous character. Both species will adapt to a wide range of soil types and will fruit well in full shade, but in general they will produce a more prolific crop in full sun.

Growth of trees should be encouraged in spring, not autumn,

Citrus australasica - Finger lime

by regular applications of an organic fertiliser in late winter and spring which will also minimise insect pest predation. For optimum fruit set water regularly from late winter through summer.

Take a walk through a rainforest gully in the Gympie area, along the edge where the rainforest meets the eucalypts and there you may be fortunate enough to find the Gympie lime growing. Look for the fallen fruit on the forest floor.

Our indigenous foods, while sometimes reminiscent of European foods, have their own particular characteristics that we need to learn to accept and value.

Opposite is a simple but delicious recipe to introduce you to the delights of the wild lime.

Should you require more information or bushfood plants, we have both native limes in stock; feel free to contact us at the Nursery on 07 54460264. Happy foraging, Graeme and Veronica.

The Witjuti Column cont'd

Recipe - Wild lime, ginger & coriander butter

2 1/2 cups (500g) unsalted butter at room temperature
1 whole Dooja lime, pureed and strained
2 teaspoons freshly minced ginger
6-10 sprigs coriander, chopped (to taste)
A pinch of salt
Pepper to taste

Combine all ingredients in a food processor and blend until a smooth and silky butter is formed. The butter will be fairly loose at this stage, so press into a serving bowl and refrigerate until it firms up.
This butter is great at barbecues over freshly grilled chicken breast or fish. Both the Gympie and Finger lime have the potential to be substituted for the exotic lime in any recipe.

Some species from the Witjuti Grub Bushfood Nursery:

(You can contact the nursery on 07 5446 0264)

Antidesma erostre	Wild current (cutting grown)
Austromyrtus dulcis	Midyim berry
Backhousia anisata	Aniseed myrtle
Backhousia citriodora	Lemon scented myrtle
Citrus australasica	Finger lime
Citrus australis	Round (Gympie) lime
Curcuma australasica	Native tumeric
Davidsonia spp	Davidson plum
Dianella caerulea	Paroo lily
Diploglottis campbellii	Small-leaf tamarind
Diploglottis cunninghamii	Native tamarind
Diploglottis diphyllostegia	Wild tamarind
Elaeagnus triflora	Mllaa Millaa
Eugenia reinwardtiana	Beach cherry
Eupomatia laurina	Bolwarra
Mentha saturoides	Native mint
Mimusops elengi	Tanjong tree
Planchonella australis	Black apple
Pleiogynium timorense	Burdekin plum
Podocarpus elatus	Plum pine
Podocarpus spinulosa	Native damson
Sterculia quadrifida	Peantu tree
Syzygium leuhmannii	Riberry
Syzygium oleosum	Blue cherry

Medicinal Herbs Markets

The following was received by the magazine:

Dear Sammy.
I am currently investigating the market for organically grown native medicinal herbs.
I would appreciate any information you can give me in relation to herbs which you feel have a commercial application and market requirements of same.
Thanks for your time.
Sheena Simpson
21 Lydia St, Wooloowin Qld 4030, 07 3858 1122

The Mint Bush ~ Part 1

Extracts From the 'Australian Plants Online' site. Visit the ASGAP site at: www.farrer.riv.csu.au/ASGAP/sgap.html

The mint bush family, known as the *Lamiaceae* (formerly the *Labiateae*) is widespread throughout the world and contains a number of well-known, commercially cultivated plants which are used in cooking and for perfumes.

Worldwide, the family compries over 200 genera and over 3000 species. There are about 20 Australian genera in the *Lamiaceae*, the ones of interest here being:

•*Mentha*; about 6 species native to Australia

•*Prostanthera*; about 60-70 species, all confined to Australia

One of the most commonly cultivated Australian member of the family is *Prostanthera* (known as "mint bushes").

Characteristics

Members of the *Lamiaceae* are generally herbs and small to medium shrubs. Many members of the family have aromatic foliage due to the presence of volatile oils and it is these oils which give exotic members of the family their characteristic taste and aroma which is so valuable in cooking. In Australia, the genus with the most pronounced aromatic foliage is *Prostanthera* (although not all species are aromatic). The foliage of many *prostantheras* emits a pleasant aroma when crushed or brushed against. In the Australian bush the aroma of mint bushes can be very pronounced following rain. Despite the relatively high oil content of the foliage of many Australian members of the family, little use has been made of either the leaves or the oil. Some species are used by bushfood enthusiasts as flavourings in cooking in the same way as their exotic counterparts (eg. *Mentha australis*, *Prostanthera rotundifolia*).

Cut leaf mint - *Prostanmthera incisa* - photo Jan Tilden

Most species are found as part of the understorey in open forests and woodlands. A characteristic of the family is a "two-lipped corolla" - in which the five petals are united into two upper lobes and three lower lobes giving the appearance of two lips. Although not a unique characteristic, it is one of the easiest features to help the average person in identification.

Propagation

Members of the mint bush family are usually grown from cuttings as many of the most horticulturally desirable species strike readily.

Seed

Prostanthera seed can be unreliable and fresh seed usually gives the best results in these cases. Pretreatment of seed prior to sowing to improve germination is not normally beneficial with members of this family.

However, a method that has been successful for at least some species is the use of smoke or "smoked water" as a pretreatment. This has been reported to be successful in the germination of species of *Hemigenia* and may be worth considering for other genera.

Cuttings

Most shrubby members of the *Lamiaceae* strike readily from cuttings using hardened, current season's growth. Cuttings about 75-100 mm in length with the leaves carefully removed from the lower two-thirds seem to be satisfactory. Treating the lower centimetre with a "root promoting" hormone both seems to improve the success rate but is often unnecessary. Members of this family serve as a good introduction to those starting out in propagation from cuttings as success rates are usually high.

Division

Some members of the family (eg. *Mentha*) produce suckers from their root systems. These can be cut from the parent plant (ideally retaining some of the roots) and potted into individual containers. If placed in a sheltered location and kept moist, these should develop quickly into new plants.

Grafting

Considerable work has been carried out on grafting with *Prostanthera* to improve the hardiness of the genus in areas where they are difficult to grow. Most species of *Prostanthera* are compatible with a root stock of *Westringia fruticosa*, a very reliable plant suited to many districts. Grafting of *Prostanthera* species to *W.fruticosa* is not difficult and, like cuttings, is a good project for those starting out in grafting. A number of other westringias (eg. the cultivar "Wynyabbie Gem") have also been successfully used as rootstocks for *Prostanthera* species. Little or no work has been done on grafting of other genera of the *Lamiaceae*. There is plentty of scope for experimentation for the keen amateur.

Cultivation

Of the Australian members of the Lamiaceae, only *Prostanthera* and *Westringia* are in widespread cultivation. All species that are in general cultivation perform best in well-drained, moist soils but they rarely succeed in continually wet soils. Generally they are at their best in light shade such as in the dappled light of eucalypts. *Prostanthera* species should be selected that are native to a climate similar to that where they are to be grown. In humid, summer-rainfall areas, avoid species from drier climates.

• Mint bushes are usually quick growing, however, they may be past their best after 6-8 years.

• Mint bushes often wilt noticeably when moisture is lacking in a garden. They are excellent "indicator" plants because of this.

• They are not demanding as far as fertilizing is concerned but they do respond to applications of slow release fertilizer applied after flowering.

The *Prostanthera* and *Westringia* Study Group

The *Prostanthera* and *Westringia* Study Group is one of over 20 such Groups whose aims are to further knowledge about the cultivation, propagation and conservation of specific Australian plants. This Study Group produces informative newsletters describing members' experiences in growing and propagating mint bushes and westringias in various parts of Australia and overseas as well as documenting botanical changes in the genus resulting from research carried out in a number of scientific institutions. Members of the Group are mainly keen amateurs with no formal horticultural or botanical knowledge, although a number of professionals in those fields also participate. As in all study groups, the members' work is mainly carried out in their own homes and gardens and in their own spare time.

Further information Most books dealing with Australian native plants will contain useful information on the botany and horticulture of *Prostanthera, Westringia* and other *Lamiaceae*. Some of the most detailed references are listed below. Althofer, G (1978), Cradle of Incense, Society for Growing Australian Plants. •Elliot, R and Jones D (1980-1997), The Encyclopaedia of Australian Plants, all volumes, Lothian Publishing Company Pty Ltd, Melbourne. •Wrigley, J and Fagg, M (1996 - 4th ed), Australian Native Plants, Collins Publishers Australia. Several issues of the Society's journal "Australian Plants" are particularly useful for those interested in Australian Lamiaceae, in particular: Vol 10, No.83 June 1980; Entire issue devoted to Lamiaceae. In addition, the article "Smoke Stimulates the Germination of Many Western Australian Plants" by K.Dixon and S.Roche contains useful information on research into the use of smoke to improve germination.

RIRDC Research Report: Food Safety of three species of Mint

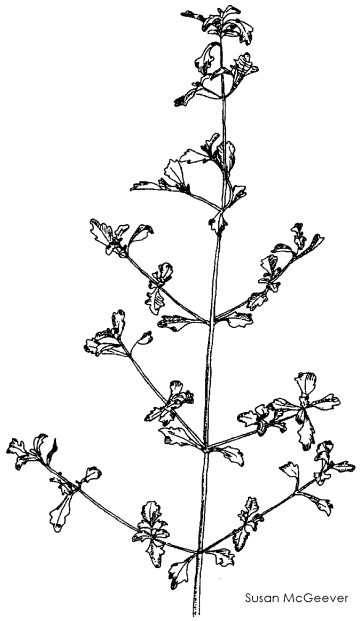
Extracts

This report was undertaken by Dr Anne Fulton, Northern Melbourne Institute of TAFE for RIRDC IN 2000

In recent times some members of the *Prostanthera* (the native mint bushes) genus have been used to a limited extent by bush food specialists in syrups, cordials, salsas, chutneys etc. One attractive feature of the mints is their attractive, clean, strongly minty eucalyptal fragrance. The oils of two species have been reported to display anti-microbial activity. Mints of this genus should be investigated for commercial use. A mint which has good flavour and the prospect of acting as a preservative makes an excellent food ingredient if shown to be safe for human consumption. This report develops methods for easy identification of the selected three species of *Prostanthera* and studies their characteristic texture, smell, taste and storage and cooking stability. It identifies the major chemical constituents of the oils, investigating the possible side effects after eating by studying published reports involving each constituent. It also looks into the anti-microbial activity of the oils from *Prostanthera*.

The *Prostanthera* as a genus are native plants which are fairly common and readily grown. The members of this family possess a distinctive minty/ eucalyptal fragrance. This, together with their dainty mauve coloured flowers render many *Prostanthera* species to be popular with many gardeners. In recent years there has been increasing interest taken in the role of indigenous plants as raw materials. Native plants with various distinctive properties have been introduced into a number of diverse fields such as cosmetics, pharmaceuticals, toiletry, etc, including the important arena of cuisine. Due to their characteristic fragrance, a few *Prostanthera* species have been used by isolated chefs as an ingredient in the production of cordials, syrups, sauces and chutneys (personal communications from S. Hess-Buschmann, 'Gold Coast Bush Foods' and from J. Robyn, 'Robyns Bush Food'.) Given that as a group they are fairly robust and not too particular about growth conditions the *Prostanthera* would appear to be able, potentially, to support a large market once this has been developed. However, even before the development of a market, the safety of these plants for human consumption must first be established. Then the stability of their most prized characteristic, their aroma/ fragrance, must be investigated in order to determine likely shelf life. Finally commercial users should have some means whereby the particular species that are targeted as raw materials can be readily distinguished from other species.

Anti-microbial activity had been reported in the essential oils derived from a number of species of *Prostanthera*, leading to the speculation that the inclusion of the dried powdered leaves in foodstuffs could act as a complete or partial substitute for preservatives in the finished product. For this reason



Cut leaf mint - *Prostanthera incisa*. Susan McGeevr

microbiological studies were included in this work. Obviously the allure of *Prostanthera* is increased if by its inclusion, the addition of 'un-natural chemical preservatives' with the attendant spectres of allergies, systemic poisoning, and chemical contamination is rendered unnecessary or to a lowered dosage. The three species selected for this study were *Prostanthera rotundifolia, prostanthera lasianthus*, and *Prostanthera incisa*. The first two are found throughout the southern cooler temperate regions of Australia where they are commonly grown as windbreaks. The *Prostanthera incisa* (Ballinyah clone) studied came from the Lismore region of northern NSW.

These three species were selected for investigation because they are already grown in signifi-

Cont'd Page 30

RIRDC Research Report: Food Safety of three species of Mint

cant amounts as crop production, and so ample quantities were available for experimental use. Moreover, *Prostanthera rotundifolia* and *Prostanthera incisa* have already undergone a measure of commercial exposure. They are at present included as a minor constituent of certain products by manufacturers of bushfoods. It is hoped that from this study the results that emanate will be of value to the native food/culinary industry and thereby increasingly realise the market potential of *Prostanthera*.

Executive Summary

The purpose of this project was to enhance the market potential for three *prostanthera* species by screening each species for food safety and anti-microbial activities in the herb and in the manufactured product, thus gathering data to form a basis for food standards. This broad aim was fulfilled by a number of studies which were meant to

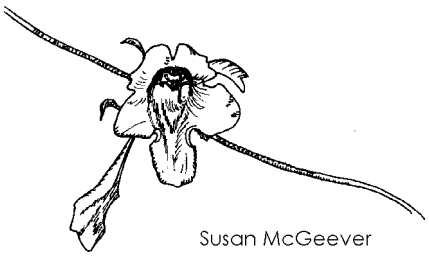
• provide means and some reference criteria for the rapid identification of the three *Prostanthera* species as raw materials;

• identify the main chemicals present in each species and establish the toxicity status of each;

• clarify the toxicity to humans after ingestion of each specie;

• establish the stability of their primary marketable trait — their fragrance;

• investigate their anti-microbial activity and the potential to serve as food preservative. The first of these aims has been completed by the microscopic and macroscopic study coupled with the TLC results. GCMS data identified most of the major lipophilic chemicals present at two time points, yielding thereby a lead to the possible toxicity of the herb oil and its stability to storage, to microwaving, and to baking. Three prominent components in the fresh oil of *Prostanthera rotundifolia* were detected but could not be identified.



Flower of *Prostanthera incisa* - Susan McGeevr

From an extensive literature search centred on the chemicals defined by GCMS the conclusion was drawn that while ingestion of moderate quantities of the leaf was unlikely to produce untoward effects, conservatively a safe adult dose consists of about four and a half teaspoons of the ground dried leaf, or about 0.2 ml of the pure oil, assuming a safety limit that is parallel to that of Eucalypt oil. Sensory tests pointed to a loss of fragrance with storage, the loss being only partial in the case of *Prostanthera incisa* and *Prostanthera rotundaolia* but quite complete in the case of *Prostanthera lasianthus*. The varying degree of loss was supported by GCMS data, which also indicated that the oil of *Prostanthera incisa* was more resistant to storage decay than that of *Prostanthera rotundifolia*. The fragrance survived microwaving to a degree, but was completely destroyed by baking. The intense bitterness of all three species of leaf was their most unattractive trait. This decreased slightly with storage but was even then still off-putting. However the oils were less bitter than expected. This lead to the speculation that the bitter taste may be due to other components as well as the terpenoids that were present in the oils. The fresh oils from *Prostanthera incisa* and *Prostanthera rotundifolia* demonstrated activity against Gram positive bacteria, which activity was still evident in oils from herbs that had been stored for five months. That a number of terpenoid chemicals displayed anti-microbial behaviour had been reported by various groups. This and our data supported the conclusion that the anti-bacterial activity originated from the lipophilic components of the leaf. In relation to the inactivity of *Prostanthera lasianthus,* it is interesting to note that the levels of cineole present were found to be lower at both time intervals than those of the other two species. When added to water, sugar solution, and oily solutions, the ground freshly dried leaves of all three species, with a single exception, showed temporary (one week duration) bacteriostatic action.

This property should be further looked into if decisions are to be formed about its usefulness as a preservative.

In closing, the following sugges-

Mint cont'd

tions are put forward for consideration. The compositions of the oils of *Prostanthera rotundifolia* and of *Prostanthera incisa* in this study were slightly different from that found by others, hence giving rise to the suggestion that oil composition may be affected by environmental conditions, ie soil, climate, harvest period, period of sunlight, etc. The correlation between composition and other factors should be investigated since products with wider markets could be developed, for example specimens whose leaves retain the original fragrance but are devoid of bitterness, or whose oils show greater antimicrobial prowess. The as yet un-identified chemicals in *Prostanthera rotundifolia* oil, as well as the flavonoid compounds in all three species, should be identified and included in an expanded safety investigation. Bacteriostatic activity, which has been shown in this work to be present in *Prostanthera incisa* and *Prostanthera rotundifolia* merits deeper and more rigorous experimental work for commercial applications. The intense bitterness of the *Prostanthera* leaves weighs against their inclusion in foods which are not highly sweetened. Developmental work before marketing should include ways of masking or removing altogether this taste while leaving the fragrance and anti-microbial property.

The full report can be found at their website:
www.rirdc.gov.au/reports/Index.htm

RACI* Natural Products Group

the following is a partial list, I have not included members with little or no information about their area, More info at the web sites listed...

* The Royal Australian Chemical Institute. Email: member@raci.org.au

Dr Ian van Altena, Dept of Chemistry, Uni of Newcastle. chiav@cc.newcastle.edu.au. Natural Products (isolation and structure elucidation)

Dr Russel Barrow. Microbial Natural Products Research Group, Department of Chemistry, Australian National University, Canberra. rab@anu.edu.au ph: Web: http://chemserver.anu.edu.au/rab

Dr Joe Brophy. School of Chemistry, Uni of NSW, Sydney. J.Brophy@unsw.edu.au. Essential oils chemistry insect chemistry natural products chemistry Website: http://www.chem.unsw.edu.au/

Mr Charles Cornwell. Faculty of Science and Technology, Uni of Western Sydney, Hawkesbury. C.Cornwell@uws.edu.au. Extraction and characterisation of compounds from Australian native plants. Website: www.hawkesbury.uws.edu.au/faculties/scitechag/project.htm

Dr Merv Hegarty, AM FRACI, Plantchem Pty Ltd, Indooroopilly, Qld. Hegarty.Plantchem@uq.net.au. Commercial uses and toxicology of Australian natural products bushfood safety

Dr Joanne Jamie, Dept of Chemistry, Div of Environmental and Life Sciences, Macquarie Uni, NSW. jjamie@alchemist.chem.mq.edu.au. Website: http://www.chem.mq.edu.au/academics/jjamie.htm

Dr. Paul Keller. School of Chemistry, University of Wollongong, Wollongong, NSW. keller@uow.edu.au

Dr Ian McFarlane. School of Biochemistry, University of NSW, Sydney. i.mcfarlane@unsw.edu.au

Dr Barbara Meurer-Grimes. ExGenix Operations Pty Ltd, Richmond, VIC Structure elucidation Biological activity Biosynthesis Phytochemistry

Ms Deidre Tronson. Faculty of Science and Technology, Uni of Western Sydney, Hawkesbury. D.Tronson@uws.edu.au. Organic chemistry Natural products chemistry, particularly as related to Australian flora Website: http://www.hawkesbury.uws.edu.au/faculties/scitechag/project.htm

A/Prof. S. Grant Wyllie. Faculty of Science and Technology, Uni. Western Sydney, Hawkesbury. G.Wyllie@uws.edu.au. Chromatographic methods, particularly high resolution gas chromatography and gas chromatography-mass spectrometry Natural products chemistry and plant biochemistry Website: http://www.hawkesbury.uws.edu.au/faculties/scitechag/project.htm

Ringwood Lords

M. Blewitt and G. McIntyre

The Bellingen Valley is unique in many ways. Whenever you mention 'Bellingen' to anyone, they always comment on its beauty. Well, there's nothing new about its beauty - Bellinger has always been beautiful - but, there is definitely something very old here.

There is an old growth forest in a valley that few human eyes have seen. Protected by its seclusion, this forest of Ringwood giants - some 40 metres tall with a 5 metre girth - is an ancient reminder of a former glory. These lush rainforest trees exist nowhere else in the world, and although there are several other remnant populations in the valley, there is none so grand, so awe-inspiring, as the Old Growth Forest, now under NPWS jurisdiction. The poem on this page by S. Cadman is an ode to this magical place.

These "Ringwood Lords", once Kings of the Valley, Protectors of the Waterways, have a familiar but unusual quality.

Lucky enough to find yourself amongst a stand of these magnificent trees, you will sense the unmistakable scent of aniseed. Nature works in mysterious ways and I, for one, never cease to marvel at Her wizardry. How is it possible, for instance, that unrelated plants from different parts of the world can look so different yet possess the same aromatic qualities?

Common to all aniseed-scented plants, such as Fennel and Aniseed from Europe, and Star Anise from China, is the organic compound, anethole. Australia's very own Ringwood (*Backhousia anisata*, commonly known as Aniseed Myrtle) is particularly high in this compound. Anethole has a sweet refreshing scent and is a stimulant with antiseptic, antiviral, and bactericidal properties.

Interestingly, a recent study cited in the September 2000 edition of the 'Natural Health Review' magazine, showed that *Backhousia anisata* essential oil inhibits the growth of several species of bacteria.

Flower of *Backhousia anisata.*
Photo: Star Hungerford

The aromatic potential of this rare Australian native was first investigated in the 1940s (by the NSW Forestry). Sixty years later, renewed interest is flourishing. There is an increasing awareness in the agricultural community that growing native species makes logistical sense; they are perfectly adapted to the local conditions, such as soil type and annual rainfall, and do not need huge inputs of fertilizers, etc. Encouraged by the potential of our local Ringwood, and in search of a sustainable 'tread softly' approach to the environment, two of the valley's farming families have recently developed a product range that captures the true spirit of Bellingen.

Bellinger Valley Bushfoods and Auntie Myrtle's Spice Factory have been growing Ringwood trees in hand-tended plantations for two to three years now.

Forest of Aniseed

Forest of Aniseed - stately and grand
Tucked away safely, away from demand
Fills the air with parochial scent
And carpet the floor with leaves that are spent.
Beautiful forest of medieval feel
Whispers of passing time and things that are real
Visions of otherworlds or a universe complete
In the palm understorey and ferns at your feet.
A precious place is this forest so rare
Such a privilege to know that its there
In an uncertain world of chaos and dilemma
This place creates the ultimate centre.

Cont'd Page 34

Ringwood Lords cont'd

These plantations are sustainably harvested and the leaf distilled to yield a high quality pure essential oil.

This oil is sold locally as" Silks" 100% Pure Aniseed Myrtle Essential Oil. "Silks" also have an Aniseed Myrtle Massage Oil and Bath Foam and are adding the food product, Aniseed Myrtle Syrup, to their range. It is hoped that initiatives like these will collectively and surely change the face of agriculture in Australia to the mutual benefit of man and environment alike.

For product enquiries contact:
Auntie Myrtle's Spice Factory,
PO Box 483, Bellingen,
NSW 2454,
Ph: 026655 2073
maree@midcoast.com.au
Bellinger Valley Bushfoods,
Ph 026655 9544 or
026653 7146,
Full Moon Natural Health
Products, PO Box 91, Bellingen,
Ph/Fax 02665 52696,
fullmoon@midcoast.com.au.

Products

green farmhouse - flavours you can taste!

Having been a little critical of some of the products I've taste-tested recently, it was a pleasure to come across a range which is not only beautifully presented but actually has some exciting flavours!

green farmhouse has produced a range which includes Mustards, Sauces, Chutneys and Jams, made with such native foods as Pepperleaf, Wattleseed, Kurrajong seed, Quandong, Lemon myrtle, Lilli Pilli, and Muntries.

The two samples they sent me were the Boobialla Bush Seasoning and the Corroboree Bush Seasoning. The packaging's interesting and very professional (it works well, too!) but the real pleasure was getting into what was inside! Corroboree Dust was my favorite - but then I like it spicy! This certainly has a distinct nip to it - not so strong as to be uncomfortable but enough to let you know it's there. I imagine the tang comes from the pepperleaf - that distinctive native pepper flavour certainly came through. Interestingly enough, this product also includes kurrajong seed and dried Kangaroo apple (I'm not sure which species). I use it with abandon on sandwiches, soup, quiche - almost anything that's not sweet!

The slightly milder and more mellow Boobialla Bush Seasoning is certainly the sprinkle of choice for such dishes as chicken and fish. The warmth of the wattleseed comes through, highlighted by pepperleaf and grounded with garlic and traditional spices.

Years ago when I first tasted some of our unique native flavours, I said that there was a range of delightful sprinkles just waiting to happen, ***green farmhouse*** have shown me how right I was.

Book Reviews

The Editor

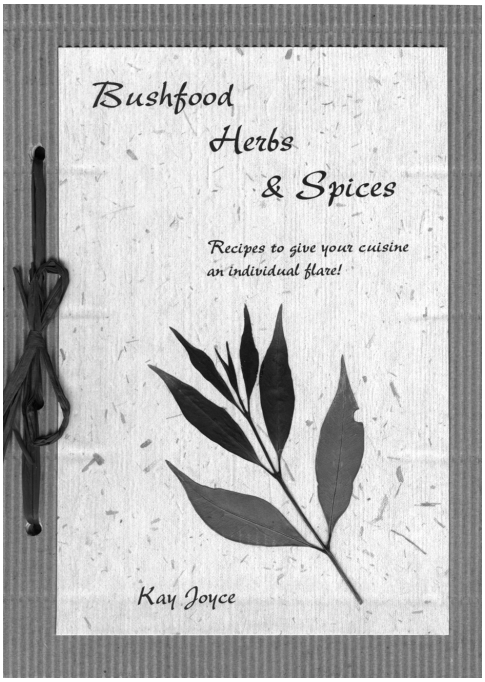
'Bushfood Herbs & Spices - Recipes to give your cuisine an individual flare!'
Kay Joyce
Bunya Forest Gallery
14 Bunya Ave
Bunya Mountains
07 4668 3020
$12.50 + P&H
and
'Bunya Nuts - recipes to take advantage of this most nutritious and precious Australian Bushfood!'
$12.50 + P&H

Kay Joyce is one of those rare combinations - a meticulous researcher and presenter who also has considerable creative flare. Both of these recipe books are so beautifully presented you'll want to buy two - one for yourself and one as a gift. Each book is handmade on home-made paper and, in the case of the 'herbs and spices' book, has a real leaf permanently attached to the cover.

Perhaps more importantly (for someone like me), the recipes seem to be almost foolproof. They are simple but very imaginative in both their scope and their melding of bushfood flavours with some traditional sweets and dishes.

The 'Herbs & Spices' book, as the name implies, introduces a range of native species into such favorites as shortbread, pavlova, scones and cakes. My favorite (possibly because I have so much wattleseed at the moment), was Wattleseed Pavlova.

Here's Kay's recipe:



4 egg whites
1 cup caster sugar
1 teaspoon vanilla
2 teaspoons vinegar
1 tablespoon cornflour
500 ml milk
2 tablespoons cornflour
1/2 cup brown sugar
2 egg yolks
1/2 cup cream (whipped)
2 tablespoons (roasted) wattleseed

Instructions

Shell:
preheat oven to 180 degrees Celsius
Whip egg whites until the mixture forms stiff peaks
Gradually beat in caster sugar
Beat in cornflour, vanilla and vinegar

Filling
Prepare wattleseed by placing in a saucepan with 200 ml water, bring to the boil and reduce by half. Strain and reserve liquid and half the grains
Place the beaten egg yolks, sugar and cornflour in a saucepan. Gradually stir in the milk and wattleseed. Stir over low heat until custard mixture thickens. Cool. Fold in the whipped cream.

The second book - *'Bunya Nuts'* is something near to my heart - watching literally tonnes of Bunyas go to waste on the ground each year, I would like everyone to have one of these!

Once again, the recipes are variations on tried and true old favorites and they make the best of the Bunya's special properties. I liked these recipes so much I've used them on the Recipe Page (39). If you have access to Bunyas, do yourself a favour and buy this book!

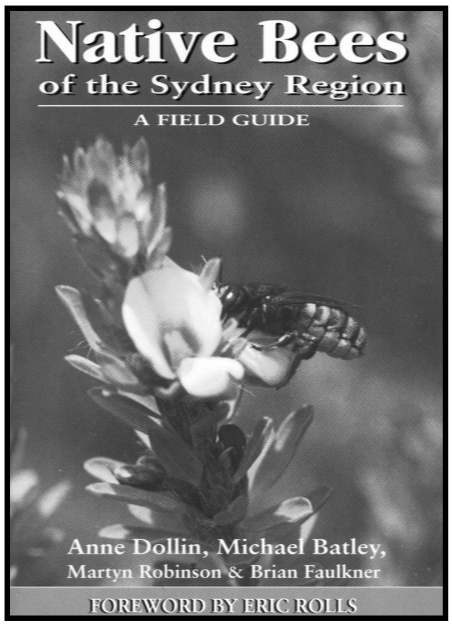
You'll find such dishes as Bunya Banana Cake, Bunya Salmon Quiche, Sherry Bunya Beef, Bunya Pizza, Bunya Chicken Parcels and many more.

I enjoyed both of these books at first read and am enjoying them even more as I put them to use in my kitchen.

Do you have a book you'd like reviewed? Send it to the magazine - address details on Page 1.

Book Reviews

Native Bees of the Sydney Region - A Field Guide



72 pages of text and black and white illustrations.
Eight pages of colour plates
$15.00 + 2.50 P&H

Australia's first and only field guide to native bees is now available. This practical colour guide will help bushfood growers identify these important flower visitors.

'Native bees are a valuable natural pollination resource. This guide passes on valuable knowledge about these amazing bees,' said Bruce White, NSW Agriculture.

Native Bees of the Sydney Region - A Field Guide describes 31 of the most easily recognised native bee species found in Sydney, over 20 of which are also found in Queensland and Victoria. The foreword is by environmentalist Eric Rolls.

Each bee has been given a common name, such as the Harlequin Bee, the Tiger Nomia and the Peacock Carpenter Bee. There is also a full description and colour photograph of every bee as well as details of their flower preferences and known nesting habits.

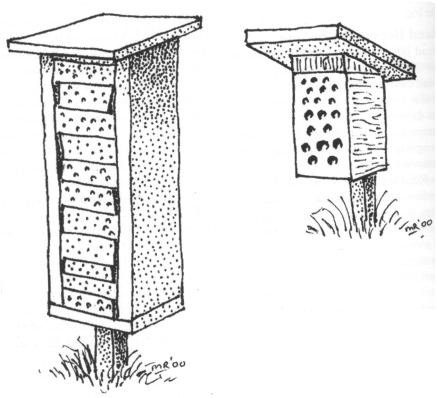
'This guide explains how to encourage native bees in your garden. There are artificial nests which you can build and lists of plants loved by native bees,' said Dr Anne Dollin of the Australian Native Bee Research Centre.

'There are also tips on watching native bees in the bush,' she said.

About the authors: Dr Anne Dollin, Australian Native Bee Research Centre, bee researcher for 20 years, author of the Native Bees of Australia Series booklets and editor of Aussie Bee bulletin

Dr Michael Batley, former Macquarie University lecturer with a keen interest in natural history and Australian bees, currently cataloguing the bee collection of the Australian Museum.

Martyn Robinson, Australian Museum, author and illustrator of many scientific papers, articles and books on Australian wildlife, including the Whitely Award winner, A Field Guide to Frogs. Dr Brian Faulkner, freelance journalist in horticulture and entomology with major articles published in Australian horticulture.



A home for native bees - the hardwood blocks can be used singly or mounted in a frame, Like an apartment building (left). Or you may like to design a fancy derivation of your own like the one on the right.

For further information contact:
Dr Anne Dollin,
Manager, Australian Native Bee Research Centre
Phone: 024576 1485
Fax: 024576 1197
Email: anbrc@zeta.org.au

Copies are available from the Australian Native Bee Research Centre, PO Box 74-G1, North Richmond NSW 2754 for $15.00 plus $2.50 postage and handling.

They may also be ordered from the Aussie Bee website at: http://www.zeta.org.au/~anbrc.
The Australian Native Bee Research Centre is the publisher of 'Aussie Bee' magazine.

A Short Bibliography for Australian Medicinal Plants.

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Recipes

This issue's recipes are all from Kay Joyce's books '*Bushfood Herbs & Spices, Recipes to give your cuisine an individual flair*!' and '*Bunya Nuts, recipes to take advantage of this most nutritious and precious Australian Bushfood*!'
(see page 36).

Lemon Ironbark Cheesecake

Ingredients:
250 g crushed, plain bisquits
1 teaspoon cinnamon myrtle
250 g Philly cheese
2 tablespoons lemon juice
1/3 cup cream whipped
1 tablespoon sugar
125 g butter melted
3/4 cup condensed milk
1 teaspoon Lemon ironbark

Method

- **Crust**

Mix together all dry ingredients in a bowl. Stir in melted butter
Press into the base of a spring form tin. Cool in fridge

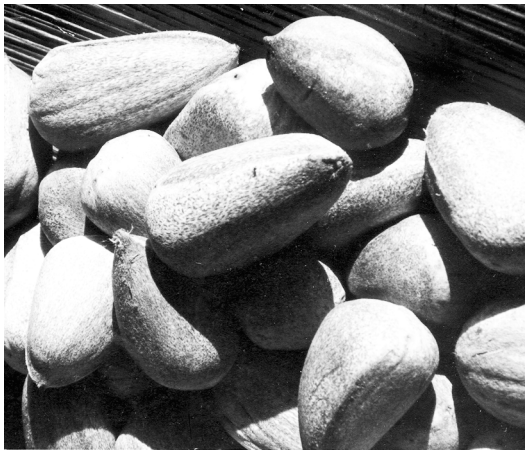
- Filling

Chop cheese and allow to soften at room temperature. Beat all ingredients except cream until light and fluffy. Fold in whipped cream. Pour into base and put into fridge to set.

Helpful Hints

Process filling in a blender or food processor for a lighter, smoother mixture
Decorate with toffeed lemon rind OR chocolate leaves, curls, etc

Sherry Bunya Beef



Ingredients

500 g beef (rump, blade, etc)
2 rashers bacon
2 leeks
3 sticks celery
1 medium carrot
Native mountain pepper to taste
Butter
1/2 cup sherry
1 large onion or
12 Bunya nuts
2 zucchini
1 cup beef stock
Flour to thicken

Method

Slice beef into thin strips, marinate in sherry for 2 hours
Boil Bunya nuts for 10 mins, remove from shells and slice into quarters
Slice vegetables, fry lightly and set aside
Brown beef strips, add vegetables, stock, Native mountain pepper and simmer gently for 20 minutes
Add sherry, thicken with flour, simmer for further 2 minutes
Serve with choice of vegetables

Plants, Products & Prices

Mothar Mountain Bush Foods

We grow and sell a wide range of Australian native bush food plants.
In addition, we stock rainforest cabinet timber species as well as native flowering trees and shrubs. We sell retail and wholesale and will grow on contract if large quantities are required. Our bushfood species include:

Davidsons Plum	(*Davidsonia prunens var. jerseyana*)
Bolwarra	(*Eupomatia launna and bennettii*)
Native Tamarind	(*Diploglottis australis*)
Small-leaved Tamarind	(*Diploglottis campbellii*)
Cedar Bay Cherry	(*Eugenia reinwardtiana*)
Eastern Pigface	(*Carpobrotus glaucescens*)
Finger Lime	(*Citrus australasica*)
Lemon Myrtle	(*Backhousia cilriodora*)
Silver Aspen	(*Acronychia wilcoxiana*)
Millaa Millaa Vine	(*Elaeagnus Inflora*)
Broad-leaf Lilly Pilly	(*Acmena hemilampra*)
Blue Quandong	(*Elaeocarpus angustifolia)*
Banana Bush	(*Tabemaemontana pandacaqui*)
Plum Pine	(*Podocarpus elatus*)
Bunya Pine	(*Araucana bidwillii*)
Sandpaper Fig	(*Ficus fraseri*)
Riberry	(*Syzygium luehmannii*)
Midyim	(*Austromyrtus dulcis*)
Lilly Pilly	(*Syzgium austra1e*)
Creek Sandpaper Fig	(*F. coronata*)

We stock many other rare, unusual and seasonal species. Please contact us or arrange to visit our nursery by appointment. Ph: (07) 54835045. email: mmbushfoods@spiderweb.com.au

Willow Creek Farm
Bush Cuisine

Current Price list, Sept 2000

Wholesale

Bush Tomato Chutney	180g net $3.95	40g $1.60
Spicy Bush Tomato Sauce	250m1 $4.50	40g $1.60
Quandong & Apricot Chutney	180g net $4.50	40g $1.60
Lemon Myrtle & Native Pepper Dressing	250m1 $3.50	
Lemon Myrtle & Pepper Vinegar	250m1 $3.10	
Wild Lime Marmalade	100g net $3.20	40g $1.60
Lilli Pilly Conserve	100g net $3.20	
Quandong& Ginger Jam	100g net $3.95	40g $1.60
Lemon Myrtle & Native Pepper Seasonal (Shaker-swing Top Bottle)	100g net $4.50	
Bush Tomato & Native Pepper Seasonal (Shaker - Swing Top Bottle)	100g net $4.50	
Roasted Wattleseed - ground (Shaker - swing top Bottle)	100g net $5.95	
Wild Lime Syrup	375ml $4.50	

Prices subject to change without notification. Large orders a discount may apply. G5T Free
Lt 74-33 Fiddlewood Dr. Freelings SA 5372
Ph/Fax: 0885 252610

Plants, Products & Prices

Tanamera Bush Foods Plantation Provenance Seeds
Hunt Rd., McLaren Flat, S.A. 5171. Ph. (08) 8383 0374
WHOLESALE PRICE LIST JANUARY 2001

PRODUCT	Price/kg	Price/kg (5 kg or more)
BUSH TOMATO		
Whole dried	40.00	32.00
Dried & ground	50.00	38.00
LEMON MYRTLE		
Whole fresh leaf	30.00	
Whole dried leaf	40.00	
Dried & ground leaf	50.00	
MOUNTAIN PEPPER		
Whole fresh leaf	50.00	
Dried & ground leaf	70.00	
MUNTRIES		
Fresh or frozen	25.00	20.00
Garnish sprigs	20.00	18.00
QUANDONGS		
Frozen halves or pulp	30.00	27.00
WARRIGAL GREENS		
Fresh leaf	12.00	10.00
Tips i.e. leaf & soft stems	10.00	8.00
WATTLE SEED (*Acacia victonae*)		
Whole dried	25.00	20.00
Dried raw & ground	35.00	30.00
Whole dried & roasted	40.00	35.00
Dried roasted & ground	45.00	40.00

NOTE: The above are farm gate prices. Prices are subject to change without notice.

A few good sites on the internet...

Acacia in Australia:
www.hort.purdue.edu/newcrop/proceedings1996/v3-228.html
Australian Dry-zone Acacias for Human Food:
www.ffp.csiro.au/tigr/atscmain/whatwedo/publications/acfoodbk.htm
Australian Native Gourmet foods from the Bush:
www.shopaustralia.com.au/shoptuck.html
Australian New Crops Home Page:
www.uq.edu.au/~gagkrego
Blue Gum Fine Foods:
www.users.bigpond.com/matterhorn.htm
Bushfood plants for Northern NSW:
nornet.nor.com.au/environment/greenwork/bfood.htm
Bushfoods of W. Qld:
www.dpi.qld.gov.au/dpinotes/vegetation/vegetation.html#bush
Food Values&Australian Bush Foods:
www.dhn.csiro.au/foodcomp.html
Lemon myrtle the essential oil:
www.ffp.csiro.au/publicat/articles/lemon.htm
Nicky's Oz Food Page:
www.zeta.org.au/~nickyg/Food.htm
Production of Bushfood:
www.greenwork.org.au/bushfood.htm
Quandong:
www.biodiversity.environment.gov.au/plants/manageme/maldong.htm
Red Ochre Grill:
www.redochre.com.au
RIRDC New Plant Products:
www.rirdc.gov.au/programs/npp.html#components
SGAP Quandong, wild lime:
www.silo.riv.com.au/SGAP/
Taste of the Bush:
www.arts.unimelb.edu.au/amu/ucr/student/1997/silva/
Witjuti - Australian Bush Tucker:
www.sofcom.com.au/mall/witjuti/

From the List

Highlights from the bushfood discussion group on the net - if you wish to join, email bushfood@hotkey.net.au

Questions and Answers

G'day all

I have a query regarding wattle seed. I am interested to know whether the seed from two tasmanian native acacia's is edible. The two are - *Acacia dealbata* & *Acacia mearnsii* (*A. mollissima*). Any info on these species would be greatly appreciated.

Thanx, bye (Duncan Cooke)

I have a few questions -

1) I'm planning to plant *Acacia victoriae, Prostanthera incisa, Tasmannia stipitata* and *Syzygium luehmannii* in an area with average annual rainfall of 1100mm with drip irrigation installed. Does anyone have information on the overall water requirements from drip irrigation to establish these species ?

2) Does anyone have information on the prices paid currently for *Acacia retinodes* seed ? Does this species hold much promise commercially ? Are there any indications of the use and the market value for its timber ?

3) Can anyone tell me what current prices are being paid for (a) dried leaf (b) berries of Tasmannia stipitata and (c) any indications of projected prices for the oil to be mixed with white oil as an insecticide ?

Regards, Andrew Murdoch

Hi Anthony and list.

In answer to a couple of your questions about *A.retinodes*, yes it is comercially viable and the price can vary just as in other native foods. If you sell at farm gate price you should not expect much more than $8 to $9 per kilo but that is actually quite good.

If you value add then you may get $20-$25 per kilo but your intended market(s) will be the real acid test so my advise is to knock on a few doors and see if you can sell it first. We have plantings of this and other Acacia species and would rate this second on the ladder to *A.victoriae*. As to planting *A.victoriae* in 1100mm and irrigating, I would suggest you would not need to irrigate very often as our experience with this species shows it survives and produces well with less than 400mm annual rainfall. It is a dryland species so you need to emulate the natural habitat rather than force it to perform too far out of it's climatic range. The timber of *A.retinodes* is quite straight and at first appearances, looks good for fence post material but it's density is quite low so perhaps someone else out there in cyberspace can tell us if it is of any commercial use.

Hope all goes well with your plantings

Regards

Brian King, Muntari wild Food Plants Of Australia

Is any body interested in any *Acronychia vestida* fruit, about 10 kgs at $8 kg?

The fruit is freshly frozen and also still currently being picked.

contact Kris Kupsch on

(02) 6677-1466

Hi -

We are using bush foods in our hampers and would be interested in herbs/spices that are small/ light weight. our current supply is in jars which is not ideal - and any unusual items particularly chemical free or organic.

Sue, Mt Colah

www.gfu.com.au

Potting mixes

Can anyone share their ideas on good potting mixes for bushfoods? I've got lots of plants needing potting up - haven't got anywhere to plant them yet!

David Williams

Hi,

I just use coco-peat 90%/ perlite 10%. There is little nutrient in this medium but it allows me to play with different brews.

Works for me.

Sandro

Hi David,

I produce potting mixes which are all biodynamically done. I have ones which are low in phosphorus for some of the Australian natives and can make ones specifically for your needs. If you are interested either email me at leslez@webone.com.au or call 026 236 8085.

Regards Lez Patten

G'day David,

I do a lot of propagating of native plants up here in the Burdekin. My mix is 4 parts peat moss, 4 parts sand, and 1 part vermiculite or perlite. Throw in a couple of handfuls of osmacote

From the List

and things grow beautifully. The same mix (minus the fert) will also work for seed germination. Happy potting.
Peter Alden, Greening Australia (Qld), Ayr

Green ants!
A company in North Queensland will be processing green ants. These are used to marinate dishes such as barramundi, which is currently processed by this company in Cairns.
Contact: Max Panachini
Panachini Gourmet Foods
Tel: 0740 578220
Regards,
Jacquie Bodger, DPI, Qld,
Ph 07 3239 3307
e-mail bodgerj@dpi.qld.gov.au

Nutritional values for bushfoods
Not everyone may know of this very useful reference:
Brand Miller J, James KW & Maggiore P M A (1993). Tables of Composition of Australian Aboriginal Foods. Aboriginal Studies Press, Canberra.
Various libraries have it. It summarises large sets of results of nutritional analyses of a wide range of Australian bushfoods, in text and spreadsheets. It shows how much protein, fat, carbohydrate, dietary fibre etc. were in one or often several samples, how many kilojoules (energy value) and also the values for some major elements including sodium, potassium, phosphorus, and for some species the minor elements copper, lead and cadmium etc.
Best regards, Merv & Elwyn Hegarty, Plantchem Pty Ltd.

Davidsonia Group
At the Sept Davidsonia Industry Association meeting Maria Matthes from the NSW NPWS brought us up to date with licensing for the collection of NSW Davidsonia species from the wild. A draft plan has been put together with guidelines for collection.
This document comprises of a set of guidelines which, if followed during wild-harvest, will minimise (and monitor) the impact of this action so as to not significantly affect the threatened species.
Since the meeting the guidelines have been reviewed and the final draft will be available very soon.
These guidelines will be attached to a section 91 Licence application and referred to throughout the application.
A Section 95 certificate will be issued rather than a Section 91 Licence. A Section 95 certificate is issued where there is not likely to be a detrimental effect on the species or habitat.
The licensing for wild plums is seen as an interim measure and will only be available for the next 3-5 years by which time it is expected that there will be enough cultivated plants in production to meet the markets needs.
Any complaints made to NPWS must be followed up. If a person is found wild-harvesting Davidson Plums and has no coverage in the form of a section 95 certificate then they will be prosecuted under the threatened species conservation act.
Current schedules to the threatened species conservation act are available in PDF form at www.npws.nsw.gov.au/wildlife/tscs00.htm.
Licences will also be required for people wishing to collect material from any of the listed plants on the schedule. *Diploglottis campbellii* - small leaved tamarind is included. Maria is now working on guidelines for the collection of propagation material from the scheduled species occurring in Northern NSW which will also be available soon.
If you have any inquirys or require a licence contact Maria Matthes
NPWS Locked bag 914
Coffs Harbour 2450
or email
maria.matthes@npws.nws.gov.au

For information on the *Davidsonia* group, contact Daryl at -
davoplum@webmongrel.com.
Membership is $25 and our address is PO box 770 Burringbar 2483. We have an electronic newsletter.
Deb

Lemon Aspen
Lynn Graham is currently harvesting Lemon aspen. If you're buying, contact her direct on 07 5442 5059 or email:
lgraham@powerup.com.au
Regards, Sammy

Some Industry Contacts:

An extract from the very fine Rural Industries Research & Development Corporation web site.

ATSIC
PO Box 17
WODEN ACT 2606
Canberra.
Tel 02 6121 4000
A possible source for database information on education and training.

Australian Bushfoods and Products Cooperative Ltd
John Armstrong
Tel 02 6629 1090

Australasian Ethnobotanical Foundation
Gareth Wise, Director
PO Box 11
West Ryde NSW 2114
Tel 02 9804 7437

Australian National Uni
Dr. Mike Slee
Canberra ACT 2601
Tel 02 6249 2224
Involved in a number of research projects relevant to the native foods industry.

Bureau of Resource Sciences
Canberra ACT
Helen Desmond
Tel 02 6272 5273
Helen is currently compiling a report on Aboriginal involvement in the native foods industry funded by ATSIC.

Centre for Aboriginal Studies
Canberra ACT
The institution has been involved in publications such as 'Tables of Composition of Australian Aboriginal Foods'

Centre for New Industries Development
Agriculture Western Australia
Jeff Hastings
3 Baron-Hay Court
South Perth WA 6151
Tel 08 9368 3682
Fax 08 9368 3791
Its aim is to develop industries which can contribute to the diversity and sustainability of the agricultural sector in WA.

Central Lands Council (CLC)
Jock Morse
PO Box 3321
Alice Springs NT 0871 or
75 Hartley Street
Alice Springs NT 0870
Tel 08 8952 9413
Fax 08 8952 9429
Email: jmorse@clc.org.au
Collating information on potential of commercial production of plants used by Central Australian Aboriginals.

Coen Regional Aboriginal Corporation
Nth QLD
Tel 07 7060 1192
Fax 07 7060 1179
Have a small range of North Queensland open forest aromatic spices and oils unique to the region.

Conservation Commission of the Northern Territory
Glenn Wightman
Extensive information compilation of plants used by Aboriginal communities in the northern part of the NT.

CSIRO
Division of Horticultural Research
Headquarters: GPO Box 350
Adelaide SA 5001
Tel 08 8363 8600

Forestry and Forest Products
QVT Canberra ACT 2601
Tel 02 6281 8211
Canberra ACT or
Merbein Laboratory: Steve Sykes
Private Mail Bag
Merbein VIC 3505 or
Email: info@pi.csiro.au

Wildlife and Ecology
Tom Irvine
PO Box 84
Lyneham ACT 2602
Extensive research on Quandongs, Acacia species and Citrus Cultivars (contact Steve Sykes, Mildura CSIRO or ANPI).

Department of Conservation and Land Management (CALM) WA
50 Haymen Road
Como WA 6152
Currently involved in the commercialisation of native resources in WA and the publication of a series of 'Bush Books'.

Department of Primary Industries (DPI) QLD
Tel 07 3239 3111
Involved in a number of native food research.

Essential Oil Producers of Australia
Richard Davis
PO Box 147
Pennant Hills NSW 2120
Tel 02 9979 9844 or 9484 1341
An association formed for Australian producers of natural essential oils and plant extracts.

Cont'd next page

Some useful contacts, cont'd

Fraser Coast Essential Oils Association
Tel 07 7123 0333
Fax 07 7123 0799
Assists in the growing and distillation of Australian Natives.

Greening Australia (GA)
Head Office: Canberra ACT
Tel 02 6253 3035

Kings Park Botanic Gardens
Kingsly Dickson
Perth WA 6000
Tel 08 9480 3600
Extensive research into WA native plant species which includes some
recent work on bushfoods.

Monash University,
Melbourne
Dr Beth Gott
Extensive compilation of plants used by South-east Australian
Aboriginals including the formation of a database with disk information on sale.

National Association for Sustainable Agriculture, Australia Ltd
(NASAA)
PO Box 768
Stirling SA 5152
Tel 08 8370 8455
The leading organic growers certification body. Many native food growers are interested in following the path of non-chemical production.

Native Food Growers Group Incorporated
Elizabeth Shannon
1358 Triamble Road
Hargraves NSW 2850
A recently formed rural group that have raised their own funding and are planning to trial quantities of native food plants in 5 different regions.

Native Plant Seedbank and Database
Dr Nanjappa Ashwath
Primary Industries Research Centre School of Biological and Environmental Sciences
Central Queensland University
Rockhampton QLD 4702
Tel 07 4930 9595
Fax 07 4930 9209
Email: n.ashwath@cqu.edu.au

Native Seed Savers Network
Greening Australia
PO Box 165
Doonside NSW 2767
Tel 02 4578 4390
A community based project established to facilitate the conservation of bio-diversity in the Hawkesbury-Nepean Catchment.

Plant Breeders Rights
PO Box 858
Canberra ACT 2601
Tel 02 6272 4228
Fax 02 6272 3650
Provides important information on the legalities related to plant breeding.

Rainforest Seed Collective
Yahana Treweeke
Private Mail Bag
Bellingen NSW 2454
Tel/Fax 02 6655 2233

Sydney University
Centre for Nutrition
Jenny Brandt
Extensive compilation of nutritional information on native foods.

The Food Forest
PO Box 859
Gawler SA 5118
Tel/Fax 08 8522 6450
Email:brookman@camtech.net.au
An excellent example of property planning using a number of different land management techniques including native foods and permaculture.

Tree Crops Centre
David Noel
PO Box 27
Subiaco WA 6904
Tel 08 9388 1965
Fax 08 9388 1852
An excellent resource provider for those requiring literature/ information on everything edible/useable, including some coverage of native species.

University of Tasmania
Chris Read
Currently researching the leaf extracts of *Tasmania lancoelata*, Mountain Pepper. Professor Robert Menary is also investigating its potential. He works at the same institute. Tel 03 6226 2999.

Groups

* = new

Arid Land Growers Ass Inc

Graham Herde
Nectar Brooks Station via
Port Augusta
SA 5700
Ph: 08 8634 7 077

Australian Native Bee Research Centre

Promotes the preservation and enjoyment of Australian native bees. Publishes *'Aussie Bee*'.
PO Box 74
North Richmond, NSW 2754
Fax: 02 4576 1196
email: anbrc@zeta.org.au

Australian Quandong Industry Association Inc

President:
Robin Schaefer
PO Box 236
Upper Sturt, SA 5156
Ph: 08 8584 7781.
Fax: 08 8584 6350

Davidsonia Industry Ass.

Daryl:
davoplum@webmongrel.com
Membership: $25
PO Box 770 Burringbar 2483.

Henry Doubleday Research Ass.

816 Comleroy Rd Kurrajong NSW 2758
Est. 1970 to promote organic methods and principles in gardening and farming.
Great newsletter.

Native Food Growers Group Inc

Elizabeth Shannon
1358 Triamble Rd
Hargraves NSW 2850
Fax: 0263 738 636

Northern Bushfood Ass., Inc

An umbrella group for bushfood enthusiasts in Northern Australia.
Secretary: Larry Geno
434 Ilkley Rd
Ilkley Qld 4554
Ph/Fax: 07 5478 8815

Queensland Bushfood Association

Chair - John King.
Ph: 07 3284 2202
email: jrmrk@bytesite.com.au

Southern Bushfoods Ass:

RMB 7390A, Wartook, Vic 3401
Ph: 03 5383v 6247
dinkum@netconnect.com.au
Very established group. Newsletter and meetings.

Southen Vales Bushfood Ass.

Mike Brandwood
PO Box 344
Clarendon, SA 5157
Ph: 08 8383 6481
email:
brandwood@picknowl.com.au

Australian Plants Society Web Page:
http://farrer.riv.csu.edu.au/ASGAP/

Australian Plants Society *Food Study Group*

Lenore Lindsay:
323 Philp Ave
Frenchville
QLD 4701
Newsletter

Society for Growing Australian Plants

Queensland region:
PO Box 586
Fortitude Valley
Qld 4006
Ordinary m'ship: $37 pa
Student: $29 pa
web page: www.sgapqld.org.au

Australian Plants Society NSW

PO Box 744
Blacktown NSW2148
Publishes *'Australian Plants' and 'Native Plants for NSW'*
Ph: 02 9621 3437
Fax: 02 9676 7603

South East Sustainable Bushfood Industry Group

Secretary: Terence Carpenter
443 Kameruka Lane
Candelo NSW 2550
Ph: 02 64 932 227
Fax: 0264 932 225

Southern Bushfood Association

President: David Thompson,
RMB 7390A Wartook VIC 3401
Ph/fax: 03 5383 6247
email: dinkumfare@hotmail.com
General membership: $35 pa
Commercial membership: $50 pa
6 newsletters per year

Southern Vales Bushfood

Michael Brandwood:
PO Box 344
Clarendon
SA 5157
Ph: 08 8383 6481

Bio-Dynamic Agriculture Association
PO POWELLTOWN VIC 3797
Ph: 03 5966 7 333
Fax: 03 5966 7433

Bio-Dynamic Farming & Gardening Assoc. in Aust
PO Box 54 BELLINGEN NSW 2454
Ph: (066) 55-0404
Fax: (066) 55-0399

Biological Farmers of Australia
PO Box 3404
Toowoomba Village Fair
Qld 4350
Ph: (0746) 393 299
Fax: (0746) 393 755

Canberra Organic Growers Society (COGS)
PO Box 347 Dickson, ACT 2602
email: cogs@netspeed.com.au

Organic Herb Growers of Australia Inc
P.O. Box 6171 SOUTH LISMORE
NSW 2480. Ph: (066) 291 057

Tree Crops Centre
PO Box 27, Subiaco, WA 6008
Phone: (08) 9388 1965
Fax: (08) 9388 1852

Bushfood Plants Found here...

VIC: Melbourne

St Kilda Indigenous Nursery
Coastal species - phone for full species list.
03 9645 2477
525 Williamstown Rd,
Port Melbourne

QLD: Cairns (Atherton Tableland)

Yuruga Native Plants
Specialist growers of native plants (including bushfoods) for Northern Aust. Phone for price list:
07 4093 3826
Kennedy Hway, Walkamin 4872

Qld: Brisbane

Edible Gardens
Permaculture nursery with a large range of edible native and rainforest plants
37 Bangalla St, Auchenflower
Ph: 07 3720 8950

QLD: Yeppoon

Yeppoon Rainforest Nursery
Native rainforest species.
Bushfood plants. W'sale & retail
Ph/fax: 0749 393 963
Mobile: 0419 683 157
PO Box 109 Yeppoon 4703

Northern NSW

Cornucopia Nursery
Wide range of species
55 Station St, Mullumbimby NSW 2482.
Enquiries:
web site:
http://users.mullum.com.au/~botanica
email: botanica@mullum.com.au

S.E. Qld: Tallebudgera

Bush Nuts Native Nursery
A propagation/wholesale nursery with over 200 rainforest and rainforest margin species
64 Syndicate Rd
Tallebudgera Valley 4228
Ph/fax: 0755 338 105

SA: Port Augusta

Nector Brook Discovery Plantation
Santalum spicatum (Australian Sandalwood) Propagated to order for Autumn and Spring planting. In biodegradable tubes with host plants. $3.50 each.
Box 393 Port Augusta 5700
Ph/Fax: 0886 347 077

NSW: South Coast

South Coast Flora
Species suitable for temperate/cool climates, including: *Illawarra plum, Mountain pepper, Cool climate Syzygium spp, native herbs and teas.*
146 Dignam's Creek Rd, Via Cobargo NSW 2550
Phone: **026 493 6747**

Bushfoods Found here...

NSW: Kenthurst

Royston Petrie Seeds

Large range of edible Acacia+
Bunya Pine, Brachychiton, Cissus, Syzygium, Lomandra, Macadamia, Podocarpus, Santalum.
Phone for full seed list.
Ph: 02 9654 1186.
Fax: 02 9654 2658
77 Kenhurst Rd, Kenthurst, NSW 2156

NSW: Bowraville

SPIRIT OF THE RAINFOREST
Growers of Davidson's Plum - NSW species.
Ph: 02 65647426
e-mail: nahele@midcoast.com.au
'Nahele', McHughs Creek Road,
via Bowraville, NSW, 2449.

Lemon Myrtle Ground Leaf

$33.27 per kg - premium quality. Certified ANSAS (chemical residue free). Also avialable in a variety of cuts and forms.
Contact Bushfoods of Australia:
Ph: 02 6687 1005
Fax: 02 6687 1358
email: bushfood@anfm.com..au

Barung Landcare Nursery...

Maleny, Qld
A wide selection of rainforest bushfood species.
Contact us for a listing:
Ph: 07 5494 3151
Fax: 07 5494 3141
email: barung@sun.big.net.au

Tasmanian Garden Design and Consultancy

Bushfood horticulture consultant and specialist grower of Tasmanian Native Plants.

Kris Schaffer
Dip. Art., Cert. Hort., MAIH
Ph/Fax:
03 6239 1575
Mobile:
041958 7139

Would you like to know more about our native bees?

Subscribe to 'Aussie Bee'- *the* most informative source for everything about our fascinating natives!

Subscription: $19.50pa (3 issues)
2 years: $39.00 (6 issues)

More information from:
Australian Native Bee Research Centre
PO Box 74, North Richmond, NSW 2754.
Fax: 02 4576 1196
email: anbrc@zeta.org.au

Display classified rates: Business card size - $30 per issue, $90 for 4 issues.
Larger sizes a little more expensive - but not that much! Contact:
Sammy... Ph: 07 54 943 812. Fax: 07 54 943 506. email: bushfood@hotkey.net.au