



# Quandong

magazine of the  
West Australian Nut & Tree Crop Association (Inc)

**Fourth Quarter 1994**

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**20th  
YEAR OF  
ISSUE!!**



**The CHERIMOYA (*Annona cherimola*)** (See: About the Cover, p. 2)

Quandong • Fourth Quarter 1994 • Vol 20 No 4

**NEXT MEETING****Wednesday November 16: 7.30 pm sharp**

The topic at the next meeting, the AGM, is:

**Growing Lychees in an "Impossible" Place**

Dr **Sujit Dey** will tell us about his experiences growing lychees in Perth — which he began 9 years ago, against expert advice.

This meeting will be at our usual venue, the Greening Western Australia office at 1118 Hay Street, West Perth. **Full details on the attached leaflet.**

*No charge to attend. Visitors Welcome. Queries to Tree Crops Centre on 385 3400.*

**Christmas Field Day/ Social in Kings Park**

The **WANATCA Christmas Field Day and Social** will be at Kings Park this year, on **Sunday December 4.**

Meet at 11 am at the **Information Kiosk**, just across the road from the government offices and the roundabout where Kings Park Road, Malcolm Street, and Fraser Avenue meet.

Kings Park has many exotic and native plants with edible fruits or nuts. Details on the attached leaflet — all welcome, no charge. Bring lunch or buy there.

**About the Cover**

Our cover illustration is from *Tropical Fruit, an Australian guide to growing and using exotic fruits*, by Glenn Tankard (see article page 10).

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[West Australian / 1994 August 30]

## Moses makes desert bloom

The tiny centre of Paynes Find, 420 km north-east of Perth, has long been known for its gold and wool. Now it has a new string to its bow—stone fruit.

Second generation grazier Bill Moses, 41, has made the red desert bloom with peaches, nectarines, plums and apricots, which he markets in Perth as an income cushion against bad seasons and falling wool prices.

Mr Moses, his wife, Jenny, and their four children run 10,000 sheep on 173,000ha Wydjee station. When wool prices collapsed about four years ago the family was looking for options. Mr Moses's younger brother, Eric, who has an orchard at Wundowie, suggested fruit trees.

Now 4000 of them are flourishing, thanks to tender loving care and an irrigation bore.

This year's crop, mainly peaches and nectarines, is the family's second and they expect the harvest of about 2500 trays to be on sale in Perth under the Kia fruit label late next month.

The orchard, established in the shadows of the range of hills named after explorer Alfred Canning, is expected to produce up to 20,000 trays in three years, with some possibly for export.

Special fences protect the trees and fruit from hungry sheep, goats, kangaroos and emus. But foxes slip through occasionally for a snack of ripening fruit.

Mr Moses, who uses casual labour from neighbouring stations to help run the orchard, said his early efforts had been greeted with scepticism. Now everyone who visited the station was impressed with the vitality of the orchard and quality of the fruit.

— Michael Zekulich



*Blossoms in the dust: Bill Moses tends to the trees in his stone-fruit orchard in the desert. Picture: John Mokrzycki*

For Sale

### Tree Shaker

3-point linkage type, hydraulically operated  
(requires 45 HP tractor)

Reasonable condition

**\$4000**

Contact Bernie Rochester on  
097-34 1309 (fax 34 3343)

*[Horticulture Today / October 1994]*

## Pecan nut growers return from visit to U.S.

Prominent Collie pecan nut growers Bernie and Cheryl Rochester recently returned from a five-week study tour of the US, where they visited a number of growers and took a close look at the industry in New Mexico, Texas, Oklahoma, Georgia and California.

They were surprised by some of their findings. For one thing, the Yankee pecan nut (a type of hickory nut native to the US) is not given the prestige status it enjoys in Australia and other western countries. In US supermarkets, the pecan is just another nut, produced in vast quantities and not particularly profitably.

The Rochesters found an industry in some disarray, and were surprised by the lack of a clear marketing strategy and the low priority given to this area in an industry that is more than 70 years old. The US is the world's major producer and origin of most cultivated varieties, many of which were developed in the US government's Pecan Research Station at Brownwood, Texas.

"The last crop of pecan nuts produced such a bumper harvest — 350 million pounds — that a lot of growers didn't even pick their nuts," says Bernie Rochester. "The price tumbled, and followed suit in Australia where it fell by 30%. When US prices are low, our prices are low."

American pecan nut growers plant fairly large acreages (an average of 500-1,000 acres), but apart from sometimes using contractors to pick the crop, there are few major differences between US and Australian harvesting and processing methods.

"Although we got a lot of information, we

didn't find the answers we were looking for," reports Bernie Rochester. "Over a thousand varieties of pecan nut tree are grown in the States, but they couldn't recommend a particular type of nut for a particular area.

"It seems to be largely a matter of trial and error, which means we will have to continue experimenting here."

The Rochesters have been growing pecan nuts since 1980, and have 30 acres planted to 1,200 trees, but they plan to expand to 2,000 trees to absorb the high cost of machinery needed - including a harvester, a cool room, and a nut sheller.

"In the US, the growers sell their nuts to a shelling company, whereas in Australia we have to shell our own," he explains. "Most consumers prefer the shelled variety."

Growing pecan nuts is a long term crop, requiring a good deal of patience, and Bernie Rochester recommends a minimum of 50 acres to break even.

Although trees begin fruiting within a couple of years, it takes up to 15 years to be reaping 1 tonne per acre.

### Carob Group Formed

A steering committee of WA carob growers has been formed to incorporate with the International Tree Crops Institute.

The goal is that of a typical producer and marketing organisation.

The contact person is —

Tony Murphy, 73 Wasley St, North Perth 6006. Phone 09-328.5317

## From the Experts

The material which follows was gathered from a Panel Discussion of local fruit experts who were kind enough to appear at the WANATCA Meeting of 16 February, 1994, to answer questions. The panel consisted of Philip Ciminata, Viv Irvine and Dr. Sujit Dey.

Philip Ciminata (PC) retired as an accountant some years ago and began to run a deli. He became excited about growing rare fruits fifteen years ago. He studied and experimented and began to experience success. The Agriculture Department was not very helpful; their advice was that these crops had no potential and it was a waste of time to work with them. He has a particular interest in jujubes, and has had materials and information from Roger Meyer. Most of his growing experience has been on the Perth sand plain and a little bit in the hills.

Viv Irvine (VI) has a small block in Cloverdale which is an amazing botanical experience. He is from Victoria originally and has been a postman for many years. He has always been interested in growing things, and has a huge range of plants. A key bit of advice that he offers is to keep up the humidity for young tropicals; it is useful to surround them with plastic.

Dr. Sujit Dey (SD) is a nuclear physicist from Bengal. He has done much travelling and moving house over the last fifteen years, which has been a great hindrance to his interest in growing lychees and mangos. The last time he moved, he hired a commercial firm to lift and transport his lychee trees, but felt that they did a poor job. He has since worked out a more successful way to do it himself. India produces thirteen billion tonnes of mangos a year. Some mangos are not right for growing in Perth. Kensington Pride is one of the best. He is

growing his trees in sand near Perth now, and finds the marginal quality of bore water rather unsatisfactory for mangos and lichees.

*Q: My black sapote has not been fruiting. Persimmons often die in this area.*

A. (David Noel): It might need a pollinator.

PC: It might need a few more years to grow and settle in. It should be three or four metres high. They grow rapidly for a few years, then settle down. They need wind protection.

*Q: Will a white sapote pollinate a black sapote?*

PC: No, they are different species. There are a number of trees of different species called "sapotes." It just means "fruit" in Spanish.

VI: Burdekin plums are supposed to be self fertile, but many are not.

Neville Passmore: There is a self fertile one in Araluen Park.

*Q: The pawpaws I have grown in Rockingham are terrible.*

David Noel: One secret is to use a lot of dolomite.

SD: I have had a lot of success with the Malay or Balinese variety, the long, red, sweetkind. They need a lot of moisture. They will fruit in the first six months. The fruit needs to be very ripe. The fruits should be covered like bananas to protect them from

hail and fungus. The fruits should be dusted with fungicide to keep them from rotting while they are ripening.

VI: I have not had any success with pawpaw. They grow and then collapse. They are hollow.

SD: It is fungus. They need full sun.

Q: *Can you use phosphorous acid?*

SD: Possibly.

Q: *What kind of a coffee plant was that?*

Neville Passmore: Arabica, grown in semi-shade.

VI: Mine is in full sun. Sometimes it gets leaf-burn. It needs shade protection when it is young.

PC: It needs a lot of water.

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VI asks if anyone has any problems with white ants and displays a product from Bunnings Hardware: Preschem No Rot. A hole is drilled in the plant and the solid plug is inserted. It is a systemic deterrent to the white ants.

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Bill Napier displays leaves of lychee and longan which are browned and deformed.

SD: This is a fertiliser problem, too much nitrate. Lichee has very few pests and diseases in WA. They do need zinc which mobilises an enzyme for cell division. A 1% solution of ZnSO<sub>4</sub> can be sprayed on. This is about four or five grams per litre of water.

Lychees also need copper and manganese. An occasional spray of copper oxychloride and mangozeb will do the job. A big orchard in Gingin sprays foliar trace elements every month.

Lychee cannot translocate ions, so the

spray has to go right on the leaves. Do not spray on warm sunny days or when hot weather is predicted. Lychees try to excrete nitrates through the tip of the leaves which is what causes the leaf damage.

Lychees are hard to establish; they can die suddenly and the causes are unknown. Wind protection is important. There is a great potential for lychees in WA. The Chinese are very fond of lychees and exchange dried ones at the Chinese New Year. In WA we can produce fresh ones in that season. Taiwan is the world's biggest producer of lychee, followed by India. The big orchard in Gingin has been mismanaged, the trees need less watering and feeding.

Q: *Can you grow lychee on longan rootstock?*

SD: I don't know. Lychees are very easy to propagate by marcot. They are evaluating about twenty cultivars of lychee at Maroochy in Queensland. Kwai May Pink is a recommended one.

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PC: I have about twelve varieties of jujube. There are four groups of jujube: juicy and crisp, for eating fresh; sweet and juicy; dry and crisp; and dry and soft. They are very popular with Asians both fresh and dried. They come in an amazing range of sizes, colours and shapes. They fruit early, don't need protection and are ornamental. Some are spiny and some are not.

The flowering and fruiting of mangos and lychees are very dependent on temperature. Avoid mangos advertised as "early." Early in the season when the weather is cool they will have only male flowers and will not set fruit.

## Thank You Mr Cola

The clear plastic containers in which cool drinks are now commonly sold can be very useful in raising plants.

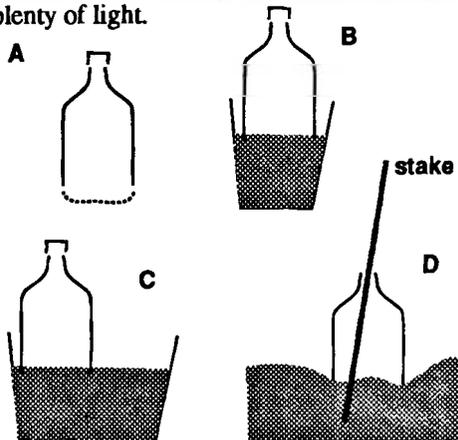
Usually these are 2 litre capacity, though 1.5 and 2.5 litre sizes also exist. They have a screw cap of metal. Just cut the bottom off with a sharp knife, where it starts to curve in (A in the drawing), and you have a handy, versatile miniature greenhouse.

The 2-litre size fits well into a standard five-inch plant pot (B). The setup can be used for promoting growth of plants, for germinating seeds, or for getting good strikes of cuttings.

With seeds or small plants, I usually loosen the cap but leave it in place. As plants reach the top, you can remove the cap and let the plant grow through the neck. As the plant gets even bigger, you can lift up the container and pull it over the top of the plant without damage, as long as the top branches are still flexible.

Watering? It's a cinch — you don't need to do anything special. As long as the container isn't too far into the soil, rain or irrigation running down the side of the pot

will be fine to water the plants inside, and no danger of splash damage either. Fine seeds on the soil surface inside are unaffected by wind, rain, or falling leaves, and yet get plenty of light.



Pest problems are diminished, with the cap on there is no way for snails, butterflies, or slaters to get at the plants inside.

The technique is very good with cuttings, especially green or leafy cuttings where the humidity must be kept up. If you want to convince yourself of its benefits, try cuttings partly inside the container and partly outside, in a wider pot (C). The photo shows some lavender cuttings tried like this — almost all those inside took and grew well, all of those outside died.

Trees grown from seed sown in-situ, at the final growing position, almost always are stronger and more stable than ones which are transplanted and have the shock to overcome. But in-situ trees have to be able to survive attack by pests such as rabbits and competition from blown-in weeds. By sowing seeds in the field, at the bottom of a small basin formed so that rainfall will reach the seeds, many of the problems may be avoided by using one of these containers held in position by a stake through the neck (D).

— David Noël



## WANATCA at Dowerin Field Days

WANATCA was present for the first time at the Dowerin Field Days this year. Our display was situated in the Men of the Trees marquee. Over 46 000 people, mainly from the wheatbelt, attended the Field Days, and we had a steady stream through the display interested in both our aims, and requesting specific information.

Particular interest was shown in Quandongs, Macadamias, Pistachios, Carobs and Eucalypts for both wood and oil production. Many farmers seemed to be keen on the possibility of carrying out some diversification to nut and trees crops to suit their specific situations.

Sincere thanks go to Jeff Newell of Gidgegannup Springs and Geoff Whyte of Goomalling for their willing participation in the manning of the display and for the sharing of their experiences. Also many thanks to Men of the Trees for providing us space in their marquee.

I would like to take this opportunity to encourage members to volunteer to assist or run WANATCA displays at country field days. It is a valuable occasion for the exchange of ideas with members, to impart local knowledge and experiences in your area to others, and to further the aims of the association.

I look forward to meeting more of our country members,

— **Bob Cook**, Gidgegannup Springs

### Vetiver Grass for Sale

Starter pots with 2-3 plants  
70c each

Contact **Bob Nederpelt**

09-377 1024

PO Box 56, Morley 6062

### *Want to help out on the Committee?*

*In accordance with our Constitution, elected members of the WANATCA Executive Committee serve for two years, with half retiring each year.*

*This year those retiring are David Brown, Bill Napier, Ian Fox, Bob Haywood, and Pat & Bill Scott. Some resigning members are willing to stand for re-election, but we will still have a shortfall for the 1995 Committee unless there is a sudden rush of volunteers!*

*Anyone interested can put their hand up at the AGM when the matter is raised, or can contact David Noël beforehand if they would like to talk about what's involved.*

Wanted

### Capulin Cherries

Do you know of a Capulin Cherry which grows well and fruits, or has exceptional fruits or growth characteristics?

Bill Napier is trialling as wide a variety as possible of this American Prunus species.

Please contact him if you can help in his work.

Contact:- Bill Napier

11 Canns Rd armadale WA 6112

Phone 09-399 6683

**STATEMENT OF RECEIPTS AND EXPENDITURE**  
**WEST AUSTRALIAN NUT AND TREE CROP ASSOCIATION**  
for the year 1 July 1993 to 30 June 1994

**BALANCE BROUGHT FORWARD**

Cwith Trad Bank	4,231 74	
Petty Cash a/c	70 43	
Debenture RAC	1,500 00	
Unicredit a/c	44 85	
Unicredit Fixed	1,826 09	
		7,673 11

**SUBSCRIPTIONS**

1993	2,205 00	
1994	10,720 00	
1995	325 00	
1996	160 00	13,410 00

**LIFE MEMBERSHIP** 500 00

**INTEREST**

CBA	79 81	
RAC	158 03	
Unicredit	89 11	
CBA	1 91	328 86

**RECOUPS** 24 10

**COMMISSION** 23 85

**RESEARCH**

HRDC Grant	20,000 00	
B Rochester	6,000 00	
Donations	156 00	26,156 00

**48,115.92**

**BANK FEES** 61 52

**CREDIT CARD CHARGES** 88 00

**FEES**

Greening Aust	25 00
WA Hort	25 00

**FIELD DAY** 88 00

**HONORARIUM** 1,040 00

**PECAN US TOUR** 25,282 00

**PRINTING**

Leaflets	367 47
Quandong	3,699 22

**POSTAGE**

Aust Post	889 50
World Mail	329 67

**PURCHASE PROPAGATOR** 546 13

**QUARANTINE FEES** 25 00

**REFRESHMENTS** 32 42

**RENT**

Tree Crop Centre	1,170 00
PO Box	39 00

**SEEDS** 120 00

**STATIONERY** 421 03

**TELECOM** 326 33

**BALANCE B/FWD** 13,540 63

**48,115.92**

**Balance brought forward is represented by :**

Balance CTB	9,517 93
Petty Cash	62 65
Secured Debenture RAC	2,000 00
Unicredit	46 82
Unicredit Fixed	1,913 23
	<b>13,540.63</b>

I certify that I have examined the books of account of the WA Nut and Tree Crop Association and believe them to be correct and that the above statement reflects the position of the Association



Hon Auditor

29 July 1994

[WA Horticulture / October 1994]

## Cherimoyas delicious but difficult

**Juliet Marshall calls them the “Rolls Royce” of custard apples.**

When asked to describe the difference between her highly prized — and highly priced — cherimoyas and custard apples Mrs Marshall said it was like comparing Packham and Bartlett pears, they might look similar but they were quite different.

She said custard apples were a much more “nobby” fruit and generally rougher skinned. The flesh inside was “grainy”.

Cherimoyas, a hybrid of custard apples, had a much more delicate flavour — its custard-like interior having a sweet taste evocative of bananas, vanilla and coconuts. Indentations around the fruit looked like finger prints and were quite smooth.

Another difference was the price cherimoyas commanded— selling at about \$13 a kilogram in retail outlets, there were few fruits as expensive. And the fruit achieved this price despite being relatively unknown to WA consumers.

Juliet and Ted Marshall are believed to be



*Juliet Marshall cuts a piece of fruit from a tree in the Karragullen orchard*

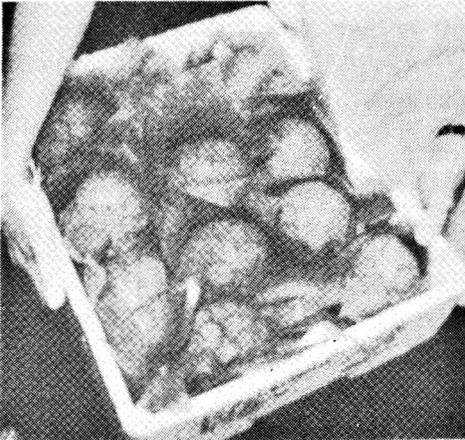
the only commercial growers of cherimoyas in the State. Nut and Tree Crop Association president David Noel was so impressed with the fruit that he contacted *WA Horticulture* about the “magnificent fruit” he saw on a visit to the markets. For those involved in the horticultural industry a recommendation from knowledgeable Mr Noel guaranteed it was quality product.

Mr Noel, a strong advocate of alternative fruit trees, was particularly impressed by the quality of the cherimoyas grown by the Marshalls because all others who had grown them in the past in WA had failed.

But his compliments did not surprise the Marshalls who planted their first cherimoya trees on their property nine years ago.

“Cherimoyas have to be hand pollinated,” they said in unison when asked why few people had success growing them.

Mr Marshall said that although cherimoyas would grow naturally the fruit was generally deformed and very small if not hand pollinated. “And that is a hand and paint



*Cherimoya are packed for protection and appearance in purple waxed paper once used to wrap Granny Smith apples*

brush job which takes hours and hours, daily," he said.

"You have to also be exceptionally careful when putting the pollen on because unless it is evenly placed, you will get misshapen fruit.

"But just brushing the fruit with pollen does not guarantee it will be a success—chances are it will not be if it is a stinking hot day, and hot dry winds are also a problem."

The couple now have 30 trees on their Karragullen property and said the climate and weather conditions of the area were ideal for cherimoyas. The horticulturist in Queensland from whom they bought their trees said cherimoyas were not a popular crop in Queensland any more because the climate resulted in them being too sweet.

The Marshalls discovered cherimoyas when holidaying in Queensland nine years earlier. "We had tried nuts — pistachios in fact — and they were a failure," Mrs Marshall said. "They would not graft. "We were looking for something that did not need a great deal of maintenance — cherimoyas seemed to fit the bill." They are a spring crop so they are not susceptible to fruit fly."

She said they had some custard apples on their property but Karragullen did not provide the ideal climatic conditions for them. Karragullen had similar cold night conditions to other areas in the world where cherimoyas were grown—Peru and Chile.

The name cherimoya came from the Peruvian word "chirimuya" which meant "cold seeds". Mrs Marshall said the number of black seeds contained in a piece of fruit could be controlled by the pollination. "If we put too much pollen on the fruit it will swell up to an enormous size and produce many seeds — we have had some fruit up to one and a half kilograms."

The couple said learning how much pollen to put on the fruit took a lot of trial and error. And it was also this trialling period that put off



*Ted Marshall picking cherimoya from one of the fully-grown trees*

a lot of people. "Lots of people are interested in growing cherimoyas and we have sent heaps of seed around WA and Queensland but everyone seems to give up because of the hand pollination." Mrs Marshall said.

It was for that labour-intensive reason that the Marshalls — who both have full-time jobs off the orchard — decided to maintain their tree number at 30. In full production the couple hope to pick 10 trays of fruit per tree.

*[Ed: The cunning New Zealanders are said to use a rabbit tail tied on a stick to hand-pollinate their cherimoyas.]*

## **Major WANATCA gene bank project under study**

**Feasibility studies are under way for WANATCA to develop a major horticultural gene-bank planting at Hamel, south of Perth.**

The project, which would include hundreds of varieties of fruits, nuts, and other tree crops, would be situated on a 10-hectare Conservation & Land Management site immediately south of the Hamel Nursery run by Greening Western Australia.

CALM have offered WANATCA the 10 hectares at a nominal rental, subject to negotiations to be finalized. If these negotiations are successful, WANATCA will progressively establish a major repository of horticultural varieties of tree crops of every sort which will grow under the conditions at Hamel.

At present, Western Australia completely lacks a Horticultural Variety Gene-Bank Repository of the sort found in other countries and other states in Australia. Plantings at the WA Agriculture Department research stations are being continually recycled as specific projects terminate — as with the tragic loss of pecan and fig varieties from the Stoneville Research Station.

The proposed WANATCA Hamel Repository would preserve these varieties in perpetuity, or as close to perpetuity as external forces allow. Both older 'heritage' varieties, and newer imported or locally selected or bred varieties would be included.

The prime mover behind this exciting project has been WANATCA Executive member Alex Hart. Alex is already familiar with the site, and realized its potentiality, from when he was in charge of it during his career with the Forests Department, one of the

government entities which became part of CALM. The site already contains a number of historic and unusual tree species from this period.

The conditions under which the site would be operated are yet to be established. WANATCA would welcome participation in the project by other local organizations with interests in perennial plant crops, such as Men of The Trees, the Ag. Dept, and CALM itself. The Repository would be a valuable variety source, and it would be a prime intention that the various varieties represented could be used for propagation by commercial and research nurseries.

One of the potential propagators involved is the adjacent Hamel Nursery, which already provides a big range of trees for land improvement and tree crop products under the current lessee, Greening Western Australia Inc.

According to Murray Edmonds, GWA General Manager, the future of their involvement with Hamel is under review. "We expect to get the Nursery into shape, and arrange a commercial sale of the assets within the next 12 months or so", he stated.

If ownership of the Nursery does shift, WANATCA would like to see it pass into the hands of a member or someone else sympathetic to the Associations's aims. The symbiosis possibilities with the Nursery and the Repository are obvious.

Further details will be available, to those interested, from the Tree Crops Centre or GWA as the situation develops.

## Letter about Argan

*I read with interest the review of Rob Fletcher's book [Ed: Listing of Potential New Crops for Australia]. I draw your attention to my work of a similar nature for the NT, and by nature applying to much of tropical and tropical arid Australia, published last year by the NT Dept. of Primary Industries [Ed: Economic Plants for the Northern Territory].*

*However, I have also investigated the Argan tree a little more thoroughly, and worry about its potential as a spiny, woody weed in many semi-arid and arid areas of Australia. I do not deny the potential, but believe it must be tempered when the plant is as spiny as this one is.*

*I'm in favour of new species—I would not work and have an interest in the area*

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## Another Royal Show success

Once again, the Association was represented in the Tree Crops Centre display at this year's Royal Show. We received many compliments on the standard of the display and the information provided on growing nuts, fruits, and other tree crops.

Many thanks to the volunteers manning the stand, including Tom Bateman, David Brown, Bob Cook, Henry Esbenshade, Ian Fox, Bruce Gardner, Alex Hart, Bill Napier, Clive Pegler, Greg Pratt, Wilf Prendergast, Pat Scott, Neville Shorter, Clint Woodward, and Marcus Vigilante.

This event is still our principal window to the general public, and those taking part do a vital job. Special thanks to Alex Hart for again organizing the roster so well.

*otherwise, but at this stage it (the Argan) is one I do have reservations about—because of our farming system styles, rather than the ability or potential of the species.*

— P G Harrison, Arid Zone Research Institute, PO Box 8760, Alice Springs NT 0871

Ed: What do readers think about this, and similar spiny plants such as *Prosopis* (widely used and recommended for multiple purposes over much of the tropical world, but banned or restricted in WA because of its thorns)? Andrew Thamo has expressed similar reservations.

My own feeling is that the points which worry Dr Harrison are not so vital when these plants are used as specific tree crops, rather than as part of broad-acre farming, because the level of attention we pay to individual trees is much greater than in the latter case. And it is paradoxical that the Argan is regarded as diminishing, even somewhat endangered, in its native Morocco, because of the pressure of human activity upon it.

### GRAFTED FRUIT & NUT TREES

SHAHTOOT King White Mulberry

MANGO

MACADAMIA

KIWI FRUIT (Male & Female)

PEACH, NECTARINE (Low Chill)

CUSTARD APPLE

CARAMBOLA

PERSIMMON

NASHI, AVOCADO, CASIMIROA

Also seedling Papaya (Taiwan hybrid),

Tamarillo, Guava, Carob, . . .

*Gilbert's Wholesale Nursery*

Pacific Hwy, Moorland NSW 2443

Phone (065) 56 3148

## Pomegranate trial at Medina in doubt

The small trial of pomegranate varieties which has been in progress at the Department of Agriculture's Medina Research Station south of Perth has an uncertain future.

The Department has been unable to give an assurance that the trial will continue. In view of other variety trials which have been completely eliminated in the past (such as the pecan and fig trials at Stoneville Research Station), there are no grounds for optimism, especially as pomegranates do not have the demonstrated major crop potential exhibited by other tree crops such as pecan.

The Association is working to establish sites on which tree crop varieties with possible future value can be preserved indefinitely. In the meantime, members may wish to contact John Burt (448 2899 home, 368 3211 business), if they would like to be notified if cuttings of the Medina varieties become available (pomegranates grow easily from cuttings).

### **PECAN NUTS WANTED**

**Good quality Pecan  
Nuts required for  
shelling**

Larger Quantities preferred  
Contact BJ & CF Rochester  
**Mumballup Pecan Shelling**  
Phone 097-341309, 322051  
Fax 097-343343  
90 Bucktin St, Collie 6225

## Older 'Quandong' magazines for free

A big box of older issues of *Quandong*, from the days before it was typeset, will be brought to the November 16 meeting and given away to those interested.

Although perhaps not as smart as current issues, these older magazines are still crammed with useful and relevant information. I picked up a copy of the January 1984 magazine, and was quite impressed with the contents, which included articles on cashew nut processing, growing coffee in Queensland, jojoba, babaco, white sapote, and feijoa.

All these are still relevant today. In fact, the last one, on feijoa, is being reprinted in this issue!

— *David Noel*

### **Nut Property for sale**

#### **Donnybrook - Newlands**

10 acres prime horticultural land. Very nice hardiplank home, modern, open-living plan, with big modern kitchen, 3 big bedrooms. New steel-frame machinery shed, large steel frame workshop with concrete floor. 92,000 litre concrete rainwater tank.

\*\*\*\*\*

123 Macadamia & 35 Pecan trees planted, also other mixed varieties fruit, citrus. All on trickle irrigation from spring-fed dam. Ample scope for further development.

Everything on this property is new.

**Priced to sell at \$189,000**

*David Regan & Co*

Donnybrook - phone 097-311566  
a/h 321249, 311468, 321261

[Eurofruit Journal & Quandong / January 1984]

## Feijoa ripe for commercial development

The feijoa, in America often called the pineapple guava, was named after a Brazilian botanist called Don da Silva Feijoa. It is now beginning to be commercially cultivated in New Zealand although it has been growing there since the beginning of the century.

It was first introduced into Europe, especially the Mediterranean area, in the 1890s, and was planted in California about 1900, later appearing in New Zealand.

Very soon popular varieties began to develop—the Coolidge in California, and the Triumph and Mammoth in New Zealand.

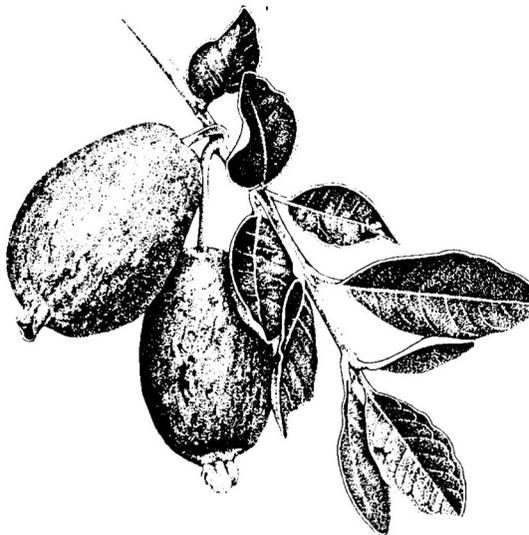
Today the Triumph and Mammoth are the varieties most commonly found in New Zealand. They have the best flavour but are thin-skinned. It is the Triumph variety which is most favoured for commercial plantings.

The fruit, which is green in colour, is large and oval with an even but firm skin, and has an excellent sharp flavor. The Mammoth variety has a smooth skin and is more rounded than the Triumph. This variety matures early, but is softer and therefore more difficult to handle.

Other varieties include the Magnifica, which is the best for export as it has a thick skin and is therefore better for transporting, the Grace, the Coolidge, the Choiciana, and the Superba. There are in addition to these hundreds of unknown seedlings.

The Coolidge from the USA has a tendency to produce smaller more cylindrical or pear-shaped fruit. All varieties have a limited shelf life.

When the large number of new plantings come into full production there will be too great a volume of feijoas for New Zealand itself to absorb and so it will be necessary to



open up more overseas export markets for both fresh and processed fruit. Feijoas are currently processed in New Zealand in the Bay of Plenty.

In New Zealand, the feijoa is even more popular than kiwifruit. It has a strong aromatic flavour and can be eaten fresh simply by removing the skin or cutting it in half and scooping out the pulp.

It is also often bottled as a preserve, frozen or made into jam. Feijoas are high in vitamin C and low in calories, similar to oranges.

Such is the confidence in the popularity of feijoas that commercial plantings increased by 50 per cent last year, and similar increases are anticipated in years to come.

The feijoa is highly adaptable to almost any growing conditions and could easily be cultivated in many countries, but it is prone to fruit fly and could, therefore, be unsuitable for commercial cultivation in some areas.

In New Zealand it is grown in most mild areas of the North Island, particularly around the Bay of Plenty and in the warmer regions of the South Island. It cannot tolerate frost below minus nine degrees Celsius.

It can be cultivated on a wide range of soil types, even those not suitable for more sensitive fruit such as avocado and kiwifruit. However, the feijoa does fare better in good soil, especially if it is well aerated.

The tree starts bearing, depending on whether it was grown from a cutting or seedling, four or seven years after planting.

The wood of the feijoa tree is quite brittle and so it should be grown in sheltered places or protected by windbreaks.

Feijoas are normally harvested from March to May in the Southern hemisphere and should be picked before they fall off the tree, but it is extremely difficult to determine when they are ripe enough.

One indication of maturity is a slight yellowing and dull surface on the flesh, and when lightly pulled the fruit should come away easily from the tree.

It is imperative that the fruit is ripe enough

when picked, because it will not ripen at all after harvesting. During packing, the fruit must be very carefully handled to reduce bruising to a minimum.

For local market supply the fruit is usually packed boxes or cartons with a net weight of about 18 pounds, but jumble-packed 40 pound cartons have recently been gaining in popularity with both growers and retailers.

Fruit for export is air-freighted to retain its freshness and on arrival should have a shelf life of about seven days. Feijoas can be stored for a very limited period if kept at a temperature of three degrees Celsius. Export fruit is packed in cardboard trays with moulded plastic inserts and is covered with a paper cushion for protection.

Turners and Growers Ltd, one of the main companies involved in the New Zealand fruit business, export a maximum of 20 tonnes, equivalent to 4000 trays, and their main markets are Japan, USA and Australia. Small quantities also go to Europe.

Commercial cultivation of feijoas is still in its infancy — a lot of research is needed, particularly into more efficient harvesting methods. However, the feijoa is a delicious fruit and could soon gain worldwide popularity.

Y

## SEEDS: *Fruits, Nuts, & lots more.*

*100's of species. Personal collection in season. For list, send S\$AE to*

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## PECAN SEEDLINGS

*hundreds available  
grown in 40 cm bags*

Mahan \$3.50 each

Apache (Very vigorous) \$1.50 each

Brian Money

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## All about Ebony

The following is extracted from *A Glossary of Wood*, by Thomas Corkhill (see *Book Reviews*, p. 18)

**EBONY.** A very hard, heavy, tough, decorative wood, with fine smooth grain, and lustrous. There is considerable variation in the different species as it is widely distributed, and the colour ranges from dark green, with dark brown stripes, to black.

It is usually sold by weight, and marketed in billets, averaging nearly 1 cwt. per billet. The logs are immersed in water for twelve months after felling; the ends are then ringed with iron and wedged to prevent splitting. When the wood is very streaky it is usually called by some other name: arang, blackwood, calamander, camagon, kaki, marblewood, persimmon, thitpol., etc. S.G. about 1; C.W. 5. Ebony is used for fancy articles, inlays, shuttles, turnery, piano keys, bowls, etc.

**AFRICAN, or NIGERIAN, EBONY,** *Diospyros spp.* The wood is usually named after the port of shipment: *Barutu* is coarse and inferior; *Cameroon* is black, of good quality and fairly large sizes; *Cape Lopez* is black with a proportion of grey, and fragrant; *Gaboon* is black and of good quality; *Ogowe* is similar to Gaboon; *Old Calabar* is black and of good quality. **AMERICAN EBONY,** *Diospyros spp.* Tropical America. Black and

variegated. Very hard, heavy, and strong, but brittle. The black heart is usually small, and the irregular yellowish sapwood makes a striking contrast for decorative work. S.G. 1.1; C.W. 5. Also see *Cocos*. **ANDAMAN EBONY.** See *Marblewood*. **BROWN EBONY.** See *Partridgewood* and *Wamara*.

**BURMESE EBONY,** *Diospyros burmanica*. Inferior, because of small proportion of black heart. Also *Dalbergia cultrata*, called Yin Daik. Dark chocolate colour with black stripes; good quality. **CEYLON, or INDIAN, EBONY,** *Diospyros ebenum*, *D. tomentosa*, and *D. embryopteris*. Usually black with lighter striations, grey sapwood with black streaks, and some wavy grain. The last-named species is inferior with very little black and is called Kaluwarra or Speckled Ebony. S.G. 0.9. **E. AFRICAN EBONY,** *Dalbergia melanoxylon*. Also called Mozambique Ebony and African Blackwood. Excellent wood, extremely hard and heavy. S.G. 1.4. **E. INDIES EBONY,** Ceylon ebony.

**GREEN EBONY,** *Brya ebenus*. *W. Indies*. Greenish brown, variegated stripes. Very hard and heavy; uniform and smooth. S.G. 1.1. **GUIANA EBONY,** *Swartzia sp.* Also called Bania. Purplish black, yellowish sapwood. S.G. 1.2. **INDIAN EBONY,** Ceylon ebony. **MACASSAR EBONY.** Unclassified. Celebes Isles. Variegated dark brown, black stripes. Used chiefly as veneer. **MALAYAN EBONY,** *Diospyros spp.* and *Maba spp.* Also called Kayu Arang. Average quality. Many species have no black heartwood. **MOZAMBIQUE EBONY.** See *E. African Ebony*. **PHILIPPINE EBONY,** *Maba buxifolia*. Chiefly variegated, but some supplies of black. **W. INDIES EBONY.** See *Cocos*.

### For Sale Pecan Seedlings

Well grown in tall bags  
\$4-5 each

Contact:

Alex Hart on 09-490 1324  
71 Terence Street Gosnells 6110

## BOOK REVIEWS

by David Noël

**A Glossary of Wood: 10,000 terms relating to timber & its use, explained & clarified, with 1000 illustrations. Thomas Corkhill.** Published by Stobart Davis, London, 1979 (reprinted 1988). 656 pages, Paperback. \*\$39.95.

This unique and extensive book is presumably intended firstly for the adventurous wood worker, wanting to work with every variety of exotic timber in the construction of all sorts of articles and furniture.

Even so, it is also uniquely useful for tree croppers with an interest in the timber uses of trees they grow. The timber of almost all trees has some value, and so the range of species covered in this book is very high — perhaps half the 10,000 entries relate to specific species, and so this book includes far, far more than any book concentrating on say fruits or nuts.

The book is also invaluable in its content of common names — they might be called 'common', but they are sometimes very hard to locate. This book gives easy reference to botanical names from common ones, and is particularly useful with terms like 'walnut', applied to a very wide range of species from a mixed bag of families.

For most of the timbers listed, brief details are given of main uses and characteristics, such as workability and density. The majority of the illustrations relate to woodworking details (eg internal dormer, corinthian column), but some leaf and tree forms are shown (eg sweet and horse chestnut). An extract from the book, dealing with Ebony, is

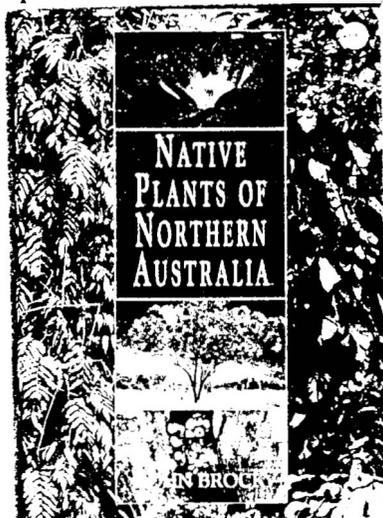
reproduced in this issue of *Quandong*.

This is a book which I expect to refer to constantly in the future, and I only wish I had known about it earlier! Just as with fruits, there does seem to be increasing general interest in knowing more about and using less common timbers, and this diversity is to be applauded. Highly recommended.

**Cork Oaks and Cork: A New Zealand Perspective. Ross Macarthur.** Published by the author, Picton, New Zealand. 120p. Paperback. \*\$29.95.

Cork is a familiar, valuable, and interesting tree crop, one which has given rise to a steady stream of enquiries over the years. Unfortunately, till now there has been not even an introductory description available in English of cork growing, processing, and uses. This book therefore fills a very notable gap in the literature.

The author, a stalwart of the Marlborough Tree Growers Association, has clearly spent years of effort researching this book. There is an emphasis on cork trees in New Zealand (as



yet no commercial production), but he continually refers back to traditional cork areas such as Spain and Portugal, and cork-growing efforts elsewhere in the world.

This book is nicely produced, with good colour photos. It is essential reading for anyone seriously interested in cork. Highly recommended.

### Native Plants of Northern Australia.

**John Brock.** Published by Reed, Sydney, 1993. 355 pages, Hardback. \*\$49.95.

This is a new edition of the work previously published by the author under the

title *Top End Native Plants*.

It is an absolutely superb work, with every species illustrated by excellent colour photos, and detailed descriptions of all aspects of each plant, including growth characteristics, cultivation, uses, and distribution (including distribution maps).

In spite of its attractive appearance, this is in no sense a 'coffee-table' book, but rather a work of

detailed scholarship and an essential manual for anyone interested in exploiting Australia's native high-tropics plants for their fruits or other products. I would recommend it unreservedly to anyone who has not already bought the earlier edition (the content is essentially unchanged from that).

**Kimseed Catalogue.** Australian Revegetation Corporation, Perth, 1994. Paperback. 76p. \*\$5.00.

More than just another seed catalogue, this booklet is listed and stocked for two special reasons. First, the hundreds of seeds included are of plants which have special value for purposes such as saltland reclamation, dune stabilization, animal fodder, agroforestry, fuelwood, drought areas, and minesite revegetation. The vast majority are Australian natives, and even in this aspect, the list has some unique inclusions, such as the cooler-climate pebble nut relative, *Stylobasium australe*. Just to have such seeds conveniently listed is worth the cost of the book, the ready availability of them from the producer is a bonus.

Second, the middle part of the catalogue is devoted to detailed descriptions and colour photographs of the large range of Kimseed equipment for direct seeding, seedling planting, site preparation and ground forming, seed collection and treatment, fodder tree and shrub management, and portable sawmilling.

Most of this equipment was developed by ARC themselves to meet the specific needs of

tree restoration and establishment projects in difficult, often arid, situations, such as in the Persian Gulf countries. This is tremendous work, and to see all the different and ingenious machines developed is a real eye-opener and inspiration for those concerned about land restoration.

## Cork Oaks and Cork

A New Zealand Perspective



By Ross Macarthur

\*Current price of copies from *Granny Smith's Bookshop*, PO Box 27, Subiaco WA 6008.

## Tree crop trial area to be established

The WA Nut & Tree Crop Association have received a generous offer for the use of land at West Gingin, for trials with various tree crops.

The land is part of a recent purchase by Bob Nederpelt, WANATCA's Pitaya Action Group leader. West Gingin is on the coastal plain some 75 km north of Perth, and is in an area of low frost incidence on which many subtropical tree crops can be grown. A commercial planting of lychees and other subtropicals exists in the area.

Bob has offered to set aside 3 hectares of the land for the Association to use as it wishes, and this offer has been gratefully accepted. The present intention is to use the land for research and production trials of every sort.

These trials would be run in conjunction with individual WANATCA members, or with university, college, or government entities wanting to test specific tree crops or specific cultural methods.

Bob expects to progressively develop other parts of the land with Red Pitayas and other new horticultural crops, and anticipates that he will be able to assist with trials on the WANATCA Reserve if needed. The property already has a good bore water supply and equipment sheds.

Proposals for uses of this land are invited from anyone interested. As plantings develop, the property is expected to be particularly suitable for thesis projects of students working on newer tree crops.

— David Noël

## City Farm Project

People travelling up Lord Street, East Perth, in recent months will have seen big changes to the local surroundings.

These changes are part of the WA Government's far-reaching plan to rehabilitate and upgrade the whole suburb of East Perth. Formerly the site of the Gas Works and a number of big 'smoke-stack' industries, the suburb actually lies in a potentially beautiful location on the banks of the Swan River.

Considerable landscaping and re-forming of the whole area is now well under way. The changes include the creation of the 'City Farm', planned as a green oasis area among the buildings to be erected.

WANATCA have been invited by Men of The Trees, who are responsible for setting up the City Farm, to participate by providing nut and fruit trees and advice on their suitability for the project. The last Executive Committee meeting decided that this is a worthwhile project which deserves our support.

Any suggestions, comments, or offers would be welcome — these can be directed to the Tree Crops Centre or the City Farm Coordinator, Men of The Trees.

### Grafted Pecans

**Order now  
for 1995 delivery**

(in 5 litre bags, approx 50-100 cm high)

\$12-14 each

**Philip Bloomfield**

member WANATCA

Lot 1 Grahame St, Mount Helena 6082

Phone 09-572 1653 (a/h)

## Beer drinkers help tree croppers

A by-product of the beer-brewing process, known as Brewery Sediment, is proving a very useful organic fertilizer and soil improver for growing all sorts of fruits, nuts, and garden plants.

Local company SoilMix are offering two grades of the material, one straight, the other a 50-50 mix with chicken litter.

Basically the material is a tough, jelly-like substance with excellent water-retention abilities. Bill Napier has used it for years — turn over a section in his orchard and it is crammed solid with worms. It is slightly alkaline (pH 7.5), which worms love.

I recently tried out a truck load of the 50-50 mix, and it has made a dramatic improvement in the growth of most plants, especially the roses which my wife insists on keeping (when the space could be used for nut trees!). The mix is a good, friable, semi-composted product which can be spread thickly all around existing plants, with no observed bad effects.

Water retention is excellent — all your irrigation goes straight into this mulch layer and stays there. A full bucket of water can be poured straight into this mulch in about 3 seconds, without any running off.

The price is very cheap — only \$2.80 per

cubic metre for the untreated sediment and \$8.60 for the chicken litter mix at SoilMix's yard on Bannister Road West, Canning Vale. Truck loads of 3, 11, 14, or 22 cu m can be delivered. For around \$50 I had 3 cu m of the mix delivered, this was ample for the year's fertilization of my large yard (almost half-acre) containing hundreds of trees (and some roses!).

I have been very pleased with this material. If you want some, phone SoilMix on 455 1020 — and say you saw it in *Quandong!*

— *David Noël*

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### First Time Offered In Australia **TOCTE TREES**

(*Juglans neotropica* —

the Evergreen Black Walnut)

**\$15 each; reduction for quantity (20+)**

From WA-produced seed! Healthy well-grown trees in plastic bags, up to 1 metre tall.

These fast-growing, almost evergreen true walnuts produce excellent timber, good edible nuts, and may also be used as rootstock for other walnut species.

Contact Nola Washer at

**Avowest Nursery, Carabooda**

Phone: 09-407 5100 • Fax: 407 5070

### For Sale

### Sandalwood Seedlings

approx. 10 cm high, 3 months old, in small plant bags. \$5 each

### Quandong Seedlings

also available

Contact Kevin Smith on  
018-917896 (mobile) or  
09-339 4752 (a/h)

### Hazelnut Varieties

Hazelbrook Nut Farm, Ballngup WA

(Members of WANATCA)

PO Box 15, Subiaco WA 6008

Phone 09-388 1121 (after hours).

[Horticulture News (NZ) / April 1994

## Chestnut pioneers pack 'em in

Waikato, New Zealand, chestnut growers Murray and Jenny Kestle run the only chestnut packhouse in the country packing out for growers from the Waikato, eastern Bay of Plenty, Tauranga, Rotorua and Taranaki. Whangarei plantings are yet to come on stream in commercial quantities.

Murray Kestle says chestnut growers need a good bank manager and a strong heart, given the pioneering nature of the industry.

The Kestles have 8 ha in chestnuts with 600 trees at a commercial cropping age of eight years. Last season they packed 3000 kg off their own property and this season expect to harvest around 10,000kg from nutfall in March and April.

Murray Kestle is enthusiastic about chestnuts and says as quantity builds he can see most of New Zealand's crop leaving the country as value added product. Chestnut flour, nutrition high, fat and gluten free, sells for \$US19 a pound in the United States, and the Asian market offers opportunity to cash in on sliced chestnut for stirfry dishes. Add chestnut puree to yoghurt and the dairy industry may have yet another winner, he says.

"In 10 years time we'll be selling 10-15% of chestnuts fresh and the rest processed." Kestle is a member of the Chestnut Council formed last year. All chestnut growers are levied at 5% of net return for research and promotion. Waikato Chestnut Marketing Ltd is the marketing arm of the council and is managed by five directors. Kestle says its single desk selling is definitely grower led. Prices are paid on size.



*Murray Kestle with some of the macadamia trees he propagates and sells grafted.*

The pool system pays growers for what they produce. "We don't penalise quality growers. We allow a 5% reject rate then penalise at 80c a kg."

Chestnuts came to the Waikato via German soldiers during the Maori king movement and seeds left around the hills took root. As disease threatens to wipe out European and American chestnut plantations, New Zealand may have one of the few disease-free plantings in the world.

Chestnut trees are planted at 200/ha and at 6m by 6m in free-draining soils. A healthy mature tree will return around 20kg, although research and development has still a long way to go. No real figures are recorded beyond

year nine, says Kestle.

Grafted trees are required for plantations as seedlings do not track true. There are four commercial nurseries in the country selling chestnuts.

Kestle's fertiliser programme consists of nitrogen in the form of 40 tonne of fowl manure to the six hectares. Fertiliser, he says, is essential in the early years for tree establishment. Leaf analysis checks tree progress and fertiliser uptake. The only spray applied to the Kestle plantation is Cocide in mid winter as a clean-up.

Shelter is essential and stock must be excluded because of the palatability of the high-tannin bark.

Before planting, Kestle ripped his paddocks three ways, and he continues to aerate the soil. An engineer by trade, he has made his own ripper to fit a small HP tractor. The plough has a skeath on the front to cut

through the soil.

Kestle has also designed and made his own chestnut harvester. Chestnuts are sealed within a prickly case which splits and allows the nuts to drop. Kestle's harvester acts like a giant vacuum cleaner with the air exhaust helping to blow loose chestnuts from the trees.

After harvest, nuts are chilled to one to two degrees C and packed out according to grading. The grader is another Kestle-built and designed machine.

The entire New Zealand crop will be sold unprocessed until returns warrant processing costs. Average individual chestnut weights are around 20g with some recorded at 50g. Shelf life is three to four days fresh, three months in a chiller and frozen nuts keep indefinitely. The export crop is shipped in chilled containers.

— Virginia O'Leary

*[Rainforest Study Group Newsletter / 1994 July]*

## TRADITIONAL KOORI (ABORIGINAL) USES OF PLANTS

During preparation of this newsletter we were fortunate to attend a day course led by a local Koori woman. Among the topics covered, food and medicinal plants were of particular interest and I will summarise her comments on some species that are often found in or around RF.

**BLACKBOYS** (*Xanthorrhoea*). These plants at times concentrate resin in "beads" that soon fall to the ground. These are collected, heated in a container and melted to form a block and duly used for various purposes. The fragrance of the warmed resin

is delightful, so much so that our mentor advocated that we collect a quantity and frequently break up the block (on any pretext) so that it has to be remelted. Heating really brings out the aromatic properties! Great potential for Buddah sticks?

**WOMBAT BERRY** (*Eustrephus latifolius*). Its fruit, when ripe, can be dried for later use for a highly nutritious snack. Discard the seeds though - in the bush - to ensure future crops. Aboriginals always thought of the future, no doubt that is why they have inhabited this country for 60,000 years at least. Maybe our race should do the same - think of and plan for a future.

**NATIVE ROSELLA** (*Hibiscus heterophyllus*). Petals are quite sweet and are

.... Continued page 26

## New edition of ATCROS out

With this edition of *Quandong*, current 1994 members of WANATCA will receive a free copy of the new 1994-95 edition of ATCROS, the Australasian Tree Crops Sourcebook.

Now updated and expanded to 88

pages, the Sourcebook contains a mass of useful tables, about half on characteristics and growing of relevant plants, the rest a Directory of organizations and suppliers of plants, seeds and services in the tree crops area for the whole of Australasia.

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[ACIAR Forestry Newsletter / April 1994]

## Tropical eucalypt clones for oil production

Only a few tropical eucalypts can produce medicinal-grade *Eucalyptus* oil in sufficient quantity and of the required quality to interest commercial producers. The source of most oil of this grade is from temperate species like *E. globulus* subsp. *globulus* and *E. smithii*, leaving countries of the lowland tropics with little alternative but to import *Eucalyptus* oil for use in local medications and antiseptics.

The recent discovery that plantations of the Petford provenance of *E. camaldulensis* can provide cineole-rich, medicinal-grade *Eucalyptus* oil as an additional product to wood offers a means of resolving this problem. In Thailand the Royal Forest Department is testing *E. camaldulensis* for the commercial production of oil as part of ACIAR's project, 'Improving and sustaining productivity of eucalypts in Southeast Asia'. A transportable still is under construction for use in pilot commercial distillations of oil in suitable plantations.

A parallel project is underway in Australia to boost the relatively low yields of oil from routine plantings of this provenance and so enhance the economics of oil production. This project involves collaboration between CSIRO's Division of Forestry and the Australian National University. The aim is to utilise the substantial between-tree variability in oil traits noted in the provenance, the high heritability for oil yield, quality (percentage of 1,8-cineole) and the relative ease of vegetatively propagating the species to boost oil yield.

The key resource for the project is a field trial of 204 Petford *E. camaldulensis* clones. Propagation of most clones was from juvenile

material but a few adult clones were propagated from grafts by cuttings and tissue culture. With the assistance of the Queensland Forest Service the trial was established in 1991 near Kuranda in northern Queensland. The site is representative of the conditions in the seasonally dry tropics where this provenance might grow commercially for wood and oil production.

Researchers have recently undertaken a major assessment of the trial 2.2 years after planting. Reliable selection for oil traits is feasible at this age. Despite two low-rainfall years, growth has been reasonable with tree height averaging 4.9 m and with the tallest trees over 6 m. The trial included a vigorous seedling control of Petford origin. In selecting clones with the best combination of traits, the aim is to match or better the seedling control in growth traits while aiming for the best possible oil yield and cineole percentage (not less than 66%). A tentative selection has been made of 10 clones. Testing has confirmed five of these clones as good candidates for mass propagation by cuttings. Testing on the remaining five clones will take place shortly. The CSIRO Division of Forestry in Tasmania will store and distribute selected clones as tissue cultured plantlets.

The collaborating partners are keen to hear from organisations interested in acquiring the selected clones. For further information on the availability and cost of the clones please contact the author at CSIRO Division of Forestry, PO Box 4008 QVT, Canberra, ACT 2600, Australia

— John Doran, CSIRO Division of Forestry, Canberra

... continued from page 23

eaten as a lolly.

**MAT RUSH** (*Lomandra longifolia*). They know this as "bush rice" but the ripe seed is edible but needs to be soaked in water for some time to soften before cooking.

**GAHNIA SPP**. Seeds are pounded and used for flour, some species can be ground "as is", but others require various treatments before they can be milled.

**BUSH GRAPE** (*Cissus antarctica*). An excellent medicine for healing (general wounds, and after surgery) when large quantities of whole fruit, seeds and all, are eaten.

**BRACKEN** (*Pteridium esculentum*). The very young shoots can be eaten raw, or lightly fried with chopped onion plus a dash of coconut milk (optional). The jelly-like juice from young stems is an antidote for insect bites and stings, also for burns. A sort of no charge 'Stingos' and just as effective.

**CASUARINA SP**. At least one species of She Oak was used as a narcotic in the inland. The half-ripe seed cones were placed in the mouth when travelling, rolled around to encourage saliva flow and occasionally nibbled. The chemicals in this fruit must have slowed down some of the body's functions, certainly causing water retention and a thirst quencher. I wondered whether it may have had a similar effect as Pituri.

**AS CONTRACEPTIVES**. Women used a preparation from the fibrous roots of *Casuarina cunninghamiana* to avoid pregnancy, while careful males based their method on chewing the fresh, red gum tips. This is said to reduce the sperm count quite considerably for a few days.

## BUNYA NUTS - A TOUGH NUT TO CRACK

Having been inundated with Bunya nuts lately and not having near enough seed boxes to plant them all, I've had to revert to the "Bush Tucker" books to reduce their numbers. Have you ever spent an entire afternoon "peeling" the nuts from the surrounding flesh? Not an easy job, and lots of cuts and stab wounds result. Do this while the cones are still green; once they've dried out, forget it! Anyway I have some hints that may help other foragers when dealing with these nuts. Various books suggest boiling them for 20 minutes. While this gives a good soft edible nut, it's very difficult to cut the hot nuts out of the slippery shells. While they are too soft for a nut cracker they are still pretty hard, so a good sharp knife is essential. If they cool down or dry out, the shells seem to go hard again! (Using this method, the nuts are OK, a bit like pine nuts, but they don't keep for very long). I tried roasting them at 250°C for a range of times up to 20 minutes, by which time they were fully roasted. While you could easily break the shells open with a nut cracker they were bloody hard to eat, although a good nutty flavour was the reward! Left for a few days, the roasted nuts softened a bit and were much better. Mind you, both kinds only received cautious attention from our local SGAP members at the last meeting.

So I threw away the books and tried another idea. I baked the nuts for 10 mins only at 250 C, in a pre-heated fan-forced oven. This was enough to harden the shells so you could use a nut cracker, but left the nut uncooked and soft. After shelling them, I cut some of them up into bite sized pieces before roasting for a further 5 mins at 250°, occasionally shaking them to ensure even cooking. While

they still came out quite hard, they were at least in manageable sizes (provided you don't have false teeth). Anyway, these bits were great when put into a chicken stuffing with herbs (not native) as they softened a bit and gave a pleasant flavour. Meanwhile, the rest I put into a blender with some water to mash them into a coarse paste and used this with stock, cream and brandy to make the sauce. Pretty yummo! So I reckon you could use Bunyas as a substitute for chestnuts with pretty good results. I think they'd also make a great "Bunyanut butter", but I don't have any recipes or a heavy duty blender/steam roller necessary to crush the roasted nuts. It would certainly be a "crunchy" style.

I've also put down a bottle of "Bundaberg Bunyas": a recipe from one of the Bush Tucker books. This involves a fiddly job of coating the nuts with toffee (which didn't stick anyway) and then putting them into a bottle of rum for 3 months. (Mind you, the SGAPees were pretty keen to taste those, but they'll have to wait!) I'll let you know the results of this venture if I can still type afterwards!

— Geoff Warn, Figtree, NSW

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# West Australian Nut & Tree Crop Association (Inc)

PO Box 565 Subiaco WA 6008 Australia

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## CALENDAR OF FORTHCOMING EVENTS

1994

Nov 16 Wed \*Annual General Meeting (Sujit Dey - *Growing Luscious Lychees under Perth Conditions*)

Dec 4 Sun Christmas Field Day/ Social, Kings Park

1995

Jan 10 Tue Executive Committee Meeting

Feb 15 Wed \*General Meeting (Bee Pollination & Yields of Nuts & Fruits?)

Apr ?? Sun WANATCA 'Bring & Buy' Meeting?

May 17 Wed \*General Meeting

Aug 16 Wed \*General Meeting

Sep 11-15 §ACOTANC-95, Lismore, New South Wales

Nov 15 Wed \*Annual General Meeting

**Deadline for next issue: Jan 20**

\*General Meetings are held starting at 7.30pm. Venue: Greening WA, 1118 Hay Street, West Perth. These meetings usually include a current magazine display.

§ For contact details refer to the Tree Crops Centre.

*Material originating in Quandong may be reprinted; acknowledgement of author and source requested.*

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