



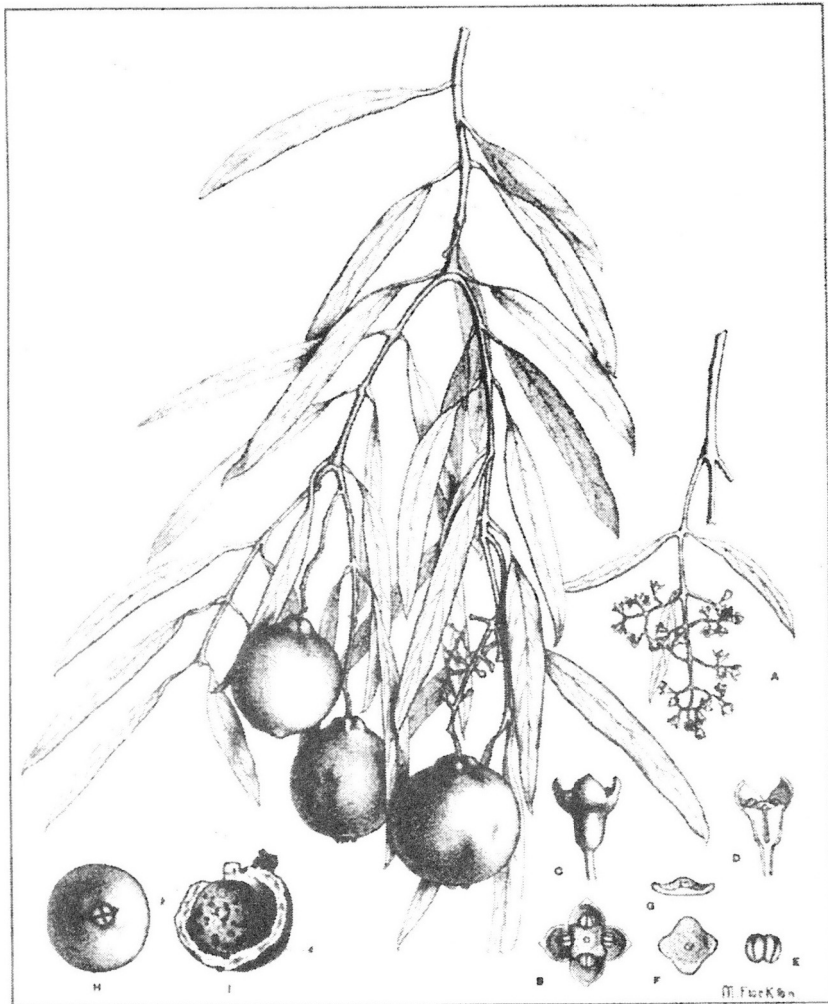
# Quandong

magazine of the  
West Australian Nut & Tree Crop Association (Inc)  
[www.AOI.com.au/wanatca](http://www.AOI.com.au/wanatca)

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Quandong • Fourth Quarter 2002 • Vol 28 No 4



The Quandong (*Santalum acuminatum*) (See: About the Cover, p. 2)

**DON'T MISS THE  
NEXT MEETING: Tuesday November 12, 2002: 7.30 pm**

We are fortunate to again have input at this meeting from Ian Crombie, Curator of Horticulture at Perth Zoo, and our guide at the September 22 Field Day & Social. Ian will be talking on:

***How Plants and Animals Interact at Perth Zoo***

As well as providing pleasant habitats for the animals, the Zoo plants are also the source of much of their food, and the plants may benefit from the animal products too. The food cycle within the Zoo is a massive one, involving tons of material each day. Ian will be telling us the fascinating details of this cycle and of the problems of maintaining the grounds to support the very varied animal and human presences there.

*Full details on the attached leaflet.*

*Visitors welcome. Queries to Tree Crops Centre, 9388 1965*

**Annual General Meeting**

This meeting is our AGM, and the occasion to elect half the WANATCA Executive. Some retiring members will be standing for re-election, but new members will be very welcome. Contact Stanley Parkinson if you'd like to discuss this.

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***About the Cover***

The cover drawing shows Western Australia's best-known native fruit and nut, the Quandong, *Santalum acuminatum*. See the story on page 3.

*Material appearing in Quandong is the views of the authors. It is offered in good faith, but neither WANATCA nor Quandong take any responsibility for any use of this material.*

[Countryman Horticulture / 2002 Jan 3]

## Coles backs bush food

**Coles supermarkets are leading a charge to increase the amount of Australian bush-foods eaten in Australia.**

The supermarket chain and the CSIRO and Aboriginal communities have called on farmers to get involved in the commercial cultivation and harvest of indigenous bush tucker.

Native mint, mountain pepper, wild chillies, muntries, ribberries, acacia seeds, rain-forest nuts, native limes, bush tomatoes, lemon myrtle, quandongs, and Victoria river plums are some of the exotic cavalcade of indigenous foods already appearing in our restaurants, shops, and now supermarkets.

The aim is raise national awareness of the richness, diversity, nutritional and culinary virtues of bush foods, to help Aboriginal groups establish new industries around it, to develop sustainable enterprises for the Outback, to help retain native species and to fund research into novel foods.

The inspiration came from Coles managing director Alan Williams, after a visit to Arnhem Land last year and subsequent discussions with Aboriginal groups and the Northern Territory Government.

Coles encouraged its suppliers to establish links with Aboriginal communities for the supply of native foods and ingredients.



*Retired bushman, Duke Wellington, of Geraldton, is a staunch advocate of bush tucker like these quandongs*

They now sell three ranges of bush foods in selected supermarkets nationally.

However it was quickly realised that a significant increase in demand for indigenous foods could outstrip the available supply for some types of food, especially if it relied on

### **Quandong Links to ATCROS**

Many of the articles, advertisements, and news items in Quandong refer to organizations and people who are listed in the Directory section of the ATCROS Web Site, which is at:

<http://www.AOI.com.au/atcros>

In this issue, items underlined in the text have Atcros reference numbers listed at the end of an article or elsewhere close by. This is so that readers can get more contact details.

ATCROS usually lists name, address, and phone numbers, also fax, e-mail, and web page details where available.

Quandong: Atcros ref. <A1466>.

wild harvesting. Discussions among the participants all pointed to the need for commercial cultivation and harvest.

To ensure Aboriginal groups have a share in this, Coles established an Indigenous Food Fund to be used by Aboriginal communities to improve cultivation and harvesting methods. The fund was launched by Mandawuy Yunupingu earlier this year with a \$20,000 donation by Coles.

CSIRO researchers Dr Maarten Ryder and Yvonne Latham are working on ways to domesticate native plants, improve their yield and find the best ways to handle them at harvest.

“When you consider the wheat we eat has been gradually improved over 7000 years, it gives some idea of the challenges of developing new crops from wild plants.

“We are also looking for ways to develop a more sustainable agriculture for Australia, which is sensitive to the soils, water, biodiversity and climatic cycles of the con-

tinent,” he said.

“Native plants have evolved to our conditions over tens of millions of years. They appear to be ideal for cultivation in many conditions.”

Dr Ryder says the benefits of cultivating native foods include conservation of wild resources and protection of biodiversity; valuing Aboriginal knowledge; potential for combating salinity, land degradation; creating incomes, jobs and new enterprises for Aboriginal communities; encouraging diversity in traditional agriculture access, and new sources of healthy food for the nation’s diet.

Dr Ryder says that the present native food industry is worth about \$14 million a year.

“But we can envisage a day when it may be worth ten times, even 100 times that, if we go about developing it in the right way. We have the example of the wine industry, with exports now worth \$1.7 billion, to prove it can be done.”

*[Australian Horticulture / 2002 Sep]*

## Pistachio potential in the wheatbelt

**Pistachios could give Western Australian farmers something that other reforestation species cannot offer — an income.**

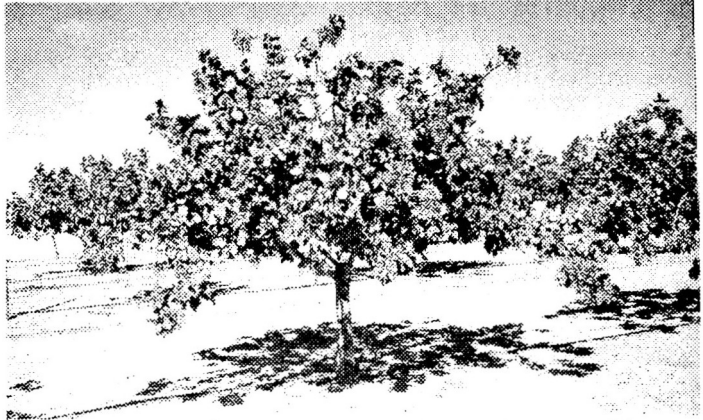
Since 1990 world pistachio production has increased by 30% and is expected to continue rising. Last year Australia produced 1400 tonnes, which did not satisfy domestic demand. With Hong Kong, Japan, Vietnam and New Zealand as export markets, industry expansion is desirable.

WA produces less than 1% of Australia’s crop. Pistachios, however, are one of the few nut trees that tolerate moderately saline water, of which the wheatbelt has a plethora. Should more be grown there?

WA Department of Agriculture’s Andrew Quin says small acreages planted for reforestation could subsequently generate income — though the concept should be seen in perspective.

Quin says: “People might not make a fortune out of pistachios but they’ll make something - which is better than many of the present options. The wheatbelt needs more trees (to reduce recharge and lower the water table) but until now we’ve planted mainly gum trees, which give few returns.”

For viability pistachios must be planted in large enough numbers to offset bird losses. Growers should also realise that trees take about seven years to fruit. However, advantages outweigh disadvantages as regards sustainability. One plus is that established trees survive just on rainfall — though, understandably, yields decrease.



*A fruit-bearing pistachio tree about eight years old*

“But that ability to rely on rainwater reduces the grower’s risk,” says Quin. “It means you could abandon an orchard for 20 years without losing your trees or environmental benefit, then irrigate and bring them back to yield.”

Pistachios do not tolerate severe salinity, and for good yields Quin advises using decent land — but once growing there they will tolerate salty water, as grower Bert Hayes proves.

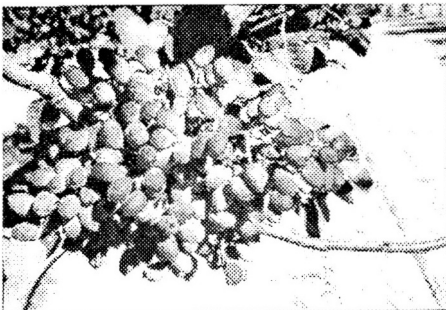
Hayes planted pistachios at Northam in 1987 and initially had difficulties with stock quality. As WA was isolated from the rest of the industry, in 1994 he and wife Angie visited

eastern Australian growers for advice. Their business, WA Pistachios, took off and today comprises 2500 trees of varying ages, on 10 hectares irrigated with blended water.

“Commercial orchards need irrigating but fresh water is limited. We take fresh from our dams and mix it with equal amounts of saline underground water, to get water which is 5 msm,” Hayes says.

“But the last two years were so dry, we had to convert to just saline water (10 msm) from late December until end of summer. The trees went alright on it but I don’t think it’s a good thing.”

During research in the United States he



*A bunch of almost ripe pistachio nuts*

## **Pistachio Nut Trees**

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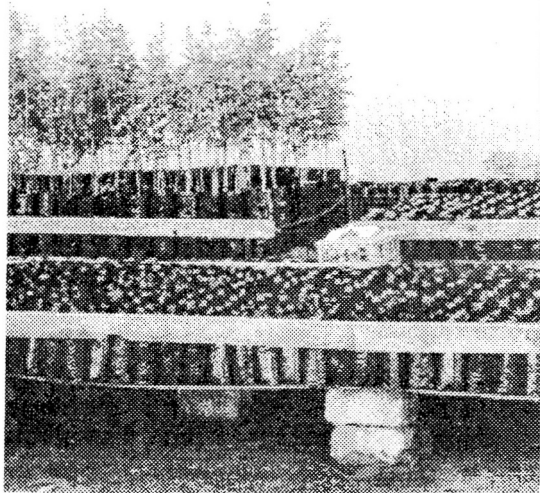
### **W.A. Pistachios, Northam**

(Bert & Angie Hayes) • <A3114>  
Phone/Fax 08-9622 9513  
wapistachios@wn.com.au  
PO Box 429, Northam WA 6401

witnessed that pistachios irrigated with fairly salty water showed no noticeable drop in yield or quality. But his reservations relate to the heavy nature of his soils. "They don't have good leaching characteristics. I think if you kept pumping on saline water continuously you would build up salt in the soil."

After commissioning a feasibility study two years ago, Hayes felt confident enough to expand his orchard and nursery, which is the only one of its kind in WA. He sells mostly grafted trees, though for clients who choose ungrafted seedlings he offers a grafting service on their properties. The Department of Agriculture discourages people from buying outside WA due to a bacterial disease currently affecting some eastern Australian trees.

Hayes is also installing a processing plant which, again, will be the state's sole such facility when it starts operating next year. Having recently marketed fresh nuts for the first time, he looks forward to value-adding through processing and packaging.



Seedlings in the Hayes' nursery before grafting

Several local growers want to use the facility. According to Quin, the presence of a cluster of growers who can form a cooperative and market their crop is a positive indicator for the industry.

Director of the Tree Crops Centre, David Noel, believes the fledgling WA industry could thrive if researchers and growers broke with convention and tried new varieties. Production currently is confined to the wheatbelt because that is where winters are cold enough to create the chilling that commonly grown varieties require for good flowering the next season. Noel says varieties which flower well without chilling should be explored.

Another radical change he suggests is introducing varieties that yield closed nuts, which would lead to a completely different end product. At present all commercial varieties yield partially open shells — because pistachios traditionally are sold in-shell. No other sorts of nuts are sold in-shell these days

except for novelty value at Christmas.

"People want ready-shelled nuts, and the key to dramatic expansion in pistachio sales is to supply the finished kernel," Noel says. "For this you want closed shells — so the kernel isn't susceptible to decay or staining from moisture — and shells which are easy to crack and process."

— *Julia Berney.*

(A new local publication, *Pistachios in WA: An Income-producing Reforestation Opportunity for the Wheatbelt*, is available from Granny Smith's Bookshop — see ad p. 32).

WA Pistachios: A3114.

## Changes at WANATCA HQ

There will be a number of changes in Association and related arrangements, as a result of David Noel retiring and giving up the Subiaco premises, on November 30.

Granny Smith's Bookshop will remain on site at 208 Nicholson Road, but will be merged with the The Craft House run by Ingrid Sims at No. 210. The Bookshop will use the Craft House phone, 08-9381 2880.

The Tree Crops Centre will drop back to only handle specific individual projects, and will no longer offer a general tree crop advice service. It will retain the current phone number of 08-9388 1965.

## Offices sought

The WANATCA Exec is currently searching for a new office, probably shared with other like-oriented organizations, and possibly in the Subiaco area.

Anyone with suggestions in this respect, please contact Stanley Parkinson on 9386 2518.

After December 1, the present number of 9388 1965 will have an answering machine on it, giving information on where the various services can be located.

During the change-over period, all other mail and fax contact details will remain as at present.

## Pistachio Seminar & Workshop

Northam (Hayes Plantation & Nursery)

Friday March 14, 2003. Full Day Seminar.

### Wheatbelt Landholders & Communities:

- Are you thinking of diversifying?
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- Are Pistachios for you?
- Will they fit your water situation?

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- To see an established plantation & nursery.
- To hear how pistachio farming, processing, and marketing is already happening in Australia.
- To hear from the people who are doing it.

### Major speakers:

- Bert Hayes — a leading WA pistachio grower.
- John Duff — Agricultural and Natural Resource Management consultant.

### Register as below:

- Fax to WANATCA on 08-9388 1852
- Mail to WANATCA, PO Box 565 Subiaco WA 6008
- Phone to Tree Crops Centre on 08-9388 1965
- Website: [www.AOI.com.au/pistachioseminar](http://www.AOI.com.au/pistachioseminar)

Cost: Pre-payment, \$25 per person, \$40 family. At gate, \$30 per person

[Australian Food Plants Study Group: Newsletter / 2001 Feb]

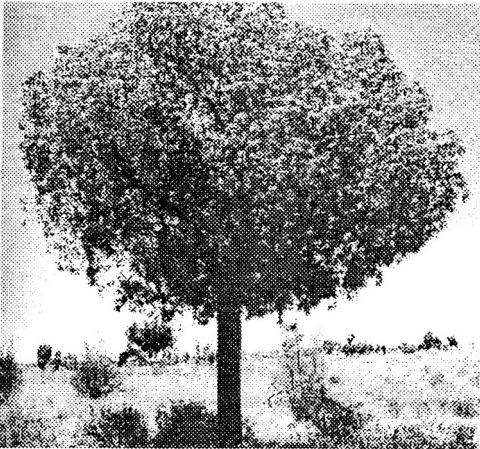
## Kurrajongs and colder climates

During the excellent ASGAP conference in Brisbane 1999 and the associated Darling Downs tour, it became apparent that in parts of Southeast Queensland the Bottle Tree (*Brachychiton rupestre*) is being used as a landscape feature.

Its striking bottle shaped trunk cannot but help catch the eye. At times it seemed like an icon among Australian plants in the region. We passed at least one park which had rows and rows of evenly spaced and sized Bottle Trees — a most startling effect. What can we do in Canberra to at least partially compete?

The Bottle Tree is one of about 12 species of the genus *Brachychiton*. All are endemic to Australia. The genus is in the family Sterculiaceae which also includes the Australian plant genera *Thomasia* and *Lasiopetalum* used in cultivation. The Cocoa plant is the most economically significant member of the family worldwide.

While the Bottle Tree can be grown where I am in Canberra — in the National Botanic Gardens at least — it is endemic to Southern Queensland and a small area of Northern New South Wales.



*Brachychiton gregorii*

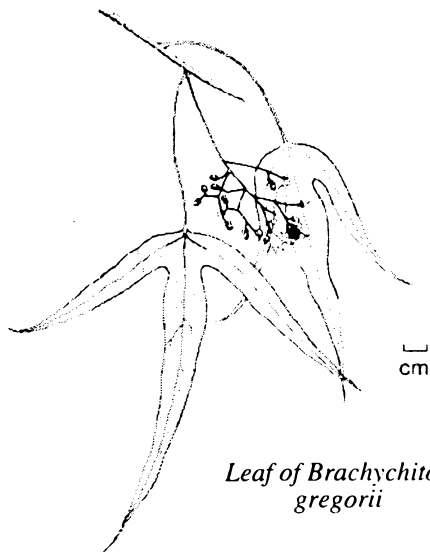
Only one of the species of *Brachychiton* is endemic to the ACT, the (Southern) Kurrajong (*Brachychiton populneus*) — so named botanically because its leaves are like those of poplars in shape.

Kurrajong was the Aboriginal name for the tree. There is also a tropical Kurrajong (*Brachychiton diversifolius*) and a desert Kurrajong (*Brachychiton gregorii*), both with similar properties to the local Kurrajong. Because the local tree was so widely planted in the past by farmers who valued its leaves as a reserve stock food in times of drought, it is difficult to be certain of its original distribution.

Nevertheless it grows in a wide range of habitats in Queensland, New South Wales and Eastern Victoria as well as the ACT, extending from the coast to the tablelands, western slopes and the eastern part of the western plains. In the ACT one area of occurrence is among granite rocks in Namadgi National Park, often in association with Drooping Sheoak (*Allocasuarina verticillata*) and Yellow Box (*Eucalyptus melliodora*), two species often characteristic of granitic soils in Southeastern Australia. There is at least one Kurrajong growing near my rural hobby block near Canberra at Burra Creek. It is growing in a position where it is not likely to have been planted, among granitic rocks near Drooping Sheoak, Yellow Box and Candlebark (*Eucalyptus rubida*).

Could the Kurrajong then be an icon in parks round Canberra, or at least be given some more emphasis in future plantings here? It grows into a tree and is probably not suitable





Leaf of *Brachychiton gregorii*

for small gardens. It has already been planted in Canberra to some extent, perhaps more commonly in earlier times than recently. There are mature specimens in the centre strip of Limestone Avenue, Ainslie, and other plantings in suburbs such as Barton and Forrest and in Queanbeyan.

The Kurrajong is certainly a remarkable Australian plant. While it does not have the very large trunk of the Bottle Tree it does have a tapered broad trunk, apparent even in young seedlings. The spongy trunk and roots were a source of water for Aboriginal people. When you take a Kurrajong out of a pot ready to plant large water-holding swellings are already visible on the roots. It can grow in areas of rainfall as low as about 400 mm per annum with a comparatively dense canopy providing year round shade because of these water storage properties.

Aboriginal people also used the Kurrajong as an important food source. The tap roots of seedlings were eaten as well as the seeds, which were eaten either raw or roasted. They are nutritious with analyses of 24 % fat and 18

% protein as well as significant amounts of calcium and other minerals. The protein level is not inflated by nitrogen in the seed coat, which can significantly influence protein levels in Wattle seeds.

A flour made by crushing the roasted seeds is apparently now commercially available, contributing additional flavours and a nutty taste from a bush food to the food industry. The dream of a tree crop rather than cereals which need high energy and other input providing staple food has long been held by those seeking more sustainable agriculture. The Kurrajong has at least some potential for making a contribution, and could be worth further research.

The numerous large seeds are produced in pods which harden, split on one side and eventually fall to the ground. According to the leader of the ASGAP Study Group for *Brachychiton* and Allied Genera, Dr Kerry Rathie, there are trials at present into ways of mechanically ridding *Brachychiton* seeds of the accompanying irritating hairs.

Aboriginal people also used the bark of the Kurrajong for making baskets. The striking flowers, cream flecked with red, produced in summer, are valued by beekeepers as a source of pollen and nectar. The early settlers made

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a passable coffee substitute using roasted crushed Kurrajong seeds, though the drink tasted more like beans than coffee.

Whatever their merits as a tree with practical qualities, for landscaping reasons alone more Kurrajongs could be planted in and around Canberra. Their striking appearance, which includes the attractive red new leaves, their deep shade, their deep rooting habit and drought resistant qualities, their usual resistance to frost, their adaptability to a wide range of soil types and their liking for rocky habitats as well as the food they provide for native wildlife, means they have much to offer.

Kurrajongs can be grown from seed with hot water treatment. Local stock in pots is available from Yarralumla Nursery and perhaps from other local growers. There is a

single-leaved form available, originally more from the eastern part of the Kurrajong's range, or a form with a trilobed leaf, more characteristic of the western part of its range, and known as subspecies *trilobus*.

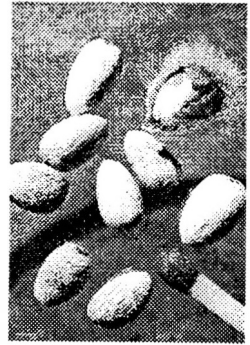
Both forms are available in Canberra. Those Kurrajongs I have planted on my rural block have grown slowly but steadily with minimal attention and no problems apart from the occasional leaf chewed, probably by a wallaby.

Even the occupant of a unit or place with a small garden need not be denied, as Kurrajongs make suitable indoor plants.

— Ian Anderson

Illustrations from *Bushfires & Bushtucker*, by Peter Latz.

Australian Food Plants Study Group:  
A2894.



*Edible seeds of  
Brachychiton  
gregorii*

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[Australian Nutgrower / 2002 Sep-Nov]

## "Positive future" for Australian chestnuts — value-adding with frozen peeled nuts

The Australian Chestnut Company was established in 1998 but our association with chestnuts started long before then. My husband Brian and I were living in suburban Melbourne and decided to move to 'the country'.

In 1986 we purchased a small property in Eurobin about half way between Bright and Myrtleford in North East Victoria. The property already had around 100 young chestnut trees planted and so began our involvement with chestnuts.

In 1990 I became a member of the steering committee given the task of establishing a national chestnut association, which is now the Chestnut Growers of Australia, and I was an inaugural Director and Secretary. Brian is currently a Director on the board. Because we were so involved with the industry, we could see very clearly the number of trees that had been planted and the anticipated crop that would be coming on-line in the future.

With demand static and industry trends indicating a move towards quick and easy food preparation, the future for the industry was not looking very bright. We felt a sense of urgency but didn't know quite what to do. The industry focus was on the expansion of the domestic chestnut market, but this was proving to be very difficult. Limited levy funds meant there was little spending on promotion and traditional chestnut consumers are an aging population.

In 1994 a horticultural marketing consultant approached the industry and offered to assist in developing export markets. He obtained a marketing skills program grant to take a group of growers on a market visitation to Japan. Brian went on that first initial trip



*Jane Casey with high-quality frozen peeled chestnuts*

and both he and I were involved in the Australia Chestnut Network which was a group of around 25 growers who wanted to pursue export markets for fresh chestnuts.

1995 saw a change in direction for us both and we separated from the Network group. However, we did not want to give up our interest in exports and so we formed a small group, but significant in terms of volume, with Nightingales (the largest producers of

Australian chestnuts) and Ardern & O'Kane. This was to become Australian Chestnut Marketing.

In 1995 Brian and I went to Japan on behalf of this group and as a result of that visit secured a Japanese customer for fresh chestnuts who we have supplied every year since 1996. This customer however, is quite small in terms of volume and it became apparent quite early on that the issue of what to do with the increasing volumes of product is not going to be solved with fresh exports to Japan. In the future, larger volumes of fresh chestnuts may be exported but not at the high prices often touted for export grade chestnuts.

### **Bolt of lightning**

During that trip we were shown frozen peeled chestnuts imported into Japan from China. These were like a bolt of lightning for us. Prior to seeing this product our only experience with processed chestnuts was the canned products brought in from Europe, which did not excite us at all. But the small yellow frozen nuts from China were something quite different. As I held a sample in my palm on a footpath in downtown Tokyo, I said "We have got to produce these!"

And so began the task of developing frozen peeled chestnuts. After a small but significant research project at Food Science Australia in November 1996, both Nightingales and Ardern and O'Kane expressed no further interest in spending funds to develop a method to peel chestnuts. In 1997 the CGA was approached, however the Board decided to undertake a feasibility study into processing rather than take over the existing project. Brian and I, with virtually no funds of our own but a strong determination to pursue processing as a matter of urgency, decided to look at all the possible options.

I undertook extensive research looking at machinery in Europe, the United States and New Zealand as well as the current methods and new research being undertaken in China and Korea. This information was passed on to Peter Hall for inclusion in his Chestnut Peeling Feasibility Study that was conducted in 1999.

Taking into account our skills, financial resources and risk threshold, we decided to process Australian chestnuts in South East Asia. However it was another 18 months before a suitable processing company could be found. Luckily, through a conversation I had with Chris Joyce at the ANIC Conference in Albury, I discovered Graeme Haling, an Australian working out of Vietnam.

At last, we had a contact in Asia who we could talk to and who could organise things at the other end of the line. Graeme became a mentor to us and his expertise in export markets and trade has been vital to our success. It's hard to know how we could have achieved what we have without him.

In 1998 the Australian Chestnut Company was created. This private company is wholly owned by Brian and myself. There are no other shareholders and it is not a network or co-operative. It was initiated out of a desire to separate the growing arm (Mountain View Chestnuts) from the value-adding and export parts of our chestnut business. Finally, we were going to start processing.

In 1999, a one tonne trial shipment was sent for processing at an ISO9002 accredited factory in Vietnam. They were sent over fresh in refrigerated containers and they were processed then frozen and shipped back in a freezer container. It was without doubt a complete disaster. Most of the frozen peeled chestnuts received were sent to the tip. However a small amount of the product looked

really good and we sent out many letters inviting chefs to try them. The response was quite good and free samples were sent. Feedback was complimentary and so it was decided to revisit Vietnam and iron out the bugs. So much had been learnt and shipment 2000 was faced much more confidently.

The volume grew to 4 tonne and after some initial hiccups production went smoothly. However, sales in Australia were slow. It was

an unexpected outcome to learn that chefs in Australia generally don't know what to do with chestnuts. The nuts processed in Vietnam were simply peeled using a knife with no heat involved at all. They were raw and like uncooked potatoes, not really at their best in this state. One chef (at a 2-hat restaurant in Melbourne) when asked for his opinion of the nuts said "they're not very good." I asked what he had made with them and his reply was that he defrosted them and chopped them up and put them on top of a cake. Well, no wonder they weren't very good! We could see that educating consumers and chefs was going to be a bigger job than we expected. We have been very fortunate however, to have the support and encouragement of a number of well known and highly respected chefs. Of note is Stephanie Alexander, Maggie Beer, Steve Manfredi and Gabriel Gate, all of whom gave us honest and open appraisals of our product and who actually took the plunge and used it in their restaurants.

But customers were still thin on the ground and by early 2001 there was still stock left in the freezers and costs were mounting. We



*Factory workers in China peeling chestnuts*

were getting extremely disheartened about what we should do. Our strong belief that there was a market for frozen peeled chestnuts was being tested. However in March 2001 all that changed. We were asked to supply frozen chestnuts to Bill Marchetti, a chef and the owner of The Latin restaurant (now closed) in Melbourne. He was travelling to Japan to be guest chef at the Pan Pacific Hotel in Yokohama for three weeks in April. In addition he had been asked to prepare a dinner at the Australian Consulate in Tokyo, celebrating the Cherry Blossom Festival. At that dinner, the main course was Murray cod with mushrooms and Australian chestnuts. We donated thirty kilograms of frozen peeled chestnuts for the event, and although it was quite expensive for us at the time, it turned out to be money well spent.

In April, we decided on the spur of the moment to visit Japan. We just missed Bill in Yokohama but during the trip we met with the importer who handled all the Australian produce for Bill's visit. They liked the frozen peeled chestnuts so much they ordered substantial volumes. We were back in

business. No longer did we have to process and then hope to sell the product, we could now process with the product already presold. Unfortunately though, things never go quite smoothly and the company who processed our nuts in Vietnam pulled out. Graeme helped us find a processor (miracles do happen!) in China and so we moved not only companies, but countries too. The new processing factory is also ISO9002 accredited and is located in Shandong in northern China

Our new Japanese customer also asked if we could supply frozen roasted chestnuts. We had had some experience with this product, having roasted chestnuts at Brown Brothers winery in Milawa over the Queen's Birthday weekend for the past 12 years. On returning to Australia, a sample of chestnuts was roasted, frozen and sent back. The response was positive and so the Australian Chestnut Company commenced roasting and freezing chestnuts.

We roasted one tonne of chestnuts in our shed at Eurobin that year under far from ideal conditions, and when a much larger order was

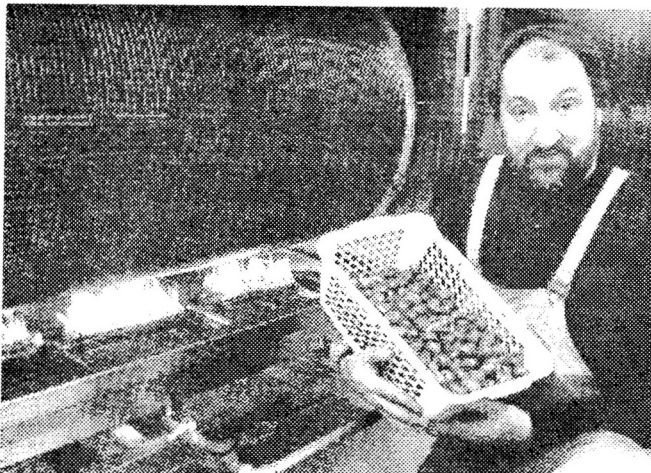
placed for 2002, we knew we had to become more efficient.

The cost of setting up a processing facility in Australia is expensive and to assist with the establishment costs, we received a New Industries Development Program grant. This has been integral to our success, as we could never have afforded to set up a facility on our own. The processing centre, located in Myrtleford, is small and modest but adequate for our needs, both now and in the medium term. Fresh chestnuts are 'marked' or slit with a knife in the outer shell then roasted, cooled and frozen. Last season, when in production we employed eight part-time staff as well as the flow-on effects of employment for freight companies, local tradespeople and suppliers.

The Australian Chestnut Company's focus is on the production of processed chestnut products and the marketing of these products both locally and internationally. Our aim is to be the premium producer of value-added Australian chestnut products with our range increasing by one product each year. It is intended that new products will be researched

and trialled one year, for general release the next. This year we have increased our production of flour and we are now experimenting with Marron Glace.

The most important people to our business, though, are our supplier growers. Special thanks go to the Nightingales and Ardern & O'Kane, who have been supportive of our efforts right from the start. We have now expanded our supplier base to around ten growers



*Brian Casey with prepared fresh chestnuts ready for roasting*

and it is a pleasure to deal with each one of them. We love visiting and walking around the groves, talking and sharing information. The growers understand that if we succeed, they succeed. During our visits we provide information on the markets, what we need and future trends, and the growers advise us on harvest volumes and current conditions affecting size and quality.

One fallacy we had to knock on the head very early on is that leftover second rate produce is okay for processing. In our experience we have found quite the opposite — if you start out with poor quality you end up with poor quality. Processing will not turn second grade chestnuts into premium produce. Our growers understand this and support us by supplying first-grade chestnuts.

The plan for the Australian Chestnut Company is to continue production of frozen peeled chestnuts and frozen roasted chestnuts. For the first time we can really see a positive future for the chestnut industry. The crop is going to increase but rather than be fearful of that, we are looking forward to the increase in volume and the potential to process even more and develop other export markets.

Only this week we were advised by our customer in Japan that our frozen peeled chestnuts are on the business class menu on the Japanese domestic airline, JAS, and our frozen roasted chestnuts will be on sale at a museum shop near Lake Kawaguchiko near Mt. Fuji. It is really satisfying to know that there are customers out there enjoying our chestnuts. We haven't even started to seriously look at the United States, where chestnut imports are already substantial, or the European market.

There is a renewed sense of energy and optimism within the chestnut industry. We

feel it when we talk to growers, and we feel it at the other end of the chain when we talk to consumers and users of our chestnut products.

Now there are Australian chestnuts that are quick and easy to use. Consumers no longer have to ask the question we so often hear, "What do I do with them'?" Now we can give consumers a pack of frozen peeled nuts and a recipe and they can use them with minimal effort. Hans van Gemert, at the 1996 Strategic Plan held in Bright, estimated that the consumption of chestnuts in Australia is one nut per person per year. At the time, it was remarked what a huge potential existed for the industry if we could just increase that to two nuts per person per year. With processed chestnut products now available, that goal is closer than ever.

— *Jane Casey*, Australian Chestnut Company, Eurobin, Victoria.  
<jane@cheznuts.com.au>

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[Countryman Horticulture / 2002 May 2]

## 'Tough' currant tempts growers

**A new "bomb-proof" breed of currant grape and a price hike for dried fruit have some wine grape growers considering a move into the dried fruit market.**

Wine grapes have been an excellent sideline business on Bruce Wharton's Bindoon property. His two hectares of Chardonnay grapes are contracted to large winery Evans and Tate and are a handy little earner on a property mostly devoted to citrus and currants.

But after next season his contract with Evans and Tate finishes and if it is not renewed he will consider budding his Chardonnay over to Carina currants. Mr Wharton said the new CSIRO-bred currants were a "bomb-proof" variety that unlike older varieties did not split and then rot when wet on the vine.

The new breed, combined with a strong rise in dried grape prices this year, had a few growers contemplating a move away from wine grapes. Mr Wharton said there were plenty of wine grape growers in the Swan Valley who had been unable to sell their fruit at a profit.

"They might not have been in a situation where they couldn't sell their fruit, but there were certainly a lot of uncontracted growers out there who sold their fruit below the cost of production this year", he said. "A lot of people are thinking of converting their wine grape vines to drying breeds."

Currant prices have jumped from \$1680 a tonne last year to \$1800/t this year. Mr Wharton grows about 7.4 t of dried fruit to the hectare and therefore earns around \$12,960/ha. For wine grape growers without fixed contracts



*These Chardonnay vines have been good earners for Bindoon orchardist Bruce Wharton but he is considering converting them to a new, and just as lucrative, currant breed*

with a winery, a firm price of \$12,960/ha from a dried fruit packer would be a reassuring return.

Mr Wharton is the WA president of the Australian Dried Fruits Association, and he advises growers considering the move into dried fruit to contact the association before making the change. "We have a lot of information available and a trial plot of currants on a new swing-arm trellis at a property in Muchea", he said.

The swing-arm trellis is designed to dramatically cut labour costs by allowing minimal pruning and mechanical harvesting.

For more details on the dried fruit industry in WA, contact Mr Wharton on 9576 1030.



## Acotanc-2004 Conference on schedule for Gatton, Queensland

*The 10th Australasian Conference on Tree and Nut Crops (ACOTANC-2004) has been confirmed for September 20-24, 2004, at Gatton College near Toowoomba, Queensland.*

*The Conference will be combined with the Second Australian New Crops Conference. The Gatton site is a college of the University of Queensland, and hosts the Australian New Crops Centre headed by Rob Fletcher.*

*Dr Fletcher said that the Conference would run from Monday to Friday, and was ideally placed for delegates interested in attending the 4th International Crop Science Conference, to be held in Brisbane in the*

*following week.*

*"A start has been made on the program structure, and we expect to progressively put information up on the Web, at [www.newcrops.uq.edu.au](http://www.newcrops.uq.edu.au)", Dr Fletcher said. "Both the preceding Acotanc-2001 Conference held in Perth, and the inaugural Australian New Crops Conference held here, were counted as highly successful, which gives us a target to match or exceed".*

*Further information will follow. Enquiries can be directed to Sally Brown, e-mail: [sally.brown@uq.net.au](mailto:sally.brown@uq.net.au).*

Australian New Crops Centre: A1638.

*[The Orchardist (New Zealand) / 2002 Aug]*

## Improving avocado oil shelflife

**New Zealand's leading avocado oil manufacturer has discovered the secret to longer life — not human life, but the life of a bottle of oil.**

When Olivado avocado oil became the new food ingredient on New Zealand's dining tables last year, the company set a target of making its product a world-beater. To achieve that objective, it had to make far better oil than anyone else.

### Research provided greater life

Technology New Zealand funding of around \$90,000 helped Olivado succeed in developing technology that enables its premium cold pressed, extra virgin avocado oil to outlive all other avocado oils and even most olive oils.

The process developed by Olivado at its Kenkeri production plant doubled the shelflife

to two years and is being acclaimed as a breakthrough in food oil technology.

Until now, the longest guarantee was one year, because oxygen and certain natural ingredients in the oil and outside influences affect quality.

"Traditional cold pressed oils are made to be used within a few weeks, because what makes them so naturally good will also turn them rancid in time - often in a very short time," says Chris Nathan, Managing Director of Olivado New Zealand Ltd.

"I've seen good olive oils from Europe that have gone off by the time they went on the shelves here in New Zealand. We were determined to make an avocado oil that would still taste as fresh as the day it was made long after it had been shipped around the world and put on sale."

"Mr Nathan says the company's research programme placed a high priority on developing long-life, quality oil. Technology New Zealand's Technology for Business Growth (TBG) scheme enabled the company

funding to employ research assistance from Massey University and HortResearch to assist with the scientific research.

Together with Olivado's own engineers, Massey helped to develop a stabilising system and find ways to make the oil extracting process more efficient whilst retaining the natural flavour and colour of the oil.

HortResearch studied issues affecting the quality of the fruit supplied from avocado packhouses around New Zealand, which has a direct bearing on the quality of the oil.

Mr Nathan says the development of the

new stability process and the information gained from all the research has already assisted Olivado in gaining the confidence of overseas customers. The company is currently exporting to Australia and Asia and is developing markets in the US and Europe.

Technology New Zealand is part of the Foundation for Research, Science and Technology, a set of government-funded business support schemes that provide funding to support R&D projects in business.

The Orchardist: A1759

[*Australian Nutgrower / 2002 Sep-Nov*]

## **New technology provides walnut trees on their own roots to Australian growers**

**Lewis Nurseries, a company well known in the Australian olive industry for the introduction of High Density Olive Grove technology, is now focusing on walnuts and will commence supply of tissue cultured trees next year.**

As Technical Director of Lewis Nurseries, I believe this offers new growth opportunities for Australian growers. Walnut trees propagated by tissue culture develop a highly branched system of roots that come out at about 45 degrees, and this makes them well

sued to shallower soils than is normally considered acceptable for walnut trees.

Until now, import restrictions have prohibited the import of tissue cultured stock, but legislation has changed and import is now permitted. The selections of walnut propagated by tissue culture have been developed in conjunction with the biotechnology company, Vitrotech, of Spain.

Vitrotech is the first company in the world to successfully commercialise tissue culture production of walnuts and supply these successfully to its representative companies in USA, Spain, Portugal, France, South Africa, and Italy. These are imported as High Health tissue cultures and this development follows the extensive consultation and protocol development with Biosecurity Australia over the last 18 months. Lewis Nurseries will have Chandler, Vina, Serr, Paradox (rootstock use) and IRTA X80 (a high yielding clone for high

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quality walnut timber) available for delivery in 2003. The range will expand in 2004 to include Tulare and Howard, and in 2005, Lara, Fernette and Fernore.

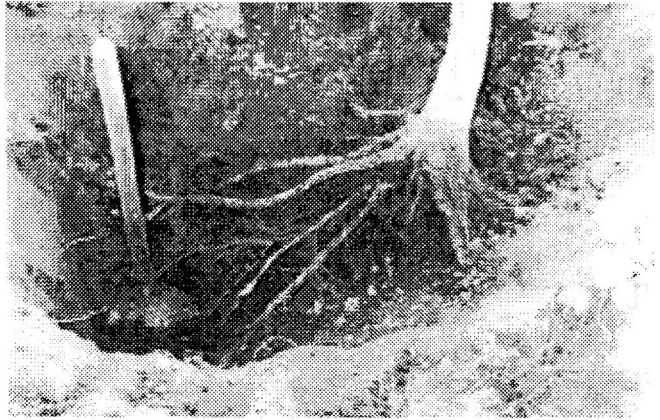
Key attributes of walnut propagation using this technology:

- *Disease freedom.*
- *Varieties that are true to type.*
- *Varieties that are genetically identical allowing development of groves with high levels of mechanisation.*
- *Ability to supply commercial contract quantities of trees to allow development of large-scale projects.*

### **Walnut Opportunities in Australia**

I believe Australia is well positioned to be a major producer of walnuts of high quality to the international market. The new selections of walnuts have been selected with greater heat tolerance which will allow production to be expanded to the major irrigation growing areas of the Murray Darling Basin, as well as the Mediterranean type climatic zones of Victoria, South Australia and Western Australia. Previously walnut production was confined to the cooler regions.

In 1998, a financial analysis was commissioned by RIRDC and conducted by agricultural consultants Hassall and Associates on eight relatively well-known industries. Tea-tree oil, walnuts, and olives, in order of profitability, were the top three with the best potential for returning strong results in terms of benefit/cost ratio, net present value and internal rate of return.



*Young own-rooted walnuts showing the dense fibrous root system*

As well as import replacement, I believe Australia has great potential for the export of nuts. The key European markets of Germany, Spain and Italy offer the greatest potential, targeting the traditional Christmas market. Key advantages are the Australian product will be fresher (by 6 months) and more competitive (due to the exchange rate) than the main supplier of USA to this market.

### **Improved Technology**

Tissue cultured walnuts offer the following advantages:

- *Superior root system that produces a well-branched network as opposed to a largely single tap root system of traditionally grown plants.*
- *Increased tree vigour due to the superior root system. This allows ready adaptation to shallower soils common in Australia.*
- *Earliness to yield with trees producing commercial crops from the third full winter in the ground.*
- *Superior yields compared to traditionally propagated trees. A yield comparison trial with Chandler in California found tissue*

*culture trees produced 47% higher yields compared to traditionally-propagated trees over the first 8 years in the ground.*

- *Genetically identical trees that assists consistency of production and aids mechanization efficiency.*

- *Trees are fully container grown allowing for minimal setback on planting and the ability to plant throughout most of the year.*

### **Efficiency of Plant Supply**

At Lewis Nurseries we are able to work with the customer to ensure that the trees ordered are ready by the planting date. Trees

at point of sale are approximately 40 cm high with trunks of pencil thickness and are supplied in root trainer pots. The potted trees are packed in stackable pallets for prompt delivery throughout Australia and all handling can be undertaken by forklifts, which allows efficient plant movement while keeping plant transport costs as low as possible.

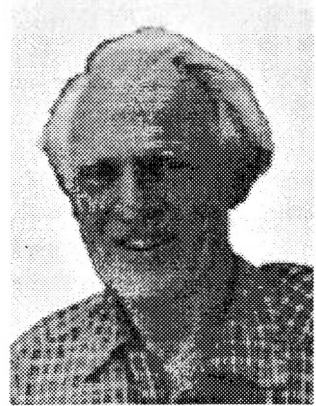
— **Hartley Lewis, Lewis Nurseries,**  
Virginia, South Australia.

Lewis Nurseries: A3072.

## **Stanley Parkinson gets Life**

**WANATCA President Stanley Parkinson has been elected an honorary Life Member of the Association.**

This was in recognition of his stalwart work over the last few years in providing the driving force behind the Association, putting in so much time and effort, always being cheerful under pressure (especially during Acotanc-2001), and offering the best chocolate drink around.



*Stanley Parkinson*

Stanley, a retired surgeon, maintains a superb block with sea frontage at Scott River on the south coast near Augusta (his "Wild 500"). It is still mostly in its natural state, although there are plantings of various fruit and nut trees, and also some Kauris (*Agathis* species), magnificent tall trees related to Norfolk Island Pines, from his native New Zealand.

Well done, Stanley, and thank you.

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## *News on the Jujube*

### **World's largest jujube production base to be built in China's Yellow River Gorges**

**A jujube production base, which will be the largest in the world upon completion, is expected to be built in the Yellow River gorges between the provinces of Shanxi and Shaanxi within 10 years, according to a bilateral development plan.**

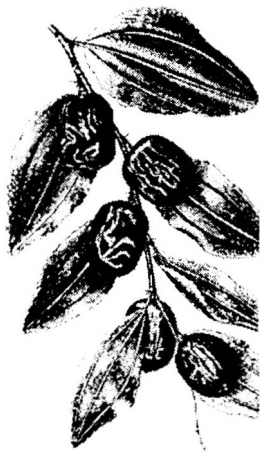
The joint project, to be jointly built by Yulin City of Shaanxi and Luliang Prefecture of Shanxi, is located in an undeveloped area in the Yellow River valley suffering serious soil erosion.

However, the region has a history of 100 years in planting jujube [*Zizyphus jujube*] trees. The jujubes produced in the region sell well in the country and have been exported to Japan and Southeast Asian countries.

Costing 7.7 billion yuan (927 million U.S. dollars), the project will cover 10 counties, 130 townships and 2,620 administrative villages, and a population of 1.33 million.

According to the plan, 200,000 hectares of jujube trees will be planted, and a forest of jujube trees, totalling 66,700 hectares, will be developed within 10 years.

The project region's annual processing capacity of jujubes will be 120,000 tons and its storage capacity will be 50,000 tons after the project is completed.



### **Red Date Brightens up Luliang**

Red dates or Chinese dates (*Zizyphus jujube*) have been widely grown in Shanxi's Luliang Prefecture, formerly a drab area and now a base of red dates in the country. As long ago as Western Han dynasty (206 BC - 25 AD), there were records of date tree planting. In spite of the changes of time, date trees have been increased rather than decreased. In Liulin, one county of Luliang, can be found the very tree (still bearing fruits annually) to which Li Chuangwang (1606-1645), a peasant rebel leader, once tied his horse.

During Ming and Qing periods when Shanxi's merchants made a name for themselves, Luliang's red dates had remained as one of their important export merchandise. Luliang's red dates are world famous for their top quality: big drupe, spongy pulp, sweet taste and no insects.

Since the reform and opening up, governments at different levels of the region have chosen red dates for speciality farming, cultivated red dates as a point of economic growth in agriculture, and nurtured red dates as a bread-and-butter product to help the farmers shake off poverty and get rich. Farmers are encouraged to liaise with scientific research institutes in order to increase their production by using scientific methods.

And in 5 to 7 years' time, a red date belt — a swath of 320 kilometres long and 30 kilometres wide along the Yellow River — totalling up to 3 million mu [15 mu = 1 hectare] will be cultivated to produce over 250 million kilograms of jujube. So let's make Luliang's red dates go out to the international markets and be enjoyed by ever more people in the world.

(Information found by Phil Ciminata).

## Notes on New Books

by David Noël

**The AVOCADO: Botany, Production & Uses.** Edited by *A W Whiley, B Schaffer, & B N Wolstenholme*. Published by CABI, UK, 2002. 416p. Hb. The complete authoritative scientific manual, covering avocado crop production, physiology, breeding, propagation, cultivars, agronomy in world regions. Highly recommended. \*\$312.00.

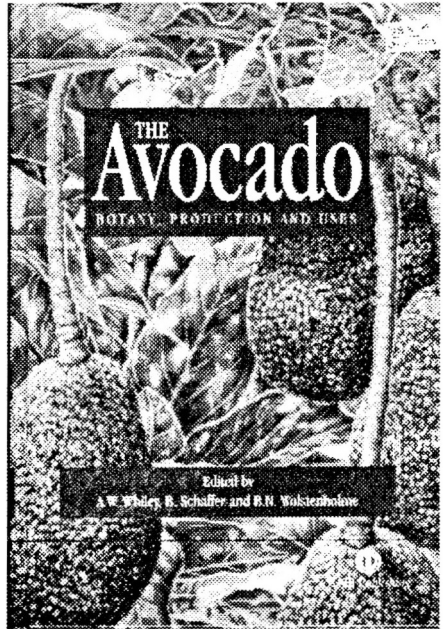
More than 10 years ago, I began to hear rumours about 'The' book on avocados which was to be put together. Now, here it is, and it was worth waiting for.

A truly international effort, with its three editors from Australia, USA, and South Africa, the book also has contributors from Israel, Spain, and Mexico.

Originating in Central America, for the rest of the world the avocado found its spread and development in the 1900s. The main commercial push came from California, where the early cultivar 'Fuerte' was selected in 1911 from Mexican stock. In Australia the avocado began to be treated as a 'commercial' fruit only in the early 1980s, though new-fruit enthusiasts

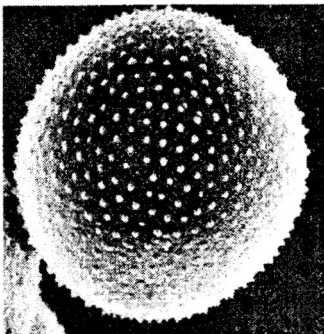
had worked on it much earlier.

Books about the avocado have appeared before now, but nothing to match the



scope and authority of the book reviewed here.

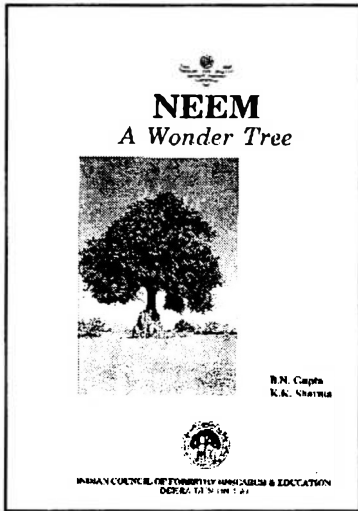
Published by CABI, the UK-government agriculture research and development institute which started out as the Commonwealth Agricultural Bureaux, this is a first-class and comprehensive work. The professional or commercial grower cannot be without this book, in spite of its relatively high price,



*An avocado pollen grain*

**NEEM: A Wonder Tree.** *B N Gupta & K K Sharma*. Published by Indian Council of Forestry Research & Education, 1998. 168p. Hb. Valuable, technically-backed manual on all aspects of neem culture, processing, uses, from its country of origin and millenia-long usage. Recommended. \*\$48.00

Since neem was 'discovered' by the Western world as the source of natural insect-control substances which are harmless to mammals, some excellent popular, scientific,



and specific-use books on neem have been published. But information readily available from India, the country of origin of neem, where it has been in use for thousands of years, has been limited to a book on folk medicine.

In past years, sourcing and finding out about books published in India was relatively difficult, although India's publication output was both large and contained valuable information.

Fortunately, since India began the process of integrating itself into the world economy in the 1990s, the situation has much improved, and the present book is a product of that improvement. *Neem, a Wonder Tree* is a useful Indian view of all aspects of the culture, use, and properties of this most valuable plant and its products, backed by much local research.

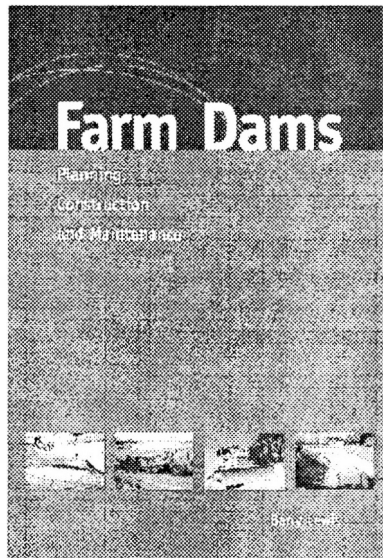
Within this book will be found much useful information not available elsewhere — for example, the study of characteristics of seed or of Azadirachtin content from different provenances really depends on local

knowledge. The book has valuable data on neem propagation by tissue culture and on outlooks for genetic improvement in neem.

**FARM DAMS: Planning, Construction and Maintenance.** *Barry Lewis.* Published by Landlinks, Melbourne, 2002. 186p. Pb. Detailed & practical manual from experienced dam engineer on all aspects of dams, even use for aquaculture. Recommended. \*\$49.50

This new book from CSIRO's publications division has found a very warm welcome from all involved in the storage of rainfall for horticultural and other uses. It goes far beyond the simple mechanics of building dams, covering such things as soil properties, effects of trees on catchment yields, dam maintenance, licences needed, and dam ecology.

In a dry country like Australia, dams are an essential part of water management on individual properties.



\*Price at Granny Smith's Bookshop, see ad page 31.

## Chilghoza pine nuts and NWFs in Pakistan

FAO have put out an excellent series of publications on NWFs (Non-Wood Forest Products). The following is an extract from "Non-Wood Forest Products in the Near East: a regional and national overview" (FAO Working Paper No. FOPW/01 /2, September 2001), part of the section on Pakistan.

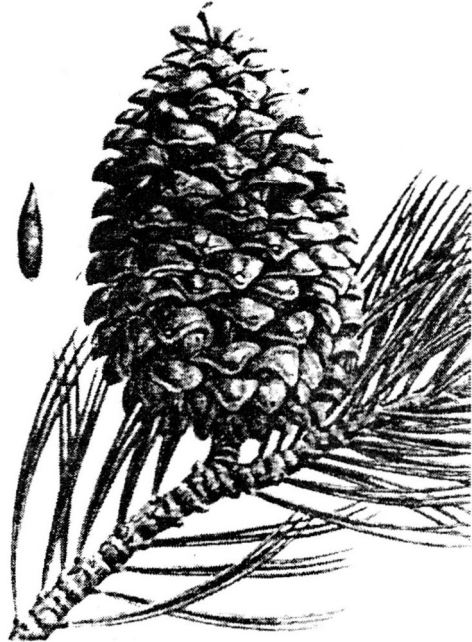
### Main Non-Wood Forest Products

The main non-wood forest products (NWF) of Pakistan are food products such as mushrooms (e.g. *Morchella esculenta*, *M. conica*, *M. anquistipect*), honey, pine nuts (*Pinus gerardiana*), walnuts (*Juglans regia*), fruits (*Diospyros lotus*, *Capparis aphylla*, *Ziziphus spp.*, *Viburnum nervosum*, *Morus alba*), vegetables (*Bauhinia variegata*, *Moringa oleifera*, *Dryopteris filix-mas*), condiments (*Punica granatum*, *Carum carvi*), medicinal plants (e.g. *Valeriana wallichii*, *Artemisia maritima*, *Hyoscyamus niger*, *Ephedra nebrodensis*, *Digitalis purpurea*) and essential oils (e.g. Eucalyptus oil, Peppermint oil, Menthol. Lemon oil and Orange oil)

Other NWF include exudates such as resins (*Pinus roxburghii*) and gums (palosa gum from *Acacia modesta*), tannins (*Acacia nilotica*), utensils and construction materials such as bhabar grass (*Eulaliopsis binata*) and fibres (*Nonnorrhops ritchieana*) miscellaneous products such as soap nut (*Sapindus mukorossi*), neem leaves and seeds (*Azadirachta indica*), walnut bark (*Juglans regia*) and animal products (Honey and silk cocoons).

Mushrooms, pine nuts, some medicinal plants and resins constitute the main export products.

The roasted seeds of *Pinus gerardiana*, locally known as Chilghoza [or Chilghoza] pine, are very popular in Pakistan. Natural pine forests occur in the dry temperate zone in Waziristan, near the Pakistan-Afghanistan



Female cone and seed of *Pinus Gerardiana*

border and in some parts of Baluchistan and the North-West Frontier Province.

Seeds are collected from the still-green cones by climbing the trees and wrenching off the cones with hooks attached to long poles. The cones are buried for about a fortnight until they open. The seeds are then extracted by striking the cones against a hard surface. The pine nuts are roasted by mixing them in a special kind of soil in iron containers placed over fire.

A tree yields 20 to 40 kilograms of nuts. The roasted nuts are sold at Rs1,500 per 40



kilograms. Total production in the country is estimated at 21,000 tonnes of which 95 percent comes from Baluchistan. Total annual value of production is about Rs 37.5 million [Pakistan Rupees Rs 100=US \$ 1.57 in August 2001].

In addition to domestic consumption, the pine nuts are exported to the Middle East. Information on the export of pine nuts during the last five years is given in Table 1, which indicates that about 271 tonnes of pine nuts are exported each year, fetching Rs.6.3 million.

The illustration at left is from *The Chilghoza Pine, An Important Nut Pine of the Himalayas*, by B N Gupta & K K Sharma, published in our first Yearbook (West Australian Nutgrowing Society) in 1975. This

**Table 1. Export of roasted pine nuts from Pakistan**

Year	Quantity (tonnes)	Value (Rs 1000)	Unit value (Rs/Kg)
1986	768	11 131	14.49
1987	234	6 996	29.78
1988	105	2 800	26.59
1989	122	4 063	33.28
1990	125	6 719	53.72
Average	271	6 342	31.57

Source: Tenth World Forestry Congress (1991)

12-page article is believed to be still the best source of information on Chilghosa Pine Nuts.

*Fruit Gardener (California Rare Fruit Growers) / 2002 Sep-Oct*

## Q & A on mulberry propagation

**Q:** Only a couple of limbs remain on my very old mulberry tree. How may I best propagate it to obtain a new tree?

**A:** Information from the Purdue University website (at [www.hort.purdue.edu/newcrop/duke\\_energy/Morus\\_alba.html](http://www.hort.purdue.edu/newcrop/duke_energy/Morus_alba.html)) says, "Mulberry trees can be propagated by seeds, cuttings, or graft wood. Seed should be treated with camphor water before sowing to ward off disease. Apply a thin layer of soil and ashes over the seed after sowing. Keep beds moist."

In the dormant season you may take cuttings with at least three buds and root them in a sponge-rock material, or bury the entire cutting upside down in the soil and keep moist until March (in California) — this helps form a callus — then invert and plant in a pot or the ground. A scion of your mulberry tree grafted

to a seedling mulberry will develop a better root system than roots from a cutting. Layering is also an option, but again the roots will not develop as well as those of a seedling.

— Eunice Messner

[eunicemessner@yahoo.com](mailto:eunicemessner@yahoo.com).

California Rare Fruit Growers: A1115.

### OUR LANDSCAPE

"OUR HUMAN LANDSCAPE IS OUR UNWITTING AUTOBIOGRAPHY, REFLECTING OUR TASTES, OUR VALUES, OUR ASPIRATIONS, AND EVEN OUR FEARS, IN TANGIBLE, VISIBLE FORM. ALL OUR CULTURAL WARTS AND BLEMISHES ARE THERE, AND OUR GLORIES TOO; BUT ABOVE ALL, OUR ORDINARY DAY-TO-DAY QUALITIES ARE EXHIBITED FOR ANYBODY WHO WANTS TO FIND THEM AND KNOWS HOW TO LOOK FOR THEM."

[From: Lewis, P. 1979 "Axioms for reading the landscape". In Meinig, D W: The interpretation of ordinary landscapes: geographical essays. pp. 1-32. New York, Oxford University Press.]

## The Swiss-Roll method of mass seedling propagation

In our nursery operation, time constraints obliged us to develop a method for rapid, simple, and cheap propagation and growing-on of large numbers of seedlings. We grow neem and other speciality crop tree seedlings up to the planting-out stage.

The technique which we evolved we call the "Swiss-Roll Method". You end up with evenly-spaced seedlings set in the layers of a large spiral, where the 'cake' in the swiss roll is made up of potting mix, and the 'jam' is made up of a long strip of thick black polythene which forms the equivalent of plant-bag walls (Fig. 1),

Here's how to set up a system:

*Find a roll of heavy black polythene.*

*Decide how long you want the root system of your seedlings (say 25 cm).*

*Cut the polythene roll to the root length wanted.*

*Decide how long you want the polythene (eg if you want to have 50 seedlings spaced 25 mm apart, plus 15 cm overlap plus a little bit on the other end, you need about 1.5 metres).*

*Take two wooden planks, 25 mm thick, and nail onto a wooden table at a separation of 25 cm (Fig. 2).*

*Put the polythene strip in the track between the planks (25 cm x 1.5 m).*

*Fill the track with potting mix to the height*

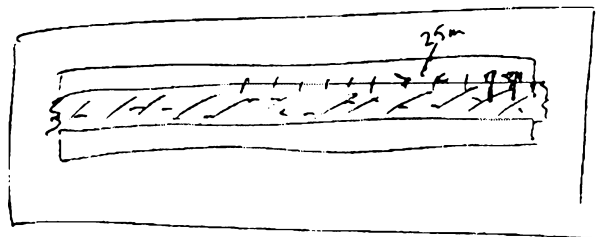


Fig. 3 (view from above)

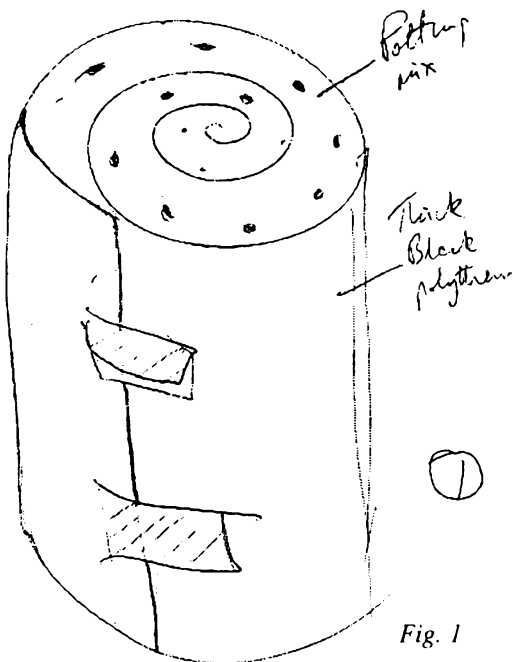


Fig. 1

*of the boards (25 mm).*

*Mark 50 seedling positions, 25 mm apart, on one plank (Fig. 3).*

*Place germinated seeds or small seedlings at the positions marked.*

*Fold back the 15 cm overlap over the placed seedlings.*

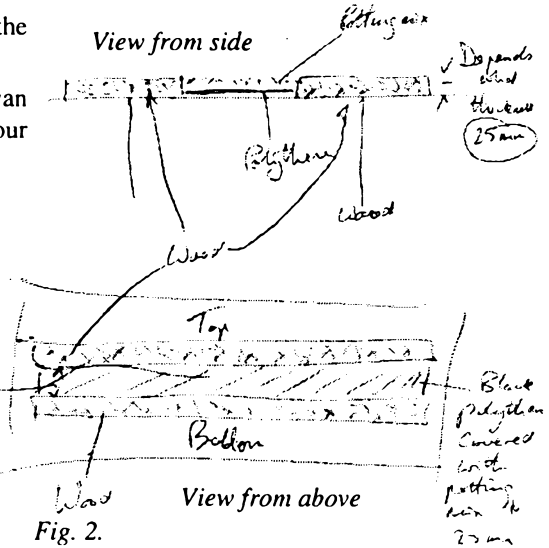
*Roll up the set of seedlings into a 'swiss roll' and secure the end with plastic tape etc.*

*Completed rolls can be placed in a metal tray or*

polythene liner and watered by filling the tray up to a depth of 12 mm.

This system was devised by Bryan Yates of Western Bonsai, who acts as our nursery supervisor.

Seedlings 25mm apart  
 50 Seedlings  
 Rhythm distance =  
 (50 x 25mm + overlap)  
 This distance  
 depends on how long  
 you want the rows  
 to be.  
 Say 25cm



— George Ainsley, Matrise Tree Farms. <matrise@space.net.au>.

[Fruit Gardener (California Rare Fruit Growers) / 2002 Sep-Oct]

## Q & A on low-chill cherries

*Q: I would love to grow sweet cherries but most cultivars require more than 700 chilling hours. Are there any low-chill cherries available?*

**A:** The search for a low-chill, self-fertile, sweet cherry is like the proverbial carrot dangling out-of-reach. During colder winters here in Southern California some members have reported a fair crop of 'Stella' cherries. One of our members planted 'Black Republican', a supposedly low-chill sweet cherry, using the 'Early Richmond' pie cherry as a pollenizer. Although the blooming periods did not coincide, they enjoyed a fair crop of pie cherries.

The best so far are the 'Lapins' (Van x Stella) or 'Starkrimson', as Stark Brothers have named it. I have grown 'Stella', 'Lapins' and 'Craig's Crimson' with 'Lapins' perhaps holding a slight edge.

I tried sprinklers, set to water for one minute every 10 minutes, from 8 am-4 pm. This works but it is a soggy mess, and the trees were white with salts after three months. I also tried 80% shade cloth, but let me tell you a "Mickey Mouse" frame doesn't work with our Santa Ana winds. Again, not worth the effort for the amount of cherries I got. Planting on the north side with a colder area of winter shade may give a reasonable crop.

Far more success has been realized with the application of "Dormex" (hydrogen cyanamide) in the southern San Joaquin Valley — where there is not normally enough chill, but there is enough early summer heat to ripen a very early crop while prices are high. The

problem with Dormex is this: "Big Brother" doesn't consider that you and I, as backyard growers, have the necessary smarts to apply it safely.

Perhaps one other area you might want to look at is the use of the new German rootstocks, 'Giselle' 5 or 6. They dwarf the tree, promote early fruiting and induce very heavy crops. They are available to the backyard grower from the Van Well Nursery, P.O. Box 1339, Wenatchee, WA 98801 and from the C and O Nursery, PO Box 116, Wenatchee, WA 99807-0116.

Don't despair, the best news I've saved for last. Zaiger, with Wilson Wholesale Nursery, has created a self-fertile, 400-500 chill-hour, blonde cherry named 'Royal Rainier'. There will perhaps be a few available this winter at select nurseries that carry Wilson trees. The winter of 2004 should, however, have an ample supply.

— **Frank James**, Specialist for Stone Fruits South.

California Rare Fruit Growers: A1115.

*[Acuminatum (Australian Quandong Industry Association) / 2002 Aut]*

## Polymers with quandong fertigation

**Quandong sudden death syndrome is something just about every grower that I speak to has experienced in some form or another. It is characterised by trees that either suddenly, for no reason at all, just seem to drop dead, or trees that look under a lot of stress for a while before proceeding to drop dead.**

Generally in our orchard we have escaped pretty lightly compared to some others, I have only had five trees succumb to the condition over the last three years. However they have all been quite good-looking large quandong trees which is always very disappointing.

Those of you who were at the Loxton Conference will remember Shane Phillips the Zany Scientist, who spoke on the amazing attributes of polymers. For those who weren't

there, these compounds are able to be put through our drip systems onto our plants. In the soil they are can hold many hundreds of times their volume of water and some are also able to spread throughout the soil like a spider's web. This effectively increases the size of the wetting zone and keeps the soil by the roots moister. The polymers have also been shown to increase the availability of nitrogen to the plant.

So where does this lead??

Well, last summer Shane convinced me to give the polymers a go through our drip system. The summer had been very hot and despite regular watering the trees had suffered quite a lot of leaf and fruit loss. I started applying the polymers in February/March, and within one to two months the trees had stopped losing leaves and had started to put out new growth.

I have continued applying the polymers since then, and this summer did not lose one tree, despite it being exceptionally dry (we have only had 36 mm from November to

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May). Also I have had a fantastic fruit set so far this year.

After seeing the effects that the polymer has had and after talking to other growers I am really beginning to wonder if drip irrigation is the best thing for the Quandong tree. It almost seems to me that the quandong has a shallow spreading root system, and by watering in such a small area it may not be able to use the water as effectively.

If anyone else has any other ideas on this one please put pen to paper and send it in to the newsletter. As for me, I will keep you posted in the future because I am planning to change our orchard over to under tree sprinklers within the next few months.

— **Robin Schaefer**

Phone 08 8584 7781, E-mail: rmschae@riverland.net.au.

*Acuminatum Ed: If Quandong have a root system similar to the Sandalwood the surface roots will not penetrate deeper than 60 cm, even in deep sand (results of research on Sandalwood in WA). The same root research showed Sandalwood roots extended up to 50 metres from a 2 metre high Sandalwood. Planning is under way to convert Nectarbrook Discovery plantation to under tree sprinklers. Unfortunately this means completely re-piping the 3.5 ha.*

### Product details

FLOXIT 134H Polyacrylamide: High molecular weight copolymer of sodium acrylate. For fertigation in drip irrigation and low level systems. Applied at 1-5 ppm of total water volume. In stock solution, maximum concentration of 2500 ppm.

Acuminatum: A1645

Australian Quandong Industry Association: A3421

[The Australian / 2002 Jul 20]

## TREES FEED ON THIN AIR

*Trees may get most of their nutrients from the atmosphere rather than from the soil, a new study has found — meaning forests might be even more sensitive to the effects of pollution and acid rain than previously thought.*

*Scientists led by Martin Kennedy of the University of California, Riverside, went to southern Chile to find some of the cleanest air in the world. There, they studied how well evergreen trees absorbed certain minerals sprayed into the air.*

*The trees absorbed minerals from the atmosphere more readily than minerals from the soil, the researchers reported last week in the Proceedings of the National Academy of Sciences.*

*The work contradicts the commonly accepted idea that most tree nutrients come from weathered rock.*

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[Countryman Horticulture / 2002 Sep 12]

## New fruit varieties due soon

A new apple variety from South Australia, a very early white grape from the US, and a series of black plums are predicted to be the next big varieties for WA, according to David Bazzani, of Olea Nurseries, in Manjimup.

The new Rosy Glow apple will be out of quarantine by Christmas this year and available to growers by 2005.

Mr Bazzani said Rosy Glow, a 'sport' of a Pink Lady apple, had excellent colouring.

Eastern States growers — who avoid the quarantine process — have already started planting the apple.

Other promising new apple varieties on the horizon for WA growers include Sunrise, a summer apple from the breeder Pico in Canada, that picks in the middle of January.

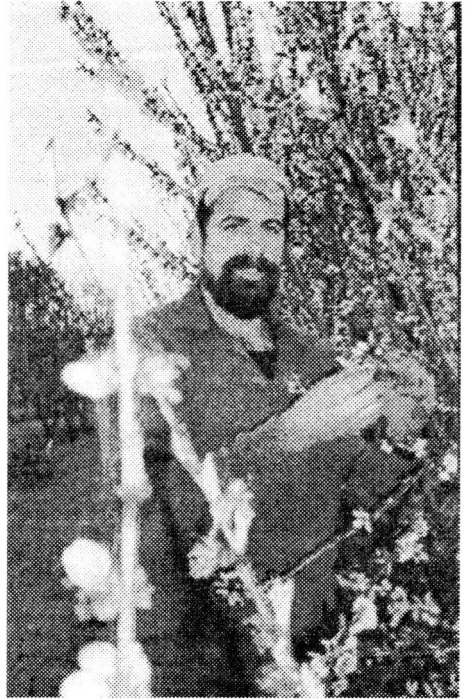
Sunrise would be available for planting in WA next season.

Mr Bazzani said the early apple would be worth a look at in the Perth Hills region. Sunrise fruits just before another early variety, Galaxy, and would help to stop that variety from being picked too early.

The South Australian Tigress apple, a stripey Fuji, was already available.

New table grape varieties from Sunworld in the US were looking promising. Mr Bazzani said.

Sugraone, a very early sweet seedless white grape, would be available in WA next year; Red Superior, a seedless red, would be available in 2004, and Midnight Beauty — an early dark blue seedless grape — would also be available in 2004.



David Bazzani, of Olea Nursery, Manjimup, with new UF Gold low chill peach trees

Four Sunworld 'Black Diamond' series plums would be available for testing by growers next year. The Black Diamond plums were all similar but matured sequentially ensuring a continuing harvest.

Plums from the Bradford breeding program would also be available from next year. The seven coloured Bradford 'candy' variety plums would be unique because of their very high sugar or brix reading, Mr Bazzani said.

Low-chill stonefruit from Professor Wayne Sherman's University of Florida breeding program were available in WA now.

The new-variety stonefruit was the result of much research, and had non-melting flesh, with improved shelf-life and taste.

## Popular macadamia varieties for WA

**741** Upright growing variety becoming denser with age; Early nut drop, April, May; Good quality kernel; Very attractive tree.

**842** Open spreading vigorous tree; Good kernel recovery and quality; Uniform nut size; Early to mid season nut drop, May, June.

**849** Open spreading tree, moderately vigorous; Very high kernel recovery; Uniform size; Mid season nut drop, June.

**816** Upright moderately dense tree; Very high kernel recovery; Larger kernels; Early to mid season nut drop, May.

**Daddow** Vigorous dense spreading tree; Mid season nut drop; Sometimes has mottled leaves; Good quality nuts.

**A16** Upright open tree; Medium size; Mid to late nut drop; Good kernel characteristics; Precocious.

**A29** Medium tree; Good producer; Newer variety with promise.

**A268** Medium spreading tree; Mid season nut drop; Precocious; High kernel recovery.

**A38** Vigorous tree possibly suited to high density planting; Good producer; Is performing well in some WA orchards.

— **John Corey** (WANATCA Macadamia Action Group Leader), Shelterbelter Australia. Phone 08-9574 6163, e-mail: treebrick@bigpond.com.au.

## Hazelnut Varieties

Hazelbrook Nut Farm, Balingup WA  
(Members of WANATCA)  
PO Box 15, Subiaco WA 6008  
Phone 08-9388 1121 (after hours).

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1482M \* The AVOCADO: Botany. Production & Uses. Wiley (UK. 2002) 416p Hb. The complete authoritative scientific manual, covering avocado crop production. physiology. breeding. propagation. cultivars. agronomy in world regions. Highly recommended \$312 00

1478C \* CASHEW Production & Processing Technology Mandal (India. 2000) 195p Hb A useful book from India. major world producer of cashew. \$57 00

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## CALENDAR OF FORTHCOMING EVENTS

(See also [www.AOI.com.au/wanatca/Events](http://www.AOI.com.au/wanatca/Events))

**Deadline for next issue: Jan 20**

2002

Nov 12 Tue \* **Annual General Meeting (Ian Crombie - How Plants and Animals Interact at Perth Zoo)**

2003

Jan 21 Tue Wanatca Executive Committee Meeting

Mar 14 Fri **Wanatca Pistachio Seminar/ Workshop, Northam**

2004

Sep 20-24 **Acotanc-2004, Gatton, Queensland**

\***General Meetings** are held starting at 7.30pm. *Venue: Theatre Room, Kings Park HQ, West Perth.* These meetings usually include a display of current world tree-crop magazines for sale.

• Event with WANATCA participation; § 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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