

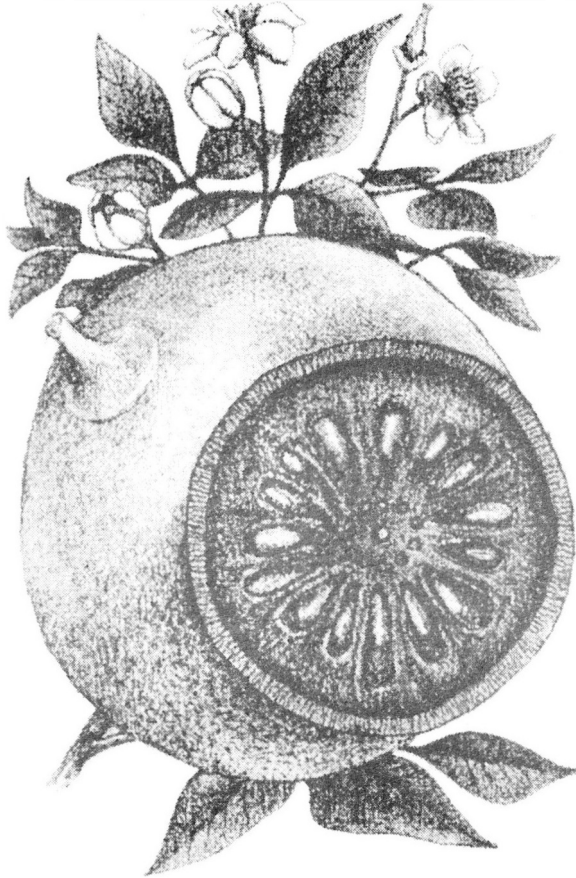


Quandong

magazine of the
West Australian Nut & Tree Crop Association (Inc)
www.AOI.com.au/wanataca

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Quandong • Fourth Quarter 2000 • Vol 26 No 4

The Bael or Bengal Quince (*Aegle marmelos*) (See: About the Cover, p. 2)

NEXT MEETING: Tuesday November 14, 2000: 7.30 pm

Something really different for the next General Meeting, our AGM:

Grafting and Budding Workshop/ Seminar

Almost all improved varieties of fruit and nut trees are propagated by grafting or budding onto rootstock. Here is something which is not difficult to learn, and with many species can be achieved successfully as long as you know what is involved.

We have been very fortunate in rounding up three experts in this area, to show you what is involved and to tell you the basics, they are **Phil Ciminata, Kevin Whitely, and Ron Broadbent**. You will have the opportunity to practice at the meeting.

Refer carefully to the attached leaflet to know what to bring and what is expected of you if you want to get the most out of this rarely-offered opportunity.

Meeting at Kings Park as usual. Full details on attached leaflet.

Visitors welcome, no charge. Queries to Tree Crops Centre, 9388 1965.

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About the Cover

The cover drawing shows the Bael Fruit or Bengal Quince, *Aegle marmelos*. The illustration is from *Fruit for the Home and Garden*, by Leslie Johns and Violet Stevenson. A comprehensive article on this fruit appears in the 2000 WANATCA Yearbook, issued with this number of *Quandong* magazine.

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.

[West Australian / 2000 May 11]

Spending more time with your chestnuts

A Karragullen pool fencing manufacturer, who grows chestnuts as a hobby, looks forward to when he can spend more of his days in the Chestnut Gully Grove.

Albert Della Franca, 38, planted his first trees 12 years ago and is now harvesting a four-tonne crop from 1200 trees spread over 6.5 ha.

"It's a lighter crop than last year, but the production seems to be light one year and heavier the next. Last year we harvested six tonnes," he said.

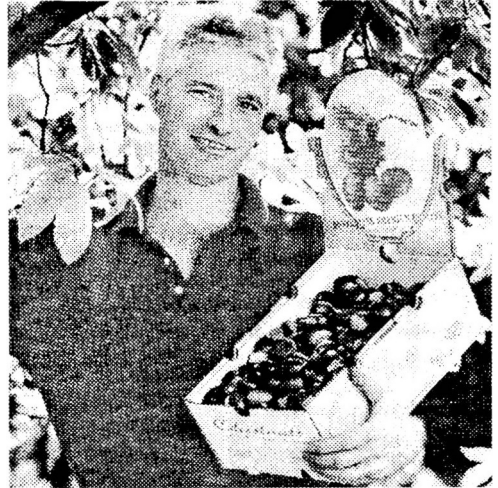
"People are passionate about growing chestnuts and I like the lifestyle. But it is not a quick return crop."

His father, Frank, 63, planted a chestnut tree at Karragullen when he came from Italy in the 1950s.

Chestnuts were not difficult to manage, but the trunks of the trees were painted white to protect them from sunburn, and a non-toxic fungicidal spray was used five times a year to protect them from dieback.

They were resistant to most insects but needed plenty of water. "Trees are watered every third day, and we pump 12 hours a day every day during summer," Mr Della Franca said.

The 12-year-old trees on the Brookton Highway property had reached a height of five to six metres, but the nuts, which dropped



Just a sample: Some of Albert Della Franca's four-tonne crop which was grown on 1200 trees at his Karragullen property. The first trees were planted 12 years ago.

Picture: Greg Burke

to the ground when ripe, made harvesting easy.

Pickers wore tough plastic gloves to protect their hands from the prickly husks which surrounded the nuts.

Seventy per cent of the crop was sold at the Canning Vale markets and the rest at the orchard gate, mainly to Asian and European

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>.

customers. Prices ranged from \$4 to \$8 a kilogram.

Mr Della Franca, who made a chestnut grading, cleaning and sorting machine, works the grove with his wife, Desiree. Up to 12 casual workers were employed at busy times.

About 20 WA growers produced 50 tonnes of chestnuts a year which were consumed in WA. Prospects for selling the crop in Japan and South-East Asia were being examined.

Thousands of recipes featured chestnuts roasted, boiled pureed and ground into flour. The nuts were used in soups main courses, stir fries, ice cream and sweets.

They were low in fat, high in carbohydrates and vitamins and a good source of dietary fibre, Mr Della Franca said.

David McLaren, president of the Australian Chestnut Growers' Association, said from Melbourne that last year about 350 growers had produced 1000 tonnes of chestnuts.

Mr McLaren, a children's surgeon, said most producers got their main income from other sources and the Australian market could use twice the current production.

— *George Boylen*

[The Post / 2000 Jul 22]

That's why people are nicking plants

A plant growing in Wembley gardens has been targeted by people making an intoxicating brew from its leaves.

A spokesman for the WA Herbarium said a lot of inquiries had been received recently from people about *Catha edulis* Forsk, commonly known as the Catha tree, mostly from the Wembley area ing strangers in the yard collecting the leaves.

Wembley police chief Sgt Peter Woollons said the plant was legal in Australia. Police were involved after reports of people trespassing to harvest the leaves.

Sgt Woollons said it appeared word had got out among some ethnic groups that the plant was more common in Wembley.

Dr Neville Marchant, WA Herbarium manager, said it was rare to find the plant in Perth. He said it was probably bought into the state as an illegal cutting from New South Wales where it was more common.

It was more likely to be found in older suburbs like South Perth and Wembley and

spread through the exchange of cuttings between householders in the 1950s.

He said it would be rare to find the tree, identified by its orange berries, at a nursery.

Dr Marchant said its effects were similar to tea or coffee. It was also used to relieve fatigue and hunger and produce feelings of alertness and well-being.

A botanical encyclopaedia description supplied by the herbarium says the Catha plant is popular with the Masai tribe of east Africa and produces feelings of euphoria when drunk.

It says the fresh leaf and twig has been used as a stimulant in certain African countries, especially among the Masai and Kikuyu of east Africa.

In some cases it is brewed, in others the young shoot (known as khat) is chewed as a stimulant and in North Africa the dry leaf is smoked like tobacco.

The plant is said to have a slightly bitter taste with a strong, sweet taste of liquorice. It makes the user thirsty and when taken in excess can produce a stupor similar to drunkenness. Sustained use can result in increased apathy and a lack of concentration.

Tree crops conference gets government support boost

Organization for ACOTANC-2001, the Ninth Australasian Conference on Tree and Nut Crops, is proceeding apace. It has been given a big boost after winning a substantial funding contract from the HRDC.

The HRDC, the Australian Federal Government's Horticultural Research & Development Corporation, was set up as a vehicle for promoting R & D in horticultural industries. Operating through the Tree Crops Centre in Perth, Western Australia, Acotanc has secured HRDC funding which will amount to \$43,000 over the life of the Conference, which will result in papers and other information being maintained on the World Wide Web for at least five years.

"Of course, we are delighted to get the HRDC commitment, which will allow us make this a world-class conference with major benefits", said Tree Crops Centre Director David Noel, who is also the ACOTANC-2001 Conference Coordinator. "It is also an expression of confidence from the Federal

Government, both in WANATCA's hosting of the event, and in the future of tree crop industries in our region".

Conference Chairman Stanley Parkinson, the President of the West Australian Nut and Tree Crop Association, has announced the appointment of Monica Durcan of Landcare Promotions as Conference Manager. "With Monica's solid background in tree raising and planting activities over many years, and her expertise in running conferences and trade exhibitions, we now have a central focus person to make sure everything goes with a swing", he said.

"We've been very pleased to date with how everything is falling into place as we make detailed bookings and arrangements. The venue for the MiniAcs will be at Kingswood College, University of Western Australia, but the Plenary Sessions will be on the main University Campus — an exceptionally beautiful site. Staging the Conference over the Easter holiday period will allow attendance even by those with full-time commitments over the rest of the calendar".

"We're now bedding down a lot of the details of the Conference", said Monica, who has become well known in rural WA from her period as Nursery Manager for the Men Of The Trees organization. "Acotanc starts off with six half-day MiniAcs, concurrent streams of specialist mini-conferences on a rich range of 30 or 40 specific topics, such as tropical fruits, jujubes, macadamias, walnuts, olives,



David Noel

almonds, propagation, agroforestry, property planning, permaculture and organic approaches.

"Many of these MiniAcs will be run in cooperation with local groups such as the Australian Macadamia Society and the Walnut Growers Association, as well as government agencies such as Agriculture Western Australia and the Water and Rivers Commission."

"For the two-day Plenary Sessions of the Conference, we are developing themes to bring out situation views, problems, and potential answers over the whole area of useful perennial plants as the major component of rational land use", Monica said. "In WA and elsewhere in Australia we have major problems with salt encroachment over huge areas, leading to loss of valuable agricultural land. It is now widely accepted that deep-rooted perennial crops can help address these issues while also providing potential income

for the landholder."

The 'Countryman' Newspaper have confirmed their support for the Conference, and will be providing publicity and information on ACOTANC in every weekly issue, right from November 9 onwards up to the eve of staging the Conference, which runs from April 13 to 19, 2001.

Monica said, "We thank the Countryman for their foresight in supporting the Conference. This series will give us an excellent platform to showcase not only a wide range of productive perennial plants, marketing options and contacts in the industry, but also to profile local and international speakers".

If you are a major player in any aspect of the tree crop industry, expect to hear from Monica (or her associate Liz) in the near future. Monica will be responsible for scheduling the MiniAcs, and for all arrangements for the Trade Exhibition, as well as helping with the day to day organisational details of the Conference.

"We have outstanding speakers lined up for the MiniAc sessions, such as Dr Ignasi Batlle from Spain, a world authority on nut production, jujube expert Roger Meyer from California, leading walnut expert Harold Adem from Victoria, Romulo Aggangan and Prof Roberto Coronel from the Philippines, Ray Givan, an expert on figs from Georgia, USA, and many others still being negotiated."

"For the Plenary Sessions we are looking to present world-class speakers on the techniques, problems and potential of tree crops and rational land use on a global viewpoint. Teamed up with the detailed information emanating from the MiniAcs, this overview data will form a complete package which we believe will give a big

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boost to a continuing productive, sustainable, and economically viable future within the world which we all must share".

Conference enrolments are already coming in, not only from Australia but also from India, the Philippines, France, Tanzania, USA, Pakistan, Malaysia, New Zealand, Swaziland, Spain, Canada, and Ghana. With its theme 'Tree Crops: Essential for the Earth', the Conference bodes well to fulfil its expectation of being 'The Tree Crops Event of the Generation'.

ACOTANC-2001 will also be a celebration. Everyone will be welcomed to a Bush Dance and Bush Tucker Barbecue, to be

held on the Easter Monday evening at the nearby Nedlands Yacht Club.

Where better to brush shoulders with world authorities on nut growing and marketing, experts on wild and exotic fruits from China and Chile, and other WANATCA members?

Mark this event in your diary along with ACOTANC-2001: April 13-20, 2001.

Further information on ACOTANC-2001 is at the website, www.AOI.com.au/acotanc, or locally contact Monica Durcan, Landcare Promotions, at mdurcan@inet.net.au, or phone/fax 08-9291 8249.

Can you help with Acotanc?

We're serious about this! We will need a lot of help to make the Acotanc-2001 Conference the outstanding success we are aiming for, and we are asking YOU, the reader, to see what you can do.

Everything from an hour or so on one of the days, to help with planning one of the processes which have to go on before the show, will be valued. And you don't even have to be a WANATCA member to help!

Together with this issue of Quandong, we're including a form which you can mark with ways you might be able to help. Feel free to copy it for others. Just fax it or mail it back (you can fold it, and stick it with a bit of tape, it's pre-addressed), or even ring the Tree Crops Centre on 08-9388 1965 (+61-8-9388 1965 from overseas), for us to take down the information.

Here are some of the ways you might be able to help:

- Offer your time during the Conference or the MiniAcs as needed.
- Offer your property, or recommend another property, to be included on the site

visits.

- Offer to home billet an overseas or interstate attendee (Perth).
- Offer to host an overseas visitor after the Conference at your property (outside Perth).
- Help with one of the planning processes - maybe you have experience in some special aspect?
 - Chair part of one of the MiniAc or Plenary (main) sessions, or offer to participate in a discussion panel.
 - Work with one of the specialist partner groups on a particular MiniAc (eg olives, macadamias, propagation).
 - Offer a poster paper or talk on an aspect of tree crops you can share with others.
 - Help with registrations, accommodation checking, site visit scheduling, or trade exhibition layout.
 - After the Conference, help with converting and editing papers for the Internet.

- Assist caterers during the MiniAc or Plenary sessions, or the Bush Dance & Bush Barbecue.

- Travel as an Acotanc representative on site visits, or post-Conference or Companion (tourist interest) Tours.

- Help with office, administrative or copying tasks.

- You name it

Any help appreciated, and we will try to offer appropriate perks to helpers, according to circumstances. This is as well as the 10% discount offered on Conference Sessions to WANATCA members!

Acotanc — How Much and When Do I Pay?

Well then. Up to the end of this year (till December 31, 2000), you can pre-enrol (and get a priority reservation number for limited-number events) at the website www.AOI.com.au/acotanc or by contacting the Acotanc Office at the Tree Crops Centre. You can do this without any final commitment and without committing any money.

After January 1, 2001, the website form will change to offer full enrolments at stated prices, and some payments will be asked for then. At the same time, a printed Enrolment Form and preliminary program will be available on request from the Tree Crops Centre.

Copies of the Acotanc Enrolment Form will be sent out with the First Quarter 2001 issue of *Quandong* (due out early February), or by request to the Tree Crops Centre, or you may receive copies from one of our partner organizations involved with Acotanc.

Costs

These are currently expected to be as follows. All costs in Australian dollars

(currently A\$1 is worth about 50 cents US — gulp!).

There will be six half-day MiniAcs (specialist sessions running concurrently). Cost will be \$60 each for 1-3 MiniAcs, \$200 total for 4 or more. Lunch not included. Reservations may be made for particular Miniacs.

There will be two full-day Plenary Sessions (main sessions with everybody). One session will cost \$150, both will cost \$225. Lunch included.

Full Conference Package (5 days), \$400.

Discount for WANATCA members, 10%. Non-members will be able to join at time of conference enrolment and receive this discount immediately (current cost of WANATCA membership, \$54 for one year of 4 consecutive quarters).

Conference enrolment charges do not include Accommodation, the Bush Dance/Barbecue, Post-Conference or Companion Tours, or displays at the Trade Exhibition. Enrolment for relevant sessions will include entitlement to corresponding site visits, but others may attend site visits (space permitting) at a charge. Delegates booking accommodation will need to pay a deposit. Credit cards will be accepted.

Early enrolment will guarantee places in limited-space events. There is no discount for early enrolment, and no rigid system for refunds, though the Conference Committee will look sympathetically at the circumstances of any request for refunds.

Contacts for the Tree Crops Centre: e-mail, treecrop@AOI.com.au; phone, 08-9388 1965; fax, 08-9388 1852; mail, PO Box 27, Subiaco, WA 6006, Australia.

Acotanc Conference website: www.AOI.com.au/acotanc.

[Shorts (NRE Victoria) / 2000 Aug]

Scientists on a pistachio saving mission

Department of Natural Resource and Environment scientists are working towards finding a solution to a mysterious disease threatening Australia's pistachio industry.

Scientists are dealing with a disease not encountered in pistachio trees overseas. The disease, which has only been reported in pistachio trees in Australia, has caused up to 50% loss in some orchards.

About 1000 trees have died and a further 20% of pistachio trees have the disease symptoms, which will result in their eventual death," said Chris Joyce, Chairman of the Pistachio Growers Association Research Committee and Kyalite pistachio grower.

It is believed a bacterial organism causes the disease. "We've been trying to find out more about how the organism affects pistachio trees and how it spreads through the orchard," said Sunraysia Horticulture Centre [SHC] scientist Cathy Taylor.

The first commercial pistachio nut orchards were planted in Australia in 1988. There are now 400 hectares of pistachio orchards in the Riverland, Murray Valley, Central Victoria, and Dubbo in NSW. The output of these orchards has halved Californian and Iranian imports, with Australian growers now producing up to 50% of total product for domestic consumption.

To better understand the disease, scientists have surveyed orchards for disease symptoms and also trialled some chemicals to determine their efficacy in controlling the disease.

"This is the first time this bacterium has been identified as being pathogenic to woody plants. Bacterial diseases are typically difficult to control. Copper sprays are traditionally used to control bacterial infections in other crops, but we don't know what impact copper



Sunraysia Horticulture Centre scientist Cathy Taylor looks for signs of a mysterious disease casting dark clouds on Australia's young pistachio industry

treatments will have on the disease. More information is required to understand the disease cycle of the bacteria in pistachio orchards," Mr Joyce said.

The Department of Natural Resources and Environment has begun a collaborative project with the University of Adelaide, with funding from the Horticulture Research and Development Corporation (HRDC) and voluntary pistachio grower contributions. This project will focus on determining where, when, and how the bacteria infect pistachio trees, and use that information to develop control

strategies.

"Current losses are at least 5 % of total production. If the disease becomes more active then there is the potential for industry to lose \$8-9 million each year This highlights the importance of DNRE's work towards ensuring the ongoing survival and success of this industry," he said.

For further information contact Cathy Taylor at Agriculture Victoria Irymple - SHC on (03) 5051 4598.

[The Pistachio Perspective (California) / 2000 Sep]

Californians pursue pistachio trade duties against Iran

After fourteen years, the California Pistachio Commission's (CPC) unfair trade duties against Iranian pistachio imports are finally being challenged. The CPC is working

to protect the interests of California pistachio growers by mounting a vigorous defense of these duties against Iran's unfair trade practices.

In 1986, the CPC received from the International Trade Administration (ITA), US Department of Commerce, three unfair trade awards against Iran: a combined antidumping (AD) and countervailing duty (CVD) order of 283 percent ad valorem on raw inshell pistachios, and a countervailing duty order of 318 percent ad valorem on roasted inshell pistachios.

While CVD and AD orders are normally reviewed on a regular basis by ITA, this has not been necessary due to the US embargo on all trade with Iran.

However, in March 2000, President Clinton partially lifted the embargo by allowing Iran to export pistachios, carpets and caviar to the US. As such, the CVD and AD orders against Iranian pistachios are now subject to the normal ITA review process.

These orders are now being challenged by Cyrus Marketing of Sedona, Arizona. Cyrus Marketing's president is Mr Gerald Murphy, a key executive with the old Early California Foods company, and more recently he has been involved with several US rice processing companies.

Mr Murphy's petitions challenging the CVD and AD orders, if successful, would benefit the Rafsanjan Pistachio Producers Cooperative (RPPC) of Tehran, Islamic Republic of Iran. The petitions, filed July 24, 2000, claim that there have been significant changes in foreign relations between the US and the Islamic Republic of Iran, and therefore the ITA should reconsider the existing duties on imported pistachios from Iran.

In addition, Mr. Murphy alleges that the

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CPC's 1985/86 dumping and subsidy allegations were never substantiated, and even to the extent they were valid, these unfair trade practices by the Iranian industry no longer exist. Mr. Murphy also states that the Iranian government and the RPPC will fully cooperate with the ITA when the agency reviews the pending petitions.

The CPC, the Arizona Pistachio Association, the New Mexico Pistachio Association and the Western Pistachio Association all filed responses to the Cyrus Marketing petition with the ITA which opposed the review of the existing orders.

On September 6, a notice appeared in the Federal Register announcing the initiation of an "Administrative Review" of the anti-

dumping duty award on inshell pistachios. The review will take approximately one year.

The decision to initiate a "Change in Circumstances" review of the CVD orders for raw and roasted pistachios has not been announced as of the date of this writing. If the CVD reviews are granted, it will require approximately 270 days to complete. The CPC is taking all the necessary actions to make sure that the California pistachio growers are well represented in the ITA proceedings.

With the largest California pistachio harvest expected in September, the CPC is focusing not only on the Iranian CVD and AD orders and the US domestic market, but is also working to open international markets to allow our industry to expand exports.

[FAO - Nucis-Newsletter, Number 7 December 1998]

Do almonds merit their own genus? — Taxonomy of the almonds

I was invited by the editor of NUCIS to express my opinion on the taxonomy of the almonds or "Why the almonds should be kept as a separate genus?", in response to a recent paper by R. Socias i Company (1998).

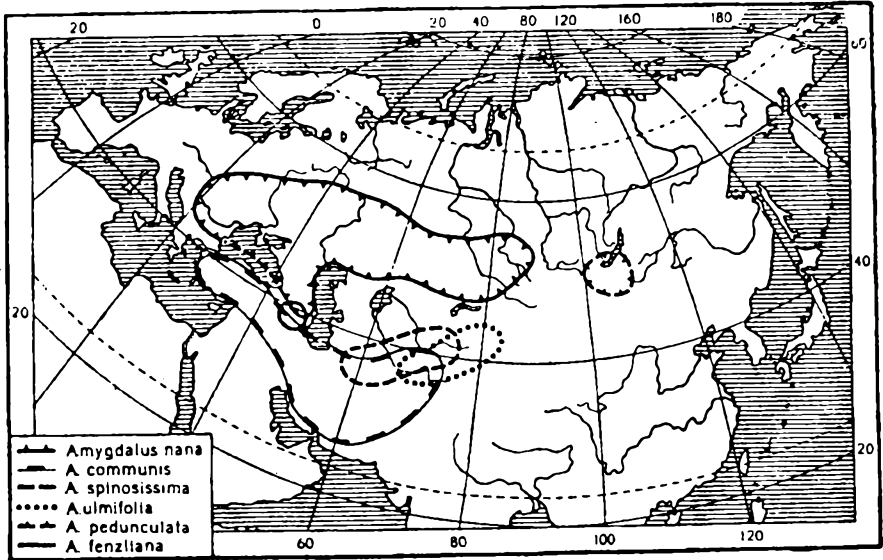
In their paper, Socias i Company recommended to place the almond species within the genus *Prunus* L., and to avoid considering them as a separate genus (*Amygdalus* L.), as Browicz and Zohary did in their 1996 taxonomic and evolutionary survey. I wish to thank the editor of NUCIS for his kind invitation to present my view on how one should rank the almonds.

The twenty six almond species (Browicz and Zohary 1996, Table 1) comprise a distinct and easily recognizable natural group, well separated from the other hard-stoned rosaceous fruit trees. When one is confronted with a well defined (and considerably diversified) group, comprising more than two dozen species, the decision whether to keep them as an

independent genus, or to regard them only as a subgenus, is largely a matter of personal interpretation. Both treatments are taxonomically "legal".

Most field botanists familiar with the almonds in their centre of species diversity (the Asiatic republics of former USSR, Afghanistan, Iran and Turkey), have kept the almonds as a separate genus. The list includes K. Browicz, V. P. Denizov, M. G. Pachomova, S. Serafimov, O. A. Svjazeva, and V. I. Zaprjagaeva (for references consult Browicz and Zohary, 1996). Except for the first author, their contributions are mostly in Russian, and are not very familiar to most workers in the West.

In contrast, horticulturists and botanists in



Distributions of some wild almond (*Amygdalus*) species. From: F.Kh. Bakhteev, *Vazhneishie plodovye rasteniya* (Russian: *Important Fruits*)

west Europe and in north America, impressed by the success in crossing almonds to peaches, apricots and plums, tended to follow Rehder (1940, p. 452) and place the almonds (as a subgenus) in an extended *Prunus* genus. A parallel situation exists in wheat. Some authors regard *Triticum* and *Aegilops* as two separate genera. Others, having in mind crossing and allopolyploidy, lump them in a single genus. All in all, differences in delimitation of generic boundaries abound in plant taxonomy; and crop plant evolutionists, conservationists, breeders and geneticists have somehow to live with the proliferation of botanical names they cause.

What should be stressed is that as long as the natural groups of species remain, their taxonomic ranking (whether genera, subgenera, or even sections) does not affect considerably our orientation as to patterns of divergence. For me, the clusters of species in the rosaceous hard-stoned fruit trees are

important — much more than their debated taxonomic rank. In other words, one can live with either way of ranking. Yet, generic ranking seems to me more appropriate for the following reasons:

In my field trips I was impressed by the distinctiveness of the almonds as a natural group. This was so all over their distribution range in central and south-west Asia. I also came to admire the extensive taxonomic, chorological and ecological studies carried out on the wild almonds by colleagues in east Europe — studies that led them to appreciate the uniqueness of the almond group. All in all, the information assembled indicates that in nature the almonds constitute a well-diverged phylogenetic branch, reproductively well isolated from the other rosaceous hard-stoned wild fruit trees. This suggests that the ability of almonds to cross with several other rosaceous hard-stoned fruit trees was overrated when their inclusion in the genus *Prunus*

was considered. In short, the distinction of the almonds as a natural group is the main reason why I concluded that *Amygdalus* should better be kept as an independent genus.

There is also a practical reason for recommending to keep *Amygdalus* apart. Botanical naming is binomial. It provides the genus and the species names to each plant; but no indication of its intra-generic grouping. Therefore, if *Prunus sensu lato* (in the broad sense) is being used, most workers confronted, for example, with the name *Prunus argentea* would not be able to perceive immediately whether this is a plum, a cherry, an apricot, or an almond. Except for a few learned specialists, they would have to acquaint themselves with the subdivision of *Prunus*, a genus which in its extended form comprises more than 200 species. In contrast, when the almonds are kept as a genus, and the botanical name is *Amygdalus argentea*, most workers would be aware that they are dealing with an almond species.

— **D. Zohary**, Department of Evolution, Systematics and Ecology, The Hebrew University, Jerusalem 91904, Israel

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[Australian Food Study Group Newsletter / 2000 Jun]

Flacourtia species in Australia

Ann Oram has replied to a query about *Flacourtia* with some information on two Australian species.

Flacourtia territorialis is found naturally in vine thickets near Darwin. This is a hardy little shrub which produces edible fruit in the shade as well as the sun. It has separate male and female flowers, and is the host plant for the Leopard butterfly.

The other species is an undescribed *Flacourtia* from Cape York. This 'Cape Plum' is a beautiful hardy screen plant with dense foliage which is bright red when new. The small black fruit are delicious and make great jam.

It has separate male and female plants, and is the host plant for the Australian Rustic Butterfly. Ann says she found the information on a CD called "Australian Tropical Plants", published by Zodiac Publications and based on plants sold by Yuruga Nursery.

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[Countryman / 2000 Aug 3]

Cacti a dry answer

Wild plants, used by indigenous peoples for hundreds of years, hold the key to successful dry land farming.

This was the message internationally renowned Israeli expert Professor Yosef Mizrahi had for farmers attending a Moore Catchment Group forum in Moora last Friday.

Professor Mizrahi was one of several speakers listed to explore options for dryland farming and salt-resistant crops at the forum.

He told more than 200 people attending that after 16 years of research, four totally new crops developed from wild plants had been introduced to Europe to help Israeli farmers remain viable.

Israeli farmers were the most efficient in the world but numbers were declining and agricultural land was going out of production.

"Over the past nine years our farmers have lost 40 per cent of earning capacity due to inflation and cost pressures," he said.

Jaffa oranges had been Israel's biggest source of foreign income for many years but Morocco was producing cheaper oranges and

Israel was missing out on world markets.

Water was also a big limiting factor.

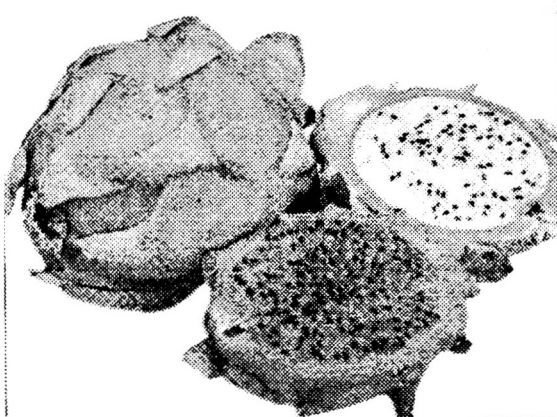
"No fresh water is used for irrigation in Israel," Professor Mizrahi said. "All our water is either saline from bores or recycled sewage".

"Oranges are no longer doing it for us — we cannot produce the volumes to compete on the world market. The answer is to find and develop products for a niche market."

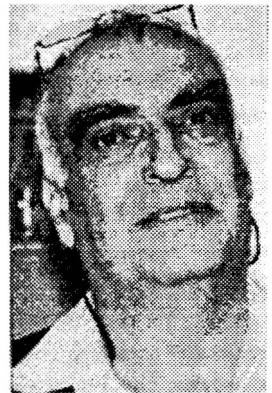
To this end a desert laboratory had been set up near the University of Ben Gurion with 13 scientists working on developing totally new crops.

"We made a list of 60 wild plants with edible fruits used by indigenous people for hundreds of years," Professor Mizrahi said.

"After 16 years of research we have introduced four totally new crops to world markets, all from cacti. Cacti are very important — they use less water than any other agricultural crop and from them we can get fruit,



The pithaya fruit comes from cacti



*Israeli dry land expert
Yosef Mizrahi*

vegetables, animal feeds, medicine and industrial products".

"But Europeans were reluctant to taste cacti, even though it is second to spinach in food value".

A successful marketing campaign selling the fruit as 'nature's own icecream' persuaded Europeans to try the fruit from cacti.

The spectacular Koubu and Pithaya fruit, with their shiny, colourful deep pink or yellow skin, had a crunchy texture and a soft, sweet refreshing flavour similar to sorbet, Professor Mizrahi said.

Problems of introducing new products

Professor Mizrahi also went into some of the difficulties encountered in bringing a new fruit to the commercial marketplace. It turns out that many of the problems are inherent in the way new products are looked at by company structures, rather than problems in developing the products themselves.

He showed the results of an Israeli study of this area:

"It is not for nothing that in all the firms surveyed (eleven), development of new products is spoken of as a special topic distinct from the rest of the problems encountered in R&D management.

Anyone who has ever tried to develop or promote a product is familiar with the trials and tribulations involved:



Israeli farmers made the desert bloom with the famous Jaffa oranges. Now cost pressures are forcing them to look to other crops developed from wild plants such as these cacti, which produce the Koubo fruit, marketed as "nature's icecream"

- *the opposition of the production and marketing people associated with the standard products, for whom the new product represents a pain in the neck;*
- *the wise guys and experts, keen to nip the new concept in the bud;*
- *neglect on the part of the directors of the firm, who, due to more pressing problems, cannot find the time to safeguard the new concept—which in the nature of things lacks a lobby and has plenty of opponents and potential victims.*

From a survey of American industry we learn that this is not an exceptional situation but rather the rule.

Every production system and every mature organization is equipped with antibodies against deviations from routine. These antibodies work overtime to kill all interest in the new product and are very likely to succeed.

It is an innate property of every established industrial organization, which is why most new products are created and brought to market by young organizations that have no standard products to occupy them.

Established organizations (Israeli agriculture among them) that want to get into this business of introducing new products have to build themselves managerial mechanisms designed to act as a countervailing weight against the forces of routine described

Examples are the unit for new product development at Black & Decker, or the systems for new venture development at 3M, a large American firm noted for its ability to develop and commercialize new products."

[Taken from: An R&D strategy for Israeli agriculture and associated industries, by Yishai Sefarim. Report to the Agricultural Research Organization, 1989.]

[Fruit Gardener (California Rare Fruit Growers) / 2000 Jan-Feb]

Pitahaya — A Fruit for the Diligent

Many people approach the New Year with resolutions to improve their lives, or to take on new challenges. As fruit-loving members of CRFG, we should also consider the challenge of trying new fruits. One fruit I would recommend is the pitahaya (*Hylocereus*).

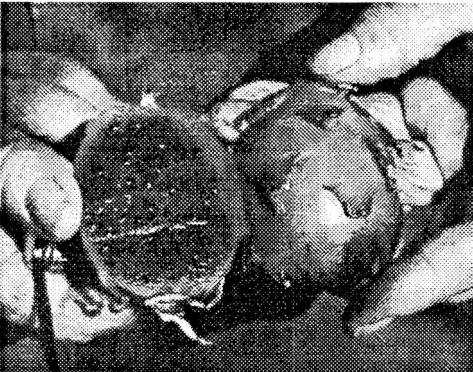
The pitahaya is a wonderful fruit to experience, not only because of its delicious taste, but for the beauty of its blooms and the intense colour and shape of the fruit itself. It

originated in Central America and the northern part of South America. From these areas it spread as an exotic to different parts of the world, including the US.

In the beginning most people were attracted to the plant because of its beautiful flowers. Little by little, the fruit was introduced in finer restaurants and served as a delicacy. Nowadays some growers are trying to develop this fruit commercially — but it draws a high price, averaging US \$13 a kilogram. Others, like myself, enjoy growing pitahaya, not only for the delicious fruit, but for the challenge as well.

How Pitahaya Grows

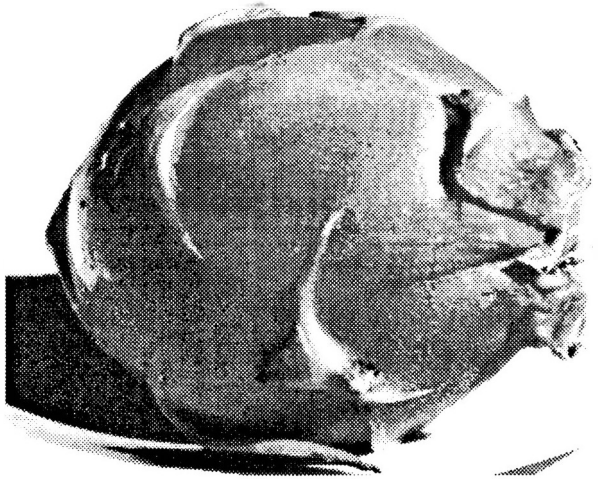
The pitahaya can be grown from seeds or cuttings. Because seeds require a much longer time to bear fruit — approximately five years



*Pitahaya — *Hylocereus polyrhizus*. This beauty is a classic example of the variability in the fruit of the pitahaya*

— I recommend growing from cuttings. You can expect fruit from cuttings in about three years.

Pitahaya is a cactus with spiny triangular stems, some more spiny than others. It is a climbing plant that attaches itself to favourable vertical surfaces like the walls of a house or the trunks of trees. Most of the pitahayas grown today in California are attached to big trees, giving the plant the chance to reach up to 6 metres in height.



Pitahaya Flowering and Pollination

Because the pitahaya flowers at night for only one night, closing around 9.00 am the following day, pollination takes place at night — normally by bats or nocturnal insects. Early in the morning, pollination is carried out by bumblebees. For the pollination to be viable, the pollen must originate from a different species of pitahaya. In Southern California, about 80 percent of pitahaya species are sterile when self-pollinated or pollinated by another of the same species. Yet when a different species is used to cross-pollinate them, they set fruit readily.

Because the two species may not bloom at the same time, you can gather the pollen from the flower you have and refrigerate it until the flower from another species blooms. Then you can cross-pollinate by hand. The pollen will last up to 10 days in cold storage. Once pollination is done, the fruit should be ready within six to eight weeks.

Cultivating Pitahaya

The new way of growing pitahaya and achieving the best results in quantity and size of fruits is to plant them four feet apart in an

area where they will enjoy morning sun and afternoon shade. However, if you live in an area with high daytime temperatures (in the 40s) it will be better to grow them in a shadehouse. If your temperatures drop below 2 °C, it would be better to keep them in a greenhouse. Pitahaya is a subtropical plant that is susceptible to damage by extremes of cold or heat.

Once you find the best environment for your plants, you will train them to grow on trellises (as with grapes) up to 1.5 m high. At this height, you will be able to perform cross-pollination by hand and harvest the fruit with no problem. It is very important to have two different species of pitahaya.

The first one I recommend is the *Hylocereus undatus*. This species will give you a fruit of about 700 gm in weight and a light melon-like taste. The colour of the skin is a beautiful bright red, the flesh is white with tiny black seeds. You'll recognize this species by the triangular cross-section of its stem and minimal spines, sometimes none. This species will cross-pollinate very well with *Hylocereus polyrhizus*, which has a small fruit, maybe

330 gm in weight, with red skin, dark-red flesh and small black seeds. The stems of this species have more spines.

Multiple types of Pitahaya

There are 15 types of pitahaya all over the world, but there are only four main pitahayas that you should know because they are the basis for the others. They are: *H. undatus* — red skin, white flesh; *H. polyrhizus* — red skin, red flesh; *H. ocamponis* or *mexicana* (self-pollinators) — yellow skin, white flesh; and *H. costaricensis* — dark-red skin, violet-coloured flesh.

There is a new type of pitahaya coming from Vietnam, one that reportedly is self-pollinating. I have just added it to my collection and should know more about it in a couple of years.

A Final Caveat

Much of my information was gathered by

visiting different sites in Southern California such as Fallbrook, Bonsall, Granada Hills, Camarillo, Reseda, Santa Barbara, San Marino, and Simi Valley, as well as speaking with the people who have had success with the pitahaya. I am sure there are many other successful pitahaya growers throughout California.

There could be some confusion in the name of two different plants. The pitahaya I have been discussing is the *Hylocereus*, a climbing cactus, not the *Cereus peruvianus*, a round, tree-type cactus which also has a delicious fruit and gorgeous flower.

I hope this article will encourage you to take up the challenge of growing the pitahaya. It will bring beauty to your garden with its magnificent white flowers and delicious fruit to your table.

— *Edgar Valdivia*

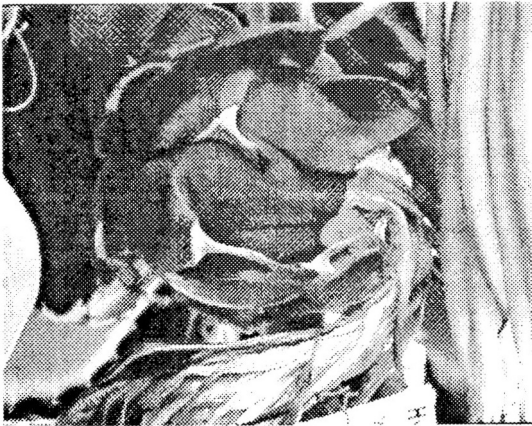


Pitahaya — *Hylocereus undatus*. With the pitahaya, using the scientific name seems essential because one cannot simply state that a given fruit came from one specific species of pitahaya. The reason for this, as the author explains, is that pollination is not viable unless the pollen used in the ephemeral blooms originates from a different species of pitahaya.

[Q Ed: A species which must be crossed with another species to be perpetuated is not logically possible — this trait would rule it out from being a species. However, clones of a plant which are self-incompatible are quite common, as in almonds — clones are all genetically identical, a different variety (genetically different) may be needed for pollination to occur.

Pollination between related species is also well known. From the description above, it is likely that all the author's plants of a given species are clones and self-infertile (common in dryland plants). This situation often arises with plants typically propagated from cuttings.]

(Conversions to metric units by the Tree Crops Centre)



*Pitahaya — *Hylocereus undatus*. When the fruit is cut open, the red exterior surface contrasts sharply with the white interior and its black seeds. Fruit is shown here with the dried remnant of what was a spectacular yellow flower*

New horticulture institute opens

The importance of "good science" underpinning the development of agriculture — horticulture in particular — has been recognised with the opening of the Manjimup Horticulture Research Institute.

The new \$2.7 million facility, just south of the town on the South West Highway, includes a state-of-the-art glasshouse and laboratories, as well as Agriculture WA's district office.

Agriculture WA chief executive officer Dr Graeme Robertson said the institute would enhance the agency's service to the region and the State.

Dr Robertson said in time the institute would become internationally recognised as a premier horticulture research facility.

"The Manjimup Horticultural Research Institute will bring together key research and development for the fruit vegetable and viticulture industries throughout the South-West," he said.

"A major focus will be to develop local expertise by offering research opportunities to students and graduates, as well as attracting national and international academics and researchers through sabbaticals."

Dr Robertson said Agriculture WA recognised the agricultural marketing potential in

the Manjimup district — its climatic advantage and low pest status.

"The new institute will help develop industries and capture markets for the region's produce, such as exporting potato seed to South-East Asia and green tea to Japan," he said.

"It will also serve agriculture beyond the region through new cereal and pulse variety testing and agricultural protection programs."

Visitors to the new facility will also be able to use the latest information technology equipment to assist their enterprises.

"The new offices are equipped with the latest videoconference equipment and Internet services to help rural enterprises access information about processes, technology and markets that can assist their business," Dr Robertson said.

"In doing so, the institute will be able to help rural enterprises adapt to market demands by providing them with the latest information and technology."

[West Australian / 2000 Jul 31]

Markets buzzing from bees on call

Bees travelling from Perth to the Kimberley in chiller trucks are boosting profits in Ord River market gardens and orchards.

Phil Sammut, 45, of Bassendean, a full-time beekeeper for the past six years, said his bees were pollinating the flowering plants and lifting fruit quality and yields. Farmers no longer relied on wild bees to do the work.

Canola in southern WA had also benefited from hives placed in crops, with grain production up 15 per cent and oil content up by 2 per cent. Farmers acknowledged the advantage of well-managed bees working from hives.

Mr Sammut operates 500 hives and travels WA to provide bees for orchards, market

gardens and broadacre crops. Bees sent to Kununurra were housed in 300 metal hives and packed into chiller trucks for the 3500 km trip that took three and a half days.

Mr Sammut is one of four apiarists supplying hives to Kimberley fruit growers, who have found that the European bees worked better than native bees.

"They help produce better-shaped, attractive and more flavoursome fruit that sells at premium prices," Mr Sammut said.

In the southern part of WA, he worked the blossom from areas north of Perth to the flowering jarrah, karri, red gum and other eucalypts in the South-West.

The demand from fruit producers for bee hives had risen as Agriculture WA trials showed bees lifted fruit production, narrowed fruit ripening time, and improved the shelf life of apples. A condensed ripening period meant pickers spent less time in the orchard.

Mr Sammut was not a big honey producer, but collected eight tonnes of pollen a year which was sold in WA, Singapore, Japan and other countries.

Rob Manning, an Agriculture WA research officer, said a small outlay on bees to pollinate crops was a good investment. Mr Manning, who recently visited the United States, said that food producers in California, which was regarded as the food bowl of the US, depended on hives to produce quality crops.

— George Boylen



Worker bee: Apiarist Phil Sammut collects pollen from traps connected to his bee hives. Mr Sammut waxes enthusiastic about the improved condition of fruit pollinated by his bees, instead of growers relying on the work of wild bees. Picture: Don Palmer

Congratulations Wayne Geddes — new life member

WANATCA Exec member Wayne Geddes has been elected to Honorary Life Membership of the Association.

Wayne has been a member for 21 years, and over the whole of this time has been a great source of help and advice for the Association.

Longer-term members may remember the Squirrel Nutkin shop in Shenton Park, set up in 1979 by a group of WANATCA members and incorporated as the West Australian Nut Supplies Co-operative Limited. At this time, Wayne was a Principal of the Metropolitan Markets firm of Roberts & Beck.

Roberts & Beck were one of the major traders in nuts and dried fruit at the Markets, and Wayne took a real interest in the Squirrel Nutkin venture, which had to pay its way, but was intended principally to promote and open up commercial trade in nuts in WA.

With help from Wayne and others, especially Tony and Bethia Bryant (then city folk, but now fruit growers in Balingup), Squirrel Nutkin did a great job. At the time, now-common products like macadamia, pine, and pecan nuts were virtually unknown in

WA. Not only were these introduced to the WA public, but occasional consignments of much rarer products, such as pili nuts, ginkgo nuts, pickled walnuts, and chestnuts in brandy, were made available. Some of these were specially imported, perhaps for the first time in Australia.

Wayne is no longer professionally involved with the nut trade, but continues to help the Association with enthusiasm and great commonsense. He has kindly taken on financial oversight of the upcoming Acotanc-2001 Conference on the Association's behalf. Thank you from all of us, Wayne, and well done!

— *David Noël*

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[Countryman / 2000 Aug 17]

Trials of giant citrus show early promise

Trials in Kununurra and Carnarvon of a giant citrus variety known as ora blanco are starting to reach maturity with promising early results.

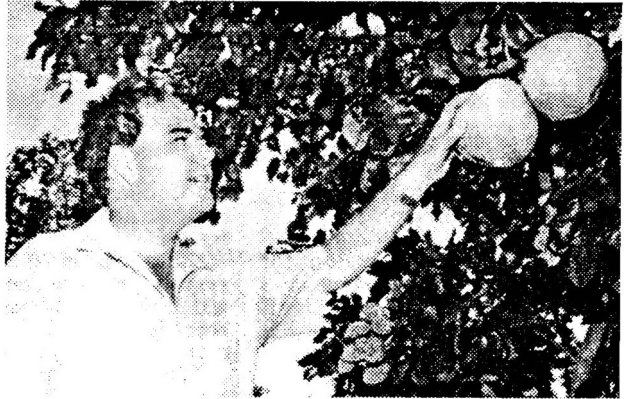
According to horticultural researcher at the Frank Wise Institute in Kununurra, Peter Johnson, the ora blanco is the result of a kind of back-to-the-future approach to plant husbandry.

"The ora blanco is a cross between a pomello and a grapefruit, with the pomello being the original fruit that the grapefruit was developed from at the end of the 1800s and the beginning of last century," he said.

While the trial is still in the initial stages, Mr Johnson said researchers had earmarked the Asian market, with the lucrative Japanese market a real possibility if quarantine concerns regarding fruit fly could be overcome.

"The ora blanco is much sweeter than any of our domestic grapefruit varieties and therefore appeals more to the Asian market," he said.

"The obvious target is the Japanese market



Agriculture WA researcher Peter Johnson with one of the giant Ora Blanco citrus fruit

because they apparently like the sweeter citrus varieties, but first we have to try to gain access

"The sugar to acid ratio is around 15:1 whereas the usual white fleshed grapefruit varieties like the Marsh, that are produced in the southern areas of the State, are about 4:1. If they are grown up here we can get up to about 8:1."

Suitability for the domestic market is likely to be affected by the thick pith which has traditionally been viewed as an undesirable trait by Australian consumers.

But Mr Johnson is confident this could be overcome through campaigns aimed at educating the consumer.

The trees at the Frank Wise Institute are about four and a half years old and just starting to fruit, while the Carnarvon trees have been in the ground longer and have shown promising early signs in terms of yield.

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[Countryman Horticulture / 2000 Sep 7]

Lavender's clean green status market winner

Australia's lavender industry needs to take advantage of the growing demand for its product from a wide range of industries.

This was the message from Senator Judith Troeth, the Parliamentary Secretary for Agriculture Fisheries and Forestry, in an address to growers at their international conference in Tanunda, South Australia, last week.

Senator Troeth said given the proliferation of end uses for lavender from both the flower and oil markets, Australian growers should take full advantage of their much heralded clean green production status in targeting import replacement and export markets.

"And what's even more encouraging is, most of these markets continue to grow both in size and value," she said.

"The Rural Industries Research and Development Corporation estimates the annual production value of essential oils in this country is \$6-7 million at the farm gate and \$20-25 million at the wholesale retail level.

"And while we export lavender oil, the value is only around a tenth of imports.

"Australian growers should take full advantage of their reputation as reliable suppliers of clean healthy oils and extracts using the latest production and extraction processes and look to replace these imports with the home-grown product."

Senator Troeth also took the opportunity to remind lavender producers the Federal Government had a range of programs in place to help boost business management skills and the adoption of innovative practices, including the FarmBis and Property Management Plan-

ning programs and the new Farm Innovation Program.

Albany grower Ernest Dechow was part of the WA contingent to the national conference and said the burgeoning range of end uses for lavender highlighted at the event should help fuel the expansion of the WA industry.

"The WA industry is very much in a fledgling phase at the moment but in time I am confident it has the potential to really develop," he said.

"They seem to be finding more and more end uses for the oil all the time, which is a very attractive part of the industry.

"I was originally a banksia grower which only has the one end use, so lavender has provided a much more promising diversification option."

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[Countryman / 2000 Sep 7]

Olives an old story

The burgeoning olive industry in WA may have its origins in some of the very old olive trees found at historic sites around Perth, according to Jerramungup horticultural science student Carissa Edmonds.

Ms Edmonds' fourth year research project at the University of WA is studying the colonial trees found around the State, identifying any relationships between the trees using DNA and physical analysis, and then using this information to find any links between these trees and the cultivars used.

"Aside from the historical information to be gathered, these trees may also have some interesting traits for potential commercial use," she said.

"So I'll be doing fruit and oil quality tests on them, such as flesh-to-pit ratio, which will help me determine if the olives

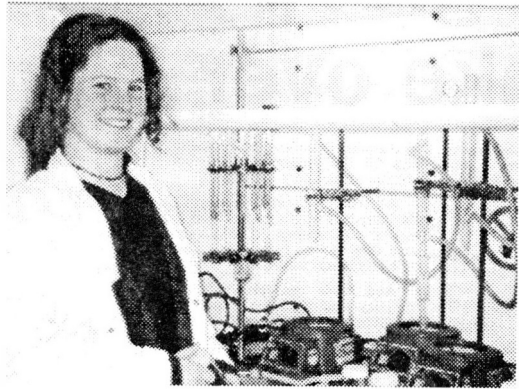
were meant to be used for oil or table fruit."

The trees, up to 15 m with trunks up to 1 m wide, are found at several sites throughout WA.

The oldest olive trees in Australia are at Government House, according to Ms Edmonds, while there are 35 trees dating back to the 1830s at the Catherine McAuley Centre, Subiaco, the first residence of the Benedictine monks who later moved to New Norcia.

"History has a place in science too," she said.

Ms Edmonds became interested in olive breeding and lineage after studying food science in third year, some of which was taught by olive specialist Professor Stan Kailis. Her project is now supervised by Professor Kailis and plant breeder Dr Susan Barker.



Carissa Edmonds is studying the characteristics of colonial olive trees in WA

At the end of her course this year, Ms Edmonds would like to briefly return to the family farm in Jerramungup and start an olive grove, both for commercial use and to help alleviate the salt problems on the farm.

(To know more about the bachelor of science in horticulture and viticulture or any of the other degrees from the faculty of agriculture, UWA, contact the faculty office on 9380 2565 or check the website at www.agric.uwa.edu.au.)

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[Weekend Australian / 2000 Aug 5-6]

Trail of the lonesome pine:

James Woodford attempts to unravel an Australian botanical mystery

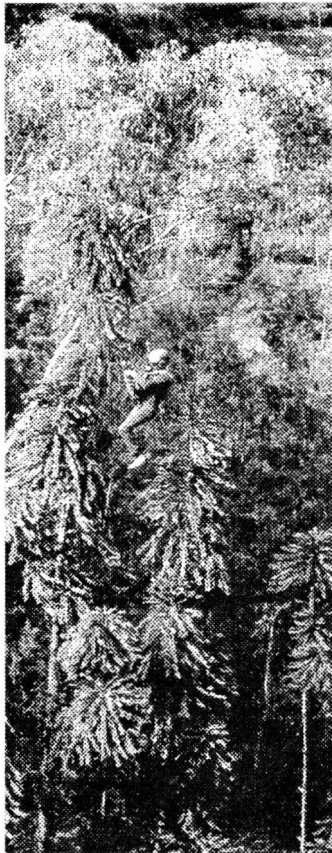
Book Review: The Wollemi Pine, by James Woodford. Text Publishing, 212pp, *\$25.00 (+ GST \$2.50 in Australia)..

Author and journalist James Woodford makes the point that you and I are living fossils. All living things have an ancestry stretching back billions of years.

Many living species, including humans, are recorded as fossils in rocks millions of years old. But the term living fossil applies to organisms that appear in rocks and are thought to be extinct until — presto! — they reappear, not identical to their fossil ancestors but closely related. They have not, of course, reappeared, but have been with us all the time.

Three such reappearances occurred in the 20th century. First was the coelacanth. This unfortunate creature, a primitive fish barely changed after 385 million years, was first noted by scientists in 1938, and many were unnecessarily hauled from the sea off southern Africa thereafter.

The second was the dawn redwood, or *Metasequoia*, a tree from 100 million years ago discovered in China by scientists in 1948. The third is the Wollemi pine, a reappearance from the Cretaceous period, about 65



Going down: abseiler and "scientifically unqualified bushwalker" David Noble discovered the Wollemi 'pinosaur'

million to 144 million years ago, the time of the extinction of the dinosaurs, according to Woodford's chart.

The coelacanth proved to be well known to local fishermen, and the Chinese had a shrine at the base of the first dawn redwood discovered — 1000 more were discovered the same day. But it seems that the Wollemi pine was unknown to humans until 1994, when David Noble, a young NSW National Parks and Wildlife Service field officer, abseiled into a gorge in the Wollemi National Park with two intrepid friends.

Gorge is, to many Australians, a special word. It embraces and encloses, holds secrets, shelters and threatens. A gully is minor, not so much in size as in quality, a chasm exists between generations, while a canyon is something they have in North America — or so it seems to me. All these names are needed for the maze of clefts in the 1 million hectares of the Blue Mountains, which includes the

Wollemi wilderness.

But, says Woodford, "a species that once grew throughout Gondwana is now reduced to two fragments in an area hardly bigger than a large backyard".

Noble, he says, was a "scientifically unqualified bushwalker". From that we can perhaps infer that Noble was a field naturalist, an enthusiastic amateur. Such people often have considerable knowledge and make great contributions. Are they scientists manque? More animal, more cerebral, more loving or sympathetic than the rest of us?

Whatever they are, they do not discover by fluke; they observe the bush and value what they observe. They ought be remembered in our prayers. But what difference does it make to anything at all if Noble had, or had not, found this "new" genus? The question

may, or may not, have an answer.

Noble first noticed that this gorge was botanically different from the usual coachwood and sassafras rainforest, then saw the strangely bubbled bark of large conifers unknown to him — or, as it turned out, to anyone else. He broke off a piece of foliage to take back and completed his excursion.

The publisher wants us to see what followed as a scientific thriller, but this book is no palaeontological Peter Corris.

It is the partial unravelling of a botanical mystery that will interest all in the trade, whether professionals or amateurs, and many general readers.

The Wollemi pine, now trading as *Wollemia nobilis*, seems to have begun life about 100 million years ago. It belongs to the gymnosperms, or non-flowering plants (such as conifers, which have cones instead of flowers), that once dominated the world but are reduced to fewer than 1000 species worldwide, a mere 0.5 per cent of flowering plants. Flowering plants, including eucalypts, slowly took over because of sharp climatic change — Alice Springs was once rain forest.

Woodford gives a good account of the prehistory of the continent and an easy lesson in botanical classification — the Wollemi pine belongs to the family Araucariaceae, along with the Bunya, Kauri and Norfolk Island pines. He pricks our interest with questions that remain unanswered. The southern beech has been a fellow traveller of the Wollemi pine through time and landscape — why has the beech survived where *Wollemia* was "extinct"? Why has *Wollemia* survived 100 km from the nearest beech? Why has it been unable to get out of its gorge — by seeds carried downstream, for instance? Most curious of all, why is there no DNA difference

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between individual Wollemi pines?

Many readers will be fascinated by the human side of the story: the secrecy; the friction between the NPWS and Sydney's Royal Botanic Gardens; and the detective work of so many scientists — botanists, palaeontologists, palynologists (who study fossil pollens), geneticists and plant pathologists — as well as the legal and political problems. *Wollemia* is a bandwagon.

Can we attach any significance beyond scientific interest to the discovery of this freak, this "pinosaur"? I have no answer. If it helps tighten conservation of a wilderness, then I am delighted because that fits my view of the way things should be. But the argument that rainforest, or any habitat, should be protected because it may contain species new to science, or species that offer a cure for death or cancer, is fatal to conservation.

Consider the implications. Unless we conserve the remnant acre up the street and the 1 million hectares beyond, we will pull the carpet from under our feet. We are part of the whole. We are what we conserve.

— *Bary Dowling*

Dinosaur trees generate \$21 m for Queensland

Queensland Primary Industries Minister Henry Palaszczuk has announced that sales of the rare and ancient Wollemi pine will generate more than \$21 million each year for Queensland at peak production.

Speaking at the official opening of the Department of Primary Industries' \$700,000 purpose-built Wollemi Pine Propagation

Complex, Mr Palaszczuk said more than \$15 million was projected from export sales of Wollemi pine, whose closest relatives are fossils from about 100 million years ago.

"Queensland has won the exclusive rights to propagate and commercialise Wollemi pine. Commercialising it is regarded as the best way of preserving it for future generations," Mr Palaszczuk said.

"We are investing in the preservation of a living fossil. We are investing in smart science. Importantly, this investment will deliver substantial benefits for the state, particularly southeast Queensland.

"By peak production more than 50 jobs will be created in the development phase of the project, with up to 50 jobs at peak production.

"Wollemi pine has enormous potential as a household plant, especially in the lucrative Japanese market, where about 300 million conifer pot plants are sold each year.

"Queensland Forestry Research Institute staff will multiply 5000 seedlings up to 3000 hedges. Within two years, those hedges will produce 25,000 cuttings annually. From there the cuttings will be multiplied into two million cuttings that will be required annually to meet the anticipated sales."

"Every additional rooted cutting produced this year will result in an extra 30 plants being available for sale in 2005."

Mr Palaszczuk said between 2005 and 2015, 15 million Wollemi pine cuttings would

Hazelnut Varieties

Hazelbrook Nut Farm, Balingup WA

(Members of WANATCA)

PO Box 15, Subiaco WA 6008

Phone 08-9388 1121 (after hours).

be produced through the joint venture between Birkdale Nursery and DPI Forestry.

Last year, DPI Forestry and Birkdale Nursery were awarded the rights to commercialise Wollemi pine under licence on behalf of the New South Wales' Royal Botanic Gardens, Sydney. They were selected ahead of interstate and overseas proponents.

Through the Queensland Forestry Research Institute, DPI will propagate Wollemi pine for commercial sale. Birkdale Nursery will market Wollemi pine domestically and overseas.

The Queensland Forestry Research Institute is propagating cuttings of Wollemi pine using its internationally renowned strategies and techniques refined over many years on Queensland's hoop pine.

The propagation facility includes a climate controlled greenhouse featuring underbench heating, evaporative air conditioning, and a travelling boom watering system suitable for fertigation and pesticide application.

A computerized system will control and record greenhouse conditions and functions, and provide dial-up alerts of system failures and undesirable greenhouse conditions; a potting/storage shed featuring a pot-filling machine and office; a shade house to be used for holding hedge plants and for conditioning rooted cuttings prior to transferring them to the field for commercial hedge establishment.

[Gumnuts (Australian Plants Online Newsletter) / 2000 Sep]

New Wollemi Pine Population Discovered

In the Sydney Morning Herald of 12 August 2000, James Woodford reported the discovery of a third population of the Wollemi

Pine (*Wollemia nobilis*).

This population is in a different sub-catchment than the two previously known populations and scientists are hopeful that it may exhibit genetic variability from the earlier discoveries, which DNA testing has shown to be genetically identical.

The article also reported that a commercial release of 150,000 plants of Wollemi Pine to the public is anticipated in 2005.

[Nafex list <nafex@egroups.com>]

Grafting sealant - cow manure?!

I had a gardening acquaintance relate to me the method her grandfather used to use — he'd either pin his bud in place with a very small brad, or wrap his graft union with small twine, then scoop up a handful of fresh cow manure (still hot and steaming) and slather all around the graft union, covering the scion. Of course, this was before the days of O157:H7!

Didja ever notice how a nice cow patty, after a day or two, gets that nice dry crust, but it's still moist and juicy on the inside? I figure the crust probably served to seal in the moisture in the manure (and scion), and continued microbial activity in the manure may have contributed heat to speed callusing — may also have precluded fungal growth as well. I was giving a grafting demonstration to some 4th and 5th graders about a month ago, and told them about this - they loved it!

"Never kick a fresh turd on a hot day" - Harry Truman

"If your lawn fertilizer was still in the cow five minutes ago, you might be a redneck" - yep, that's me.

— *Lucky Pittman*

<Lucky.Pittman@murraystate.edu>

[West Australian / 2000 Aug 30]

Couple's move bears fruit

Steve and Sue Collis turned a family tradition into a commercial success after travelling around Australia and finding people loved sun-dried fruit as much as they did.

The couple abandoned their jobs and life in Perth six years ago for Donnybrook where they set up a fruit leather business, now known as Solarfruit.

While other fruit leather producers use dehydration or commercial ovens, the Collis' say theirs is the only fruit dried naturally by the sun on purpose-built tables.

The tables have special covers to protect the fruit from contamination while outdoors.

The technique was inspired by Mrs Collis' mother, who used baking trays covered with mesh to sun-dry fruit for the family.

The Collises use fruit that would otherwise be wasted because it is either too small, too ripe to transport or slightly blemished.

"The market is getting fussier and standards are getting higher so perfectly good fruit is being rejected," Mr Collis said.

The fruit is pulped after the stone has been removed and then spread on drying tables for up to 10 days. "It's an amazing process," Mrs Collis said. "It takes a lot of looking after and if you're not careful it can burn."

The product was becoming popular with parents who had trouble with children to eat fresh fruit and for people with allergies.

"There's a lot of products out there that are real fruit but there's a lot of colours and preservatives added," she said. "Ours don't have any of that."

— Sarah Heinzman



Business with bite: Steve Collis samples a roll of sundried fruit he and his wife, Sue, produce on purpose-built tables at Donnybrook. The technique was inspired by Mrs Collis' mother. Picture: John Evans

[WA Olive Network: Newsletter / Number 19,
Aug 2000 Aug 23]

Olive oils aint olive oils

There has been some debate on the quality of various varietal oils for some time. Of particular interest to me has been the quality of oil from Barnea. I have had reports from various people, however the following comment from Paul Seats should get some people thinking.

"The oil from these trees (BARNEA) was probably the best I have tasted in my short association with the olive. I now know what it is that people rave about. A splash of this oil on a fresh green salad is heaven.

It had a slight banana/pepper/grass taste and was so fresh you could still hear the olives screaming. That was nearly 12 months ago now and I treasure the last few drops that I have left.

It has kept very well. The oil came from Ponder Estate on the south island of New Zealand and was smack bang in the middle of their wine growing region. Mike Ponder the owner of the grove also makes wine and I believe he is a bit of Maverick/pioneer type person.

He gladly showed us around the grove. The trees were quite vigorous and had amazingly thick trunks for their age, 4-5 years I think. Of course the local conditions obviously had a major impact on the taste. I was impressed. His oils are included in the top 100 of estate oils in the world"

I have also read one report that was very derogatory of oil from Nevadillo Blanco (which some suggest is Picual, by any other name). This would be of concern to the Spaniards, given that 80% of Spain's Olive oil is said to come from this variety or clones close to it.

One of the best Olive Oils I have tasted is Mike and Betsy Watkins' oil from Frankland. When is it hitting the market Mike?

— Harry Goff

Opportunity for a Stone Pine venture

In the northern Perth suburb of Jandabup is perhaps the most extensive planting of Stone Pines in Western Australia.

The Stone Pine, *Pinus pinea*, is the source of the pine nuts used in Mediterranean cooking, especially Lebanese dishes. These were the variety of pine nuts formerly sold in Australian healthfood shops, although in recent years they have been mostly replaced by the similar Korean Pine nuts from *Pinus koraensis*, produced in large quantities in China.

The Jandabup planting was put in by the Franconi family, in an effort to find a tree crop which would grow and thrive in the extremely infertile light sands of the area.

Now present owner Murray Franconi would like to see better use made of the planting. He would like to talk to people interested in a share-farming venture with these trees, or who would be interested in buying some of the trees for transplanting to other properties.

Present production from the trees is fairly low, but could undoubtedly be greatly improved with more horticultural input. Another possibility is to farm the trees as a source of seed for sale.

Murray can be contacted at 08-9405 7246 or by e-mail at murray_f@today.com.au.

Tree milestone

WA organization Men Of The Trees recently celebrated their planting of more than five million trees.

A special gathering at MOTT's St Barbe Grove nursery in Hazelmere also marked the opening of the Bob Foote Memorial Workshop.

Mr Foote, a design engineer, was a dedicated member of MOTT and at one time manager of their Farm Tree Help Scheme.

WANATCA was represented at the occasion by Exec member Bob Cook.

West Australian Nut & Tree Crop Association (Inc)

PO Box 565 Subiaco WA 6008 Australia

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WALNUT: Graham Fellows, 97731346 (PO Box 217 Manjimup WA 6258)

CALENDAR OF FORTHCOMING EVENTS

Deadline for next issue: Jan 20

2000

Nov 14 Tue **Annual General Meeting** (Grafting and Budding Workshop/
Seminar)

2001

Jan 16 Tue Executive Committee Meeting

Feb 13 Tue **WANATCA General Meeting**

Mar 10-11 § West Australian Olive Festival, Gingin

Apr 13-20 **ACOTANC-2001 Conference, Perth**

Apr 22-29 § Commonwealth Forestry Association Conference, Perth

May 15 Tue **WANATCA General Meeting**

Aug 14 Tue **WANATCA General Meeting**

Nov 13 Tue **Annual General Meeting**

*General Meetings are held starting at 7.30pm. Venue: Theatre Room, Kings Park HQ, West Perth. These meetings usually include a current magazine display.

• Event with WANATCA participation; § For contact details refer to the Tree Crops Centre.

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