



Quandong

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West Australian Nut & Tree Crop Association (Inc)
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The Jaboticaba (*Myrciaria species*) (Sec: About the Cover, p. 2)

NEXT MEETING: Tuesday May 16, 2000: 7.30 pm

For the next General Meeting our main speaker will be Dr Zora Singh of Curtin University. Zora will talk on:

The Bael Fruit, Aegle marmelos

This interesting and very hardy fruit tree is a cousin of citrus. Tins of the fruit pulp can be found in asian-food stores (see illustration on page 5), and the plant also has a host of medicinal and other uses. We look forward to a most interesting presentation.

Chestnut Harvester

Also at the meeting will be award-winning inventor Alan Ness of Wagin. Alan is currently working on a new design for a chestnut harvester (previous successful projects have dealt with jojoba and tagasaste). He will tell us about his progress with the chestnut harvester, and also seek feedback from members on what they would look for in such a machine.

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

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

In This Issue

Helliar success with olives, vines	3	Tree crop extract cures nasty cough	18
Riding the Olive Tiger	4	Elder tree provides influenza relief	19
Bael Fruit	5	Cancer cures from trees	20
Bring & Buy' meeting: rare trees	6	Funding sought for ATCROS	21
'Festival of Fruit' in California	8	Tree crops: new life to depressed farms	22
Raiders of the lost rainforest	9	Experiment rediscovers delicious dates	24
The GST and WANATCA	13	WA tree crop consultants go international	26
Clean and green boost to bush tucker	14	Local water diviner: success with trees	27
Focus on natural remedies	15	Farmer switches to mangos	28
Book Notes: <i>Natural Chemical Substances in Australian Plants; Fruit Salad; Commercial Forest Plantations on Saline Lands.</i>	16	Backhousia oils a culinary hit	29
		Blueberry products net profit	30
		Hint on Bunya propagation	31

About the Cover

The cover drawing of the Jaboticaba, one of a group of *Myrciaria species*, an interesting fruit in the same family as eucalypts, from southern Brazil. It grows well, if slowly, in Mediterranean climates, and has a good description in *Fruit Salad*, a book reviewed on page 17.

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[Weekend Australian / 1999 Sep 25-26]

Helliar success with olives, vines — pomegranates, mangos next

When Sydney couple Colin and Helene Helliar bought their property in Cowaramup in southern Western Australia seven years ago, little did they know that their vineyard “with a small paddock of vines” would go on to become the vanguard of the fledgling Margaret River olive oil industry.

The 48 ha property, which started life as Stellar Ridge vineyard, diversified into olive trees two years ago. The Helliars are celebrating after their second olive oil crop took out a swag of awards at the annual Australian Olives Association awards this month.

**Oil at \$100
per litre**

After an initial 180 litres from a mere half-tonne of fruit, this year’s crop produced five tonnes of olives and 1000 litres of oil. Their premium WA

Mission oil won the best overall product at the annual awards and sells for roughly \$100 a litre in Selfridge’s in London. After coming to Margaret River for a holiday seven years ago, the couple “fell in love with the place”.



Colin and Helene Helliar with their budding olive trees. Next will be pomegranates. Photo: Ross Swanborough

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>.

For the best part of five years they operated the business "by remote control" from Sydney, but moved to the West permanently 18 months ago. "As far as Australians are concerned, not many people realise how beautiful it is down here and what it offers people. It's like 'going west young man' in America many years ago."

The Helliars are not stopping at merely producing olives and wine. Pomegranates and the first mangoes to be grown commercially in the region are next. And in the next two years expect their unwooded chardonnay and shiraz to be complemented by grenadine.

"No one is really growing pomegranates; there are only one or two growers in NSW, but there is nothing over here," Mr Helliar says. "We thought it would be interesting to grow pomegranates and make liqueur and grenadine."

— *Cathy Pryor*

[The Helliars are WANATCA members]

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**David Rankin, Ph/Fax 08-9757 2547
PO Box 217 Margaret River 6285**

Riding the Olive Tiger

The Olive Industry in WA continues to gather pace at a phenomenal rate.

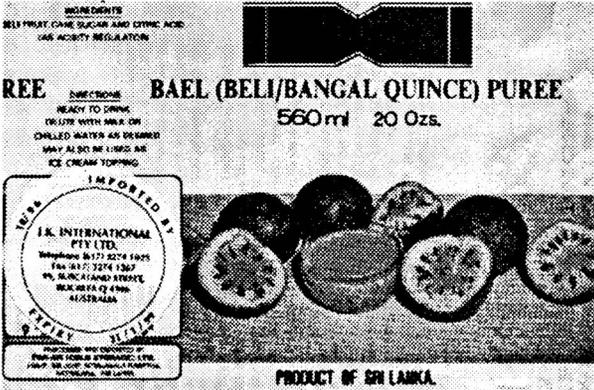
The speed of development has been unprecedented for an Australian horticultural industry, perhaps the closest parallel being the rise of the Californian pistachio industry, from zero to the world's second largest producer, in 15 years.

Big investments have been made and hundreds of thousands of trees have been planted, by individuals, consortiums, and major companies. New information and news reports continue to flood in — enough to fill up the whole of 'Quandong' if it was issued every month of the year.

Improved machinery, mostly from European sources, continues to hit the docks. Israeli irrigation equipment suppliers have made many sales here. And much of the investment funding and expertise is also coming in from Europe.

It is perhaps natural that many people considering entering the olive industry in WA have two fears. One is that the big output will glut the market, leading to poor returns from the crops when they come in. The other is that olives are a 'bubble' crop, pumped up to huge expectations and likely to fall in a heap, with only unscrupulous promoters making any money in the end. Memories of the over-selling of Jojoba as a crop in the 1980s will remain in many minds.

My personal view is that these fears will not be realized, and that olives will go ahead to become a major crop and export item for WA — perhaps even rivalling wheat, in the billion-dollar bracket. While I admit to being an optimist, I have some grounds for my views — the olive situation is rather different



Bael Fruit (Aegle marmelos). From a Bael Puree can label. More about this interesting fruit from Dr Zora Singh at the May 16 WANATCA meeting

to that of earlier crops which have not lived up to their initial promise.

- People and companies are putting their own money into olives, not just looking to 'the public' to subscribe to floats or to buy a small share in a managed grove. This is a healthy sign.

- Traditional European sources of olive oil are drying up. Italy, a major consumer and producer of olive oil, now imports considerable amounts. Land in Italy is becoming increasingly urbanized and taken out of agriculture, standards of living are rising, and old-style peasant methods of production are no longer economically supportable. Spain is beginning to follow the same route.

- In contrast, WA has huge tracts of land generally judged suitable for olive growing, which are currently only used for grazing or field crops and return only a couple of hundred dollars per hectare per year. Olive growing, while more capital-intensive and perhaps better operated on smaller hectareages, can give very much better returns than this.

- Availability of printed information and practical expertise has improved out of sight. In the early days, the only available information in English was the 1960 Bertini report, *Olive Growing and Processing*, which we rescued out of oblivion and which perhaps helped kick-start the current development. Now a range of excellent books and reports is available, and we have been able to draw on European and North American personal expertise.

- Availability and capability of equipment has also improved out of sight, perhaps the major step being the release of small, automatic continuous-process oil extraction plants at a

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price which an individual grower can afford, from about \$15,000.

- There is increasing recognition of the health value of olive oil, as a plant oil which does not contain cholesterol. In southern Europe, olive oil is a staple food, like butter once was in Australia and Britain, and huge quantities are needed.

- WA is in a position to plan a start-up industry using the best modern equipment and techniques, without conflict with vested interests in old equipment and methods. We also have the technical expertise in computer control and process engineering to support high-tech operations. However, the output is not from a 'new crop' and does not have to fight to establish itself in world markets.

- We have the opportunity to 'go for the best', and produce high-quality oils with the prestige of 'vintages', 'varieties', 'appellations' and the like, incorporating much value-adding. This parallels the very successful growth of the Australian wine industry, and in fact much of the experience of this industry is now being applied to olives.

So the outlook is bright. Undoubtedly, as production grows, we will need to get out there in the world and sell, as the Californians had to do with almonds, but the major part of the world's population is yet to taste olive oil. Cooperation, investment, research—can they fail to pay off?

— David Noël

'BRING & BUY' MEETING OFFERS CHANCE OF RARE TREES

Once again, WANATCA has organized another 'Bring & Buy / Tree Crops Fair' event, at which members and others can buy and sell all sorts of useful plants, including some real rarities not available anywhere else in WA.

This year we expect the event will again be held in the Carpark of the Captain Stirling Hotel, Stirling Highway, Nedlands. Make a note of the date:

**9.30 AM - 12.30 PM, SUNDAY,
OCTOBER 15, 2000**

This event is open to all buyers and sellers, including commercial nurseries involved with fruit and nut trees, and especially sister organizations. This year Men of the Trees will have their own sales stand and we would welcome others.

Bookings for sellers will cost \$5, no charge to buyers. Many thanks to Stanley Parkinson for taking on the organization of this event.

To book your space, please contact Stanley on 9386 2518 (or e-mail: sjparkinson@hotmail.com), or leave a message with the Tree Crops Centre.

Many thanks to the management of the Captain Stirling Hotel for their generosity in allowing us to use their site. The Hotel offers a fine range of meals and other refreshments—just the way to top off a great morning!

What we had last year

Here is a list of some of the items offered at the 1999 Bring & Buy:

Acacia saligna (Saligna Wattle - Herbert strain) : Very variable WA wattle. This strain can grow rapidly to 10 m (4 m in first season), good pioneer, firewood, biomass producer. Dies at age 10-12 years, riddled with borers.

Annona cherimola (Cherimoya) : Cool-climate, deciduous custard-apple relative, will fruit in Perth, one of world's best fruits. Seedling.

Annona x atemoyer (Custard Apple, Atemoyer) : For warm-temperate/subtropical climates. Seedling.

Araucaria bidwillii (Bunya Pine) : Stately relative of Norfolk Island Pine, slow growth, huge (5 kg) cones with delicious edible nuts like chestnuts, fine timber, prickly leaves. Hardy. Australian native nut. Commercial future.

Artocarpus heterophyllus (Jakfruit) : Huge edible fruits, mostly on trunk. "Tropical", but these plants raised in open in Perth.

Carissa grandiflora (Carissa, Natal Plum) : Spiny evergreen hedge plant, has plum-like edible fruits.

Casimiroa edulis (Casimiroa, White Sapote) : Hardy fruiting tree from Mexico, produces very sweet orange-sized green or yellow fruit, excellent when softened.

Diospyros digyna (Chocolate Pudding Fruit, Black Sapote) : Evergreen persimmon relative, will fruit in Perth, black fruit with chocolate flavour when fully ripe, recommended with ice cream, dairy products.

Diploglottis campbellii (Native Tamarind) : Australian rainforest tree, promising bushfood fruit.

Doyalis caffra (K-fruit, Kei Apple) : Spiny tree from South Africa, hardy hedge or barrier plant, bears round yellow plum-sized fruits, unusual acid/sweet flavour with hint of apricot, carrot. Commercial possibility.

Eriobotrya japonica (Loquat) : Hardy, evergreen apple relative from China. Fast-growing, sweet yellow-orange fruit in Spring, good biomass, filler tree. Fruits good for jam, drying.

Eugenia uniflora (Pitanga, Surinam Cherry) : Evergreen shrub, bears distinctive red cherry-sized ribbed fruit, unusual sweet/sour 2-phase flavour, grow well in Perth. From South America.

Ficus carica 'Peter Good' (Fig) : The best WA-origin fig selection for home use.

Ficus coronata (Sandpaper Fig) : One of the best of the Australian native figs, evergreen, masses of small edible fruits on branches and trunk. Leaves very rough, like sandpaper.

Ginkgo biloba (Ginkgo, Maidenhair Tree) : Living Fossil' first noted in coal deposits, subsequently found live in China. Slow-growing, deciduous, male and female trees, latter bear edible & medicinal nuts, 'silver almonds'.

Harpephyllum caffrum (Kaffir Plum) : Distinctive fast-growing evergreen tree, red sweet fruits with large pip, may have potential as a timber tree. Not for

very cold areas.

Hylocereus oncampensis (Red Pitaya) : Unusual climbing cactus, grows on walls or other trees, spectacular night flowers may be followed by beautiful large (1 kg) red-fleshed fruit. Needs some shade and support. Commercial prospects.

Inga mertoniana (Inga, Ice-cream Bean) : Subtropical evergreen tree, lush leaves, producer of pods with sweet edible flesh.

Leucaena leucocephala (Leucaena) : Important tropical fodder & timber species. Grows quite well in Perth in sunny position. White ball flowers followed by dark brown pods

Mangifera indica (Mango) : A good versatile fruit for Perth, self-fertile. Seedling, but normally true-to-type.

Manilkara zapota (Sapodilla, Chiku) : Mexican fruit now found worldwide, very sweet fruit like brown sugar, slow growing, will fruit in Perth. Seedling.

Pereskia aculeata (Barbados Gooseberry, Pereskia) : Climbing thorny vine, grows easily. Small yellow edible fruit. Has fleshy leaves, is a primitive cactus.

Persea americana (Avocado) : Avocado. Seedling.

Psidium guajave (Guava) : Fairly hardy subtropical fruit, pear-size fruits eaten green or allowed to soften & sweeten, high vitamin content, many seeds.

Quercus suber (Cork Oak) : The bark is the source of commercial cork, and the acorns are good for stock feed. Slow-growing, evergreen, hardy to frost, quite dry conditions.

Sterculia quadrifida (Peanut Tree) : North Australian kurrajong relative, tree develops distinctive bottle shape, bears pods containing round seeds which when roasted are similar to peanuts.

Syzygium forte (White Apple) : Fairly hardy Australian lillypilly relative, large edible fruit

Syzygium jambos (Jambo Fruit, Rose Apple) : Substantial evergreen tree in myrtle family, from Asia but grows well in Perth, has small apple shaped fruit, apricot texture, good flavour.

Syzygium paniculatum (Magenta Brush Cherry, Lilly-Pilly (WA)) : Prolifically- and early-fruiting Australian native, hardy in Perth, small apple-flavour crisp purple fruits.

Ugni molinae (Ugni, Chile guava) : Attractive compact shrub, small tangy fruit, hardy in most conditions.

'Festival of Fruit' in California

The annual meeting of California Rare Fruit Growers will be hosted by the Orange County Chapter and the meeting has been scheduled for Nov 11-20 at the University of California at Fullerton [an eastern suburb of Los Angeles].

Tours, meeting, and specialty crop seminars are now being scheduled for the entire week. The main seminar day will be Saturday, Nov 18. Registration and meeting details will be forth coming.

Please see our website as below. Discounted airfares are now being planned and a few home visits may be arranged for Australian registrants to the meeting. Paper presentations are being requested of WANATCA members.

Please contact Roger Meyer, Program Chairman, if you would be interested in presenting a paper which would be of interest to Rare Fruit Growers. The e-mail address is

<exoticfruit@95net.com> . Or mail your interests to 16531 Mt Shelly Circle, Fountain Valley, CA 92708, USA, for consideration.

Two overseas speakers will be at the meeting to give "keynote" talks. They are John Prince of New Zealand and David Noel of Western Australia.

The event will include a presentation on WANATCA's staging of Acotanc-2001 in Perth, Western Australia, at Easter 2001.

The web site for the Festival of Fruit is <http://home.att.net/~oc_crfg>. Check at this site for the latest news.

— Roger Meyer

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David Noël comment: As you can see, I have been invited to the CRFG event and will be away in California from November 11-20 this year. I will also be away in Europe for most of September, and hope to visit the Agroforestry Research Trust site in Devon, England, and the Horticultural Research complex at Reus, Spain.

The CRFG are perhaps our closest group of colleagues, enjoying quite similar climatic and social conditions as in WA. Both John Prince and Roger Meyer are WANATCA members and have given great encouragement and exchange of material in the past. The CRFG deserve our thanks and support, and any member who has the opportunity to visit LA for their November event is asked to contact me for any help I can provide.

California Rare Fruit Growers: <A1115>. The CRFG website, at www.crfg.org, is one of the most useful sources of information on rare fruits.

[Weekend Australian / 2000 Feb 12-13]

Raiders of the lost rainforest:

Into the Daintree in search of medical and agricultural gold

For half a kilometre our research party ventures into the Daintree rainforest.

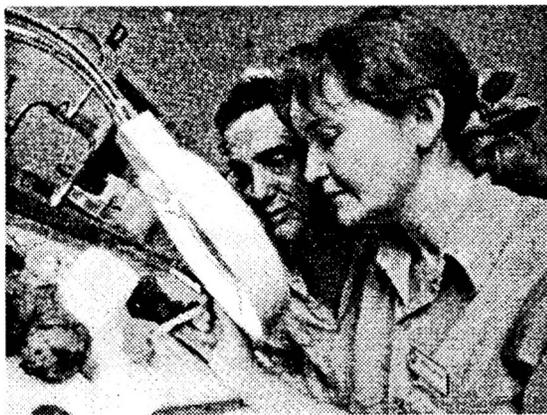
Dr Paul Reddell, an ecologist from the CSIRO, has executed a lunge at something on the ground and holds it up to me. It's a curious seed, corrugated green and brown, just smaller than a tennis ball, partially split into segments.

It's known as an idiot fruit, but more properly as *Idiospermum australiense*. It's a flowering plant, a very primitive angiosperm, so unusual that it has its own family in the scientific classification system.

This is the Daintree, one of the wettest areas in Australia, if not on earth. Last year Bellenden Ker, a mountain with a Bureau of Meteorology weather station on it, recorded a whopping 11,853 mm of rain, its highest-ever rainfall.

The wet tropics World Heritage area is a small part of Australia — about 900,000 ha — but it holds staggering biodiversity. Globally, tropical rainforests cover less than 7 per cent of the earth but are home to more than 50 per cent of all species: more than 125,000 higher plant species, 5 million insect species and 1.5 million fungi species. The wet tropics of far north Queensland is one of the few sites that meets all the criteria for inclusion on the World Heritage List.

But we aren't here for the scenery. Reddell and his colleague Dr Victoria Gordon are bioprospectors, seeking plant extracts that may one day change the face of medicine and agriculture.



Bioprospectors: Victoria Gordon and Paul Reddell collecting Daintree samples that could yield useful chemicals

"You have seen a living fossil now," Reddell says excitedly, still holding the idiot fruit. It closely resembles the first flowering plants that existed about 100 million years ago, when dinosaurs still walked the earth.

It's also deadly. Dozens of them have remained on the forest floor, untouched since last year. This is amazing considering the volume and variety of animals that roam the area and the suite of fungi and insects populating the forest floor, all of which you'd imagine would find a nutrient-rich seed such as this irresistible.

"Nothing touches them," Reddell says. "They are laced with cyanide. If you had one of these quarters, you would be dead."

Gordon, a chemical ecologist, says the fruit is packed with nutrients and carbohydrates, ready food for the seedling after the seed germinates and starts growing. But as well as cyanide, it also contains

alkaloids, a chemical group that includes nicotine, cocaine and morphine, as well as medicines used to treat heart disease, cancer and malaria.

"Some alkaloids can totally disrupt the nervous system. That's why they are so important as drugs," Gordon says. "Of the 12 commercially most important plant-derived drugs we have, 10 are alkaloids. What they are doing is protecting the nutrients for those seedlings."

This living museum holds one of the largest collections of living relics from ancient flora. It is also one of the world's last biological frontiers. Scientists barely know what lies within many of these plants. Some have been analysed before but by chemists, not by chemical ecologists such as Reddell and Gordon, who are using their knowledge of ecology to unlock floral secrets.

Directly behind is a stinger plant, *Dendrocnide moroides*. When it bears fruit,

they look like little pink bunches of raspberries. The entire plant, even the fruit, bears delicate silicate needles that inject a toxin — moroidin — when touched. This poison can cause severe pain, swollen lymph nodes and depression, and the symptoms can last for months.



*Fruits of the forest:
deadly idiot fruit*

Reddell and Gordon, who work at the CSIRO's Tropical Forest Research Centre in Atherton, an hour's drive west of Cairns, have dodged many stinger plants as they search the Daintree for extracts that might prove useful to medicine and agriculture.

Since starting their research 18 months ago, they have found a number of crude extracts, including some from the fruit layers of a particular member of the Proteaceae family that includes banksias, which kills golden staph bacteria much more effectively than standard antibiotics. Golden staph is a virulent bacteria that causes pneumonia and a multitude of other diseases, including urinary tract infections and mastitis. It is ubiquitous, resistant to antibiotics and a serious problem in hospitals.

The extract's components are being isolated and tested individually.

"After further testing, hopefully these things will be made available commercially," Gordon says.

Reddell and Gordon believe their approach as ecologists means they are able to find substances other scientists fail to. The ecologists are "letting nature give us leads to

Acotanc-2001 Conference:

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"A great reason to come to Western Australia"

potential new chemical entities”.

“The traditional approach is, you collect everything in sight and run them through a series of tests, but in a sense it’s all a shot in the dark,” Reddell says. “Using ecological knowledge can focus you on where to look.”

Fascinated by how seeds manage to defend themselves against natural predators and get themselves dispersed throughout the forest, their research into seed ecology has turned into a quest to find useful chemicals.

They found that large seeds such as the idiot fruit and some smaller seeds avoided by animals, insects and microbes contained unusual chemicals worth studying.

Reddell and Gordon suspected that plants would need to “package” their seed defences into different parts of the fruit. So they collect the fruit from high in the forest canopy with the aid of a slingshot weight and a bit of fishing line, then examine fruit and seeds in separate layers, peeling off the layers of fruit, separating skin, flesh, seed case, testa (seed coat) and seed interior.

“The useful compounds are at such low concentrations within the fruit part that they would not have been identified if the common practice of examining the whole fruit been followed,” says Gordon.

The CSIRO’s entomology division recently found strong insecticidal properties in some of the extracts collected by Reddell and Gordon (which they won’t identify publicly) and the organisation’s molecular science division is interested in identifying specific “bioactive” compounds in them.

Reddell hopes their investigations will lead to discoveries of anti-insect and anti-cancer compounds.

“With most cancer treatments, what you are looking for are things that are toxic to

cells. There’s a very simple logic to it. In nature one of the mechanisms plants use to protect themselves is to use toxins,” he says.

He talks about fleshy fruit that stops seeds from germinating until animals can distribute them around the forest. Some form of biological-friendly weed control is contained in the fruit. If it can be captured and used agriculturally, it could produce a weed killer that works without putting hydrocarbons into the environment.

Scientists have long been investigating substances found in plants in the hope of finding miracle cures.

“More than 25 per cent of all medicines in the Western world are plant-derived natural products,” says Gordon, who qualified as a scientist after studying naturopathy and prescribing traditional medicines to people in Tasmania.

For Sale

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(*Juglans neotropica*) Seedlings

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or phone

John, Linda Price: 08-9497 2302
Bill Napier: 9399 6683

“However, 70 per cent of the world’s population relies fully upon traditional medicines which are all natural products.”

The flip side is the potential danger to the rainforest of unregulated commercialisation of plant extracts. But Reddell and Gordon argue that if scientists are unable to synthesise the active compounds in the lab, the demand for the host plants would require them to be grown in plantations and could form the basis of a new industry in north Queensland.

Unlocking these secrets on the ground is difficult enough, but the mysteries high up in the forest canopy are even more elusive, if only because of the difficulty of access. The canopy level in the Daintree rainforest is about 25 m.

In the past scientists have floated through it on hot-air balloons and swung from ropes. Three partners of the Rainforest Co-operative Research Centre, based at the James Cook University campus in Cairns, decided to solve this problem by building a crane from which they could study the canopy at close quarters.

The crane—the first in Australia and the southern hemisphere—rises nearly 50 m out of the rainforest over the canopy near Cape Tribulation. It can pivot 360 degrees and the three-man gondola can be lowered to any level.

The Rainforest CRC is one of scores dotted around the country that are jointly funded by government and industry bodies, including the University of Queensland, Griffith University, state and local government, tourism bodies and the Wet Tropics Management Authority. A key partner is the CSIRO Tropical Forest Research Centre with headquarters in Atherton.

Scientists at the research centre are using ecological modelling of weather and

vegetation patterns to uncover the history of the rainforest and attempt to ascertain its fate.

The Daintree rainforest looks like it has been there since ancient times but, except for small pockets, this is not the case. Dr David Hilbert and his colleague Dr Bo Ostendorf have seen the rainforest come and go, its death and renewal over thousands of years— all with the aid of computer simulation. They have plotted the history of the rainforest and how climate affected it over tens of thousands of years.

There was little rainforest 18,000 years ago, they believe. This was the time of the last glacial maximum, when the world was colder and drier than today — not ideal conditions for a tropical rainforest.

These days the rainforest is smaller than 5000 years ago, and on the drive from Cairns to the Daintree you can see pockets of darker rainforest forming in the sclerophyll, underlining the fact that most of the rainforest is only 10,000 or less years old. Global warming means the climate will continue to change and with it the rain forest.

How will a warmer and wetter world affect the rainforest? Some rainforest types would be substantially reduced in size and you could possibly lose some species. This means some extracts could be lost before the bioprospectors discover them.

— *Stephen Brook*

CSIRO Tropical Forest Research Centre:
<A1938>

Hazelnut Varieties

Hazelbrook Nut Farm, Balingup WA

(Members of WANATCA)

PO Box 15, Subiaco WA 6008

Phone 08-9388 1121 (after hours).

The GST and WANATCA

Australia's new Goods and Services Tax (GST) comes into operation on July 1, 2000, and the WANATCA Executive have been examining our position and recommended actions for many months now.

As a non-profit organization with a turnover under \$100,000 per year (well under!), we had the choice of registering for GST or not. If we did, we would have to add GST of 10% to everything we charged for, including subscriptions (almost all our income).

We would have to collect up this 10% charge in a separate sock, and every three months, send it to the Government. But first, we could deduct the total of GST we had paid on our own purchases (printing, postage, etc).

The Exec have decided not to register for GST, which means that GST will not be added to subscriptions. But our expenses will increase, as we will have to pay GST on most of our purchases, and this will be reflected in our subscription rates.

Our tentative estimate is that our costs will increase by about 8%. As from July 2000, our subscription rate will be \$54 per year, up from \$50. We have also decided to go onto a 4-quarter subscription year instead of a calendar-year basis.

Under this arrangement, subscriptions will run for 4 consecutive quarters, and members will receive 4 issues of *Quandong* and 1 issue of our *WANATCA Yearbook*, as at present. The difference is that new members can subscribe starting with any quarter, instead of with the first quarter of the calendar year. Existing members will not be affected. This change is expected to spread the administrative load of renewals off the year-end peak, although it will take some years to even out.

There is a sting in the GST tail which is not

yet widely appreciated. If a GST-registered business receives an invoice from another business (a business-to-business transaction) and the second business is not GST-registered, the first business is required to deduct 48.5% of the amount of the invoice and send that to the Government, sending only 51.5% of the amount to the invoice issuer. However, WANATCA is not a business, our subscriptions are not a business-to-business transaction, and no deduction is to be made by WANATCA subscribers which are businesses.

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[Weekend Australian / 1999 Jul 24-25]

Clean and green boost to bush tucker

The world's taste for things Australian is providing the opportunity for a growth industry in edible native plants.

"It is not limited to the food and beverages industry, but increasingly, we are seeing a growth in the cosmetics and pharmaceutical industries as well," says Vic Cherikoff, founding director of Australian Native Fine Foods.

With the approach of the 2000 Sydney Olympics and a growth in Australian identity, products that are unique to Australia are gaining popularity.

"The Olympics are a motivation for manufacturers to be shown as uniquely Australian. For example, Woolworths now has bush bread in its bakeries," says Mr Cherikoff.

"Restaurant and caterers are experimenting with innovative menu styles with Australian recipes."

As a result, the supply of Australian native foods such as Kakadu plums, warrigal greens and gum leaf oil are increasingly being used to promote an Australian image.

"We are supplying Stadium Australia, the Superdome, Aquatic Centre and many others (Olympic venues) with the ingredients, and the processed foods they require to appear as Australian as they can," he says.

The native food industry has gathered support from various government organisations.



Researcher Amani Ahmed tends to hydroponically grown native vegetable warrigal greens

A recent joint initiative by federal and State governments, Regional Food Movement, has been successful in regionalising native edible food production.

In NSW, for example, native foods grown in the Cowra-Orange district are government-funded, allowing the growth to be economically sustainable.

Another federal government initiative, Clean and Green, also has boosted demand for native foods.

"Native foods are seen as largely organic. So from an environmental perspective, their growth has been quite attractive," Mr Cherikoff says. "It is also cost-effective to grow native foods."

He also believes that Australian native plants are in high demand on the international market, particularly in Britain, the US, Hong Kong, Malaysia and Dubai.

“Overseas demand will continue to rise. It is a very large market compared to the domestic one,” he says.

“One of our clients is an icecream manufacturer in Canada who uses our products to give it an Australian flavour.”

Fruits such as the bush tomato, cheesefruit, Kakadu plums and riberry are often used in raw or processed forms as ingredients by restaurants.

Ironically, many of these native Australian plants have been grown in Europe since the 1770s, but their commercial potential is being exploited only recently by Australians.

Horticulture researcher at the University of Technology, Sydney, Amani Ahmed, says

that warrigal greens, for example, proved popular in Europe and North America during the 19th century, and still are grown in France.

In Australia, the wild plant grows mainly in coastal areas and inland near salt marshes.

As part of her PhD research, Ms Ahmed is exploring the best ways to grow Australian bush foods, particularly the bush tomato and the warrigal greens.

“Local experience in the organised farming of bush food plants is very recent, so I hope my research will provide some important background information for growers, particularly those using hydroponic methods,” says Ms Ahmed.

— *Ruchi Lamba*

[*The Australian* / 2000 Mar 4]

Focus on natural remedies

Australia is set to place itself at the forefront of alternative medicine research with the opening of the Centre of Phytochemistry at Southern Cross University at Lismore in regional NSW.

Phytochemistry is the study of the chemistry of plants. The centre's focus will be the research and development of natural plant products in Australia.

“Our aim is to provide the science base for the study of herbal drugs and other natural products and to understand how they work,” centre director Peter Waterman says.

The centre has one of Australia's first LC-NMR instruments, which is used to study and determine the structure of plant compounds. At a cost of \$750,000, the machine identifies the structure of individual molecules, from their hydrogen and carbon atoms when exposed to a powerful magnetic field using radio waves.

The centre is finalising a cooperative research and development agreement with the University of Malaysia in the state of Sabah to develop natural plant products that are indigenous to that state.

The university has been commissioned by the Malaysian Government to oversee the development and commercialisation of herbal drugs and other natural remedies indigenous to Sabah.

The Centre for Phytochemistry is forging research links with a West Australian company, Biogene Bioprospecting, to develop new pharmaceutical drugs from West Australian flora.

“Bioprospecting is sifting through native flora to find anything of pharmaceutical commercial interest,” Professor Waterman says.

— *Andrew Stavro*

Centre of Phytochemistry: <A3354>

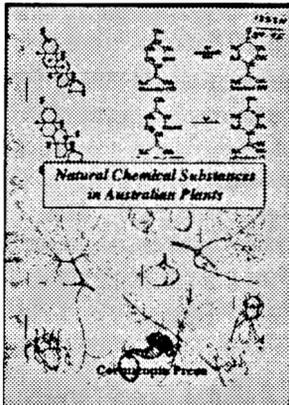
Notes on New Books

by David Noël

NATURAL CHEMICAL SUBSTANCES in AUSTRALIAN Plants. Published by Cornucopia Press, WA, 2000. 300p. *\$39.95

This book is a facsimile edition of a 'labour of love' put together by a team of Australian scientists in the late 1950s, and issued in mimeographed form. With the current increasing interest in Australian plants for their medicinal, culinary, and industrial uses, it is good to see this 'forgotten' source again available.

The team went through all the scientific periodicals available at that time, and extracted every mention of analyses of chemical substances contained in plants growing in Australia. All the information was organized to give main tables of chemicals in the plant species,



organized by family, with indexes by species name, and chemical types.

The new edition has an introduction from which the following is extracted.

Circumstances in remote geological history have led to a doubly unique position for the natural chemical substances contained in Australian native plants.

Australia has, for many millions of years, existed in comparative isolation from the other continents, lacking the land connections which

elsewhere have often allowed easy movement of plants and animals. A major consequence of this is that our flora and fauna have had the opportunity to develop in unique directions, without the levelling influence of competition from various evolutionary trends occurring outside Australia.

So in one sense many Australian plants are relics, with our best-known family, the Eucalypts, exhibiting the largest known prominently-flowering plants, while elsewhere evolutionary trends have de-emphasized insect pollination in favour of smaller, less spectacular wind-pollinated plants.

In another sense, Australian plants hold the peak position in a subtle branch of evolution, that of chemical warfare. Well before the advent of Man, Australian plants were involved in chemical attack and counter-attack to an extent which is only now being realized.

Ultimately, chemical substances produced in plants are a reflection of their genes, which hold the templates for the manufacture of these chemicals. Development of divergent and endemic plant families means development of plants producing very diverse natural chemical substances.

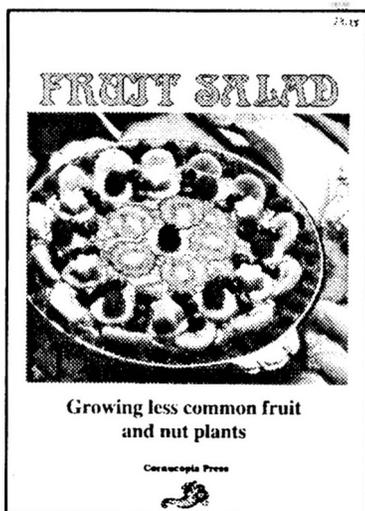
In the past, people have cursed the way native Australian plants have poisoned their introduced stock animals. But now, with acceptance that poisons and medicinals are just different aspects of the same substances, there is a dawning realization of the great and underexploited treasure chest represented in our Australian flora. Not only for pharmaceuticals, but also for unique industrial processes and products, as well as for foods, essential oils, and spices, to which these plant genes contribute unique flavours and characteristics.

FRUIT SALAD: Growing LESS COMMON FRUIT & NUT Plants.

Compiled by *Mike Hanslow*. Published by Cornucopia Press, WA, 2000. 118 pages. Paper cover. *\$29.95

This book is a compilation of information on less usual fruits which may be successfully grown in Mediterranean or subtropical climates. Some 43 fruits are covered, with mentions of related fruit species.

The prime source of this information has



been the Internet, with most information originating in California. To make the information more accessible to an international audience, all references to imperial measures have been converted to metric equivalents. An index has been added.

This compilation will be of great help to growers of new or uncommon fruits and nuts in comparable climates

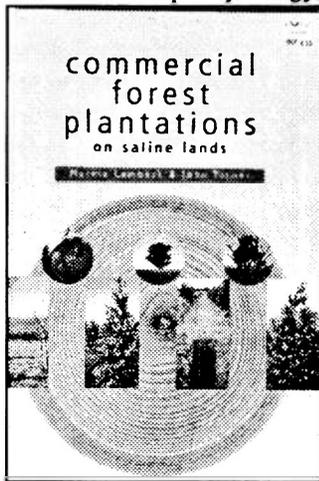
Every fruit or nut covered is 'proven' for subtropical conditions in the sense that it has been successfully grown in warmer parts of California. For each, their description, cultivation, propagation, and botanical

background is given. Most have varieties which have been selected, introduced, or developed, and for these their characteristics are listed. Highly recommended

Commercial FOREST Plantations on SALINE LANDS. By *Marcia Lambert & John Turner*. Published by CSIRO, Australia, 2000. 198 pages, Hardcover. *\$99.00

With the present compelling land salinization problems in Western Australia and elsewhere in Australia and the world, plus the move to combat these problems through tree planting, this book is a welcome new arrival.

This is a detailed and scientific, technical study, with many graphs and tables. Its chapters cover the general area of Salt in the Environment, then Tree Crop Physiology, Screening Trees for Salt Tolerance, Species Selection and Productivity, Environmental Benefits, Products and Marketing, irrigation with Effluents, and Plantation



Management in Saline Environments. The final chapter is on Carbon Accumulation in Forest Plantations, a subject much talked about but until now with little of any substance available. This is a professional-level book, well-produced, and packed with technical information.

* Prices at *Granny Smith's Bookshop* (see ad p. 31)

Tree crop extract cures nasty cough

Last year I had a nasty virus attack which left me with a persistent cough. All the usual medicines on offer at the pharmacist failed to have any effect.

After trying these for several weeks with no joy, I thought I would try a 'chinese' preparation, from an Asian food store in Perth. Back at the office at lunchtime, I hoed into it. Right from the first dose, I could feel it working, and by the end of the afternoon the cough was almost knocked over. I was impressed.

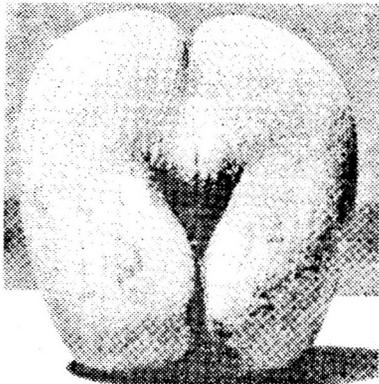
The label said 'African Sea-Coconut', which I thought was just a fancy brand name. But no, on looking at the contents, they included "extract from fresh East African Sea Coconut".

This fantastic plant is a palm, *Lodoicea maldivica*, often called Double Coconut or Coco de Mer. It is found wild only on one or two small islands in the Seychelles group, in the Indian Ocean. Everything about this plant is striking: its appearance, its history, and its botany. The nuts themselves are the largest seeds in the plant world, weighing up to 20 kg each.

There is an excellent writeup by Guy Lionnet, 'The Double Coconut of the Seychelles' in our WANS Yearbook, vol. 2, 1976, from which the photo is reproduced. This is not done by digital trickery, I have been to the Seychelles and seen these nuts growing, and even brought one back to Perth (but never managed

to get it germinated). However, the Lionnet article does not mention its medicinal uses, only its reputation as an aphrodisiac....

So as far as I am concerned, this is a plant medicine which really does work. However, as with other natural-product medicines, it



may not work for everybody — a cough is only a symptom, and we still have so much to learn about the actions of natural products on various individuals.

During my 'cough research', I also looked at 'Nin Jiom Pei Pa Koa', a 'natural traditional chinese herbal cough syrup', made in Hong Kong. This contained 11 plant extracts, including leaf of *Eriobotrya japonica* (loquat), peel of *Citrus nobilis* (tangor, a mandarin-orange cross), kernel of *Prunus armeniaca* (apricot), ginger, and root of *Glycyrrhiza glabra* (licorice), as well as the seed kernel of a cucurbit, *Trichosanthes kirilowii*.

For those interested, the African Sea-Coconut medicine is made by Luen Fook Medicine Co Pte Ltd, 203 Henderson Road #05-09, Henderson Industrial Park, Singapore 0315.

— David Noël

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[West Australian / 1999 Jul 19]

Elder tree provides influenza relief research

Influenza can reach epidemic levels at this time of the year. Though it is a short-term illness for most, it is a life-threatening condition for some.

It is a common viral infection of the lungs, leading to fever, body pains, coughing, nausea and vomiting, and, in most cases, leading to the development of a common cold.

Several botanical medicines have been shown in clinical studies to help prevent and reduce the severity and duration of influenza. One is the elder tree. Also known as *Sambucus nigra*, the elder is a shrubby tree with stiff stems and smooth segmented and toothed leaves. The white flowers appear in early summer and the tree flourishes in temperate climates.

When used in feverish states, elder flowers have a strong diaphoretic effect. In other words, they promote sweating and also have an expectorant and anticatarrhal effect on the respiratory system. They can also be used as a mouthwash and gargle for mouth and throat inflammations.

A study published in the Journal of Alternative and Complementary Medicine showed that Israeli researchers found elder flowers effective.

All patients had fever, muscle soreness nasal discharge and a cough. None of them had been vaccinated against influenza and all were confirmed by blood tests to have tested positive for influenza antibodies (confirming that they did indeed have influenza).

The subjects were divided into two groups.

One received the elder flower preparation while the other group received a placebo (inactive substance) for three days. The group with the elder flower treatment all experienced improvement in symptoms and 87 per cent had achieved complete cure. In contrast, only 58 per cent in the placebo group experienced an improvement in symptoms and only 33 per cent were completely cured.

Elder flowers are available from health food stores and practitioners of complementary medicine.

— *Dennis Vander Kraats*

Q Ed: Elderberry fruits have traditionally been used in Europe to make Elderberry Wine. As is common with plant substances with medicinal properties, excess use is sometimes claimed to be harmful.

The genus Sambucus is interesting in that it is one of very few temperate tree genera which have representative species in both Australia and Europe (there is a reason for this). Sambucus australasica is native to areas of Queensland, New South Wales, and Victoria, while S. gaudichaudiana is found in these three States and also in South Australia and Tasmania.

It would be interesting to check these native species for medicinal properties.

(Dennis Vander Kraats is a Perth medical herbalist and a fellow of acupuncture. His website is www.denmar.net.)

¥

Honeybee Pollination Increases crop yields

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[Cancer Foundation of Western Australia announcement, 1999 Aug]

Cancer cures from trees

Contrary to popular belief, cancer cures do grow on trees.

There's a common misconception that conventional cancer treatments are in some way unnatural. And, that so called natural treatments belong in the domain of alternative therapies. But, the fact is, nature is very often the "mother" of orthodox cancer treatment.

An example is the drug taxol, which was discovered in 1967 when a compound was isolated from the bark of the Pacific Yew Tree of northwest America.

It was found that this compound had a controlling effect on the growth of tumours. A stumbling block of early development though, was that it appeared the only source of taxol was the bark, which meant harvesting six 100 year old trees to treat just one patient.

Following further years of research and development, taxol is now made by synthesising part of the compound and obtaining other extracts from the needles and leaves.

Taxol was finally approved for use as a treatment for ovarian and breast cancer in the early 1990s and joins a newer group of anticancer drugs called taxanes.

Another naturally occurring substance currently under examination is selenium, a compound found particularly in protein rich

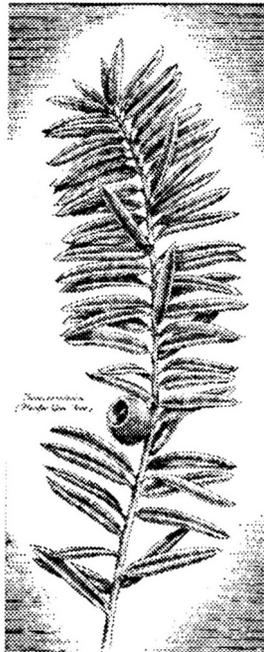
foods like meats, fish and grains.

Studies have shown that when a certain amount of selenium is taken via supplements, the risk of some cancers appears to decrease, particularly prostate cancer. These results are encouraging, but more study is needed before selenium supplements can be recommended as preventive and safe.

The research being carried out today on natural substances like these involves careful observation using sophisticated technology, including 'computer aided drug design'.

And, even when some therapeutic effect has been isolated in a substance, it is essential that further research is undertaken to test for harmful side effects.

Little wonder then that it can cost as much



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as \$200 million and take up to 20 years research to arrive at one useful drug.

Substances occurring in nature will continue to be an important source of potential prevention, treatment and cure for cancer, however, it is a very long road before us.

To put the issue in perspective, there are over 250,000 plant species in the world and only 2% of them have been properly analysed.

This is certainly encouraging in terms of the possibilities that may lie ahead. It's also very daunting in terms of the scale and expense of the task before us.

But, if the result is that cancer cures might one day both literally and figuratively grow

on trees, research of this kind has to be worthy of our full support.

David Noël comment: The mention of selenium is interesting, as selenium deficiency is the most widespread mineral deficiency of sheep in WA. The deficiency occurs over most of the Southwest (roughly west of a line from Perth to Albany). It is most common in areas with ancient eroded soils (which we have in abundance), and usually not found in more recent volcanic soils.

Humans fortunately draw their foods from a much wide area than this, nevertheless the possibility of selenium deficiency in our food should be borne in mind. Brazil nuts are regarded as a good natural source of selenium.

Funding sought for ATCROS

The ATCROS website at www.AOI.com.au/atcros was set up with development funding from RIRDC, the Federal Government's Rural Industries Research & Development Corporation.

This funding has now ceased, and new funding is sought to maintain and update the website, which is quite heavily used by people in tree crop activities.

Ideally Atcros would like to hear from a Principal Sponsor who might provide funds in exchange for suitable publicity or advertising on the site, but any other suggestion would be welcomed.

About \$6000-10,000 per year is needed for some level of maintenance.

Please contact atcros@AOI.com.au.

Olive Seminars

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Email: olives_nn@yahoo.co.uk,
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Scientific enquiries: Dr. Stan Kailis, UWA, Perth.
Ph: 08 9380 1644; Fax: 08 9380 1108;
email: skailis@agric.uwa.edu.au

Tree crops offer new life to depressed farms

The last century, the 1900s, saw a vast and dramatic development of crop agriculture in Western Australia.

Huge areas were cleared of native vegetation, ploughed, and sown to wheat. First with horses, then with tractors, and more recently with huge machine combinations costing perhaps a million dollars each, the land was subjugated. The 'Wheatbelt' was created, a vast swathe of land extending east and north of the higher-rainfall Southwest corner of the State.

The Wheatbelt now reaches out to the final margins of where field crops can be feasibly grown using every drop of available rainfall. And the Wheatbelt and its farmers are in trouble.

First, the amount and timing of rainfall received is critical for these farmers. And as the land in the Southwest was cleared in the 1900s, the average annual rainfall decreased in step. While some dispute that these factors are linked, the effect is the same for the farmers.

Second, the land itself is sharply deteriorating over much of the Wheatbelt. Removal of the native trees led to rising water tables, with brackish water seeping out on the surface and evaporating to form deadly layers of salt.

Finally, and perhaps the most bitter blow of all, the farmers have been caught in an economic vice. Even though the last two harvests have been excellent, with record production after good rainfall, the price farmers have received for their wheat has fallen.

For many, the percentage return on their huge investments in machinery and other inputs is pitifully low. For some, it means walking off the land is not far off.

Some say the answer to all these problems is simple — plant a huge range of specialist tree crops which can cope with adverse conditions and still bring in economic returns.

While this may be the way to go, there must still be a lot of pain and waiting involved. In effect, farmers have to shift their investments out of big machinery and into long-term 'tree crop capital', probably on smaller acreages worked more intensively. But in contrast to machinery, the tree capital increases in value as it sits there.

WANATCA Meeting

At the last meeting of WANATCA, the West Australian Nut & Tree Crop Association, Phil Bellamy of Nungarin presented an up-and-running scheme to achieve these sorts of aims.

First an analysis was made of all native species growing within 150 km of Nungarin which could be exploited for worthwhile economic returns, superior to those from wheat. The answer was staggering — no less than 1337 economic possibilities were found to be documented.

None of them was a replacement for wheat, nor intended to be — that was not the name of the game. Instead, the whole set of them could go towards an extended network of niche crops of varying size.

Second, an arrangement was set up to pay farmers a rate of about \$70 per hectare per year to grow specific niche crops for the venture group. At present, about 10 different niche crops are either planted or under late development. Many are native to WA or Australia, others are from elsewhere.

PITURI. Botanically *Duboisia hopwoodii*, this native shrub is poisonous to sheep. But it contains high levels of nicotine sulphate, which is a raw material for production of niacin and the rest of the Vitamin B complex.

NITRE BUSH. *Nitraria billardieri*. Native to WA and elsewhere in Australia, this salt-resistant bush has edible red fruits. It is being grown in the lower Southwest.

BUSH TOMATO. *Solanum orbiculatum* and *S. ellipticum*. Native tomato species, highly sought-after for the bush food market. Being grown in the Yilgarn Shire.

WATTLES. A number of *Acacia* species are being grown at Wialki, Nungarin, York, Greenhills, and Bonnie Rock. These include *A. saligna* and *A. microbotrya*, and the products include wattleseed flour, gum arabica, and speciality timbers.

RUTIN TREES. Some Eucalypt species are being grown specifically as a source of Rutin, used in making Vitamin K compounds as a herbal treatment of haemophilia. These include *Eucalyptus macrorhynca* and *E. youmanii*, both from New South Wales. Other eucalypts are being grown for timber (*E. loxophleba*, York Gum) or for eucalyptus oil (oil mallees).

TASMANIAN PEPPER. *Tasmania lanceolata*. Source of a unique, distinctively-flavoured pepper, currently a real gourmet item.

DESERT SHEOAK. *Allocasuarina decaiseana*. The only true tree found in the most arid areas, it produces a fine speciality timber.

GINKGO. *Ginkgo biloba*. This Chinese tree, the source of 'White Nuts' or 'Silver Almonds' is currently under rapid commercialization for extracts from the leaves, said to be effective in treating Alzheimer's

Disease and memory problems. The group has about 300,000 trees at Manjimup and about 240,000 at Badgingarra, with the ultimate expected total being about 2 million trees. A selection, named TC9, has produced 20 kg of fruit at 3 years of age.

PAULOWNIA. *Paulownia fortunei*. This fast-growing timber tree has been planted at Badgingarra.

OLIVES. A dryland site has been planted at Mt Weld, and an irrigated site in the Eastern wheatbelt.

(The venture group is Silviculture Management Pty Ltd of 443 Albany Highway, Victoria Park, WA 6100. Phone 08 9470 4300. The Operations Managers are Phil Bellamy and Andrew Huffer.)

(Nungarin is about 45 km north of Merredin, which is on the Great Eastern Highway about 250 km east of Perth).

FIG CUTTINGS AVAILABLE

Alex Hart is now able to make cuttings available from an extensive range of fig varieties.

These are from the trees which Alex established and has been maintaining at the WANATCA Gene Bank at Hillside Farm, Gosnells. Figs are currently one of the best-represented tree crop species at this site.

Contact Alex Hart on 08-9490 1324 or at 71, Terence Street, Gosnells WA 6110.

[Landline (ABC TV) / 2000 Apr 8]

Experiment rediscovers delicious dates

A South Australian farmer has revisited failed attempts to grow dates set up more than a century ago – and he is more than making a go of it.

Australia has the perfect environment for date production, no where is too hot for a date palm, so it is surprising that Mr Christopherson's brainchild is one of only a few productive plantations in the country.

With dates selling for \$20 a kilogram and able to thrive on reclaimed effluent Mr Christopherson, is confident within a few years he could have himself a nice little earner.

Flinders' Ranges Dates began 10 years ago when Mr Christopherson tracked down the experimental date plots around Maree, in South Australia's north.

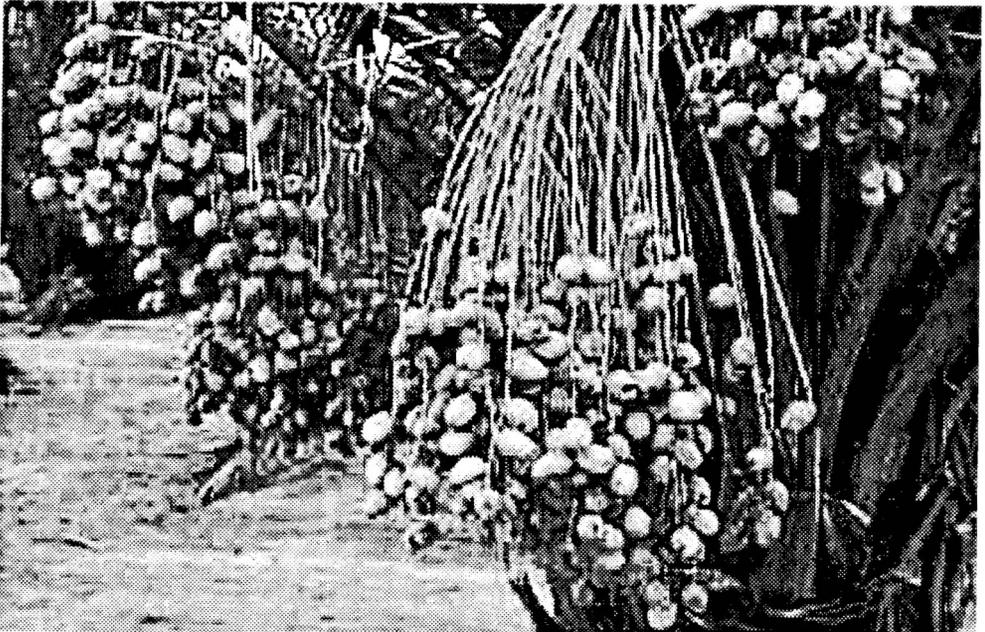
"A hundred years later those trees were still going strong," Mr Christopherson said.

"Not strong-fruited — because they had

so many offshoots on them they couldn't bear fruit. The offshoots need to be taken off the tree. Also in a lot of cases they weren't getting a lot of water - but they had hung in there and that was the main thing to keep the genetic material going."

Mr Christopherson, with the help of his daughter and son-in-law, began the arduous task of transplanting the offshoots. The shoots that grow at the base of the palm and are genetically identical to the parent plant. Removing the offshoot will allow a tree to bare fruit again and the offshoot will produce the same quality fruit as the parent plant.

Through a process of trial and error, the family learnt that the trees need to be hand pollinated in order to get decent fruit.



Rare prize

But the family is being rewarded for its hard work. Flinders' Ranges Dates produces varieties of fruit that are highly prized in the Middle East. "This plantation produces varieties that can be eaten in their kalal state, that is when it is hard and still yellow. It's crispy but very, very sweet."

Helen Zubrinich believes these dates are the only true fresh dates available in Australia, 99 per cent of dates consumed here are imported. "You can buy dried dates and re-constituted dates, which they call fresh dates," Ms Zubrinich said.

"Why is that? Why can't we get hold of fresh dates off the tree now? It can be a packaging problem because they are so soft they don't transport as well as a dried date and I suppose they stick to the easier method."

While it is a tender fruit, one thing they have in their favour is they can be frozen.

"As soon as they are ripe enough we freeze them right away. We don't lose any quality of fruit in the taste and you can freeze them for as long as you like and they don't change at all."

Mr Christopherson and his family have been harvesting for two years. Last year they only took 50 kilograms, this year they are hoping for half a tonne and in four or five years they want to be producing as many as 12 tonnes.

Nature's water pump

The hitch is the dates need water. While there is plenty of sunshine and the is temperature right, the region is lucky to get 230 millimetres of rain in a year.

Mr Christopherson has been very inventive in his measures to fully utilise the plantation's little water or reclaimed effluent.

"In this area you can get to nine feet of evaporation a year and we needed that water," he said. "So we covered it with Coke bottles half-filled with water so they floated at their maximum width and the water in them stops them from blowing away. We save, with those 31,000 bottles on that pond, somewhere between 500,000 to 600,000 gallons a year. " That is two million litres of water a year.

Flinders' Ranges Dates only takes the effluent from the small settlement of Stirling North, which is on the fringe of Port Augusta. There is a belief that the industry could use the millions of litres of treated waste that pours out of the channel into the nearby Spencer Gulf.

The town's senior environmental officer Bob Rutter believes the 1.5 million litres of effluent that flows into the gulf could be used far more productively.

"We could use it for date palms, which bring in something like \$20,000 per tonne," Mr Rutter said. "That sort of effluent volume would support a plantation of about 8,000 palms, which could bring an income of something like \$16 million a year."

There could be a burgeoning date industry in Australia, with the country's hot, dry inland areas and highly saline water. It baffles Mr Rutter why there is not. "They are known as nature's water pump. So where you have dryland salinity these would be the ideal plant for that area to produce a very valuable crop."

But while the market for fresh dates is still small. There is confidence that Mr Christopherson's discovery raises the hope of a full-scale Australian date industry, not to mention fresh dates for Australian consumers.

— *Prue Adams*

Contacts: Helen and Glenn Zubrinich, 08-8642 5794

[Media release /2000 May 1]

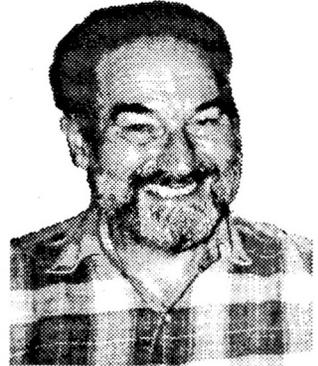
WA tree crop consultants go international

Over the years, the small WA firm of Nut & Tree Crop Consultants have built up a solid reputation within the State. Now they are looking further afield.

"We regard ourselves as generalist, first-stop consultants", said the company's principal, David Noel. "Our most popular service is for people who have a piece of land available, and want help in choosing the most suitable tree crops for it."

"We go over their land and develop a report for the client which tries to take into account both the client's wishes and needs and the outside economic and trade factors which apply for different nuts, fruits, and other tree crops. These days this includes things like bush foods, essential oils, speciality timbers, and plants for medicines and flavourings".

According to Mr Noel, someone doing this sort of work properly needs to have built



David Noel

up a very wide range of information, spanning tree crop industries all over the world. "Changing social patterns in the Central Valley of California could have a strong effect on the economics of growing a particular tree crop in WA", he said.

"We are now aiming to put the expertise we have built up to wider use, and offer our new 'International Checkmarking' service worldwide", he said. "A government or large commercial company may have a huge plan to develop a particular crop in, say, Africa or South America".

"We don't have the resources to set up or manage a scheme like this, and we don't necessarily have detailed knowledge of raising a particular crop. But we can give an overview check of the viability of a project — almost like a second opinion — often without leaving Australia".

Mr Noel suggested that all too often, big schemes are entered into without a wide enough view of important international factors.

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“What eventually happens may be just a matter of chance”, he said.

“A common enough occurrence is when a tree crop industry is developed using only the resources which happened to be available locally”, he said. “For example, the New Zealand kiwifruit industry was built up from a mere handful of seeds that someone happened to bring back from China in the 1930s. Or, because of costs and difficulties in importing new varieties, commercial development of a fruit may involve only those varieties which are already available in a particular country”.

“At the other extreme, a multinational company with experience in a particular crop in one country may rely wholly on imported technology in setting up a plan to raise the same crop in a second country. But if they don't take account of local factors in the

second country, their scheme may fall in a hole”.

“We have built up a global base, covering plant resources worldwide”, Mr Noel said. “This can be very important, you need the ability to ‘mix-and-match’. For example custard apples, which originated in Central America under humid conditions, often have pollination problems in drier climates. By matching these fruiting species with pollinizing relatives from a dry part of Africa, you may be able to overcome these problems”.

“We prefer projects to have a sustainable basis and to offer some technology transfer to less-developed countries”, he said. “We have recently put up our aims and contact details on the Internet, our new website is at www.AOI.com.au/nutconsult”.

Nut & Tree Crop Consultants: <A1401>

Local water diviner has success with crop tree plantings

Water diviner David Kennett has been concentrating his talents on finding water sources for tree growing, whether as irrigation sources or to site trees above points where their roots can find water themselves. He writes:

“People plant trees for different reasons: trees might simply appeal to one landowner, another might be planting them to combat salinity, for carbon sequestration, or as crop trees. Whatever the reason, they all want to grow successful trees. The dilemma is: what varieties and where to plant them for maximum benefit?

All too often, choice is determined mainly by rainfall, and this restriction can rule out many trees that are highly desirable for a variety of reasons. However, we all know

that, provided other criteria are satisfied, plants can be grown indoors, where there is no rain! Water can frequently be provided for trees in the lowest of low rainfall areas, either by irrigation, or preferably, by growing the trees close to underground streams where their roots will seek out the water, themselves.

As a human being with a talent for divining, I am able to locate the paths, depth and salinity of underground streams, as well as other locational factors. Armed with this knowledge one has the opportunity to grow considerably better trees.

While I am happy to be engaged by a landowner to divine his/her property, almost certainly, they have the same, though undeveloped, natural talent. Thus I prefer to train people (individually or preferably, in groups), as this will do more to overcome our environmental problems.”

Contact: David Kennett, Auria diviners and environmental consultants, 08-9448 0473, e-mail davidkennett@bigpond.com.

[Countryman Horticulture / 2000 Apr 6]

Farmer switches to mangos

After a little more than 12 months as a bona fide horticulturist former Southern Cross wheat and sheep farmer John Newbury intends to expand his mango and avocado operation.

Mr Newbury made the move to what was then an established stonefruit orchard after selling his 3000 ha Southern Cross property last year.

"I came specifically looking for a loamy block with a north aspect and good water that was high enough to avoid frosts, and after about six months I found it," he said.

After deciding there wasn't sufficient return for effort in stonefruit he bulldozed the trees and started planting mangos and avocados.

"The whole idea was to go growing mangos and avocados as they offered reasonably high returns from less work which for me provided two fairly compelling reasons," he said.

"At this stage I have planted 1000 avocados and 500 mango trees and this year I will continue that program by planting another

1000 mangos and 500 avocados."

After he has completed the reconfiguration of the 50 ha property Mr Newbury intends to plant the remainder of the property to either olives or hardwoods.

While coming from a completely different background may present its own challenges, Mr Newbury views his lack of experience in horticulture as something of an advantage, because he is able to approach new ideas free of any preconceived notions.

"Not having a background in the industry means you can take all the information, sit back and analyse it and choose the best option based on the facts rather than anything else," he said.

After a lifetime spent dealing with livestock and broadacre cereals he is in no hurry to return to them except, in the case of the cereals, as mulch around the bases of his trees.

"A lot of people in the area use sheep or cattle on their spare country, but I think I'll utilise olives," he said.

Mulching is a process Mr Newbury believes is essential for the health and productivity of his trees, particularly the shallow rooted mangos, where maintaining the moisture and biotic activity in the top few centimetres of soil assumes added importance.

"I use barley straw as a mulch and it breaks down



John Newbury with some of the Kensington Pride mangos growing on his Gingin property

very quickly, it is virtually all gone after a year," he said.

"You have to keep the feeder roots, which are virtually on the surface, cool as well as increase the microbial activity in the soil."

[Countryman / 2000 Feb 17]

Mangos a hit in Paris

A new variety of Queensland bred mangos exported last week to Europe are now selling in Paris for up to \$35 each.

Queensland Primary Industries Minister

[From the Bushfoods list-server
<bushfoods@listbot.com>]

Backhousia oils a culinary hit

I've just done a bit of culinary work on two Backhousia oils sent to me by Ron of Bellinger Valley Bush Foods. Here are my comments.

Backhousia citriodora is an established oil now, for culinary and aromatherapy uses both. *B. anisata*, however, has yet to be recognized to the same extent. Well, I, at least, now recognize it for its amazing flavour.

I tried two small experiments with a combination of both oils. One using them in a cordial, and one in an icing mix. This might not sound a big deal, but both these simple things are consumed in great quantities by supermarket consumers. The cordial recipe was 500g sugar, 500ml water, a teaspoon of citric acid, two drops *Backhousia citriodora*, and four drops *B. anisata*. The flavour of the Anisata was remarkably enhanced by the addition of the Citriodora, making a flavour different from both. It was thirst quenching in South Australia's rather warm spell the other day — 40 °C — and I'm still using it even in the colder weather.

Henry Palaszczuk said the success of the B74 mangos highlighted the power of combining smart research and smart marketing.

The Childers area, south of Bundaberg, exported 5000 trays of the B74 mangos.

Mr Palaszczuk said many French people had got into the habit of taking a juicy mango to dinner parties instead of a bottle of wine.

The fact that Parisians were willing to pay up to \$35 for a single mango highlighted the tremendous dividends for farmers able to find niche markets.

From the 'vintner's description' point of view, the Citriodora has a high note, loud, clear and clean, with no echo. The Anisata has a slightly lower and softer note, almost a chord, with a slight echo — not at all unpleasant, on the back of the tongue. For any of you thinking of using these oils in your culinary delights, I can recommend them.

We have a long way to go before we run out of different flavours from the Bush, and next week, on my first trip North (to Darwin and Oenpelli) I intend to consult the experts in this field. I will be writing something about the trip.

— *John Day*, Macclesfield, South Australia <farmacy@iweb.net.au, <http://members.iweb.net.au/~farmacy/index.html>>.

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[Countryman Horticulture / 2000 Jan 27]

Blueberry products net profit

The Rainbow Coast region probably leads the State in the number of horticulturists looking to develop value-adding enterprises to their core growing operations.

For Greg and Sue Luke, of Eden Gate Blueberries, this has meant developing 20 different products sold both on the property and through outlets as far apart as Albany and Broome.

The Lukes grow everything they need to produce a range of food products largely based on blueberries on their property west of Youngs on the Wilson Inlet.

Their operation is contained underneath a hectare of bird and animal exclusion netting which has also produced an unexpected insect control bonus — the lack of birds has encouraged a proliferation of spiders that keep insects like hoppers and weevils under control.

The netting also drew attention to another local resident with a taste for the berries — bandicoots. But the problem was more that the marsupials would break the netting rather than walk around the enclosure, a situation that has been solved through the addition of a low voltage electric fence set just above ground level.

While the resident spiders may prevent arachnophobic pickers from offering their services, a shortage of labour in the area was a main reason why the Lukes switched from fresh fruit growers to value-adding.

“One of the decisions we faced was either to get a lot bigger and focus on meeting the demand set up by the supermarket chains for fresh blueberries or focus on the value-adding options,” Mrs Luke said.

“One of the greatest problems in this area is getting regular skilled labour and that was proving a real challenge so we looked into developing our own products.”

As a result of the move into on-farm sales the packing and sorting shed has been extended to offer a tasting area for the blueberry wines, homemade blueberry icecream, preserves, and sauces produced in the latest addition to the



Sue Luke with some of the blueberries grown with husband Greg on their Eden Gate property at Youngs on the south coast

operation, a demountable commercial kitchen.

The Lukes produce an annual yield of about eight tonnes of blueberries, and grow their own vegetables for use in the preserves sold through the property.

In total the couple have invested 17 years in the development of the Eden Gate enterprise, a process which began with a search for a property with the right soils, with water availability and quality for intensive blueberry production.

“It is a long process, basically 17 years of

trial and error, and every year we have tried to improve the products we are selling and introduce another product to the range," Mrs Luke said.

The next part of that process looks likely to involve a step into electronics, using the Gateway to Albany portal and, according to the Lukes, if the e-commerce venture is successful it would provide an ideal way of augmenting their largely tourist driven enterprise.

[From the Bushfoods list-server
<bushfoods@listbot.com>]

Hint on Bunya propagation

I have just been scrolling through the archives and would like to add a bit more about bunya propagation that may be helpful. The first year we grew bnyas I thought they had all rotted, on tipping out the box we discovered the psuedobulbs.

Over the years we have found the plants grow much better in the nursery situation if we lift these bulbs when they are formed (we usually do this after winter) and either pot them on then, or restack into deep styro boxes with the top of the bulb just poking the surface.

This speeds the process along and allows more room for root development. The wildlife/rats will come from far and wide to eat the bulbs if you bring them to the surface, so keep them protected until they have good top growth.

— Deb Wood <deb@norex.com.au>

"The fruits of excessive caution are short-term complacency and long-term dismay"

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CALENDAR OF FORTHCOMING EVENTS

Deadline for next issue: Jul 20

2000

- May 16 Tue **General Meeting** (Zora Singh - the Bael Fruit; Alan Ness - Chestnut Harvester)
- Jun 11-16 § 3rd International Olive School, New Norcia
- Jun 16-18 § 4th Olive Cultural & Scientific Symposium, New Norcia
- Aug 15 Tue **General Meeting**
- Aug 26 Sat *Agroforestry Field Day, Boyup Brook
- Aug 29-31 *Dowerin Field Days
- Oct 15 Sun **WANATCA Bring & Buy / Tree Crops Fair**
- Nov 14 Tue **Annual General Meeting**

2001

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

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

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