

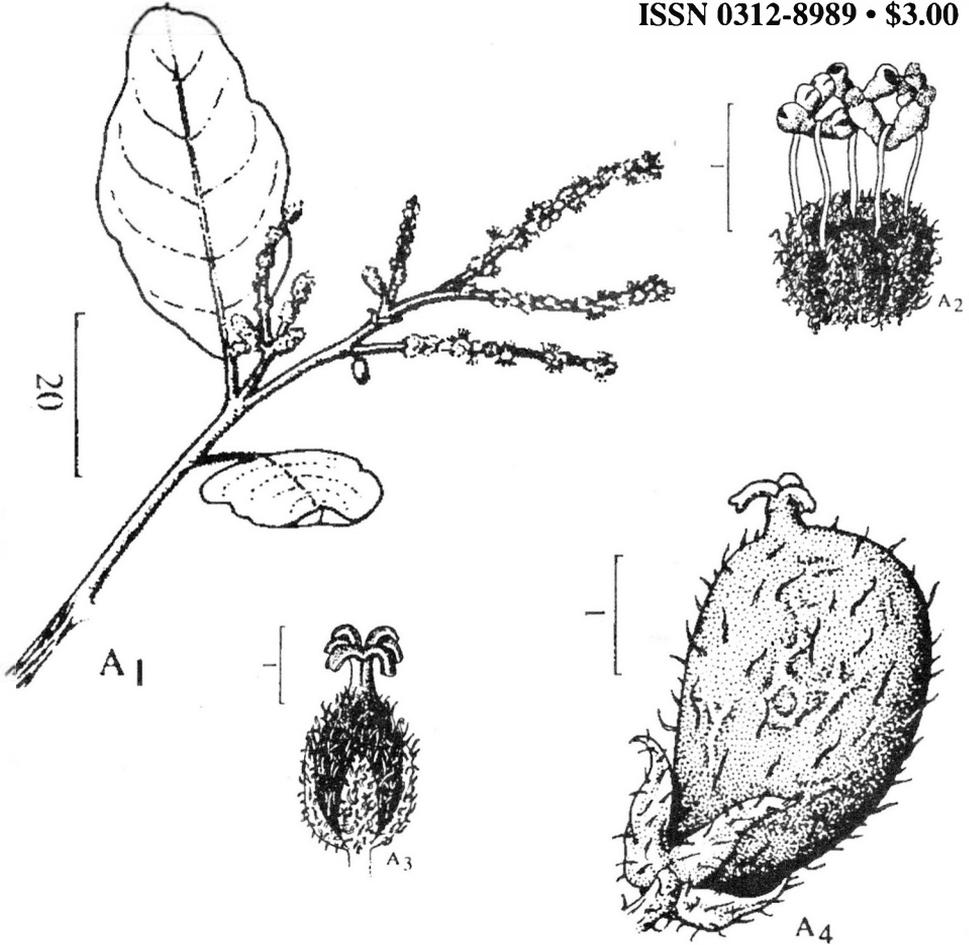


Quandong

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

Fourth Quarter 1998 • Vol 24 No 4

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Quandong • Fourth Quarter 1998 • Vol 24 No 4

NEXT MEETING: Tuesday Nov 17: 7.30 pm

At our next General Meeting, we are looking forward to a lively session with Exec member Dr Zora Singh, discussing:

Jujube/Ber: Valuable fruit tree or weed?

Zora is expected to not only bring us up to date on Chinese Jujube (*Ziziphus zizyphus*) and Indian Jujube or Ber (*Ziziphus mauritiana*), but also to comment on a disturbing trend whereby the State Government is effectively restricting the development of some potentially very valuable tree crops by classifying them as weeds.

These restrictions are being applied insidiously and without reference to the industry, Decisions appear to have been made arbitrarily and appear not to be open to any appeal mechanism or arbitration route.

Full details on attached leaflet.

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

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About the Cover

The cover illustration shows the WA Blackcurrant Tree, *Antidesma ghaesembilla*, from *Flora of the Kimberley Region*, edited by J R Wheeler (see article page 28). Key: A1, male flowering branch; A2, male flower; A3, female flower; A4, drupe (fruit). Scales are in cm.

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[*Countryman Horticulture* / 1998 Sep 3]

Mouth-watering fig starts quest for early varieties

Alex Hart can still vividly remember the time he tasted a superb fig at the old Stoneville Research Station.

The taste was unbelievable — literally made your mouth water — and honestly the size was like that of a little pear," Mr Hart recalled.

It did not taste anything like the fig I grew up tasting."

It was that taste sensation that was the impetus for the avid WA Nut and Tree Crop Association member to set up a gene pool of old fig varieties.

So keen was Mr Hart to preserve varieties like the one he tasted at the research station that in retirement he made it a priority to find out where the trees from the property were distributed .

Unfortunately, some of the fig trees grown at the research station were pushed out to make way for apple varieties at the site, but a few were saved by interested growers like the one Mr Hart tracked down in the South-West.



Pam Riordan checks on the progress of the old fig varieties being grown at the Hillside Farm Project with WANATCA member Alex Hart.

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>.

Needless to say, Mr Hart now has some of the original research station trees as well as others he has acquired from various sources.

He now knows that the trees at the station were originally from the US where they were part of an arboretum designed to preserve old fig varieties.

However, when urban development meant the arboretum had to go in the name of progress, some of the seedlings, for whatever reason, were sent to New South Wales and then on to Stoneville.

Mr Hart said he now had about 10 old fig varieties growing on the Hillside Farm Project at Gosnells — a land allotment under the direction of the City of Gosnells.

Quite simply, you could say this is a preservation exercise," he said.

"The concept is that all old varieties should be preserved and that is something that the WA Nut and Tree Crop Association is all about.

"The idea is to provide a gene pool of old varieties so people who are interested can get seedlings and cuttings of them."

The project is not confined to just figs — there are old varieties of carob, kai apple, neem and olives all planted on the site.

New exotic trees are also being trialled, and these include the much talked about paulownia trees.

The figs were planted in September last year and the other fruit and exotic varieties gradually, after that — about 45 trees in all.

Fittingly, the trees were all planted at one of the oldest farming properties in the Gosnells area.

Pam Riordan, the manager of program development at the City of Gosnells, said the property was called Hillside Farm in the 1890s

when it was owned by pioneers Steven and Elizabeth King.

Still remaining on the property is the almost original homestead - the first one burnt down within a few years of the Kings moving into it.

The property changed ownership a few times in the 1950s and 1960s and was then called FRITICO, an acronym of a few of the companies involved in its operation.

How the property reverted back to the Ministry of Planning, who leased it to the council, is not well documented.

But Ms Riordan is not complaining — the farm served the Gosnells community well.

Recently the council subleased half of the property to the Education Department for the Kelmscott Agriculture School and made the other half available to community groups like the WA Nut and Tree Crop Association.

"There are now a number of community groups involved and they are all joined together by the common vein of having an area available to them for the development of sustainable practices for education and information purposes," she said. ¥

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Figs in South Australia

Just a quick note to bring you up to date with our fig situation here. We have several complete collections planted out at this stage.

These include the following varieties:

Adam; Adriatic; Archipal; Black Genoa; Black Ischia; Blue Province; Brown Turkey; Calimyrna 275-195 + 278-103; Cape white; Capri; Celeste; Colombo; Deanna; Excel; Flanders; Green Ischia; Haraldjo; Jelly Mary Jane; Kolota; Lemon Lenni; Persian Prolific; Preston Prolific; Servante; Smyrna; Spanish Dessert; Tena; White Genoa;

Yellow Ischia.

This winter I hope to receive another six or seven varieties, although some of the names are a bit dubious. I am hoping that you are prepared to do some swapping of cuttings. I am particularly interested in the varieties *Panachee* and *Peter Good*, but also any others that are not in the above list.

— *John W Rance*, 60 Holder Road, North Brighton SA 5048 (Fig Action Group, [Rare Fruit Society of South Australia](#)).

[Rare Fruit Society of South Australia:](#)
<A1474>

WANATCA improves signage for shows

The signs which WANATCA displays at shows and exhibitions are an important part of our image.

We have been using an older cloth sign, which lately has been showing its age.

Now Exec member Bob Cook has had a new rigid sign made for us on light plastic, suitable for attaching by velcro to display boards etc.

This sign was used to good comment at the Dowerin and Karragullen shows.

When not in use at shows, the sign has been displayed in the window of the Tree Crops Centre, the Association's headquarters.

Many thanks to Bob for this effort, and especially for donating the cost of the sign. This is much appreciated.

We are conscious of the need to continually strive for an image of competence and professionalism, and comments on how to improve this image are always welcome.

Not the Exec Chain Gang

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

This year those retiring are Lance Bannister-Jones, Trevor Best, and John Foote. The Committee meets only 4 times a year. This is not a great time commitment, nor is special knowledge of tree crops expected, and we would welcome offers to help out on the Committee.

Some retiring members will be standing for re-election, and the formal election will be held at the AGM, on November 17, as usual. Put your name forward then or contact David Noël beforehand if you would like to discuss the possibility.

Tales of the Big Ripper

Tree planters everywhere generally recognize the vital importance of deep ripping or other ground preparation in most soils.

And, of course, this sort of work must be done in advance of any tree planting, and is perhaps the most important initial capital investment to think about.

But just ask a contractor to deep-rip your land, without saying how deep you expect him to work, and you are likely to find that he regards 30 cm as quite deep enough. NOT SO!

The University of California's *Almond Production Manual* (reviewed in this issue) has an excellent section on *The evaluation and modification of physical soil problems*. This section alone may make the book worth getting for any orchardist or tree grower using heavy or duplex soils. The illustrations reproduced here are drawn from the 17 in the soil section.

Generally speaking, it is best to deep-rip all heavy, compact, or duplex soils along the contour, to a depth of 1 m. This action cuts a slot in the ground which intercepts sub-surface water seepage on sloping sites and forms a natural reservoir which can greatly reduce irrigation needs of trees planted so their roots propagate along this slot. The schematic shows how this can be arranged.

(Fig)

Ripping to a depth of 1 m, with one pass in a heavy soil, requires quite a large tractor or other device. Ripping to a depth of 2 m, which gives a result perhaps four times as good for deep-rooting drought-tolerant species like olive or pistachio, needs a machine like that in Photo 1.

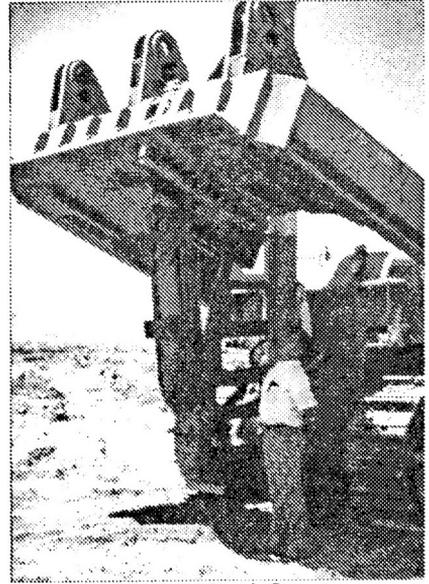
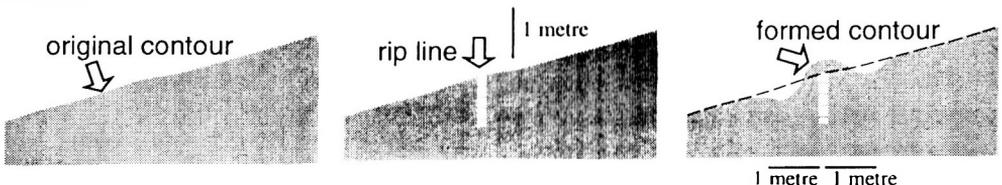


Photo 1. A Real Ripper

An alternative treatment, of particular value with highly stratified soils, is to run a trenching machine (eg of the 'Ditch-Witch' type) along the future tree lines to produce a trench filled with mixed soil (see Photo 2). The Production Manual comments:

Two-year old trees grow well in this very stratified soil because a portion of it was mixed by a trenching machine. Notice the roots growing in the uniform soil at centre, but not in the white sand layer. Trees originally



planted in this orchard with out the soil-mixing treatment grew very poorly.

Trenching is also an excellent treatment for poor sandy soils, even on flat ground where hillside moisture accumulation is not possible, if a good proportion of organic material is incorporated into the trench soil at the time of mixing. With olives, the incorporation of rock dust at this time has also been strongly recommended.

While trenching is slower and so more expensive than deep ripping, trenching can be done in more intricate detail and on fairly steep hillsides where large machines could not operate. Also, trenching machines can be hired and operated by one person, even between tree rows of an existing orchard slated for tree replacement.

In California, two other types of treatment



Photo 2. Beneficial results of trenching stratified soils

are being increasingly used. With one, Mouldboard Ploughing, the whole of the soil surface is mixed. The depth treated can range from 60 cm to 1.8 m.

The other treatment, Slipboard Ploughing, effectively mixes soil to the width of the slip plate (37 cm) and to depths of up to 1.5 m. Its action is therefore similar to trenching.

In the enormous pecan planting put in by the Stahmann family at Moree, New South Wales, as an extension of their Arizona operations, they have been said to have first homogenized the soil over the whole planting site to a depth of 2 metres.

While such treatments may now be routine in the Central Valley of California, where most of their tree crops are grown, they are relatively new in Western Australia. Here we do have an advantage over the Central Valley, which is essentially the floor of an enormous former lake, and is very flat.

Our undulating terrains allow West Australians to make use of hillside water accumulation — water seeping down on the top of a subsurface clay layer may take 12 months to travel 1 km. Using retention slots as described builds in an automatic watering system in a manner which cannot be used on flat terrain.

— David Noël

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[Sunday Times / 1998 Sep 20]

Jujube, the soothing fruit tree

The jujube or Chinese date (*Ziziphus jujuba*), also known as the red date, and in China as Zao, is an unusual fruit. It's thought to have originated in Syria, others say China, but it has spread throughout the hot, dry climates of the world. It is known to have been cultivated in China in the third century BC and was introduced into England in 1640 where it grows only in mild areas.

This important fruit in traditional Chinese medicine is used mainly as a tonic to overcome anaemia, irritability, diarrhoea and insomnia. It's fairly well known as a soothing fruit particularly for throat and chest problems and the juice is often used to alleviate cold symptoms and sore throats. This is where the word jube, the lozenge one chews to treat

throat problems, came from.

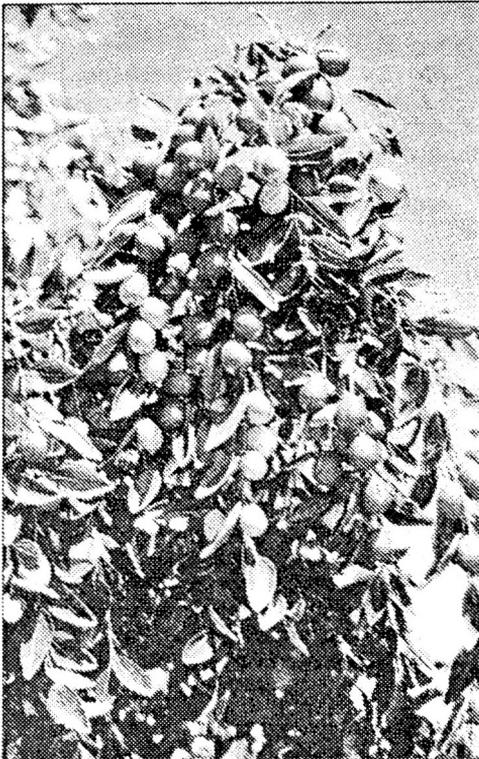
If you aspire to grow all the fruit from A to Z, here is a tree that can finalise your collection. While they are difficult to obtain, jujube trees are available in limited quantities.

The fruit is shaped like a plump olive and is about 3-5 cm long. When ripe it is a reddish mahogany-brown and has a flavour similar to a granny smith apple. The fruits are harvested in autumn. When fully ripe the flesh is spongy and very sweet.

When eaten fresh the fruits of jujube are delicious, but they can also be dried. This dried fruit is what is known as traditional Chinese dates. In this form they can be used in savoury dishes: for example with fish casseroles and soups. They are also tasty additives to puddings, cakes and breads.

Jujubes can be candied, and this is another famous Chinese desert. To candy your own fruit, puncture the fruit all over with a pin and then boil in syrup. The juice of the jujube makes an excellent jelly. Fruits can be frozen in an open container for six weeks.

The tree is a handsome, small deciduous specimen, growing from 3-5 m high in most locations. Jujube is a tough tree that is drought-tolerant, able to withstand sub-freezing temperatures in winter and extreme heat during summer. Many varieties have a weeping habit and the unusual way the shoots grow in a zigzag style makes even the bare branches unusual and attractive in winter. In summer



A jujube tree in fruit

the foliage is a shining deep green. In autumn, before it drops, leaves turn a rich golden yellow.

Jujube needs a long, dry, hot, summer for best fruit development and dislikes humidity. This means that most of the metropolitan area should be ideal. It's tolerant of heavy clay soils, even alkaline and poor draining soils, and is not demanding when it comes to feeding. Pruning isn't essential for fruit development and isn't usually necessary, even for shaping, because the tree tends to be fairly well formed.

The jujube tree does have a few problems. It has spiny branches which have to be manoeuvred around carefully when picking the crop. It suckers, which takes some years to overcome.

The best preventative treatment to sucker formation is to water occasionally through summer.

— *Neville Passmore*

WANATCA is fortunate in having world jujube expert Roger Meyer among its membership. Here is a useful article he has supplied.

Pruning Jujube in the first few years

The jujube (*Zizyphus jujuba*: Chinese date or Chinese apple) is just beginning to be cultivated as a commercial crop in the Western world although it has been an immensely popular fruit for millennia in China, Korea, and other Asian countries. Since we have no experts here in the United States to teach about pruning these trees, I have had to learn pruning over the 20 years I have grown them.

First, before one ever puts pruning clippers

to a branch, it is important to learn the structure of the jujube tree and of its different types of branches. There are at least 5 different types of branches on the jujube. These are:

1. **Main Trunk:** On a properly pruned tree, the main trunk will only be a metre in height. The rest of the tree will have its height due to the upright branching canes.

2. **Upright Branching Canes:** These form the bulk of the tree's height. These are also the canes from last year's growth, which are best to take for grafting material.

3. **Lateral Canes:** These come out of the tree horizontally and are generally less than a metre in length. The laterals produce most of the cone and fruit canes but never grow much in length over the years. Use the lateral canes for grafting material only if no other branching canes are available. The lateral canes usually take an extra year to produce a viable trunk on newly grafted plants.

4. **Fruiting Canes:** This is where the fruit action is! They grow out of the nodes on either the branching or lateral canes or the cones. Many fruiting canes are produced annually at each node. Each winter, the tree sheds the fruiting canes, although some may remain on the tree through the next spring (although dead).

5. **Cones or Pine Cones:** These form usually at the nodes of the lateral branches. They are the slowest branches to grow on the tree, usually adding only a millimetre of length each growing season.

Young jujube plants can be obtained either as bareroot plants in the winter or container grown at any time of the year. For purposes here, we will only consider first year pruning of dormant trees. If your trees are container grown, follow the pruning steps as the plant seems to fit the description. Assuming the

tree has a good trunk, first prune off all branches to leave a single trunk or whip (yes, every branch!) Then prune that single trunk back so that is only a metre in height.

Some commercial nurseries in California ship one-year whips which can be up to 3 metres in height. Although it hurts, prune this back to that single metre so that fresh, upright branches will sprout the upcoming spring. This helps to form a highly branched tree. If the tree has a central trunk, but is less than one metre in height, prune off all side branches and leave the tip bud in place so that a strong trunk will begin from that tip bud. Then the next year it should have grown sufficiently to follow the pruning advice above.

Sometimes plants are fresh grafts with only fruiting canes and no trunk branch present. If so, do nothing and the trunk should appear the next year. Then follow the pruning advice above when a adequate trunk branch does form.

The pruning of the upright branches is then repeated the next winter. At that time, just tip prune each of the upright branches and then clip off the top two lateral branches that formed the previous year. This should force both of these buds to send out an upright branch each. Thus, the first year we have produced 3-4 upright branches and the second

year each of those branches will form 2 additional upright branches. Now the two year old tree should have a good structure of many upright branches.

In following years, prune either to shape or to give newly formed upright branches the chance to grow into an open area. Prune upright branches by cutting where needed above any lateral branch and then clipping off the two uppermost lateral branches to force new upright branches.

— *Roger and Shirley Meyer*, 16531 Mt Shelly Circle, Fountain Valley, CA 92708, USA. E-mail: exoticfruit@95net.com

[*West Australian / 1998 Sep 14*]

By ginkgo, don't you worry about that

Middle-aged people are increasingly being confronted with the problems some of their parents experience as mental function deteriorates.

Failing memories and the increasing incidence of Alzheimer's disease are stimulating interest in preserving mental faculties.

Research shows the herb *Ginkgo biloba* can increase alertness and improve memory. It may have applications for Alzheimer's patients and otherwise fit people who want to negate the effects of ageing on memory.

The Ginkgo tree has been called the doyen of trees because of its antiquity. A deciduous, slow-growing tree reaching up to 30 m, it is resistant to disease, fungi and pollution.

Native to Japan and China, it is cultivated worldwide for its therapeutic benefits and beauty. Asian cultures have used the kernel medicinally for hundreds of years, but the modern Western use of ginkgo is limited to the leaf.

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The main compounds of pharmacological interest in the leaves are flavonoid glycosides and terpene lactones, thought to be responsible for ginkgo's ability to improve circulation. Researchers believe this ability to improve circulation to the brain results in an improvement in mental function.

More than 45 controlled clinical trials with ginkgo leaf extract have been conducted. Nearly all have shown positive effects of ginkgo compared with a placebo (inactive substance) in improving the many symptoms associated with diminished brain circulation.

A New York study of 202 Alzheimer's patients found that those treated with Ginkgo biloba extract showed significant improvement in mental performance and social functioning after six months.

Ginkgo has also been used for problems associated with poor circulation such as ringing in the ears, leg ulcers, dizziness and headaches.

The leaf is of low toxicity and has been found to be extremely safe. No serious side effects have been reported from any trial. There have been mild stomach upsets and headaches and there are no known drug interactions.

[Dennis Vander Kroats is a Perth medical herbalist and acupuncturist]

Interested in sharing a weekender owned by an incorporated club?

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Pat and Grant Keady

[TVN (The Vetiver Network) Newsletter / August 1998]

Vetiver gets a grip in Madagascar

A British chap who lives next door just recounted this story to me. He was on a field trip two weeks ago and was in a 4x4 that got stuck in a muddy ravine. The driver hooked up the winch of the car to a nearby tree, and slowly as the winch turned, the tree uprooted, leaving the car unmoved.

Next, he extended the winch cable to the pylon of a nearby bridge, and very slowly turned on the front mounted electric winch. The bridge was either too old or too weak, and the pylon ripped off and part of the small bridge collapsed.

Nearby were some large clumps of grass, and one of the passengers suggested as a last resort — I am not making this up — to tie a rope around the grass at the base and use that as a footing.

The driver hooked the winch cable to the lassoed rope, and proceeded to slowly pull the car out of the ravine! This British person (Andrew Taylor), who had just been reading documents about vetiver I had given him, verified that clumps were in fact *Vetiveria zizanioides*.

— *Criss Juliard*, Madagascar

[Vetiver is an enormously versatile and hardy deep-rooted perennial grass, known for its ability to stabilize steeply-sloping orchards, river and dam banks, gullies, and cuttings]

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[Uniview (University of Western Australia) / 1998 Oct]

A Symbol of Peace and Prosperity

In ancient Greece the olive tree was a symbol of peace because it took more than five years — without wars or natural disaster — for a grove to reward its cultivators with a harvest. Western Australia's first olive trees were planted in the 19th century but growing olives never graduated beyond a cottage industry. A century later, however, the born-again industry is promising profits — and UWA research is underpinning the surge of interest.

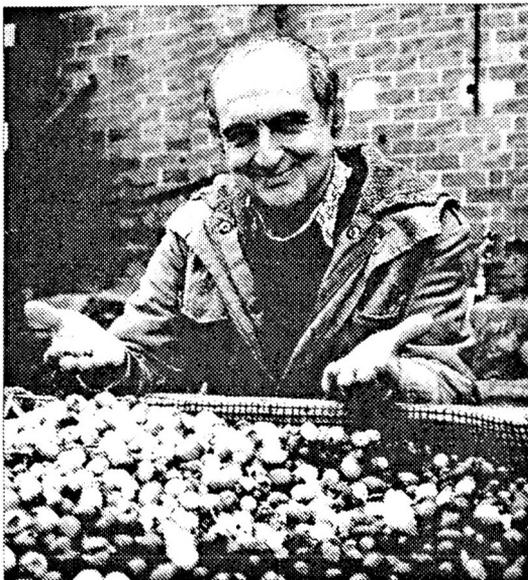
The olive groves that have appeared in the Swan and Avon Valleys, and in the vineyard country of the State's Southwest, are on a steep learning curve — and UWA research is nurturing the fledgling industry.

With its Mediterranean climate and ideal growing conditions — and with health messages of the non-cholesterol olive oil being taken to heart — those venturing into olive production are wondering why it has taken Australia so long to exploit an industry tipped to mirror the success of viticulture.

The oil rush now happening right across Australia has seen orchards being established in the Hunter Valley, in the shadow of the Grampians, and the hills of South Australia. Last year more than 200,000 trees were planted in New South Wales alone, and in WA the estimate is that 110,000 have recently been planted, and a further 160,000 are planned for the new season's plantings. These are in addition to some 5,000 older trees in existing orchards.

In this State, Dr Stan Kailis of UWA's Department of Agriculture, has been at the forefront of research that underpins the local industry.

'The olive industry in WA is now at the stage of the wine industry 25 years ago — and it may well prove to be as profitable,' says Dr Kailis.



"The olive industry in WA is now at the stage of the wine industry 25 years ago — and it may well prove to be as profitable", says Dr Stan Kailis, Senior Honorary Research Fellow.

'Some big groves involving up to 5,000 trees have been established to cater for the bulk oil market, but there are also indications that vines and olives will flourish side by side, with numerous vineyards in Frankland River, Margaret River and Baldivis planting both.

'Within 12 months, this State will have over 300,000 trees in the ground which, in five to seven years, have the potential to produce 15,000 tonnes of olives yielding 3,000 tonnes of oil. This would have a farm gate

value of \$12 m. If sold on through the boutique olive oil market, the retail value would be \$135 m and if sold off the supermarket shelf, \$48 m.'

In the winter of 1997, the University organised the First Olive Cultural and Scientific Symposium at the monastery town of New Norcia. The symposium, jointly organised by UWA and the Benedictine Community of New Norcia, was quickly booked out.

When Dr Kailis, Senior Honorary Research Fellow of UWA's Olive Research group, organised a second symposium in conjunction with an International Olive School in July this year, even the ebullient professor was overwhelmed by the interest. Thirty places in the week-long workshop were quickly snapped up, and some 150 people — from hobby orchardists and disgruntled farmers to well-heeled professionals and agribusiness investors — listened to keynote presenters from the US, France and Greece during the weekend.

Each speaker addressed a particular aspect of the industry.

Dr Louise Ferguson of the University of California spoke of the small scale olive orchards that make up the bulk of the Sacramento and San Joaquin Valleys' annual \$60 m production.

Professor Apostolos Kiritsakis from the Technological Educational Institution of Thessaloniki reminded his audience that it was the Greeks who first nurtured olive orchards, and then spoke of old and current methods of processing the oil.

Dr Jean-Baptiste Lesourd highlighted the healthy track record of the olive (research from Reading University has found that men switching from animal fats to olive oil reduced

harmful cholesterol levels by 20 per cent) and pointed to the opportunities for new producers that could result from the promised deregulation of the subsidised European Union industries. Five member countries of the EU (Spain, Italy, Greece, Portugal and France) account for about 80 per cent of world supply.

There was also much talk of domestic demand for the local industry — 95 per cent of olive oil consumption is currently met by imports of oil and fruit valued at \$110 m — and of the potential for exports to Asia. Japan, for instance, has experienced a 500 per cent increase in per capita consumption of olive oil since 1983.

In between the lectures and workshops, there were olive tree propagation and planting sessions, and oil tastings.

What do you look for in a good oil? According to Dr Kailis — dipping a piece of crusty bread into a bowl of golden oil — the taste experience (as with wine) is a combination of aroma, texture and flavour. Positive attributes include a fruity flavour, a characteristic bitter tang from green olives, and a pungency produced by olives harvested early in the season.

The first olive seedlings are believed to have been brought to the Swan River Colony by Captain James Mangles in 1831 and are the rootstock of the New Norcia Mission olive. New Norcia was an appropriate venue for the symposium as the Benedictine Community has been cultivating olives since the 1860s and their oil won a silver medal at the Franco-British Exhibition of 1908. To this day the monastery's oil is extracted using traditional Mediterranean methods — the trees are hand harvested and the fruit crushed by a wheel press. The 140-year-old trees still produce oil that has olive buffs murmuring approvingly and the golden oil is snapped up by leading

hotels and visitors.

Dr Kailis is currently in the third year of a research project on olives, supported by the Sir Eric Smart Fund. The late Sir Eric Smart was at one stage the biggest wheat farmer in Australia and a pioneer in sand plain farming. He had close links with plant scientists at UWA and the generous endowment he established (which was augmented by his son, the late Peter Smart) supports agricultural research at UWA.

The research is monitoring growth in 10 different trial groves that Dr Kailis has planted from York to Albany, Northampton to Esperance. Each site is testing six varieties of olives. 'The results have been encouraging in that there has been a 98 per cent uptake rate across all the sites,' says Dr Kailis.

'While we know that olives are grown successfully in climates such as ours, there has been little local research to establish the best soil conditions and locations for orchards,'

says Dr Kailis. 'The University is currently engaged in several international collaborative research projects. One involves chemical testing of local oils to gauge the quality of the fatty acids and polyphenols (which have health implications) to see how they compare with Mediterranean oils.

'A second project is looking at growing olives in dry land conditions, and areas affected by salinity or erosion. What I am finding is that there is considerable interest in the farming community in planting olives as part of diversification programmes, in which case the best soil is saved for the major crops. These projects hold opportunities for postgraduate research, which would be jointly supervised by myself, Dr Kiritsakis and Dr Ferguson.'

Six varieties of olives, from Greece, Italy, Spain and New Norcia, are being tested. They are Frantoio, Leccino, Kalamata, Manzanillo, Pendolino and New Norcia Mission.

Free subscriptions offered for early renewal

To encourage early payment of 1999 subscriptions, WANATCA is repeating last year's popular scheme by which all members who have paid their subscription by January 1, 1999 will go into a ballot for free subscriptions.

Renewal notices are being sent out with this issue of Quandong. Members who have already paid for 1999 and later will automatically go into the draw. The lucky winner(s) will have their subscriptions extended for the number of years prepaid, so if you renew for 1999 and 2000, you could win 2 more years free, to 2002.

The rates for 1999 are Full Member, \$50, Student Member, \$25.00. Life Memberships remain at \$600.

How are we doing?

As can be seen from the Association's balance sheet, shown on the next page, we

encountered a small deficit for the last financial year. However, thanks to Treasurer Trevor Best's sterling work on our financial system, we are now for the first time able to make forward estimates of our financial position at any time in the future. We hope and believe that the small increase in rates will stabilize our position for the next few years.

By far the biggest cost to the Association is that for producing and sending out our publications Quandong and WANATCA Yearbook. If we have more members, these costs are shared more widely, so help us find new members and help yourselves.

West Australian Nut & Tree Crop Association

Income & Expenditure \$ \$

For the 12 months ended:	30 June 1998	1997
Income		
Interest income	457.33	461.01
Life Membership	600.00	500.00
Miscellaneous Income	157.70	20.00
Postage O'seas	0.00	30.00
Research	15.00	40.00
Subscriptions	13,569.50	13,460.00
Total income	14,799.53	14,511.01
Expenses		
Bank charges & fees	22.92	0.00
Credit Card Charges	212.37	33.00
Field Trips & Shows	461.96	175.00
Honorarium	1,040.00	1,040.00
Miscellaneous Expense	614.55	368.90
Postage	1,884.57	1,693.25
Printing	8,116.24	7,748.10
Refreshments	29.55	31.60
Rent	3,613.00	1,953.40
Stationery	21.48	37.76
Tax	35.42	47.23
Telephone	399.71	267.97
Total expenses	16,451.77	13,396.21
Total (income - expenses)	-1,652.24	1,114.80
Transfers		
To Cash Account	-950.00	-1,000.00
To RAC Debentures	-600.00	-500.00
To Trading Account	-294.96	-376.75
From RAC Debentures	294.96	376.75
From Trading Account	1,550.00	1,500.00
Total transfers	0.00	0.00
Balance Sheet \$ \$ At 30 June:	1998	1997
Assets		
Cash and Bank Accounts		
Cash Account	119.58	149.89
Unicredit Savings	571.64	568.65
Trading Account	4,333.65	6,714.34
Unicredit Term Deposit	3,510.35	3,354.58
TOTAL Cash and Bank Accounts	8,535.22	10,787.46
Investments		
RAC Debentures	4,209.44	3,609.44
Total assets	12,744.66	14,396.90
Liabilities & equity		
Liabilities	0.00	0.00
Equity	12,744.66	14,396.90
Total liabilities & equity	12,744.66	14,396.90

[Countryman Horticulture / 1998 Aug 6]

Macadamia grower finds satisfaction

For farmer Peter Brown, growing macadamia nuts provides an enjoyment which outweighs the uncertainty involved in establishing a new enterprise.

Mr Brown has 200 macadamia trees on his property in Roelands, just south of Harvey, and believes the personal rewards he receives from growing the nut trees should provide an incentive for both farmers looking for a hobby crop and those seeking a form of diversification.

The Browns became interested in growing macadamias six years ago when they heard the nut had few known predators in WA and did not need to be picked from the trees, meaning that harvesting was not labour intensive.

But primarily, Mr Brown was inspired by the challenge of growing something different which not only produced a delicious tasting nut that was healthily (macadamias are low in cholesterol) but was also expensive to buy in shops.

"There is a lot of fun in growing macadamias" Mr Brown said. "The challenge lies in growing trees that are considered to be only suitable for tropical climates."

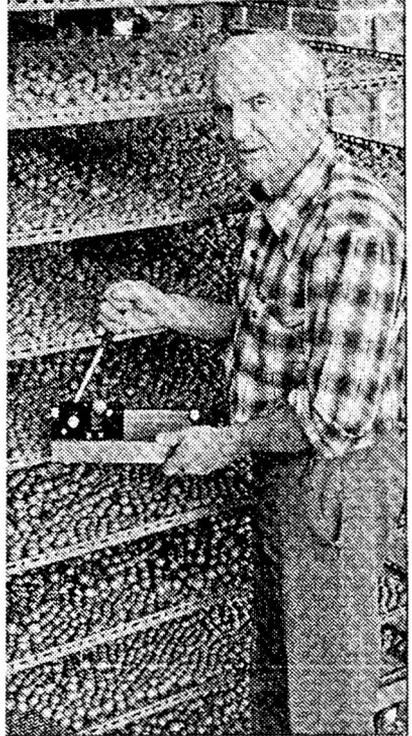
Mr Brown said experts from Queensland who had seen his trees were very impressed with their success. Of the 200 trees planted, only three had not survived.

The trees now six years old, are growing well, and produced a combined 150 kg of nuts last harvest — a healthy yield for trees which are generally not considered commercial value until their seventh to tenth year, depending on the variety.

But Mr Brown is well aware that macadamia farming is a long-term investment.

Five varieties were planted on the Brown property, with the A4 variety producing the biggest quantity of nuts.

Mr Brown said although young trees required considerable care, the management and maintenance of growing macadamia nuts



Peter Brown assesses the quality of the macadamia nuts.

was no more intense than with most other nuts.

"The main requirement in young trees is that a fair amount of time and expertise is needed in training trees to one main leader to avoid splitting off," he said. "It is also important to buy strong plants."

There was still a lot of trial and error involved in the care of trees, he said particularly in watering and fertilising techniques.

Mr Brown uses only 150 litres of water on his plants a week and believes in one watering

every seven days. "Many people think macadamias are very big consumers of water and require several waterings a week," he said.

"But I attribute part of my watering regime to mulching which I carry out vigorously.

"Mulching of trees is vital to ensure the soil around the plants is kept moist, but the trees also need to be well fed.

"I have found that applying superphosphate between rows and then slashing and blowing grass on the plants works well."

Mr Brown said although the success of his trees had been high, there were a couple of unhealthy trees in the lower region of the planting area which he attributed to water logging — something macadamia trees did not like.

Financial returns from the macadamias are limited for Mr Brown, who said most of his income came from dog kennels he managed and a small orange planting on the property.

But he was hopeful next year the situation would improve and he is hoping for a substantial increase in yield of 300-400 kilograms.

He believes the answer to marketing lies in farmers forming a cooperative and approaching the domestic market.

"I believe a cooperative is a viable option. What is needed is to raise public awareness."

Macadamia industry expanding — Agriculture WA

Agriculture WA has released a new information package on macadamia nuts to help farmers looking to take advantage of opportunities in Australia's rapidly expanding macadamia industry.

The package was prepared by Anthea Paino, a graduate trainee working with AgWA's Southern Coastal Plain Sustainable Rural Development Project.

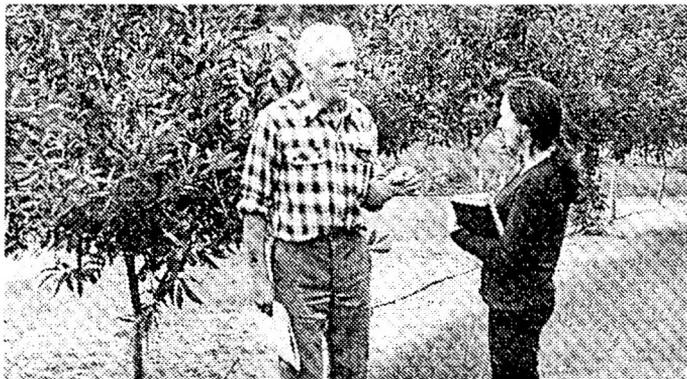
Her work was funded by the Department of Training under the Landcare Training Initiative.

"Australia is fast becoming a major producer and foremost trader of macadamia nuts," she said.

"Export and domestic sales are growing rapidly as consumers become more aware of the distinct texture, delicate flavour nutritional and low cholesterol qualities of the macadamia."

The Australian industry is now centred in northern New South Wales and is still at the experimental stage in WA.

Ms Paino said researchers, local growers



Peter Brown explains the reasons he started growing macadamias to Agriculture WA graduate trainee, Anthea

and nurseries believed WA offered ideal conditions for growing macadamias and an excellent diversification opportunity for local farmers.

"Our climatic conditions are similar to those in California where macadamias have been successfully grown for many years," she said.

"We have ideal soils that are well drained and normally duplex in nature and therefore can maintain moisture for use by macadamia trees."

"Land costs are much lower in WA compared with the eastern States and we have growers who have already indicated their dedication to developing suitable varieties and appropriate management techniques for growing macadamias under WA conditions."

WA also already had a processing plant in Baldvis near Perth.

Ms Paino said the new information package now available from AgWA could help farmers with up-to-date data on the growing and marketing of macadamias.

"The package has been designed specifically for farmers in the Peel region but the information could be useful for farmers in other areas in the southern areas of the State," she said.

Macadamia notepad

History — Although macadamias are native to Australia-originating in the sub-tropical rainforests of northern NSW — they were not commercially grown in the country until the early 1970s.

Climate and soil conditions — Macadamias grow best in sub-tropical climates with mild temperatures and abundant rainfall

distributed throughout the year.

Characteristics — Macadamia trees have shiny green leaves and bear sprays (racemes) of long, delicate, sweet-smelling white or pink blossoms.

Varieties — Most macadamia development has been done in Hawaii, so many of the world-recognised selections are not well suited to Australian conditions. Recently there has been an active selection program established to develop varieties suited to Australian conditions.

Planting — Macadamias are susceptible to wind damage and therefore it is essential that the site is sheltered and/or native trees are planted as wind breaks.

Planting distances — Planting distances vary according to soil types, varieties and management systems. To encourage earlier production, the suggested distances are 8m between rows and 4m between each plant.

Tree management — Care of young trees is important as this is when they are most vulnerable to setbacks. Frost can severely damage young trees, therefore it is recommended to frost wrap trees up to four years old as an insurance, from June to September or until frost risk is past.

Fertiliser application — Fertiliser applications will depend on soil types and conditions.

Irrigation — Irrigation is essential when growing macadamia trees under WA conditions.

Pruning and training — It is essential to train macadamia trees to one central leader to minimise breakage of limbs from strong winds.

Pests and diseases — The main threat in WA is the fungus *Phytophthora cinnamomi*.

[Australian Macadamia Society: 1998 AGM Agenda]

Macadamia Industry Outline

The Society and the number of macadamia nut growers

The Australian Macadamia Society Limited represents the Australian Industry with over 650 financial members. Founded in 1975, it is made up of nursery owners, growers, researchers, processors, marketers, consultants, suppliers and those from a wide range of ancillary support services, as well as 35 overseas members. The AMS offers varied industry services from providing a lobby group for industry issues through to Research and Development information dissemination through a regular News Bulletin and a Computerised Bulletin Board. It also coordinates the use of industry levy funds for both Research and Development and Promotion.

The main geographic location of the industry

The majority of the Australian plantings are in Northern NSW and Southeastern Queensland with less numerous plantings on the NSW Mid North Coast, Central and Northern Queensland. Most of the plantings are on the coastal plains east of the Great Dividing Range, with some pockets on tablelands in North Queensland. There are also minor plantings in Western Australia.

Number of trees

Current estimates are that the Australian industry has about 3,250,000 trees covering an area of 12,000 hectares, varying in age from newly planted to over 20 years old. 98% of these trees are the commercially preferred *Macadamia integrifolia* species. Of this total, about 90% are Hawaiian selections. The remainder are Australian, including some relatively new releases. Of the total trees

planted, it is estimated that 45% are mature, 30% in the early bearing stage and 25% not yet bearing.

Annual Production of Macadamia Nut in Shell

Year	Production	Average Farm
	NIS tonnes	Gate \$/kg
(10% moisture) Indexed to 1994		
1987	4,400	4.26
1988	5,200	5.05
1989	6,800	4.05
1990	12,000	2.32
1991	10,000	1.63
1992	13,000	2.09
1993	14,500	2.80
1994	19,000	2.75
1995	17,500	2.90
1996	20,500	3.00
1997	25,400	3.05
1998(est)	23,400	2.40(est)

(Updated from A W Stapleton & I Skinner, 1995).

Australian Macadamia Society: <A1055>

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[The Australian / 1998 Jun 7]

Carbon credits — new income source for tree growers

The NSW Government yesterday handed two companies a licence to keep polluting under a landmark scheme that allows the buying and selling of the right to produce greenhouse gases.

Premier Bob Carr described the scheme as a market solution to an environmental problem and predicted private landholders would plant trees as 'carbon sinks'.

Carbon-credit trading effectively tells generators of greenhouse gases they can increase their emissions as long as they plant or buy trees. Companies that reduce their emissions substantially can trade their carbon credits with other companies.

Companies and countries are expected to jostle to acquire credits to allow them to keep polluting above the greenhouse limits set at last year's Kyoto climate-change conference.

Under the NSW deal, the third carbon trade anywhere in the world, power generator Pacific Power will buy the carbon rights to 1000 hectares of NSW State Forests, while

Delta Electricity is to establish 41 hectares of pine plantations to offset emissions from its coal-fired power stations.

But the decision to allow so-called carbon credit trading is a leap in the dark as details of how it will work internationally, including pricing, allocations and penalties for exceeding emission targets, are not expected to be known until the next UN climate change conference in Buenos Aires this November.

Carbon credits are also likely to become a key component of futures trading, with the Chicago Board of Trade estimating the market will have an annual global turnover of between \$US 30 million (\$49 million) to \$US 100 billion within a few years.

Pacific Power chief executive Peter Graham said: "The reason why we entered this is because it will reduce greenhouse gases".

He said about 2400 tonnes of carbon would be locked up in the trees during the next 12 months. The amount of carbon locked up was equal to the greenhouse emissions from the electricity supplied to 2500 suburban homes. The amount of carbon locked up under the pilot scheme was expected to grow to 10,000 tonnes a year within 10 years, before the trees were logged after 30 years.

While none of the parties to (the June 98) deal would give the price of the carbon rights, private trades in the US are setting prices of about \$US11 (\$18) for each tonne of carbon.

[This article was reproduced in the Subtropical Farm Forestry Association Newsletter for August 1998. It was accompanied by a useful and much more extensive article on *Trading Carbon Credits*, by Max Bourke].

Subtropical Farm Forestry Association:
<A1929>

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Limonnik attracts research work in Europe

WANATCA member Walter Griesmeir in Germany has himself been following up current research work on Limonnik (*Schisandra chinensis*), the subject of two articles in the current (1998) WANATCA Yearbook.

He has brought to our attention a number of valuable research sources. The following English summary is from the article *Hinweise zur Kultur von Schisandra chinensis* (Recommendations on the culture of *Schisandra chinensis*), by A. Kump, published in *Drogenreport*, v. 16, n.10, 1997. This article has an extensive list of further references, mostly from work done in Western Europe.

Schisandra chinensis (Turcz.) Baill., a liana from the deciduous forests in East Asia's temperate zones, is currently achieving an increased interest in Central Europe.

The people living in the areas where the plant is localised have been using it for centuries as a part of their traditional herbal medicine. Today, it also serves as source material for the preparation of officinal phytopharmaceuticals. The fruits are even suitable for the preparation of juices and teas. Another remarkable feature of this plant is its highly decorative value.

In this article, I want to describe the plant's disposition, its demands on the site as well as its distribution. Breeding can be done easily by qualified professionals using conventional methods, i.e. generative as well as vegetative ones. Further, I will discuss the stratification

of seeds often recommended in the appropriate literature. The monoecious or dioecious sexual characteristics controlled by various influences should be taken into consideration if a cultivation is intended. The first experiences obtained during a cultivation trial in Central Europe confirm the suitability of *Schisandra* for cultivation in appropriate and suitable places.

Only late frosts have the ability to endanger its cultivation marginally. A satisfactory yield can be obtained by the fifth year. There are no differences in the quality of the bioactive compounds of the fruits compared to fruits from naturally grown plants. ¥

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*The most useful service we
can render a culture is to add a
new plant to its agriculture*

— Thomas Jefferson

BOOK REVIEWS

by David Noël

Jujube Primer & Source Book. Edited by *Roger Meyer & Robert R Chambers.* Published by Fruit Gardener Books, California, 1998. 267p. Spiral. *\$54.95

Here at last is the long-awaited treatise, a comprehensive book in English on growing jujube.

The book grew out of frustration on two continents about the lack of such a book. This production is the prime effort of Roger Meyer of California and support for his groundbreaking R&D on jujube or chinese date, *Ziziphus zizyphus* and its close relatives.

The first part, the 'Primer', is a straight reprint of 14 articles from the 1994 issues of *Fruit Gardener*, the magazine of the California Rare Fruit Growers. 1994 was the 'Year of the Jujube' for the CRFG, and FG carried a complete set of basic articles on this topic.

The second part, the 'Source Book', consists

of about 64 articles extracted and reset from a very wide variety of sources. These include 4 articles from our own *WANATCA Yearbook*.

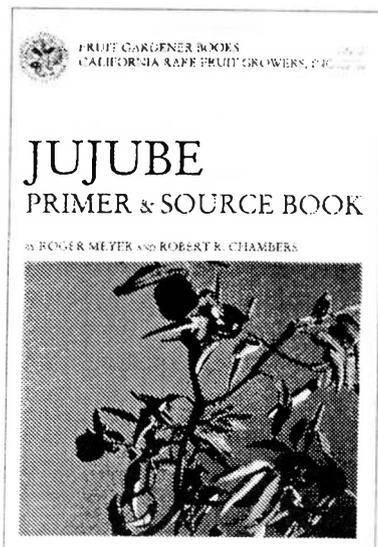
This book is greatly welcome, and should have a major influence on jujube development and commercialization worldwide.



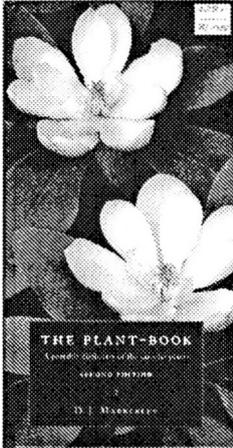
Sandal and its Products: proceedings of an international seminar, December 1997, Institute of Wood Science & Technology (ICFRE) and Karnataka State Forest Department, Bangalore, India. Edited by *A.M. Radomiljac* et al. Published by Australian Centre for International Agricultural Research as ACIAR Proceedings no. 84, 1998. 204 p. Paper. *\$37.95

This book records a truly international effort to put together the latest research and practical developments on sandalwood, with participation of researchers from all areas of Asia, the Pacific islands, and Australia where sandal is a significant plant product.

Topics covered in the more than 60 papers include biotechnology, silviculture, chemistry, tree improvement, pests, trade and economics. This book is probably the most extensive primer on sandal currently available, and



ACIAR are to be thanked for their support in making it available in printed form. No worker in this field will want to be without a copy.



The Plant-Book: a portable dictionary of the vascular plants. Second edition. *D.J. Mabberley*. Published by Cambridge University Press, UK, 1997. 858p. Hardback. *\$81.95.

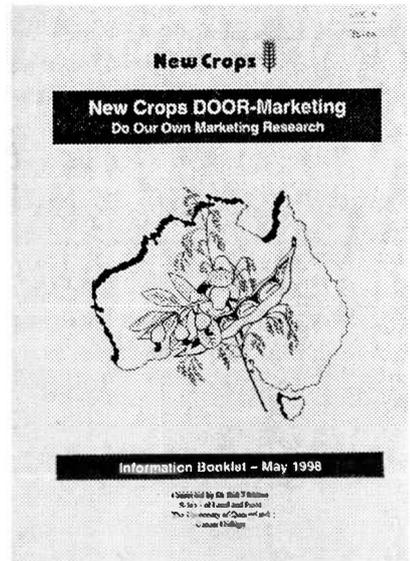
The appearance of the first edition of this book was greeted with loud plaudits all around the world and acknowledged as a very significant event in plant publishing.

An immensely impressive work of scholarship, *The Plant-Book* aspires to cover every known genus of plant, listing the number of species, where they are found, their characteristics and relationships. It builds on works such as Willis's *A Dictionary of the Flowering Plants and Ferns*, which ran into six editions over the years. But what makes Mabberley so much more useful than Willis is its inclusion of a tremendous amount of information in succinct form on the uses and social importance of the different species of plants referred to.

Edwin Menninger, author of *Edible Nuts of the World*, referred to Willis as "The most

used book in my library'. Mabberley takes this place in my own usage, I typically refer to it on more days than not, and it is the only book for which I keep a copy at hand both at home and at work.

So I confess to being a major fan of this book, now updated in the second edition with 2500 new entries. In fact I can't imagine being able to function efficiently without it!



New Crops DOOR-Marketing: Do Our Own Marketing Research. Compiled by *Dr Rob Fletcher*, University of Queensland Gatton College, and published by the New Crops Group, 1998. 253 p. Paper. *\$30.00

The New Rural Industries - A Handbook for Farmers & Investors. Edited by *K W Hyde*. Published by RIRDC, (1998). 570p. Paper. *\$54.95.

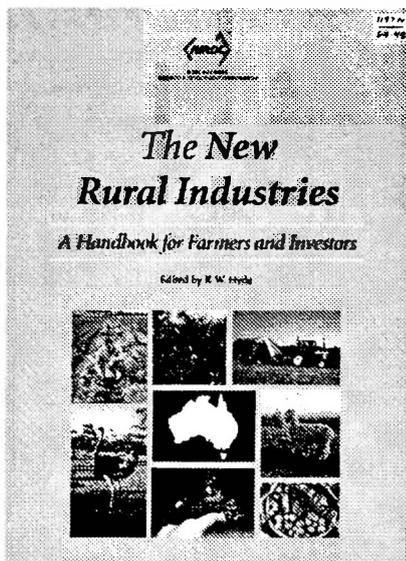
Australia is fortunate to see the recent publication of two new books on the development and promotion of new plant

crop and other start-up industries. These two books do not compete, they are complementary, together they give a very good picture of the new-crops field.

Rob Fletcher's readable and useful text is about how to analyse potential new crops and work out which might make a bob, and has some instructive and amusing case studies.

The Rural Industries Research and Development Corporation book gives an excellent update on 94 specific new plant, animal, and aquaculture industries, with useful further contacts. These two books are required reading for those looking for viable new-crop projects.

*Prices at Granny Smith's Bookshop, see p. 31



Olive oil processing plant upgraded

WANATCA members will remember our 1997 visit to the Ioppolo family olive oil processing plant at Wanneroo, just north of Perth.

Now the Ioppolos have installed the first continuous cycle processing plant in Western Australia, made by Officine Meccaniche Toscane of Firenze (Italy). They write:

We have had a lot of delays due to the water-front strike, but we finally received our machinery and got it up and running. The plant is capable of 600kg per hour and has room for expansion. It starts off with a ground level hopper (in which to tip your olives). It then goes to a sand shaker and de-leafer, and then to an olive washer.

The olives are then crushed and the resultant paste falls into a kneader (mixer) which has 3 separate holding tanks. Once they are kneaded for the appropriate time they go to the last stages which are the decanter and separator. We commenced processing olives in mid-June and hope to continue

satisfying our customers throughout the remaining season. On this note - I'd like to thank our existing customers for their continuous support and at the same time welcome any new ones. Thanks to all from the Ioppolo Family.

—**Sandra & Carlo Ioppolo**, Ioppolo Oils, 108 Pinjar Road, Wanneroo, Western Australia, 6065. Ph: (08) 9405 3586.

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[*Australian Horticulture* / 1998 Sep]

White Aspen — more than just a bush food

Native foods attract enormous interest and discussion. However, while the industry is worth between \$15-20 million a year, it is still struggling to be taken seriously by related industries whose involvement could substantially assist its growth.

Many native foods, such as *Acronychia oblongifolia*, the white aspen, have important roles to play in horticulture and sustainable land management. They are also an attractive amenity species in landscaping.

Observing the interaction between native foods and native fauna increases understanding of plant management, both in situ and in cultivation. It also helps bridge the knowledge gap between indigenous and non-indigenous cultures.

The white aspen, a bushy, evergreen rainforest tree, grows to about five to 10 metres when grown in open plantings. In its natural habitat, it can attain a height of 21 m

as an erect, glabrous tree.

The name *Acronychia oblongifolia* (common names: white aspen, southern lemon aspen, hard aspen, common aspen, yellow wood, white lilly pilly) is derived from akros, end or edge, plus onyx, a claw, therefore claw-tip, because the points of the petals are curved and look like claws. It is in the Rutaceae family.

The white aspen occurs in rainforest and along gully and creek lines in southeastern Australia, from the Mitchell River in Victoria to Gympie in southern Queensland (areas with greater than 600 mm rainfall). Its white fruits are subglobose to mitre-shaped drupes



up to 13 mm diameter. They are semi-fleshy with blackish seeds, have a ring of dense hairs at their apices, and occur in dense axillary cymes. They occur abundantly in summer in Victoria, and from May through to November in NSW and Queensland.

The fruits have a unique, sharp citrus flavour, with the versatility of a lemon, to which it is related. The trees are under research as a native food crop and have shown some potential as a new crop option for farmers wanting to diversify.

Whole white aspen fruits (or juice) can be used in pastries, desserts, sauces, dressings, jams and marinades. The pulp from juicing can flavour shortbread or be infused to extract its unique flavour.

In addition to providing a refreshing and mouth cleansing snack, the fruit are an important food source for the Wompoo fruit dove, topknot pigeon, green catbird, regent and satin bower-birds and of course the pied currawong.

White aspen comes from a genus of about 16 endemic species and about 10 other species found in the Asia/Pacific region. The endemic species are trees and shrubs concentrated in the moist tropical and sub-tropical rainforests of the east coast of Australia, with the exception of *Acronychia pauciflora* which occurs in dry rainforests of NSW/Queensland.

It is surprising that this particularly hardy and attractive genus has been overlooked in

horticulture. Some species, such as *A. acidula* (lemon aspen from North Queensland), have attractive shiny broad foliage that emits a delicious citrus aroma when crushed. It also makes an excellent indoor plant or pot specimen for courtyards or terraces.

Three leading players in native foods recently rated *A. oblongifolia* (white aspen) highly, and believe its fruit has considerable potential if a consistent, quality supply can be obtained. In comparison to *A. acidula* (lemon aspen), the most popular species used by the industry, the flavour of the white aspen fruit is superior, especially when picked straight from a tree.

Additionally, the fruit is not prone to the same grub infestations as its northern relative. Most importantly, it is far more reliable in a diverse range of southern-eastern habitats, where it occurs naturally, so could prove to be an important option for farmers wanting to grow native aspens in these regions.

For those who prefer the lemon aspen, the white aspen could be used as excellent rootstock material, as some success has been achieved with this method of propagation.

In landscaping, *A. oblongifolia* is extremely hardy and makes an attractive screen. Its shiny, delicately scented foliage and flowers, and its long season of producing highly ornamental fruit, make it a suitable alternative to exotics such as *Coprosma repens*, or more commonly used natives such as *Acmena* and *Syzygium* species. It makes an excellent feature tree in parks or streets in coastal regions.

In bush regeneration and revegetation projects, it offers an excellent option for stream bank stabilisation, for coastal plantings in regions behind dunes, or on cliffs where some vegetation provides initial protection. It is

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being used by regenerators in a number of areas around Sydney. The tree produces a creamy white, close-grained, fairly hard and tough timber that appears to be resistant to insect and fungal attack. It is suitable for turning, carving and small tool handles.

White aspens prefer neutral to acid enriched organic soils for best production. However, they will tolerate a broad range of soil conditions and habitats. If grown in low-rainfall areas, they require irrigation to establish, or during drier periods when coming into fruiting.

Heavy mulching is recommended for all climates and soil types. The tree may be cultivated in drier temperate climates if protected from severe frost when young. White aspens are frost tolerant once established, to minus 4° C. They respond well to pruning, though how this affects crop production requires further research.

Under irrigation, at a spacing of 5x5 m (450 per hectare), an average yield of five kg per tree can be expected in the fourth season after planting. Fruiting is generally abundant. Some specimens have been estimated to produce over 60 kg in a season. Heavy fruiting appears to occur on trees on the fringes of rainforest, or under cultivation in full sun combined with induced stress, such as paving or bitumen, or sheltered hotspots against north facing walls. Being a citrus relative from the family Rutaceae, it is probable that the practice of cincturing may also encourage heavy fruiting.

At a farm value of \$12/kg, a gross return of \$23,750 per ha could be achieved. These figures are based on seedlings, however grafted selections of favourable gene types are currently being researched and when available, estimated cropping yields could increase considerably.

Selected favoured genotypes of the white aspen take rapidly as grafts - as little as six days. Both *A. wilcoxiana* (silver aspen) and *A. acidula*, (lemon aspen) have been grafted successfully on to the white aspen, though proving slower to take.

The difficulties in propagation commonly recorded in a number of reference books do not apply to all genotypes and species. The white aspens found around Sydney germinate profusely in about three to four weeks after the fruit is simply cleaned. Many of the northern species are difficult to germinate, and cuttings of all species seem to be extremely slow to take, with very low success rates.

— **John McCarthy**

[*A. oblongifolia* stock is available from Sydney Native Nursery (Bush Foods Division), Warrie Wood, NSW. Phone: 02-9979 8812; fax: 02-9979 8813].

Australian Horticulture: <A1050>

Sydney Native Nursery: <A3241>

Bushfood starter kit available

Sammy Ringer, Editor of Australian Bushfoods magazine, has announced the publication of the Bushfood Starter Kit,

The kit covers not only species descriptions but also such things as site selection, organic certification, an overview of the industry and a listing of bushfood products currently available as well as other information on this growing industry. Included in the cost of the kit is a 12 month update service.

Readers can get a synopsis of the kit and a listing of the species it includes through Australian Bushfoods magazine by phoning 07 5494 3812.

Australian Bushfoods magazine: <A3075>

Antidesma has bushfood possibilities

The genus *Antidesma* includes many species with edible fruits. According to Mabberly's *The Plant-Book* (reviewed page 23), there are 170 species, most of which are in tropical or warm areas of the Old World, especially Asia, with 10 species in Africa and 1 in Hawaii.

Apparently 6 species are native to Australia, the three more common ones described below (from Keith Townsend's book 'Across the Top'), plus *A. erostre*, *A. sinuatum*, and *A. schultzi*. A further species, *A. dallachyanum*, is now regarded as only a form of *A. bunius*. One species (*A. ghaesembilla*) is native to northern WA.

These plants are usually classed in the family Euphorbiaceae, although sometimes their section is split off into a separate family, Stilaginaceae.

These plants do have possibilities as commercial bush foods. I have a plant of *A. bunius* growing quite well, if slowly, in Perth.

— David Noël

Antidesma bunius

Common Name: Herbert River Cherry, Currant Tree, Wild Cherry.

Form and Size: Tall shrub or small tree 3-8 m high.

Distribution: North-eastern Qld.; In rainforest margins and along streams. Common throughout the Pacific region.

Leaves: Leathery, shiny, lance-shaped, bright green, 10-12 cm x 2-3 cm.

Flowers: Separate male and female flowers; male spikes 10-15 cm long, female flowers greenish, borne on racemes 4-6 cm long.

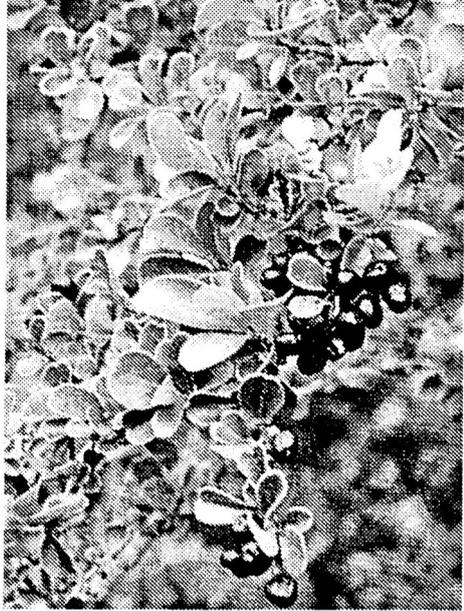
Flowering Period: September to December.

Fruit: Bright to dark red, egg-shaped, to 2 cm long. Fruit are edible and make very good Jam or Jelly.

Cultivation/Notes: Propagate from seed or stem cuttings. Prefers some protection, well drained soil and adequate moisture.

Antidesma ghaesembilla

Common Name: Black Currant Tree.



WA Blackcurrant (*Antidesma ghaesembilla*), from Bindon's 'Useful Bush Plants'.

Form and Size: Tall shrub or small tree 3-8 m high, with branchlets covered in woolly hairs. The species is semi-deciduous and has separate male and female plants.

Distribution: Qld., N.T., W.A. and other Pacific countries; in open forests, vane thickets and along streams.

Leaves: Smooth, broad-oval, blunt end, dark green above, paler beneath, 3.5-9.5 cm x 1.5-5 cm.

Bark: Cream-grey, rough, fissured, fibrous.

Flowers: Creamy or whitish-green, very small: male in spikes 2-5 cm long, female in slender terminal spikes.

Flowering Period: September to December.

Fruit: Purple-black, about 0.5 cm diameter; a single hard seed.

Cultivation/Notes: Propagate from seed or

cuttings. Suitable for Jam making.

Antidesma parvifolium

Common Name: Currant Bush.

Form and Size: Small, bushy shrub with dense foliage, 2-3 m high: semi-deciduous and having separate male and female plants.

Distribution: Qld. and N.T.; in coastal scrubs, sandstone escarpment, woodlands or vine thickets.

Leaves: Small, oval, blunt, light green, crowded on the stem. 0.8-2.5 cm x 1-2.3 cm. Bark: Grey, smooth.

Flowers: 0.5-1.5 cm long: male in spikes 1-2.5 cm long, female in racemes 0.5-1.5 cm long in the upper axils or terminally.

Flowering Period: November to January.

Fruit: Oval, fleshy, purple-black, 0.4-0.6 cm long; a single hard seed.

Cultivation/Notes: Propagate from seed or cuttings. Suitable for Jam making.

Propagating rare plants

Lenore Lindsay, Leader of the Australian Food Plants Study Group, puts out a useful newsletter. In the June 1998 issue of 'Australian Food Plants Study Group Newsletter' there was mention of attempts to propagate *Alectryon ramniflorus* at Central Queensland University, and it was said that there were only 37 plants of this species left in the wild.

I sent Lenore a comment on propagating this and other rare plants:

There is a technique which we call a Bazzani Graft, which was brought to our attention by Lui Bazzani of Olea Nurseries in Manjimup, Western Australia. Olea use this method for a number of their commercial fruit plant range.

The technique is basically simple, but enormously powerful, especially for rare

plants. It consists of taking a piece of root of the subject plant, and a piece of growing shoot, and grafting them together. It can thus be used on a single, isolated plant from a remote bush or forest setting. Having both a root segment and a shoot segment, most of the problems of striking cuttings or germinating seeds are eliminated, and since the root and shoot are from the same plant, they must be graft-compatible!

Usual techniques such as whip and tongue or cleft grafting may work fine. An interesting variation is an 'inverted wedge graft' — a piece of shoot is taken, the base is split, and two tiny rootlets with their edges shaved are pushed into the cambium sections of the cleft edges. Maybe you could pass this on to anyone wanting to propagate rare plants.

David Noël

I also sent a copy to WANATCA member and ace propagator Rob Furneaux, of Kanangra Propagators. Rob commented:

I have been using the root graft techniques you describe for about 20 years. I have found the wedge or inverted wedge graft more successful than any of the approach techniques such as whip & tongue.

I routinely use it for Chionanthus species and Jujubes, both Chinese and Indian. For 2 mm diameter wood I use a pair of 2.5 X magnifiers that clips onto my glasses. I have also designed and market a nylon grafting clip for use on such small wood. In the trade it is more commonly used for grafting conifers.

Jujubes and Asimina

Where the rootstock may sucker, leave exposed cambium of the scion and it will eventually form its own roots and the graft below can be cut off and thrown away. This is desirable with Jujubes and Asimina.

Australian Food Plants Study Group: <A2894>

Kanangra Propagators: <A3092>

[West Australian / 1998 Sep 14]

China acts to save forests

China is taking desperate measures to stop the stripping of its forests, blamed for the recent floods.

More than a million Chinese lumberjacks will swap their axes for shovels as part of a three-year plan to replant China's depleted forests and avert a repeat of this season's devastating floods.

Chinese authorities have made erosion due to overlogging in old-growth forests in Western Sichuan the scapegoat for the worst flooding in China in 44 years.

State-run media reports blamed millions of tonnes of silt washed into the Yangtze River due to deforestation for the record high flood peaks which have claimed more than 3000 lives in three months.

This month China banned logging across the country, with Sichuan's 54 western counties putting 4.6 million hectares of forest off limits, shutting down 65 timber mills and reducing production at a further 70 mills.

The State Forestry Administration (SFA) estimated the three-year ban on logging in old-growth forests would force more than one million people now employed in the timber industry out of work.

SFA deputy director Li Yucai said most of those laid-off would be given new jobs planting trees as part of a three-year strategy to reshape the timber industry.

It is planned to use unemployed loggers to plant 1.83 million ha of trees, while a further 8.97 million hectares of old growth forest would be temporarily spared from the chainsaw.

A \$4 billion investment plan would ensure better protection for China's old growth forests and make timber production mainly reliant on newly planted forests, Mr Li told the official Xinhua newsagency.

The spending included \$124 million earmarked this year for tree planting in the upper Yangtze and flood-ravaged Heilongjiang in China's north-east.

China has 87 million ha of forests accounting for 9 per cent of its land use.

But overlogging by illegal timber mills and farmers in isolated communities desperate for winter fuel has prompted predictions that China could be completely cleared of woodlands within the next decade.

International environmental group Greenpeace described the ban as too late to stop the mass deforestation of China's ancient woodlands.

Greenpeace China executive director Ho Wai Chi said this year's floods had confirmed for many people the consequences of deforestation. But the problem had been made worse by local cadres failing to maintain protective dykes along the Yangtze.

Congratulations to Mal Washer

Every good wish from the Association to Dr Mal Washer, recently elected to Federal Parliament as member for Moore.

Mal and Nola Washer, owners of the prominent Avowest avocado orchard and nursery, are WANATCA supporters of very long standing, in fact Foundation Members.

We look forward to a strong voice on tree crops in Parliament, Mal!

Widespread deforestation in China could not simply be solved by implementing a temporary ban, as the reasons for the illegal overlogging in remote areas of the country were due to necessity, Mr Ho said.

"Many of the farmers in this area do not have any other form of energy and the only way to keep warm in winter is to cut down the forests," he said. "Something has to be done to improve the livelihood of their local community and allow them to survive without logging."

— Owen Brown

Property Planning Course

'Farm Fix', a joint initiative of Fairbridge 'Ecohouse' and 'Ecojobs', is holding the 'Men of The Trees' Property Planning Course on the weekend of the 12th and 13th of December, 1998 at Fairbridge Farm, Pinjarra.

If you are thinking of buying a small rural property or already own one, this course is essential in helping you address land degradation issues, improve productivity, beautify the landscape and increase the overall value of your property.

Topics covered in this course include: expectations and goal setting, property planning strategies, identifying land management units, selecting trees and shrubs, tree planting techniques, weed control, selecting the best pastures for your soil, farm diversification options — including fruit and nut trees, fencing demonstrations, and minimising the risk of fire.

Included in the course is an assessment and design of your property with the assistance of experienced landcare practitioners.

For Further Information, including course details, please contact the Course Coordinator, Chris Baillie, on 08 9336 3337.

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1211J * JUJUBE Primer & Source Book. Meyer (US, 1998). 267p. Sp. Wonderful! At last, a long-awaited comprehensive book in English on growing jujube. Highly recommended. \$54.95

1208N * NEW CROPS DOOR-Marketing (Do Our Own Marketing Research). (Aus 1998). 253 p. Pb. Essential reading for anyone involved in development of new crops, from Australia's own New Crops Centre. Highly recommended. \$30.00

1197N * The New RURAL INDUSTRIES - A Handbook for Farmers & Investors. (Aus, 1998). 570p. Pb. Great intro to market prospects, production-processing factors, costs of production, prospective returns, further contacts, for 94 potential new plant, animal, aquaculture industries incl nuts, olives, essential oils, wildflowers. Highly recom. \$54.95

428P * The PLANT-BOOK. 2 ed. Mabberley.(UK, 1997). 858p. Hb. Tremendous species/genus sourcebook, includes every plant genus, many common-name references. New edition updated with 2500 new entries. Very highly recommended. \$81.95

1210S * SANDAL & its Products.(Aus, 1998). 204p. Pb. Excellent sandalwood update from an international seminar (Bangalore, India, 1997), incl biotechnology, silviculture, chemistry, tree improvement, pests, trade & economics. Recommended. \$37.95

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CALENDAR OF FORTHCOMING EVENTS

Deadline for next issue: Jan 20

- 1998
- Nov 17 Tue Annual General Meeting (Zora Singh - Ber & Jujube/Ber: Fruit Tree or Weed?)
- 1999
- Jan 12 Tue Executive Committee Meeting
- Feb 16 Tue General Meeting (Bryan Baker - Useful trees & fruits from Southern Africa)
- Apr 17 Sat *Bingup Small Farm Field Day
- May 18 Tue General Meeting
- Aug 17 Tue General Meeting
- Nov 16 Tue General Meeting
- 2001
- May? 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.

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