

# Quandong

magazine of the

West Australian Nut & Tree Crop Association (Inc)

**First Quarter 1990**

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**THE CAPULI CHERRY (*Prunus capuli*)**

*[From : Lost Crops of the Incas - See reviews inside]*

## NEXT MEETING: HORTICULTURAL INNOVATIONS

Horticultural innovations — we live in a changing world and it is vital that we do our best to try and keep up with these changes.

Many of the changes on the tree crops scene relate to new and interesting plants. At the same time, there are many innovations in equipment and techniques which can be applied to new and old crops both. For the next meeting, we have been fortunate in arranging for TWO speakers, both from the commercial scene, to talk on quite different areas of innovation.

**Stuart Hartley, of QE Marine & Rural Supplies P/L (381 2028),** will be showing and demonstrating a range of innovative propagation and plant culture items. These will include grafting machines, bird netting for fruit trees, heated seed germination and grafting trays, weed mats, and biodegradable grafting tape.

Stuart's company was established in WA in 1984 as an associate of a New Zealand firm. It imports items based on horticultural research and development in New Zealand and elsewhere, and aims to supply products direct to the end-user, with no middle-man involvement.

**Mark Denning, of The Arbor Centre P/L (381 2399),** will be talking and showing slides on two topics. The first is the TERRALIFT system for Soil Decompaction, a method of reversing this common orchardist's problem through injection of high-pressure air. The other topic is MOVING MATURE FRUIT TREES.

The Arbor Centre is a West Australian company devoted to tree-based services — street-tree pruning, tree surgery and lopping, tree re-location and planting. Mark is particularly concerned with soil compaction, which can cause both reduced yields and vigour in orchards through the use of heavy machinery, and also unthriftiness or even death of amenity trees growing in streets, carparks, or other heavily trafficked areas.

The meeting is free, open to the public, and all interested visitors are welcome.

**Time: Wednesday February 21, 7.30pm**

**Place: Naturalists' Hall, 63 Meriwa Street, Nedlands**

# Government Knocks Back Pistachio Salinity Trials

In June 1989, WANATCA applied for funding from the Federal Government's National Soil Conservation Program for a project entitled "Pistachio Varieties — Saline Land Reclamation"

Saline soils are a particularly pressing problem in WA. Pistachio plants are noted for their salt tolerance. The aim of the project was to obtain seed of all possible *Pistacia* species, from as wide a variety of seed provenances as possible, drawing from world-wide sources.

The seed was to be used to raise approximately 200,000 pistachio trees over 5 years and plant them in salt-affected land trials throughout the State. The project was a very cooperative one, with participation by Men of the Trees, the Land Management Society, WISALTS, and Greening Australia, as well as WANATCA and the Tree Crops Centre. Fuller details of the project were printed in the Third Quarter 1989 issue of

*Quandong*, on p.4-5.

We have just heard that our application for this grant has been rejected. The WANATCA Executive thought this was a great pity, as the project was widely viewed as both having high research value and also exploiting local cooperation to the full. Moreover, the NSCP was only being asked to cover about 24% of the estimated annual project cost of \$253,000, only \$61,000; the rest was to be provided by participants from their own resources.

On January 22 the letter extracted below was sent to the NSCP Secretariat in Canberra. As yet no reply has been received.

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*L J Nothrop, Principal Executive Officer  
NSCP Secretariat  
Commonwealth Dept. of Primary Industries  
GPO Box 858 Canberra ACT 2601*

*Dear Mr Nothrop,*

*Thank you for your letter of January 17 notifying me that our application for NSCP funding of the project Pistachio Varieties — Saline Land Reclamation was not approved by the Minister for Resources.*

*Naturally we are disappointed at this result, as it was widely felt here that our project had both strong research merit and also, involving as it did a broad range of local land-care organizations, considerable social and public relations merit.*

*To enable us to better formulate such applications in the future, and also to enable me personally to give a clearer idea for the rejection of the proposal to the Executives of the various other organizations participating in the application, I would be most grateful if you could supply me with the names, project titles, and amounts of grants received by the successful applicants for grants.*

*Any comments which you could add to this basic information, which might produce a more successful result for us in the future, would also be warmly appreciated.*

*Yours sincerely*

*David Noël*

[from *Lost Crops of the Incas* - See Book Reviews in this *Quandong*]

## Capuli Cherry

Around highland villages from Venezuela to southern Peru, the capuli (*Prunus capuli*) is one of the most common trees. Easily identifiable, it has been said to characterize the Andean region much as the coconut palm typifies tropical coasts.

Yet it is probably not an Andean native: capuli (pronounced ka-poo-lee) is an Aztec word, and most botanists believe that Spaniards introduced the tree from Mexico or Central America in Colonial times. Whatever its origin, this attractive tree has become so popular that it is seen from one end of the Andes to the other, especially around Indian settlements. In fact, it is now cultivated much more in the Andes than in its probable northern homeland, and the fruit is often much larger and more flavorful.

At harvest, capuli fruits are abundantly available in Andean markets. Capuli is a cousin of the commercial black and Bing cherry, which it usually resembles both in appearance and taste. However, fruits are carried on short stalks and in bunches almost like grapes, and some taste like plums. They are round and glossy and are maroon, purple, or black in color. Their flesh is pale green and meaty, and most are juicy. The skin is thin, but sufficiently firm for the fruits to be handled easily without bruising. Although mostly eaten as fresh fruit, they can also be stewed, preserved, or made into jam or wine.

This fruit could become popular throughout much of the world. Although it grows in the Andes at tropical latitudes, it thrives there only in cool upland areas (2,200-3,100 m at the equator; fruit set

occurs between 10-22°C). It is therefore a plant for subtropical or warm temperate regions. Some newly introduced specimens are growing particularly well in northern areas of New Zealand, where little or no frost occurs.

Despite its promise, the fruit also has a downside. The pit is rather large in proportion to the size of the fruit. Also, there is usually a trace of bitterness in the skin. However, in the best varieties it is so slight as to be unobjectionable and the fruits compete well with imported cherries.

It is curious that this fruit doesn't have more negative features because it has scarcely benefited from concentrated horticultural improvement and so far has been propagated primarily by seed. This is not because of any inherent difficulty: both grafting and budding are easy and successful, and the plant also roots easily from softwood cuttings.

The tree is extremely vigorous. It sets flowers and fruits heavily in its third — or even in its second — year of growth. It eventually reaches 10 m or more in height. Apparently, it is not exacting in its soil requirements and grows well on any reasonably fertile site. It can thrive in poor ground, even clays, and seems to prefer dry sandy soils. Although resistant to damping-off, powdery mildew, and other seedling diseases, it is susceptible to the common black-knot fungus and does not thrive in wet areas (areas receiving 300-1800 mm are said to be best in Ecuador). Apart from

bearing fruit, this is a useful, fast-growing timber and reforestation species (because it produces in poor soils, cost of production is also lowered). A few years after planting, its wood is suitable for tool handles, posts, firewood and charcoal. After 6-8 years it yields an excellent reddish lumber for guitars, furniture, coffins and other premium products. The wood is hard, is resistant to insect and fungus damage, and sells at high prices. Young branches are supple and strong, like willow canes, and the prunings are often used to make baskets.

Capuli seems particularly suitable for agroforestry systems. Its deep roots help prevent erosion, and it may not dry the soil. It can be interplanted with field crops such as alfalfa, corn, and potatoes. It is a good plant for wind protection and it acts like a biological barrier — the birds enjoy its fruits so much they leave nearby crops alone.

*Notes.* Locally the fruit is often just termed 'cherry' (cereza or guinda). Little-used Quechua names are 'murmuntu' and 'ussum'. In English it is sometimes called 'American cherry'.

The name *Prunus capuli* is used extensively in agricultural and horticultural publications. Research indicates that the capuli is actually a large-fruited subspecies of the North American black cherry, formally designated as *Prunus serotina* subsp. *capuli*.

*Editor's Notes:* The above is only the first part of the *Lost Crops* article on the Capuli Cherry. The fruit is also sometimes called the *Capulin*. However, the name *Capulin* is also applied to two other quite unrelated fruits, *Muntingia calabura* (from Tropical America) in the Elaeocarpaceae Family and *Eugenia acapulcescens* (from Mexico) in the Myrtaceae.

## WHAT'S HAPPENING ABOUT THE NEEM?

During 1987-88 the Association raised and distributed to members a number of Neem trees (*Azadirachta indica*). The trees were raised from seed brought in from India and donated by Avril Baxter.

The Neem is attracting a lot of interest lately because it is the source of an excellent natural insecticide which is not harmful to mammals; it is even beneficial to them.



*Leaves and flowers of Neem Tree*

Now we would like to know the fate of these trees, or of any other Neem trees known to members. Of the trees which I had in pots at home in Shenton Park, those outside died in the winter; two which I kept in the greenhouse are still growing, but not vigorously.

Ken Herival's trees which he had up in the Pilbara were earlier reported as growing very strongly. Please, anyone with recent news about Neem, contact me at the Tree Crops Centre — we want to follow this up.

— David Noël

## Score: Parrots — 10, Noel — 1

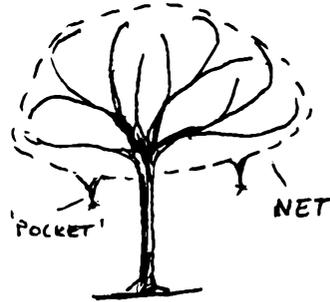
In my garden we have a large Satsuma plum tree, about 4 metres high and the same across. Each year it bears quite well, but we get to eat hardly any of the fruit. The reason — those fiendish birds, the 'twenty-eight' parrots.

These pretty, intelligent, but intellectually perverted birds are very destructive. They not only eat the ripe fruit, but also tear off both green and ripe fruit and drop it on the ground. They also possess an infuriating and arrogant indifference to most control measures permitted in the suburbs.

They show nonchalant lack of concern for loud noises, are indifferent to hurled pieces of wood or balls, are amused by 'decorative' plastic bags etc. in the foliage, or jets of high-pressure water from the hose, and are heartlessly unmoved by the presence of a dead relative (traffic victim) hung in the branches.

This year I rebelled. In late October I bought a large piece of 1.5-inch bird netting from QE Marine for just under \$40. Tying this to a long length of 10-cm plastic irrigation pipe, I placed it over the tree using a stepladder, then pulled it out to cover the foliage, using a broom.

I should say that because of the multi-storey approach used in my 'synthecology' garden, the plum tree's lowest branches are high enough above the ground to be walked under, so the tree has a 'lollypop' shape. This meant that the net could be gathered together under the branches and secured together with wire to form an almost complete 'sphere' of netting (see sketch). The tree had not been pruned for some time, and I did have to bend some of the more 'whippy' branches in to get them within the net.



**VICTORY!** For the first season ever, we did not make a major contribution, of plums at least, to the Parrots Benevolent Society. And there were two bonuses. A small one was that the plums collected were properly tree-ripened and very sweet, unlike many commercial (or desperate amateur) crops which are gathered greener.

But the most interesting bonus was that gathering the fruit was so quick and easy. It fell into the net and lay in the low spots. A shake of the branches, and all the properly ripe fruit

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would fall down ready. Pull open a gap where the net edges were drawn together, and the fruit would roll into a container held ready.

It seems to me that this technique could have commercial application. Shake such a tree with the right amount of force with a tree shaker, and it should be possible to take off all fruit with the desired amount of ripeness. Form the net under the tree into suitable conical pockets, and it should be possible to have the fruit roll down gently into waiting boxes, or even a conveyor belt!

There were a few extra lessons. I bought the net late in the season, and when I put it on, much of the fruit was already well sized, so I pulled quite a lot off applying the net. Next

year I will have the net ready (I have been told it should last at least 15 years), and I will put it on earlier. Also, in the dormant season I will be pruning back the longer branches so that they will not need bending, and this will give me more slack under the tree to form nice collection pockets.

The parrots still managed to peck a few holes in the fruit right against the net, but they couldn't reach most of them, inside. This year I have the smug expression instead of them. And if you don't think the score given in the headline is very impressive, remember that last year it was: Parrots — 10, Noel — 0!

— David Noël

[West Australian, January 17 1990]

## PLASTIC KEEPS IT FRESH

ADELAIDE: A South Australian company has gained the Australasian distribution rights for a revolutionary new plastic film that can store fresh fruit and vegetables for up to three months.

HR Marketing Pty Ltd, a small agricultural export and import company, has the rights to Everfresh, developed in Japan.

Everfresh enables fresh fruit, vegetables and flowers to be kept for long periods under refrigeration with no visible deterioration.

It absorbs the ripening gas produced naturally by fruit and vegetables, thus preserving freshness and prolonging storage life.

The general manager of HR Marketing, Mr Brian Rodda, said that in one test navel

oranges and grapefruit were successfully stored for more than three months.

The reusable film is available for home use.

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## NASHI FRUIT: THE CURRENT W.A. SCENE

The 1988 Yearbook of this Association featured an excellent article *Nashi Fruit: an Overview*, by John Johnson of the NSW Department of Agriculture.

Interest in growing Nashi Fruit (also called Asian Pear) in the Hills and Southwest regions of WA is gaining increasing momentum. To July 1989, there were 25-30 small commercial plantings with an all-up total of 10,000 to 12,000 trees.

Nashis are considered to have similar climatic requirements to apple trees. They have a distinct winter chilling requirement (need to accumulate hours below 10°C). Like any tree fruit crop, trees require an adequate supply of good quality water for summer irrigation.

A reasonable depth of soil is desired, the more loamy the better. Nashis are a good option for anyone wishing to grow fruit in the Southwest, whether on a commercial or a hobby basis. Market prospects look bright on the home market, especially with our increasing Asian-origin population.

In the USA, Nashi have become popular — there they are often called 'salad pears'. The delicious, crisp, juicy fruits are used in main-course and dessert salads.

Trees are not hard to grow under suitable conditions. The recommended variety for planting at present is called 'Twentieth Century' or 'Nijisseiki'. It is largely self-fertile. 'Kosui' is a variety to watch.

The plant is free of many of the major pests and diseases which attack other fruit crops here. An exception is the Mediterranean Fruit Fly, which must be controlled if it is present.

The skin of the fruit is easily marked by twig or leaf abrasion. Because of this, trees benefit from annual pruning after trees reach bearing age, particularly if grown on a central leader rather than a trellis system.

Both vertical (palmette) and V trellis systems (Tatura) should be well suited to Nashis.

Windbreaks are likely to be essential for most sites. These are best established ahead of the plantation trees. As with apples and European pears, birds can be a major problem at times.

Trees are readily available in Western Australia. Olea Nursery at Manjimup is a wholesale producer, and in Perth trees can be bought from Blossoms Garden Centre, Waldeck, or Kelmscott Azalea Gardens.

— Neville Shorter

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[West Australian, Dec 15 1989]

## HAWKS SEND THE FEATHERS FLYING

Plastic hawks are coming to the rescue of Australian fruit growers in their battle against native birds.

For years, birds such as king parrots, Port Lincoln parrots, western rosellas and silver-eyes have feasted on apples, grapes blueberries and other fruits.

Growers have fought back with guns, nets, mirrors and scarecrows with mixed results.

But a Sydney boat builder, Mr John Lindsay, has come up with a simple solution to the problem — a \$20 plastic hawk.

"The idea came to me several years ago when I was trying to find a way of keeping seagulls off boats," he said.

"One day a hawk flew overhead and scared the gulls away, so I started experimenting with hawk replicas as bird-scaring devices.

"People laughed at my first ostrich feather devices. They wore out quickly and lost their scaring power.

"But I later found that plastic hawks, with wing tips that replicated a hawk in flight, really did fool the birds and scare them away."

Mr Lindsay said his hawks soon became so popular among Sydney boat owners that they became a target for thieves.

He said blueberry growers were now the biggest users of his invention.

Mr Trevor Richards, the manager of Tisara (Australia), which makes and markets the



*Reg Lowe with the simple bird-scaring device mounted above passionfruit vines at his Jandakot property*

"Hawk Bird Scarer" said the bird's shape resembled a goshawk — the most aggressive bird of prey in Australia.

"Its scaring power is enhanced by butterfly-wing eyes and a thin, hanging plastic film which rustles in the breeze and attracts birds' attention," he said.

Mr Richards said the plastic hawk scarer had proved successful against most birds.

Mr Reg Lowe, the WA distributor of the scarer, said it was proving popular for use on government buildings in Perth and in South-West orchards.

— Keith Bates

*[The Fruit Gardener (California Rare Fruit Growers), Fourth Quarter 1989]*

## Mangoes in the Arizona Desert

For several years, I have seen my Haden mango bloom, set a few fruits which drop from the tree within a few weeks, and sit bare for another year.

I found the Haden would grow well vegetatively in the low desert with temperatures of 115°F (45°C) and low humidity. I planted the tree against the north wall of the house with a large amount of peat incorporated to help retain the moisture.

The tree grew well in the spring, generally stopped growth in the hot, dry summer, and resumed growth in the late summer when we have our local version of the monsoon. Fertilizer was withheld in the fall and water decreased to ready the tree for the cooler winter months.

Despite the beautiful vegetative growth and spring bloom, the fruit would always fall off before reaching an inch in diameter. An article by David Wallace in *The Fruit Gardener* addressed this problem.

His solution was to deblossom the tree by breaking off the inflorescence before 10% of the flowers had opened. This was to produce a bloom a month later in the spring, with the warmer nights resulting in better pollination and ultimately in higher fruit yield. My tree had always bloomed in March when nighttime temperatures in the 40s are not that unusual.

An article by J. A. Samson reported that a 1% potassium nitrate solution sprayed on the tree helps induce blossoming. Bloom is said to occur 10 to 14 days after spraying. I thought this might help produce a better bloom.

I deblossomed the tree. This is not a difficult task for a home gardener with only a tree or two. Two weeks later, a 1% potassium nitrate solution was applied as a foliar spray. The result was awesome. There was a tremendous bloom and a large number of fruit set this time. I actually had to thin the fruit.

The first fruit was harvested during early August. Its external color was beautiful with red and yellow. It was juicy and sweet. The first fruit picked had a hint of carrot, which was not noted in the fruit harvested later.

The combination of deblossoming and potassium nitrate spray appears successful. I suspect the deblossoming alone might be

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sufficient and will deblossom only for the next few years and see if the tree continues to bear fruit.

I've also recently added a Kent and will see how it performs. It is also planted against the north wall to shade it during the summer.

I've discovered that a Kohula longan also does well against the wall. It has grown well, bloomed, and is bearing fruit without any other special treatment. I tried Iychees in three consecutive years in the location the longan is in now, but they never survived the summer heat. A black sapote has been doing well. It is in its third year, growing well, but has not bloomed. I would like to try other plants, but unfortunately, I have run out of north wall.

I believe you can grow almost any plant anywhere if you wish to spend enough time and/or money on it. The trick is to find or develop methods to keep these expenses to a minimum.

### References

1. Wallace, David (1988). Growing Mangoes. . . Down Under. *The Fruit Gardener*. 20(1):13-14.
2. Samson, J. A. (1986). Mango. *Tropical Fruits*; 2nd Edition. 216-234.

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### Letter from America

*Just received the latest Quandong and was reminded that (again this year) we did not make our trip to Australia as we had hoped. Until recently we thought it could be a reality but events here just put it off month to month. Someone even sent me a Round Tuit but that did not help!*

*The nut harvest is over but sorting and marketing is still upon us and so is winter*

*weather. We have lots of production this year, chestnuts and filberts are fine but still a problem with the Persians and hickories.*

*Persian walnuts are our largest crop. We just can not seem to master the "worms" "weevils" or whatever they are called. Sprayed a lot with Imidan and Captan and still have worms. The trees are so big that spray does not reach tops, so that is a possible problem. Now I'm thinking of biological control to see if that can be more effective.*

*The hickories here have had weevils for many years. Now they get into the Persians and the big problem is they do not come out like they do out of the hickories so that the wormy ones can be identified and sorted out.*

*Some few drill holes in the shell, others just get big and live like kings in the large Persians. Sometimes we find 5, 6, or 7 in a single nut! I'm told they are the same species, whether in the hickories or the Persians. They surely get bigger and huskier in the Persians.*

— Russ Yoder

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Department of Conservation  
and Land Management

## BOOK REVIEW

**Western Permaculture Manual.** Edited by *David Brown*. Published for the Permaculture Association of Western Australia (Inc.) by Cornucopia Press, Perth, 1989. 159p., paperback. ISBN 0 9593205 5 5. Price \$16.00.

People's attitudes to the ethics and practices of land use and the environment tend to mirror the declension of an irregular verb: *I* know how to save the world (but they won't listen to me!), *you* are well-meaning (but misguided), *he* is a capitalist exploiter, *she* is a ratbag feminist stirrer, *we* are the guardians of our planet, *they* are out of touch with the real world, etc., etc.

Among this vast spectrum of opinions and attitudes, perhaps jungle would be a better word, the adherents of the attitudes classed under 'Permaculture' must surely be among the most sane. Their attitude that our use of this planet's lands and soils has to be organised in a long-range, sustainable manner, aiming to create a 'Permanent Agriculture' system, can scarcely be faulted.

The fringes of the jungle are populated by some who are obsessed with some aspect of ecology, such as cutting down or not cutting down trees, using or not using chemicals, 'exploiting' or 'conserving', and so on. The Permaculturists are closest to looking at our ecosystems as a whole, and trying for a sensible balance between these opposing fringe forces.

For this reason it is most pleasing to welcome this new permaculture book on the scene, a most worthy effort and a local

West Australian production besides. Almost all of the 'solid' permaculture books to date have originated from the Tagari stable of Bill Mollison, the inventor of the word 'Permaculture'. This new book is entirely our own. Of course, the derivation and the links are undenied; although an 'Eastern Stater', Bill Mollison was actually one of the earliest members of the W.A. Nut & Tree Crop Association, and his earliest co-author, David Holmgren, actually lived here.

Although a compilation from many different authors, the book is very clearly the child of the Editor, David Brown. The authors have provided bricks with which to build; David Brown did the ordering, made the mortar, used his own spirit level and trowel, and in some cases had to make some of the bricks himself. He has ended up with a complete, functioning edifice, not the rather formless pile of bricks which sometimes results from an editorship.

The book is divided up into four large sections, headed 'The Permaculture Context'; 'Permaculture Design and Practice'; 'Plants and Animals'; and 'Genetic Diversity and Permaculture'. Within each of these somewhat arbitrary sections is a layered sandwich of principal articles, liberally buttered by the editor, and garnished with many sweet and savoury aphorisms and comments from others.

The result is interesting and informative; like permaculture itself, each section is not made up of just the isolated trees, but is a whole ecology containing undergrowth, animal dwellers, and forces-from-without as well.

It is not possible here to list all the articles appearing, and it is perhaps unfair to pick any out for mention, but I particularly liked John Croft's view that 'Permaculture belongs in this region'. Most interesting. I was also impressed by articles on Energy and Design (Miles Durand), Nabatean Terraces (Pat Scott), Perth Sands (Kevin Andrew), Orchard Strategies (Jeff Nugent), Fruitful Opportunism (Waybe O'Sullivan), Bamboos in Permaculture (Peters Bindon & Hicks), Earthworms (Tom McCredie), and Animal Breeding Strategies (Frank van Bocksmeer).

That is, in fact, picking out the isolated trees. When one stands back and looks at the forest as a whole, it perhaps yields the impression that the chief value and merit of this book is that it provides a whole-ecology and whole-philosophy view of permaculture, rather than a foreman's list of things to do and how to do them. In this respect it stands out from what has gone before.

In format the book is nicely produced, compactly and purposefully laid out, with a bustling, active feel. It is very readable and highly recommended. Good one, David Brown!

**Lost Crops of the Incas: little-known plants of the Andes with promise for worldwide cultivation.** Published by National Academy Press, Washington DC, 1989. 415p. Paperback. ISBN 0-309-04264-X. \$25.00 from Granny Smith's Bookshop.

Among the range of books and booklets stemming from projects carried out by BOSTID, the Board on Science and

Technology for International Development (of the U.S. National Academy of Sciences), almost all have had value, many have been highly useful, and a few have been outstanding and inspirational. This new publication falls in the latter category.

For me, the previous high point was in BOSTID's *Underexploited Tropical Plants with Promising Economic Value*. Published in 1975, I suspect this work has had a fundamental world-wide influence on the introduction and development of new tree and other crops. *Lost Crops* will probably equal this influence, and may even surpass it.

The book is laid out in six main sections, devoted to Roots and Tubers, Grains, Legumes, Vegetables, Fruits, and Nuts. Of the first four of these, occupying a little over half the book, I will say little here, except that each is made up of the detailed, balanced, and informative analyses which we have come to expect from BOSTID. As an example, in the first section I was familiar only with the potato, but knew little of the huge variation of crops existing under this heading in the Andes. Of the other nine root and tuber crops, I knew nothing!

It was the last two sections which were of most interest to me. Eleven categories of Fruits were included: Berries (some dozens of species); Capuli Cherry (an extract reprinted in this Quandong); Cherimoya; Goldenberry (Cape Gooseberry); Highland Papayas; Lucuma; Naranjillo (Lulo); Pacay (Ice-cream Beans); Passionfruits; Pepino; and Tamarillo (Tree Tomato). Some of these I knew a little about, but in every category there was much that was new to me.

The section on Nuts has only two categories, Quito Palm and Walnut. Of the first, two species of *Parajubaea*, I did not even know they existed. These interesting miniature coconuts are evidently relatives of the Pygmy Coconut or Wine Palm of Chile and the Pondoland Palm of Southern Africa. Like all the Andean crops mentioned, they are especially promising for the warm temperate to subtropical conditions where many WANATCA members operate.

The Walnut is, of course, the Tocte or Tropical Walnut (*Juglans neotropica*) which has such promise for Western Australia, the species of which WANATCA imported a thousand seeds some years ago. Information on the species is very hard to come by, and this book contains the best account yet.

As well as the six main sections, and a good Index, the book contains both excellent lists of references on each category, plus the Lists of Research Contacts which are such a valuable feature of these BOSTID studies. For anyone researching any of the crops concerned, these Research Contacts are uniquely valuable. Only so much can be extracted from the literature, ultimately the need is to extract from the (often unpublished) expert.

Attractively produced, and excellent value. The Tree Crops Centre is the Authorized Australasian Distributor for this book; the price of \$25.00 is the direct

equivalent of the U.S. published price.

**Growing Macadamia Nuts in South Queensland.** Compiled by *N.T. Vock* and others. Published by Queensland Department of Primary Industries, Nambour, 1989. 23 p. Paperback. ISBN 0 7242 3226 5. \$5.75 from Granny Smith.

This is an excellent introductory booklet for anyone contemplating installing a plantation of macadamias.

Of the four book sections, the main two are 'Establishing a Macadamia Nut Orchard' and 'Managing an Established Orchard'. The first deals with such topics as land suitability, orchard layout, selecting cultivars, and the first four years. It is assumed that the trees to be planted will be bought, and nothing is given on propagation.

The second includes such topics as fertilizing, watering, weed control, mulching, pruning, and pest control. A useful 'centrefold' feature is a macadamia management calendar, showing graphically what operations are needed and what factors apply through the year.

The last two, brief, sections are on Harvesting and Marketing, and Grower Service Organizations. The former is only a 16-line summary, and the latter just lists the Australian Macadamia Society details.

There are some differences between the area for which the book is written, and Western Australia, as in pests found and in soil types.

### **USEFUL TREE SEEDS FROM CHILE**

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Nevertheless, if these differences are borne in mind, the booklet will be a most useful and practical introduction to the topic for anywhere the macadamia can be grown. Recommended.

**Plant Propagation — Principles and Practices. 5th Edition.** *Hudson T Hartmann, Dale E Kester, and Fred T Davies.* Published by Prentice-Hall International, 1990. 647 p., Paperback. ISBN 0 13 680786 0. Recommended price in Australia, \$37.95.

This title needs no review. Everyone seriously concerned with plant propagation will know the earlier editions of 'Hartmann & Kester', the undoubted leader in the field, and will welcome the arrival of this new and updated edition.

All the reviewed titles are available from Granny Smiths's Bookshop, PO Box 27, Subiaco WA 6008.

— *David Noël*

## Farewell George Barnard

*Quandong* is sad to report the death of member George Barnard during December 1989.

One of Western Australia's best-known horticulturists, George was a very popular figure on ABC radio broadcasts, particularly in the gardening programme where he appeared with Verity James.

His vast store of knowledge and his most friendly and helpful manner endeared him

to all those who heard him, and to the many who contacted him on and outside the programme.



George was the operator of Jandakot Field Nursery, where he was one of the first to produce sandalwood plants for sale. His pioneer work with Proteas was highly regarded.

George was struck down with a heart attack while jogging on the beach. His loss to the community at a relatively young age is a source of sorrow to us all.

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*Tick Courses of interest*

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[West Australian August 23 1989]

## NETS HAVE FRUIT WORRY COVERED

WA fruit industry history is being made this week with the erection of the first nets to protect a commercial crop from hail damage.

"It is a costly exercise, but we believe it will be worth it."

"We are hoping for a 10-year life from the netting."



*Manjimup orchardist Harvey Giblett displays the netting being placed over a section of his orchard this week.*

In the past two years hail damaged Santa Rosa plums on a Manjimup property to such an extent that none could be exported.

According to orchard part-owner and manager Harvey Giblett, hail has fallen at the farm at critical periods in 11 seasons of the past 13.

He believes the cost of the netting, at \$15,000 a hectare, will be justified in the fruit it will save.

He plans to cover three hectares of plums and then extend the protection for some Granny Smith apples.

He says that as well as removing the hail threat, the netting will provide protection from sunburn and wind damage.

Moisture loss will be cut as well.

"With a skirt, we could also give ourselves total protection from birds", he said.

## GINKGOS DON'T RING THE BELL

According to work reported in the Society for Economic Botany Newsletter, extracts from the Ginkgo Tree, *Ginkgo biloba*, are proving successful in treating patients afflicted with tinnitus (ringing in the ears).

The Ginkgo or Maidenhair Tree is the source of the White Nuts sold in chinese food stores. It was dealt with in detail, including its wide medicinal uses, in D.A. Griffiths' article in the 1987 WANATCA Yearbook.

American research on tinnitus and ginkgos is in progress at Temple University, following earlier European work. Some details appeared in an American Herbal Products Association publication in April 1989.

# A New Look at Persimmons

Persimmons have been around for a very long time. However, they have generally remained unpopular because of the bitter taste which the traditional astringent varieties have unless they are absolutely ripe and soft.

Today, much more attractive non-astringent varieties are available [sometimes marketed under a new name, 'Fuji Fruit']. Fruits can be eaten, like an apple, when they are still firm. They are bright orange when ripe, crisp, juicy, and with an attractive sweet flavour.

Trees grow to normal 'apple tree' size. Growing condition are well matched with those in the southwest region of Western Australia. Trees like our long, hot summers.

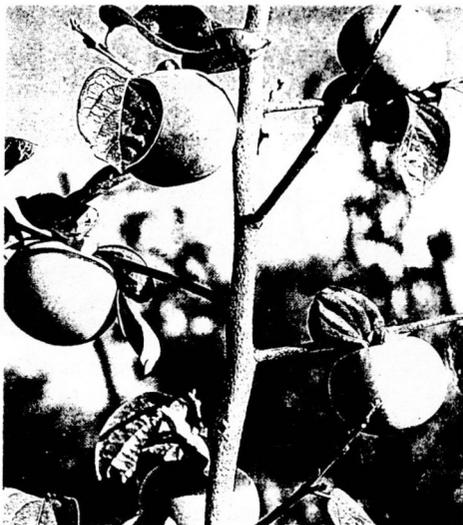
Their adaptability to different soil types is also a plus. Protection from strong winds is essential.

The variety favoured at this stage is 'Fuyu'. Several other selections are becoming available. A second pollinating variety is

desirable, if not essential. Trees are available from commercial nurseries in WA.

All the above aspects are reviewed in a new WA Department of Agriculture Farmnote, No. 41/89: *Growing Persimmons*, by Bob Paulin.

— *Neville Shorter*



*Persimmons ready for picking*

## Granny Smith's Bookshop

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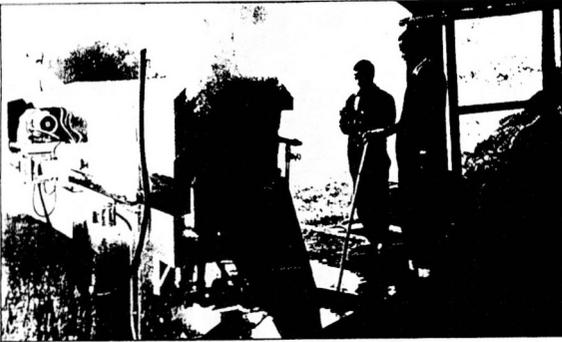
Call or write for our free catalogue.

*[ODNRI Newsletter (Overseas Development Natural Resources Institute, UK), Sept 1989]*

## Cashew Nut Processing on a Small Scale

A small-scale cashew nut decorticating machine developed by ODNRI's Industrial Development Department is undergoing field testing in Zambia. The plant can process 100 kg of cashew nuts per hour.

First indications are that it is giving a high yield. Waste shell is burned within the unit process generated numerous enquiries about cashew nut processing. It quickly became apparent that a smaller-scale plant was also needed.



*Dry-roasting cashew nuts at a factory in Mongu, Zambia*

to give the nuts the initial roasting. This not only saves fuel but also minimizes the cashew nut shell liquid contamination level.

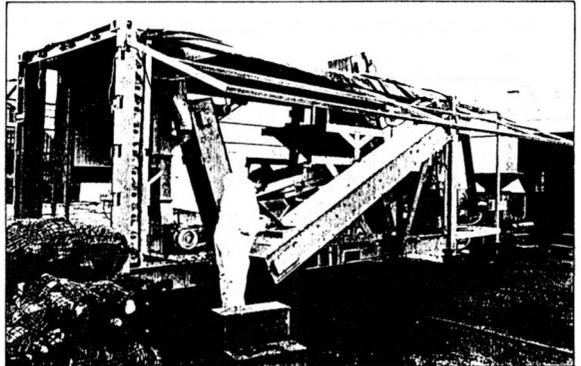
The decorticating process was developed by the Institute twenty years ago and led to the successful commercial manufacture of the plant in Britain by Peabody-Sturtevant. This earlier version was designed to process some 1000 tonnes of cashew nuts per year. More than 50 modules have been sold to nine countries.

The success of this large-scale

The equipment is of modular construction and the whole lot can be packaged within a standard ISO container, which means that shipping costs are kept to a minimum.

The equipment has already been tested in Britain.

The field trials in Zambia are being undertaken in collaboration with the Zambia Cashew Co. Ltd., a subsidiary of the Zambia Mining Corporation (ZIMCO).



*Plant undergoing tests at ODNRI's Industrial Development Department*

## HAIL NETTING AT MANJIMUP

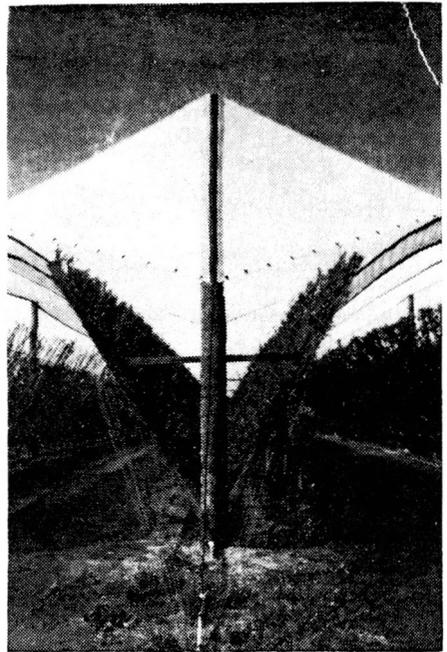
Last September the Hills Orchard Improvement Group organized a tour of orchards in the Manjimup district, about 300 km south of Perth in the temperate southwest.

One highlight of the tour was a visit to Newton Bros to see the hail netting, erected over Santa Rosa plums grown on Tatura trellis. About 1 hectare is under hail cover; the netting cost \$8 000 and the total cost was about \$15 000.

Loss of fruit to hail is a recurring problem, and since its erection this netting has saved the latest plum crop from extensive hail damage suffered by nearby but unprotected trees.

Details of the tour, and other articles on fruitgrowing activities of interest to growers in the Perth Hills, are reported in the *Southern Districts Agricultural*

*Memo* for November 1989, available from the Midland District Office (09-274 5355).



*Hail netting over plums on Tatura trellis*

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[*Growing Today* (New Zealand Tree Crops association), Oct-Nov 1989]

## Feijoa grafting made easier

Grafting and root cuttings of feijoas is not easy. However, 'know how' on feijoa propagation is increasing steadily. Many nurserymen are now getting a reasonable percentage of takes with rooted cuttings and grafting young plants.

Field grafting of young and old plants appears more difficult, but a new technique developed at the Riwaka Research Station is giving better and easier success rates with field grafting.

Field grafting is useful because it takes less time to return to full cropping. If plants are removed and replaced with improved cultivars the trees will take several years before they produce a good yield. However, large plants that are grafted over put on fast growth, due to a strong healthy root system, and are fruiting well again after two seasons.

Grafting larger plants can also enable a more manageable tree to be developed, whereas young plants need to be fruited low down to get crops in the early years. However the main purpose of field grafting is to introduce new cultivars quickly and more economically.

### *Use scionwood within two months*

Feijoa wood does not keep well in the coolstore and should be used within two months. Deterioration can be checked by scratching the bark off and observing the colour of the cambium. Green will tell you it is still healthy, and discolouration toward brown means it should be discarded. However, feijoas have suitable scionwood through most of the year with dormant buds on straight unbranched stems. The previous season's wood appears the best and is readily available at grafting time.



*An example of a recent field graft*

Freshly cut scionwood is preferred but wood stored for up to two months should also be satisfactory.

Scionwood should be at least pencil thickness (8 mm) and have obvious dormant buds with no branching. Leaves are removed as soon as the wood is cut from the tree, wrapped in moist paper or material, put in a

plastic bag, sealed, and stored at approximately 5 degrees C.

*Preparing the rootstock*

The aim is generally to have an upright trunk and take advantage of past growth so that grafting can be done at about chest height.

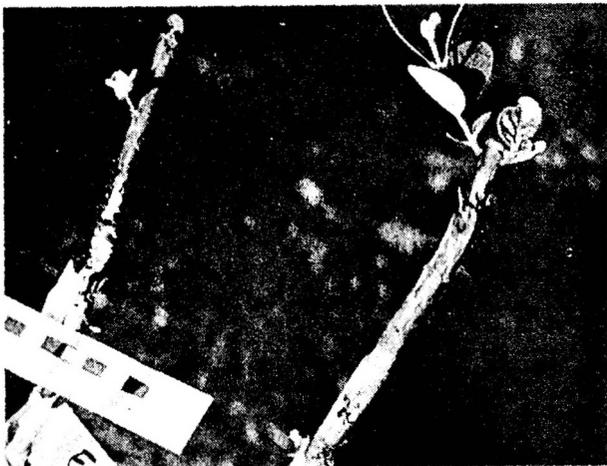
This will depend on how the trees are to be trained, but grafting at fruiting height means that there will be no waste growth and that fruiting will return very quickly.

The rootstock is trimmed to a sturdy trunk as upright as possible, and two young shoots are selected at a desirable height. It is best to graft onto two year old wood that has a similar diameter to the scionwood. Feijoa bark and cambium are very thin and the better the size match, the greater the success rate is likely to be. Large trees can be prepared for grafting in the winter or at the time of grafting if the trees are small.

*Timing & temperature important*

The best time to graft feijoas has not been pinpointed accurately; however successful grafting can be done through spring and summer as warmer weather tends to give

better results. For the North Island this will be earlier than the South Island. In Nelson, November and December are the best months. The rootstock must be actively growing to get the scion sprouting quickly. Scions dry out and die quite quickly and this



*Leaves breaking away a few weeks after grafting*

is the cause of most failures.

*The technique is simple*

The method developed at Riwaka is simple, but has the essential elements to ensure success. As drying-out of the scion is a major cause of failure, the union area must be taped and the whole scion above it

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covered with grease. This inhibits moisture loss and buds have no trouble pushing through the grease no matter how thick it is. Warmed grease, brushed on thinly, is adequate to prevent moisture loss, and extra covering such as plastic bags is not needed.

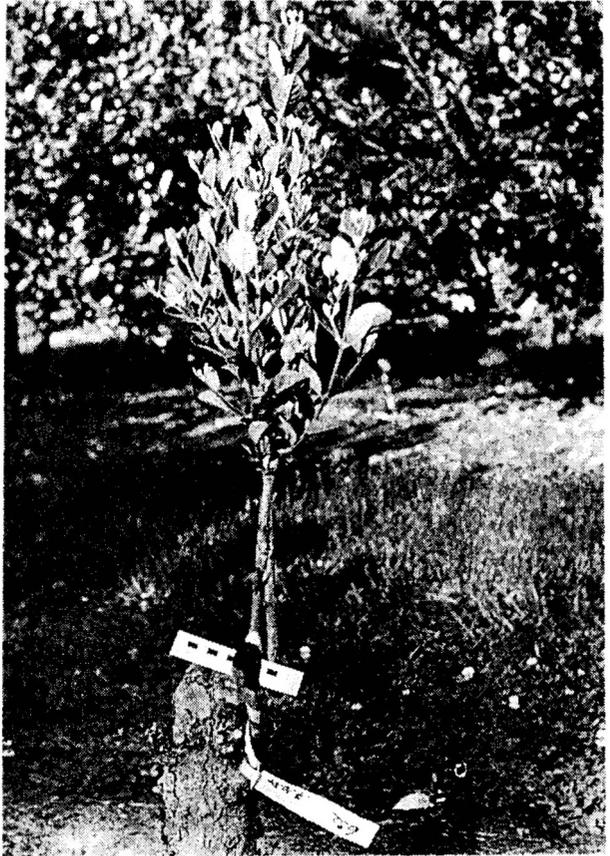
We have used a 'V' cutting grafting machine successfully at Riwaka, but good handmade whip and tongue grafts are just as good. If using a machine, keep the damaged side of the scion and stock matched together, and where possible match both sides. Tape tightly so there are no gaps left between scion and stock.

Grafting should be done quickly and cleanly ensuring no soil or grease gets under the tape. Greasing is best done by another person or when all grafting has been completed. When doing a lot of grafting, a team of two or three, with separate jobs of cutting, taping, and greasing, makes the job flow more easily and helps with cleanliness.

*It's vital that you cover scion with grease*

Remember the most important part of this method is to completely cover the scion with grease to stop any moisture loss through the bark before the buds grow.

I would be pleased to get some feedback on the success of grafting with this method.



*A successfully established graft using the DSIR method*

#### *A word of warning*

Grafting a new cultivar protected by Plant Variety Rights is illegal without permission of the breeder. Usually permission is easily obtained by paying a small royalty. Don't deny the breeder a small reward for having developed a new cultivar for you!

— *Roy Hart*, Riwaka Research Station, Motueka, New Zealand

[Nut Grower (California), September 1989]

## Hedgerow Walnuts Spreading

Fifteen years of University of California research on walnut hedgerows is beginning to pay off as more growers are devoting new plantings to this close spacing technique.

The system offers advantages such as high early yields, simplified tree training and the minimized loss of the individual trees (such as with blackline). However, there are disadvantages like higher establishment costs and design problems for irrigation systems.

Varieties recommended for trial include Chandler, Chico, Howard and Vina. Advantages and deficiencies of each variety are listed along with recommended pollinizers.

"We're not talking about high density plantings that are thinned as the trees get bigger," said University of California, Davis, pomologist Dave Ramos. "The trees are there for the life of the orchard."

Results to date have encouraged growers to begin planting hedgerows, said Ramos. He estimated that there are currently "a few thousand acres" of hedgerow walnuts under production throughout the central valley.

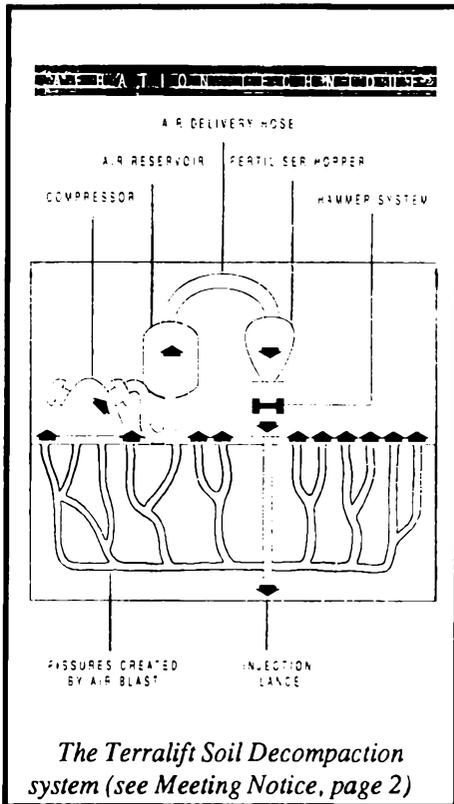
"Growers are interested, but they're going at it slowly. We still need a lot of answers" said Wilbur Reil, farm advisor in Solano and Yolo counties. Reil is conducting field trials on the adaptability of new walnut tree varieties to hedgerow management. Optimum tree spacing, pruning and other management practices also remain to be determined.

However, there are several reasons for producer interest in hedgerows, according to Ramos.

"You can get up to twice as many trees per

acre than conventional plantings" said Ramos. "For the first eight or 10 years, production per acre is directly related to the number of trees per acre"

Trees also are easy to train for hedgerow systems, the hedgerows lend themselves to mechanical pruning, and they can be more effectively managed for pest control.



# West Australian Nut & Tree Crop Association (Inc)

PO Box 565 Subiaco WA 6008 Australia

## EXECUTIVE COMMITTEE 1989

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## ACTION GROUP LEADERS

**CHERRY:** Neville Shorter, 450 5606 (2/9 Clydesdale St, Como 6152)

**FIG:** Alex Hart, 490 1324 (71 Terence St, Gosnells 6110)

**JUJUBE:** Ian Fox, 354 3131/H, 380 2571/W (15 Stringybark Ramble, Willetton 6155)

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**PECAN:** Amos Machlin, 444 4609 (38 Hartwell St, Mt Lawley 6050)

**PISTACHIO:** Tom Bateman, 401 8138 (4 Lygnern Cres. Kallaroo 6025)

**POMEGRANATE:** Marius Loeffler, 097-33 5220 (P.O. Box 22, Yarloop 6218)

## CALENDAR OF FORTHCOMING EVENTS

1990

Jan 23	Tue	Executive Committee Meeting
Feb 21	Wed	*General Meeting (Horticultural innovations — QE Marine & Rural, and Arbor Centre)
Apr 10	Tue	Executive Committee Meeting
May 16	Wed	*General Meeting (Growing Sandalwood?)
May 20	Sun	Field Day, Bedforddale, Karagullen etc.
Jul 10	Tue	Executive Committee Meeting
Aug 15	Wed	*General Meeting
Sep 9-14		§ACOTANC-90: 5th Australasian Conference on Tree and Nut Crops, Berri, South Australia
Oct 9	Tue	Executive Committee Meeting
Nov 21	Wed	*General Meeting

\*General Meetings are held at the Naturalists Hall, 63 Meriwa Street, Nedlands, starting at 7.30pm. These meetings usually include a current magazine display.

§ For contact details refer to the Tree Crops Centre

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**Current Subscription Rate: \$35.00 per year**  
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