

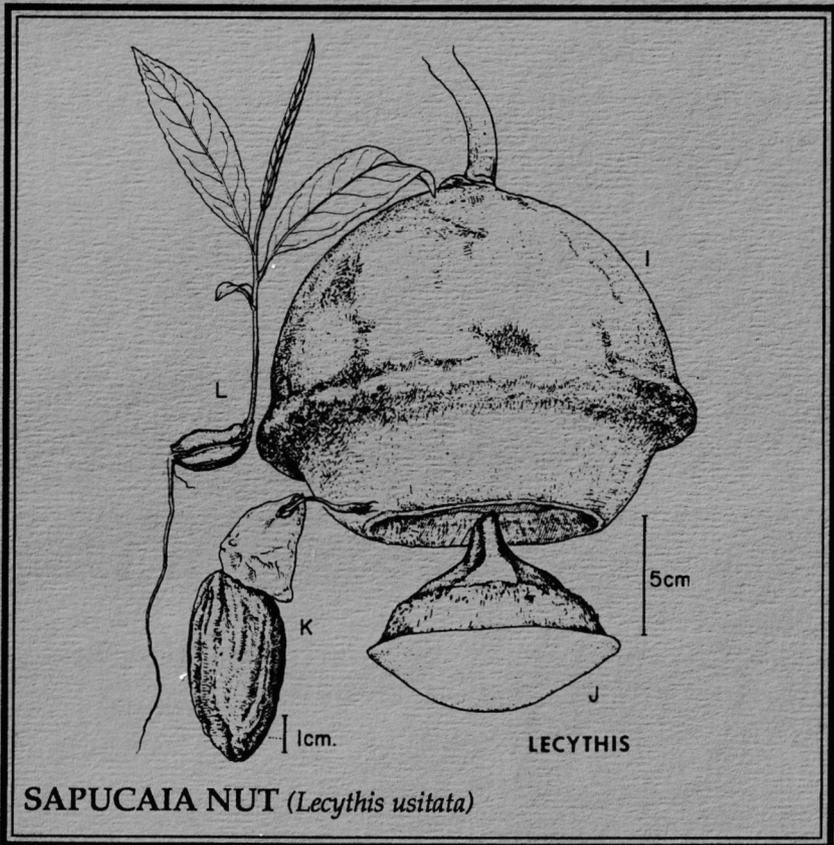
Quandong

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

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SAPUCAIA NUT (*Lecythis usitata*)

NEXT MEETING

Our speaker for the next meeting will be Amos Machlin. He will be talking about

THE MACHLIN NUT PLANTATION AT GINGIN

(Wednesday February 17 at 7.30 pm)

Amos will be describing the innovative nut plantation he has built up at his property at Gingin over many years. Pecans, macadamias, and pistachios are among the range of nuts planted. With production now well underway, this project is undoubtedly a solid professional achievement.

As a qualified and experienced engineer, Amos has also been able to design and build an effective nut cracking plant. It has been successfully used on pecans, and is believed suitable for almonds and other nuts.

This is an exceptional opportunity to hear about a real working nut property and the methods which have been used there. Make sure you come along. The meeting will be at the Naturalists' Hall, 63 Merriwa Street, Nedlands, as usual. The meeting will be open to the public, please ask anyone interested to come along (free admission).

It is expected that there will be a Field Day at the Machlin Property later in the year, probably on May 22 (Sunday). Fuller details in the next Quandong.

HANK SWAAN

Quandong regrets to report the death of long-time WANATCA member Hank Swaan, of Victoria, at the beginning of 1988.

I first met Hank in 1978 when he was the Agricultural Development Officer for Amatil, the snack food company (Nobby's nuts, APD, etc). Subsequently he became a lecturer at Burnley Horticultural College, and during this time he co-authored 'Fruit Gardening in South-East Australia' with the Ballingers.

A very tall, powerful Dutchman, Hank was a most kind and considerate person with an excellent grasp of his field. His passing is a loss to the horticultural industry.

David Noel

REG JUDD

The Association has suffered a great loss with the sudden death, on February 7, of Reg Judd. The tragedy is understood to have occurred as a result of an accident at the Judds' farm in the Augusta area.

Recently elected to the position of WANATCA Vice-President, at the Executive Committee meeting in January, Reg has been a stalwart member of the Association, and a Committee member, for many years.

Behind his self-deprecating front, Reg was a most talented, perceptive, helpful

and considerate person. He was a first-class musician, playing any instrument he cared to lay his hands on, and performed country music professionally under the stage name of Danny Peters.

Our greatest sympathies are extended to Reg's wife Celia and the family in this very sad time. His untimely passing will leave a large gap in his many fields of endeavour, in addition to the deep personal loss.

David Noel

Letters

I am most interested in your latest Seed Distribution for members. I wish to order three (3) packets, at \$10 per packet. As the seed will be for Broome, in the semi-arid tropics, please do not include anything that is only suitable for a cold/temperate climate.

The cashew is very common in this area, so please do not bother to include it in the selection of "at least 10 different species of useful fruits and nuts".

Also, do not bother to include seed of the Gubiny, which is a native to this area. You will find my name acknowledged, amongst others, in the front of Merrilee Lands' new book. I have to date, supplied 2.5 kg of Gubiny seed to CSIRO, Canberra, along with seed from eleven other local Terminalia species.

Do you have any notes on the specific variety of the parents of the seedlist seeds? The Brazil cherry variety that has reached a fruiting age in Broome, has a bitter taste to the fruit, so it is possibly not of good parentage.

Species such as the Marula have been tried in Broome, but there was trouble in getting a good variety. We are currently waiting for South Africa to release some new good quality varieties, one aiming at a large nut-kernel, and the others with large amounts of flesh on a small seed/nut. Any information on the parents of your seed would be appreciated.

The main reason for writing is to follow up on the article in Quandong Nov. 87 on the *Castanospermum australe*. I have a large tree growing on our nursery at Waroona. The tree is 25' high or approx. 8 m and well formed. The tree is relatively slow growing and because of the size I can only guess its age at 25-30 years++. In some references it suggests the tree to be frost tender, and this may put people off the idea of propagating it, but I have raised many of these plants and after the first year or so they tolerate light frosts.

As a garden or street tree it makes an excellent specimen. However, the pods weigh up to 0.5 kg and have a very sharp point on the tip, so when they fall they could cause a lot of pain or even put dents in a car under the tree.

Stirling Macoboy suggests they can be roasted and eaten as European chestnuts, whereas Encyclopaedia Botanica notes the seed is poisonous. Perhaps some further comment from your readers? The flowers are typical of the Fabaceae, being red to orange, and are pendulous sprays directly from the stem and branches. The dark green compound leaves grow up to 40-50 cm and provide an excellent summer canopy. As mentioned earlier, a specimen tree would be an ideal use, or as an entrance to a farm or horse stud driveway the tree would be of value (remembering the pods).

If any members would like some seed I have a supply here which would be free to anyone passing through, or we can post a few seeds for \$2 in a padded postbag. If passing this way, you may wish to photograph the tree.

Alan Lewis, Greening Australia Nursery, PO Box 147, Waroona 6215

FARM TRIAL PLOTS

Throughout the world Nature has presented us with tens of thousands of species of trees. Many of these trees are economically useful for the production of fodder, fuel, fibre and food. They provide the raw materials for more of our daily necessities than any other resource. Many of them could grow in Western Australia yet few have been tested.

Then why don't we grow them? Why don't we make more use of trees in our landscape, not only for conservation of our soil and improving the environment, but for providing a direct financial benefit to growers?

The idea behind the Men of The Trees FARM TRIAL PLOTS is to test the potential of a range of such trees, provide a base for future observations scattered throughout our wheatbelt, and to create a new on-farm hobby for people who want to do the best for their land. Who knows, they could be laying the foundations of a new agriculture more suited to our soils and climate?

On every farm you will find two distinct qualities of plant growth; that which is within the fenced-off garden around the

house where farmers, and more often their wives, are very successful at growing all kinds of fruit trees, vegetable crops and lush green lawn; and that land outside the fence, the 'farm', which for various reasons presents an impoverished or stressed appearance for much of the year. The idea of the FARM TRIAL PLOTS is to extend that tender loving care, which up until now has been lavished on the fenced-off garden, and apply it to a small tree plot. With care and close attention it will repay the effort with abundant pleasure in the years ahead.

Tender loving care begins before day one - preparing the plot for the first tree seedlings - and it must continue for at least the first three years before the new trees become firmly established and 'happy' in this new location.



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Initially, contact on any matter we may be able to assist with will be through our Perth Office, telephone 09-325 5100, contact Neil Dayman (a/h 09-332 3962) or Alan Bell (a/h) 09-3302074).

We look forward to hearing from you.

So, all participants in the Men of The Trees FARM TRIAL PLOTS must become attuned to meeting the challenge. It is a commitment involving personal time, effort and cost.

NO PLOT CAN SUCCEED WITHOUT EVERY ONE OF THESE REQUIREMENTS BEING MET

1. ERADICATION OF RABBITS

This means total eradication. Even one rabbit means there is a family somewhere and a family of rabbits will eat the tops out of every single one of your newly planted seedlings in just one night.

2. METRE-DEEP RIPPING

To THRIVE your tree seedlings must get their tap roots down into the permanent moist soil during their first winter and spring. If they don't get their roots down through the compacted and clay layers no amount of top watering is going to turn them into good trees. Metre-deep ripping may require a D9 bulldozer. If that is the only way, go for it. If you can't afford the dozer what can you achieve with the machinery on your farm? A back hoe? A post-hole digger? (Beware of leaving a glazed hole.) Metre-deep means just that. No scratching around with chisel ploughs! Test your rip lines with a probe to make sure you have a full metre penetration.

3. WEED CONTROL

Weeds and grasses will starve and strangle

tree seedlings in their first year. Application of VOROX AA at the rate of 4 litres per hectare is necessary after weed emergence and immediately before planting. There are two components to this weedicide, Amitrol and Atrazine. One kills through the leaf, the other remains active in the soil and is, in fact, a root stimulant for the young tree seedling. As Vorox is now out of patent there are other brands, such as FYBAR, which contain the same ingredients, and price advantages are available. So shop around.

4. FERTILISER

On poor soils, and particularly on soils that have been cleared of bush but never cropped, application of a fertiliser containing trace elements of copper and zinc is required at planting. Place about 100g of fertiliser a few inches away from the seedling and cover with earth. Suitable fertilisers are SUPERPHOSPHATE with trace elements, POTATOE, or BLOOD AND BONE. If, however, the site to be planted has a good fertiliser history this step can be omitted. Surprisingly, trees have less need for fertiliser than annual crops and grasses.

5. FENCING

We always say that it's not the trees that need fencing but the sheep! However, fencing is always seen as a cost, and usually the major cash cost, in any serious tree planting exercise on the farm. Fencing is essential and must be adequate to restrain the hungriest stock through the first three years.

continued on page 6

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6. WATERING

If you have diligently followed the rules up to this point, and small and vigorous seedlings have been planted after good soaking rains, then watering can actually hinder the natural development of the young tree and a surface-rooted weakling could develop. If you must water, carry out this trial. Next to a few selected seedlings sink a hole at least 60cm into the ground and fill with large stones, or insert a section of 90mm PVC drain pipe. When you think the tree needs watering tip two bucketsful (20 litres) straight down the hole. This at least will get the water deep down into the root zone and encourage tap root development. Do not wet the surface. This will only encourage weeds to germinate or the surface soil to crust over and prevent natural worm movements. Later on you can compare the success rate for both your watered and unwatered trees.

7. INSECT CONTROL

Keep a keen eye open for plagues of wingless grasshoppers, rutherghlen beetles, red-legged earth mite, lucerne flea, leaf miners, cut beetles, and anything else that might get the better of your seedlings, and treat immediately. A moderate amount of scale, thrips or lerps can be tolerated. In fact they will help recolonisation of the site by other beneficial insects which will rapidly restore soil structure and bring your whole tree plot into healthy equilibrium. Do not be too hasty with broad spectrum insecticides - you can destroy your friends as well as your foes. Have you thought of using turkeys to feed on your problem insects? Provided you look after them and keep the foxes at bay you could have another little earner there!

8. WIND PROTECTION

On exposed sites it will be necessary to give your seedlings protection through their juvenile leaf year from drying winds and from sand-blasting. You can contrive this in several ways - by leaving a bund of earth on the windward side, by leaving tall standing grasses or weeds (clear of the root zone), by installing plastic 'Grotubes' or similar, or by placing small tree shields over bent wire supports. You can use straw bales or even old tyres. But beware, black rubber can get very hot in the full sun and can scorch your young tree's foliage.

9. MULCHING

Try to keep the soil covered around the seedlings. Old rotting hay bales are useful, so are stones, old carpet or super bags, or a good covering with decayed straw or leaf litter held in place with stones. Nature never intended the soil to lay bare in the sun, hence, in nature, a wild profusion of colonising plants.

10. FIRE SAFETY

Allow access for slashing between rows (take into account the fact that tree branches spread outwards as they grow). Allow access around the perimeter for getting in with discs.

11. INSPECTION

Make frequent visits to inspect your tree plot closely, especially in the first year. Observation can teach us far more than books and advisors. Your own observations become your unique contribution to understanding the whole spirit and fabric of nature, something we really know very little about as our wasting and salting lands are telling us.

Barry Oldfield

MULCH DOUBLES YIELD OF H2 MACADAMIA

Macadamia trees treated with mulch have given more than double the yield of unmulched trees, or trees treated with fertiliser alone, in a trial at Dunoon near Lismore.

Mulch alone or mulch and gypsum have given the best yield. The increased yield follows a significant improvement in tree health (canopy colour and density) and massive extension of the fibrous root system in mulch treatments in the four years since treatment began.

The variety H2 (Hinde) has given the best response. Average yield for mulch and mulch and gypsum treated trees was 14 kg (nuts in shell), compared to 5 kg for trees treated with fertiliser alone, or untreated trees. Although varieties 246 and 508 have given a significant yield increase, it was not as great as H2. It is expected these varieties will give better yields next year, because they take longer to enter the bearing phase after vegetative growth, compared to H2.

The trial at Dunoon, which is conducted by Daryl Firth, Technical Officer at Alstonville, was set down in 1982 to help determine the cause and ways of alleviating what is known as macadamia decline.

Macadamia decline is a condition characterised by interveinal yellowing, necrosis and marginal browning of leaves, followed by leaf drop which greatly reduces canopy density.

Terminal shoots die back and give the tree an unthrifty, skeletonised appearance which, in extreme cases, can lead to tree death. The variety H2 appears to be most severely affected. It is the major disease threat to the macadamia industry.

The response from mulch on improving health and yield of macadamias has important ramifications for the young industry which has been concerned with low yields in Australia compared to those in Hawaii.

Mulching will also be a valuable aid in countering the problem of deterioration of cultivated red soils, especially the loss of organic matter, increasing acidity, and associated problems of manganese and aluminium toxicity, which appear to be primary causes of the decline problem.

Mulch will provide organic matter to help displace toxic elements, increase cation exchange capacity, and raise organic carbon levels which seem important (and perhaps essential) for the proper functioning of some tropical tree species.

Mulching also assists in reducing extremes of soil temperature (hot dry conditions accentuate manganese

toxicity), helps maintain moisture levels, and reduces the need for constant herbicide spraying around trees, which results in continuous bare soil conducive to soil deterioration and erosion, especially on sloping land.

The continued exposure of the red soils leads to compound problems from deteriorating surface soil structure, including loss of soil colloidal root penetrability. We do not know enough about specific soil ecology requirements (both physical and chemical) to determine possible

adverse effects of degraded surface soils on certain plant species.

It should be remembered that every desirable or undesirable managerial practice in a long-term orchard crop has important repercussions when extended over the life of the crop. Integration of mulching and permanent low growing covercrops along the tree row will go a long way towards stabilising the soil environment, to help sustain long-term horticulture on red soils.

POMEGRANATES

The Tree Crops Centre has received an enquiry about a source of pomegranates (ultimately, for export to the Middle East). Does anyone know of any significant planting of pomegranates?

Anything over one or two trees in the backyard would be of interest. Possibly there are some old neglected orchards somewhere which could be rejuvenated. Any information please, to David Noel at the Tree Crops Centre.



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THE SCHMOO TREE

An almost magical tree that can be used as a cocktail snack, a fertilizer, timber for homes, fuel for stoves, a coffee substitute, a flour surrogate, a child's candy, and cattle forage has gained scientific attention as a boon for poor nations.

The tree, a relative of the mimosa, can grow 4 metres a year, to a mature height of 20 metres, and to a thickness of half a metre. Its cut stumps regrow so fast that the National Academy of Sciences says it "defies the woodcutter". Its scientific name is *Leucaena leucocephala*, and its disciples nickname it the "schmoo", after the mythical Al Capp cartoon creature that provided Li'l Abner and his friends with unlimited supplies of milk, butter, and eggs.

A native of Mexico, the schmoo tree has not been cultivated widely. It owes its phenomenal growth to a taproot as deep as the tree is high. The root can reach nutrients and water supplies usually out of reach of other trees. Recent experiments in Hawaii, the Philippines, Australia, and Haiti conclude that the tree can quickly replenish depleted forests and feed starving millions in underdeveloped countries.

The leaves can be used as protein-rich cattle feed. They are now eaten like candy by children or — dipped in a pepper sauce — by adults as hors d'oeuvres. One tree can produce 20,000 seeds a year. The seed pods can be eaten raw, popped like popcorn,

ground into flour or coffee substitutes, made into red and brown dyes, or painted as ornaments that are then sold. The pulp can be made into paper. Bees appreciate its small white flowers.

Questions remain about its growth under intense cultivation, but scientists believe the schmoo tree holds great promise. They suggest that researchers should develop the best strains so the tree can be widely grown.

Stuart Diamond



Leucaena leucocephala. Almost as versatile as Li'l Abner's schmoo.

[Editors note: Leucaena is proving promising in northern Australia as a source of animal forage. CSIRO scientists have discovered that it is necessary to introduce certain bacteria into the animals' stomachs for them to make proper use of the foliage.]

TREE CROPS CENTRE AGREEMENT WITH GREENING AUSTRALIA NURSERY

An exciting advance has occurred with the Hamel Nursery near Waroona, south of Perth. The former Forests Department/ Conservation & Land Management nursery has been leased to Greening Australia, who will use it for bulk raising of large numbers of trees for farms, landscapes, and crop production.

Manager of the Hamel Nursery is WANATCA member Alan Lewis, who is most enthusiastic about cooperation between the Nursery and other groups (see Alan's letter in this issue of Quandong). Alan believes that stock can be raised to meet members' requirements, provided these are known in time.

The bulk of the Nursery's work is contract growing of small tree seedlings. Most of the production currently being raised for planting this autumn and winter is already sold, so we are really looking at longer-term needs in this project.

The Tree Crops Centre has concluded an agreement in principle with the management of Greening Australia, by which Hamel Nursery stock may be ordered through the Centre. We invite enquiries for your longer term needs in

crop trees, and would be pleased to receive comments on the types of stock which should be made available (contact David Noel at the Tree Crops Centre).

Later in the year we expect to run a Field Trip to the Hamel Nursery for WANATCA members and others interested.

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IDEAS FOR EXOTIC FRUITS TAKE SEED

Exotic fruits have tempted artists, poets, even songwriters, to extol their virtues for many centuries now. Once admired from afar, many of these fruits are now available in local stores.

Exotic fruits have always enjoyed a bit of notoriety. The Bounty mutiny had a tropical backdrop and involved an attempt to transplant the productive and delicious breadfruit from Polynesia to the West Indies to feed slaves.

More recently, the elaborate swindles associated with babaco and aloe vera plantations in Queensland's sugar belt have kept the spotlight on unusual fruits and plant remedies.

up in the desire to eat fresh vitamin-rich fruit, vegetables and grains. Substantial medical evidence backs the view that fresh fruit consumption is an essential part of healthy living.

A potentially huge agricultural industry is growing in the tropical north of Australia to export exotic fruits throughout the world, including back into South-East Asia. Experts believe it could return \$2 billion in export earnings by the year 2000.

There is a strong recommendation to increase the general level of consumption of vitamin A and C and dietary fibre to prevent or, at least, reduce the incidence of many cancers. Fresh fruit is rich in all three of these lifesavers.

Early crops are starting to be seen in southern fruit markets — fruit such as custard apples, lychees, mangos, pawpaw, avocado, babaco and blueberries are being tried and enjoyed.

Having convinced you these fruit look great, taste good and do wonderful things to your ailing body, the question arises . . . can I grow them at home? As John Cleese would say, Yes and No.

Many West Australians are holidaying in Bali, Singapore, Hong Kong and Thailand and tasting fascinating new fruits. Add to this substantial Asian migration, and the desire of all people to recreate a little of the "old country" in the new, and it's not surprising there is a groundswell of interest in producing some of these fruits in home gardens around Perth.

Some fruits such as the feijoa or tropical guava are easy — "you couldn't kill them with a brick". Proven winners such as avocado and mango require a lot of initial care, particularly through the early winters to get a successful "take".

The "wholefood" revolution has hit Perth. Many people have been caught

When it comes to the legendary durian (smells like hell, tastes like heaven) and the exquisite mangosteen, you need to consider retiring and setting up a tall heated glasshouse to properly look after their needs. No one has fruited either in Perth yet, to my knowledge. However,

such is the desire, particularly of the Chinese, that I'm certain it will happen. In between the extremes are many beautiful and productive plants that will perform in Perth gardens, given a small amount of extra care.

Growing Guidelines

Most of the fruit below are from tropical and subtropical areas and have predictable requirements. They like a full sun location, particularly open to the north or west.

Free-draining soils that have been enriched by more than equal quantities of organic matter such as compost, compeat or well-rotted animal manure are essential.

It's hard to over-emphasise the need for wind protection, particularly when the trees are young. A surround of shadecloth is effective — it will also aid in frost protection.

For the cold-sensitive varieties, I recommend an additional winter cover of clear plastic sheeting. But it must be well ventilated. A ready-made product called Grotube is cheap and very effective for overwintering young exotics.

In summer, mulching with organic materials such as compeat or animal manure will help to keep roots cool and moist and increase the humidity in the canopy.

In most cases, watering needs to be heavy and regular. Reticulation is a real boon in growing tropics. Most will thrive on trickle or throw jets directed at the root zone.

Regular feeding through the warm "growing months" of the year should

aim to get the tree rapidly established so it can begin cropping at an early age. I recommend Tropigro, Nurserymen's General Purpose or NPK Blue. The latter needs to be used with great care to avoid fertilizer burn. Properly applied it has a dynamic effect, improperly used it's more like dynamite — blasting the tree out of existence.

Some Proven Winners

The following plants have been grown and fruited in the Perth metropolitan area:

Avocado, banana, babaco ("Golden Fruit" of the Incas), blueberries, cape gooseberries, Ceylon Hill cherry (Rhodomyrtus), custard apples (cherimoyas), guava (including the big fruited tropical guava and the smaller cherry types), feijoa (pineapple guava), jaboticaba, kei apple (Dovyalis), kiwifruit (Chinese gooseberry), longan ("Dragon Eyes"), loquats, mango ("The King of Fruit"), monstera ("Fruit Salad" plant) in shady gardens, pepino, pomelo (Shadidock), papaya (pawpaw) and wampee.

Recommended Varieties

Many of these are planted in Perth gardens, but have yet to produce fruit. In theory they should all succeed, but time will be needed to assess their suitability:

Abiu (caramel custard fruit), Barbados cherry (acerola), black sapote ("chocolate pudding" plant), grumichama ("raspberry jam" fruit), jak fruit, lychee, sapodilla (chiku), star apple, "strawberry jam" fruit (panama berry), soursop (guanabana), java plum (jambolan), rollinia ("lemon sherbert" fruit) and wax jambu (water rose apple).

Neville Passmore

GRAPE TRIALS SHOW SOUND VALUE

The Swan Valley, long renowned for its quality table grape production, may be going under cover — in part at least — heralding a new era for the industry.

Two growers have planted vines especially for growing under controlled environmental conditions, after impressive results in trials by the Agriculture Department at its Upper Swan research station.

There, grapes have ripened two to three weeks earlier than usual; damage from sunburn, wind rain and birds has been eliminated or minimised; and yields have been up to 40 per cent higher than the district average.

Mr Ian Cameron, the department's senior technical officer, said yesterday growers had the potential to treble incomes under such protected production.

But the cost — up to \$200,000 a hectare — could scare off many. Mr Cameron

believes this could open the door to business investment, helping WA restore some of its lost position with table-grape exports and completely changing the picture for new varieties.

"You can graft a new variety on an existing vine and have a full-scale crop the following year under these conditions", he said. "I believe the investment would be worthwhile, with the right varieties for the right markets".

Michael Zekulich

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BLACK WALNUT REPORT – 2

(Continued from Quandong, November 1987)

Comments on American trip

The Walnut Council Conference was attended by approximately 150 people, with probably half being plantation owners (some of them having only 3 or 4 acres of black walnuts) and half being government and university experts on black walnut.

An Australian table was set up on which photographs, the original Walnut Island prospectus, original promotion materials, some nuts (cleared through customs) and a copy of Australian Nutgrower were displayed. The display caused a great deal of interest, particularly amongst the many people who had knowledge of the original planting.

During the conference and our subsequent visits a vast number of photographs were taken, books and pamphlets collected, recordings made and an outstanding video on black walnut pruning was purchased. The conference concentrated on black walnut for timber, particularly for veneer timber, with very little attention being given to nut production.

The planting of black walnuts, on both a large and small scale, is being recommended in America as one of the best uses of prime land (deep, fertile and well drained) in those areas where climatic conditions are appropriate (cold winters are essential).

Black Walnut, which is now the top priority tree species in at least 8 states, is also being promoted as an ideal agroforestry tree for intercropping with such things as soya beans, corn, winter wheat, milo and other row crops. A black walnut plantation can also be lightly grazed (with care).

Black walnut is considered to be the "aristocrat of fine cabinet woods" and enjoys the highest esteem for home, office and commercial interiors. It is the high

performance wood, unexcelled for many technical applications such as gunstocks or the finest furniture.

Black walnut wood is heavy, hard, strong, stiff and has good shock resistance. The heartwood is one of the most durable of any hardwood. The wood works easily with hand or machine tools, takes and holds paint and stains exceptionally well, is readily polished and easily glued. It finishes beautifully with an outstanding handsome grain colour and pattern.

The ideal time to harvest black walnut is when they have d.b.h. of about 18" (35 to 50 years). A pruned straight log should be at least 8 ft. long and ideally should be 17 ft. long. The pruning is critical to the value of the timber and commences two years after planting and ceases when branches are 2" thick or the trunk has a dbh of 10". Sealing of pruning wounds is a thing of the past.

Choice veneer timber can fetch a price 10 times as high as lumber timber. We were shown trees which were valued as they stood for as much as \$8,000 (for a 25" dbh) with some of the quality veneer timber being worth as much as \$8 a board foot (to the plantation owner).

Natural black walnut timber is fast running out in the United States and conservationists are trying to prevent much of the remaining forest timber from being felled. This is why the black walnut plantation timber is now becoming so important. To date, however, no plantation grown black walnut timber has been cut down for use as veneer timber. Plantation growing of black walnut timber is

still in its infancy in America.

In all the states where Eastern black walnut can be grown the universities and conservation departments have created special groups or departments to undertake black walnut research and to promote the planting of black walnuts.

It is now believed that some of the new black walnut cultivars developed will be able to produce 18" dbh timber in 30 years. However the veneer millers do query whether the timber produced on these fast growing trees will be suitable for high quality veneer.

Most plantations are being planted from a variety of nuts or seedling taken from good trees (rather than the special cultivars) growing successfully in the vicinity of the new planting. Therefore most tree farmers are still regarding black walnut as a 35-40 year investment crop.

Most private growers work in closely with their foresters (Conservation Department) and with their local universities. The state forestry people and the universities play a very significant role in the development of the plantations. The largest private black walnut plantation in America (about 350 acres) is in Stockton, Missouri where the University of Missouri and the Missouri Department of Conservation are actively involved in both research and ongoing development.

The black walnut is the only hard wood tree in the United States around which a fully fledged (and most active) association has been formed (i.e. the Walnut Council).

Committee members of the Walnut Council commented on the interest in black walnuts being shown in New Zealand, and were surprised by the lack of interest from Australia, particularly in view of the fact that approximately 50% of the veneer black

walnut timber being cut in America was currently being exported, mainly to Japan (often as an unmilled log).

Many areas in the more southern parts of New South Wales, Canberra, Victoria, Tasmania and in the colder parts of Western Australia and South Australia could be ideal for black walnut.

The nuts from the black walnut tree are sold as ingredient nuts for confectionery, ice creams, domestic use etc. They are the second highest priced nuts (after macadamia) in the United States and demand for the nuts cannot be satisfied. They are regarded as the gourmet nut because of their strong flavour.

The only processor of the nuts in the United States is Hammons Products Company in Missouri. Hammons also processes the shells for use in metal cleaning and polishing, oil well drilling, paints and explosives. It collects nuts from central hulling points in a number of states.

It appears there is no middle sized black walnut cracker in America. Crackers are either hand crackers (we purchase one for \$60) or enormous roller crackers such as those used by Hammons. We are therefore still undecided about the future of our 25 tons of nuts. The annual crop is increasing by a few tons each year. On average black walnuts in America appear to have an 8% kernel content. Kernel makes up approximately 20% of the Walnut Island nuts.

The Walnut Council committee members and ordinary members were incredibly helpful to us. They gave us all the information we sought, invited us to their homes and offered their total support for new black walnut plantings in Australia.

Hugh & Gay Meggitt

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[*Australian Horticulture, February 1986*]

[*The following useful article by Dr John Possingham of CSIRO is being reproduced here in parts*]

SELECTION FOR A BETTER QUANDONG

Part 1

The fruit of the quandong (*Santalum acuminatum*) has long been recognised as nutritious food. The Australian Aborigines have traditionally included both the flesh and the kernel in their diet. In their book 'Wild Food in Australia,' Cribb and Cribb report that Aborigines would dry and store the flesh for future use, an unusual practice for them. In the cities of modern Australia it is still fascinating to see the faces of 'ex-bushmen' light up when quandongs are mentioned and their thoughts go back to the quandong pies, jams and jellies they ate when they lived in the bush. In areas where quandong trees can still be found, housewives are proud to serve their quandong pie.

While another Australian native, the macadamia nut, is now well established commercially, and is almost universally attractive to all who taste it, the quandong is still largely unexploited. The major problem is almost certainly its taste, or lack of taste. While a minority of people do claim to enjoy the taste of the flesh of raw quandong, most are unimpressed and prefer it cooked or processed. In this form it becomes much more attractive to most people. The kernel too, often has a strong flavour that many find unattractive.

Trees grow naturally across most of the southern half of Australia. There is a wide range of fruit size, shape and colour. CSIRO Division of Horticultural Research first became involved in research with the quandong about twelve years ago. Seed was collected from a number of sites so that representative and controlled plantings could be established for future observation. The more important of the plantings

include about two hundred trees at Quorn, S.A., planted in 1974, about 90 at Paringa, S.A. planted in 1977, and about four hundred planted from 1981 onwards at Koorlong, near Mildura, Victoria.

Up to now, the work of CSIRO has concentrated on developing improved methods of germination and propagation, observation of tree growth, yields, fruit size, shape colour, etc. and analysis of the flesh and kernel to establish its nutritional value.

From observations made so far it is clear that there is tremendous variability in the quandong population. Seed germination can take from about two weeks to a year or more. Tree growth rates and tree shapes vary considerably. At Quorn, after ten years, the trees vary in height from half a metre to about three metres. At Paringa, after eight years, the range is from about half a metre to over three and a half metres, and at Koorlong, the range for four-year-old trees is from half a metre to just over three metres.

To be continued...

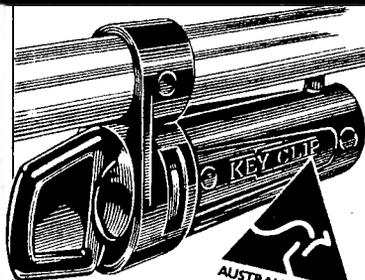
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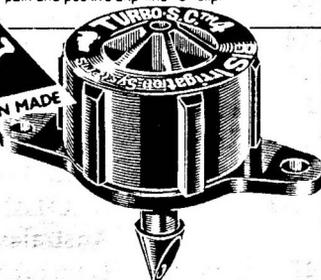
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CALENDAR OF FORTHCOMING EVENTS

1988

Feb 17	Wed	General Meeting* (Machlin – the Machlin Nut Plantation at Gingin)
Apr 12	Tue	Executive Committee Meeting
May 18	Wed	General Meeting* (? Weed Control in New Orchards)
May 22	Sun	Field Trip: Machlin Orchard, Gingin
Jul 12	Tue	Executive Committee Meeting
Jul 22-24		'Nut Growing in Australia' Conference, Albury, New South Wales
Aug 15-19		ACOTANC-4 Conference, Lismore, NSW (4th Australasian Conference on Tree & Nut Crops)
Aug 17	Wed	General Meeting*
Sep ??	Sun	Field Trip: Greening Australia Hamel Nursery, Waroona
Oct 11	Tue	Executive Committee Meeting
Nov 16	Wed	Annual General Meeting*

*General Meetings are held at the Naturalists Hall, 63 Meriwa Street, Nedlands, starting at 7.30 pm. These meetings usually include a plant auction and current magazine display. Members wishing any matter to be considered at an Executive Committee meeting should contact the Secretary by 2 days before the meeting.

**Current Subscription Rate: \$30.00 per year
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