

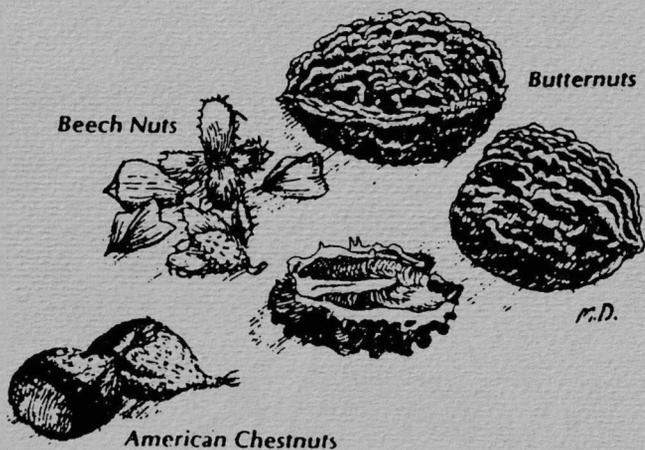
NEWSLETTER

Quandong

WEST AUSTRALIAN NUT AND TREE CROP ASSOCIATION

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NEXT MEETING

TREE CROP INTRODUCTIONS AND QUARANTINE Roland Gwynne

Wednesday November 19 : 7.30 pm
(Naturalists Hall, 63 Meriwa Street, Nedlands)

Our speaker at the next meeting (which is also the Annual General Meeting of the Association) will be **Roland Gwynne** from the W.A. Department of Agriculture.

Plant Quarantine is the responsibility of the Australian Government Department of Health. In Western Australia, the Plant Quarantine Service is actually operated by the W.A. Department of Agriculture on their behalf. WANATCA members who have introduced seed of plants from overseas, and in some cases actual plants or scion wood, will know of the help extended by Roland Gwynne and Colin Smith towards those genuinely concerned with plant introduction.

This talk looks to be informative and interesting, and will be illustrated with slides. Come along and learn what you can and can't do with introducing new plants, and the best ways to go about it.

THE NAPIER-RAYNES AWARD FOR BIRD DETERRENCE

The winner of the Napier-Raynes award for 1986, for the best bird deterrent suggestion, will be announced at the A.G.M.

ELECTION OF EXECUTIVE

In accordance with the constitution, half the Executive retire at the end of 1986, and nominations are called for to fill these positions. Those retiring this time are Aitken, Geddes, Judd, Raynes, & Turner. An election will be held at the AGM. The current executive committee will be putting forward nominations at that meeting, but nominations or expressions of interest are very welcome from any member. Feel free to phone David Noel on 381.7341 for more information.

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*A special message from David
Noel, President*

BIG CHANGES IN TREE CROPS

Some major advances have occurred in the local tree crops scene. The big news is that TANCDARF, the Tree & Nut Crop Development & Research Foundation, is going ahead, and that a new Tree Crops Centre has been set up in Nedlands.

The creation of TANCDARF has brought to fruition some years of effort by the WANATCA Executive. This effort peaked in 1985, when a detailed draft proposal, for submission to the West Australian Government, was prepared and circulated to over 200 interested parties scattered throughout the world. The responses to these drafts were most helpful and supportive.

TANCDARF is being set up as a legally independent non-profit research and development organization to promote tree crops. It will be able to apply for grants, and to receive donations and bequests on the same basis as a charitable organization. It will also take advantage of the Federal Government's scheme by which companies putting money into research and development through an approved research organization get a 150% tax deduction on their funds.

Your Association has borne most of the costs to date in getting TANCDARF under way, and will have a strong representation on the Governing Board. Now help has become available from the Co-op. The Co-op (West Australian Nut Supplies Co-operative Ltd.) is a commercial cooperative company owned by some members of the Association. It was set up some years ago and operated a specialist retail nut shop, Squirrel Nutkin, in Shenton Park. This

business did an excellent job in raising public awareness of the potential of nut crops, but when difficulties occurred in extending the lease of the premises, the Squirrel Nutkin business was transferred to one of our members, who operated it in a new location in Subiaco. The Co-op itself has been largely dormant, but has now taken on a new lease of life.

The Co-op has taken office space at Suite 8, 88 Broadway, Nedlands (Broadway Fair, top level) and will be providing a home for TANCDARF within the Tree Crops Centre being set up there. It is proposed to change the name of the Co-op to Treecrops Cooperative Corporation Ltd. to reflect its current broadened role in the development of all tree crop industries. The Share Register of the Co-op is currently closed. It is hoped to re-open this Register in the future, after a reorganization of the share structure, so that shares in the renamed company will once more become available for purchase.

The Tree Crops Centre now also houses Granny Smith's Bookshop, providing a welcome public outlet for horticultural book sales, after almost two years restricted to mail-order operation. It will also house Cornucopia Press, publisher of horticultural books, and Nut & Tree Crop Consultants, providing consulting services to the industry. All these businesses will operate as divisions of the Co-op. Lorna Budd will continue as Secretary of the Association, in exactly the same way as before. The Tree Crops Centre will assist in the operations of the Association whenever possible.

CONTINUED NEXT PAGE

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At the same site there is also a group of information technology businesses (in which I have a financial interest) operating under the name **Information Dynamics Centre**.

These businesses operate computers and other advanced equipment, including a laser printer capable of high-quality output (this announcement was typed on a Macintosh computer and output on a laser printer). One business, **Instant Artwork**, produces artwork for printing, such as letterheads, business cards, invoice forms, programmes, menus, and price lists, and also text and graphics for club magazines. With the new equipment, these items can be stored on computer disc and easily amended.

Another business in the group, **Association Aid Services**, provides a computer service to maintain membership lists for associations, shareholder lists for

companies, magazine editing and production services, mailing services and so on. The Association will be using some of these services. I am confident that we will be able to upgrade the quality of our publications and services in this way, with no increase in costs, possibly even a saving.

I believe that we are entering a new and exciting era for everyone concerned with tree crops in our region. In particular, the formation of the **Tree Crops Centre** should act as as a focus for a whole range of future developments. Of course, to start with we will be feeling our way. I ask all members to give me suggestions for improved and new services.

Phone numbers at 8/88 Broadway (Nedlands WA 6009) :-

Tree Crops Centre,
386.8093; Information
Dynamics Centre, 386.8990.

News

Imported Avocado Fails to Meet Expectations

A patented variety of Avocado, brought to Australia after rave reviews from both California and South Africa, has failed to perform as expected, according to a report from the Queensland DPI.

The variety, 'Pinkerton', is a 'Rincon' x 'Hass' hybrid and was noted overseas for producing heavy yields at an early age. It apparently also showed good flavour qualities in a pear-shaped fruit which remained green when fully ripe and had a pebbled skin which was easy to peel. However, the QDPI reports that here the variety flowers over a long period (also seen overseas) and so produces fruit ripening at different times, so complicating harvest. Furthermore, it has been found that in cooler, high altitude areas the fruit develops a long neck which makes packing difficult and reduces consumer acceptance. In North Queensland there is the additional problem of a large proportion of fruit having hard

pulp between the stem and seed. This does not ripen and sometimes, even extends around the seed. This has proved to be the most serious problem as it was not noticed until the fruit reached the consumer.

The 'Pinkerton' case helps to illustrate both the inherent problems in relying on cultivars imported from overseas and the important need for the encouragement and development of Australian breeding programs. Even from the standpoint of pure logistics, if material was to have been imported, it would have been a far better proposition to bring in clones of all the progeny from the cross that produced 'Pinkerton' and select the most suitable one for Australian cultivation. Of course any such action is precluded by the lack of PVR here, but with legislation again about to be presented in Parliament, hopefully this situation is about to change.

Growers are now being urged not to plant 'Pinkerton' pending the results of trials being conducted in both north and south-east Queensland.

Lychee a touch of the Orient

THE most tasty and beautiful fruit that God created in the universe", "One of the daintiest packages that has ever been wrapped by nature's hand" - so remarked early travellers to China, talking, of course, of the lychee.

Many West Australians have eaten canned lychees, particularly as a dessert served in Chinese restaurants. Few have experienced the joy of eating the fresh fruit, which makes the canned product "pale ale" indeed.

The great news is that you can grow this delicious fruit in your own garden.

In fact the tree is so attractive, with leaves that emerge a coppery colour before turning glossy green, that you can plant it in the front garden.

NEVILLE PASSMORE continues his series on tropical fruit.

In full crop the tree is covered with clusters of bright red strawberry-like fruits - a spectacular sight.

THE FRUIT:

About 4 to 6cm in diameter, lychees are borne in clusters of three to 20 at the tips of the branches. When ripe they are bright red. The rough, brittle shell is peeled to reveal firm, sweet, white translucent flesh, enclosing one or two dark brown seeds.

Eat lychees fresh from the tree. One delightful dinner party idea is to place a whole branch as a table centre-piece and allow your guests to pick their own.

Store ripe fruit in plastic bags in the fridge for up to three weeks. Lychees can also be

dried or frozen. Fruits do not ripen after harvesting so it is important to pick at the peak of sweetness.

THE TREE:

A handsome bushy evergreen, the lychee can grow to about 10 metres high. It is a great choice if you are looking for a shady ornamental tree - with a bonus of fruit.

Lychees are tolerant of light frosts as well as our summer heat - commercial plantings are taking place around Gingin.

They are self-fertile, so you only need one tree for fruit.

The trees usually begin cropping in their third year after planting. The size, of the crop appears to in-

crease yearly so that trees of 20 to 30 years can produce 150 to 300 kilograms. That's a lot of lychees.

HOW TO GROW YOUR LYCHEE TREE:

Choose a sunny position protected from strong winds.

A heavy feeder, the lychee will benefit from regular applications of fertiliser through the growing season.

A rich, well-drained soil is ideal - use plenty of compost and well matured animal manure to build up sandy soils.

It is essential to keep lychees well watered through the growing season.

Mulching with animal manure is common practice in tropical regions as an aid to moisture retention and to protect the shallow feeder roots from sun scald.

It is certainly a recommended step here. In addition it lifts humidity and this is beneficial.



BOOK REVIEW

GOING TROPICAL: Living and Fruit Growing in Northern Australia. Ron Edwards. Published by Night Owl Publishers, Victoria, 1986. 136p. Pb. Available from Granny Smith's Bookshop at \$14.95.

An excellent book at a reasonable price. As the title says, part of the book is about living in tropical Australia (actually around the Cairns area of North Queensland), and part is about raising tropical fruits, but the two topics are closely intertwined.

I liked the author's style of writing; a quiet, almost conversational approach, full of good sense and lacking all pretensions. Part 1 deals with Living in Tropical Australia - such things as the climate and its practical implications, non-suburban living, dealing with local councils, and, above all, how to organize the growing side of things. This includes where and when to use machinery in the garden, how to make different plants work together, simple methods of building and construction, and the whole general approach to growing fruits, nuts, and other useful plants. Although written for the tropics, this section contains a lot of value to tree growers everywhere.

Part 2, Trees for the Tropical

Orchard, is of unique value. While there are other publications which deal with some of the plants in much greater detail, I know of none other which covers such a wide range, and which moreover is based on practical experience (rather than extracted from another book). Over 120 species are mentioned, about three times as many as most other sources - which means many species rare in Australia get a mention for the first time. Two are rare enough that the author was unable to locate the botanical name - these were the **Kepunding** (actually a *Baccaurea* species, probably *Baccaurea dulcis*), and the **Kaliasem** (almost certainly what was named *Jambosa cauliflora*, now placed under *Syzygium*). Both these species, and many others listed, were grown from seed collected by the author in Indonesia. Other species listed and hardly ever mentioned in Australian descriptions include ones from the following genera: *Aegle*, *Bactris*, *Bertholletia*, *Blighia*, *Cinnamomum*, *Flacourtia*, *Glycosmis*, *Mammea*, *Matisia*, *Melicoccus*, *Muntingia*, *Myrciaria*, *Oenocarpus*, *Phyllanthus*, *Pithecellobium*, *Pouteria*, *Rheedia*, *Rhodomyrtus*, *Salacca*, *Sandoricum*, *Spondias*, and *Terminalia*. In addition, there are many unusual species from more familiar genera such as *Manilkara*.



Coffee farming returns — after 50 years!

by **ROBBIE MARSHALL**
pictures: **DAVID MARSHALL**

AUSTRALIANS can now enjoy a brew of top quality coffee — from their own, locally grown beans.

After half a century of political — and climatic — setbacks, Australian coffee is back on the market, thanks to the Jaques brothers.

The two brothers, Dick and Nat Jaques, arrived in Mareeba, North Queensland five years ago, with the dream of starting again a nearly forgotten industry.

Nat Jaques is experienced in managing a farm, while his brother Dick brought in a degree in psychology and many years experience as a store manager.

They combined their skills and knowledge and with the help of their wives and other Mareeba shareholders started Australia's first coffee marketing industry since the depression.

Dick and Nat planted the best coffee, Coffee Arabica, "The King Of Coffee". They also adopted the best irrigation and fertilisation procedures.

But Australia is a different place to Tanzania, and harvesting the beans was a major obstacle to financial success.



Within a 77 ha (190 acre) property, Dick and Nat planted 240,000 coffee trees close together in rows.

Next, they modified a 44Kw, hydraulically driven straddle tractor so that it could collect the berries from the coffee trees.

The modified straddle tractor became the "Coffee Harvester", which not only collects the berries, it also removes the pulp from around the beans and then drops the pulp under the trees for mulch.

Through the use of an advanced drip irrigation system, the coffee berries ripen uniformly so that the harvester can remove them efficiently.

The coffee crop has a drip-fertilisation system enabling liquid fertiliser plus nutrients to go directly to the trees.

One of the advantages Australia has over third-world countries is its sophisticated soil and plant analysis. This permits top quality and disease-free coffee beans to be grown.

The Jaques Bros. coffee plantation is probably the only coffee farm that uses a drip-fertilisation system.

After 5½ years the brothers have 240,000 coffee trees growing and producing on one of the most advanced and efficient coffee farms in the world.

Maintenance can be carried out by only two people, and they have their own factory where the harvested coffee beans are cleaned, dried, polished and then roasted and packaged.

Only the best beans are selected by the machinery, while the inferior are rejected.

This quality coffee is marketed in both roasted bean and ground coffee, and at a later stage instant coffee and coffee essence will be sold.

Dick and Nat are taking one step at a time. "We must walk before we can run" they say. Jaques Bros Coffee, in light, medium and dark roasts, is at present only available in Queensland at Gourmet Delicatessen and Supermarket stores. At a much later stage they will go to the U.S. market.

The sweet and pungent aroma of this new Australian coffee is very tempting indeed, but the sweet smell of success is even more gratifying to the brothers. ●



The thorny Dovyalis

DOVYALIS, commonly known as Kei-Apple, or Umkokolo as it is known in its native South-Africa, is one of the spiniest shrubs I know — young plants in pots have 1cm-long thorns.

These thorns develop into 3-5cm-long lances when the shrub is planted out in the garden and is actively growing.

They make an impenetrable hedge — fact well recognised in the troubled urban-areas of South Africa and Rhodesia.

Such hedges have their uses here in keeping unwanted visitors (two-legged as well as four) out of the garden. They are particularly useful if you have bearing fruit trees visible from the road.

The fruits are borne in profusion and are bright golden-yellow when mature. Shaped like an apple, they are smaller with a diameter of 3-5cm.

The aromatic juicy yellow flesh has an apricot-like flavour and is sweet-acid.

Dovyalis has a velvet-smooth skin and makes a good-looking addition to a bowl of fresh fruit.

Eat it fresh or make a distinctive-flavoured jam or preserves. A delightful jelly is made from immature fruits.

Yellow flowers in early summer precede the fruits by two to three months. Pick the fruits when they are a rich golden-yellow colour. A pair of long-handled tongs makes harvesting the crop painless.

Male and female plants are needed to maximise productivity. However, most female plants will produce some fruit without a pollinating partner.

As it is not possible to sex your Dovyalis before it bears, you should plant three to ensure a crop. This is another good reason to look at growing it as a hedge.

Without pruning, Dovyalis can grow to five or six metres high with a three-metre spread. However, pruning is beneficial, increases the crop and makes a compact shrub of one to two metres high. It is evergreen with glossy-green foliage and looks good in the garden.

Coming from South Africa, the plant's climatic requirement is easily met in most areas of WA.

It is cold hardy down to minus 3C and is very tolerant of poor or sandy soils and drought. Needless to say, its productivity is improved dramatically in well-irrigated rich soils.

Grow Dovyalis in full sun. This tough shrub can withstand coastal conditions just back from the beach front, but flooding can be disastrous.

It does not suffer much from insect and disease pests, but the fruit's juice stains clothes.

A fairly slow grower, it makes good sense to plant it away from paths, particularly the edge of your lawn if there are children about.

Dovyalis is an interesting addition to home orchards, with its attractive appearance and appealing fruits.

Grant will aid crop research

MURDOCH University has received an \$882,000 grant from the Australian Centre of International Agricultural Research to investigate trace-element deficiencies in soya-bean, peanut and mung-bean crops in Thailand.

The three-year project, led by Professor Jack Loneragan, will involve collaboration with scientists at Chiang-Mau and Khon Kaen universities and Thailand's Department of Agriculture.

Their findings will benefit both countries and, eventually, a big part of South-East Asia.

Professor Loneragan, a professor of biology, has concentrated on plant nutrition studies in pasture and food crops since Murdoch University was founded 11 years ago.

He said this week that the project's main thrust would be into boron deficiencies in the soils of northern Thailand.

These caused peanuts to develop a "hollow-heart" condition with discolouration and malformation of the kernel.

It could also reduce

By ALEX HARRIS

mung bean crop yields by up to 50 per cent.

A second series of studies, led by Professor Mike Dilworth, of the university's school of environmental and life sciences, would investigate iron deficiencies which affected peanut crops in central Thailand

Professor Loneragan said that in addition to boron and iron deficiencies, early studies showed some deficiencies of copper and molybdenum in legume crop yields.

Skills

"The programme will use special skills developed in Australia to solve problems in other countries," he said.

"At the same time Australian scientists will gain more expertise and wider experience."

Murdoch post a first

A PROFESSOR of horticultural science has been appointed at Murdoch University to head a new degree course.

Dr John Considine (43) has been awarded WA's first professorial post in horticultural science.

He will head a four-year course launched this year and offered jointly by Murdoch University and the University of WA.

Professor Peter Boyce, vice-chancellor of Murdoch, said that the Reserve Bank of Australia had contributed more than \$80,000 to the new post through its rural-credits development fund.

Dr Considine has been senior lecturer in botany at Auckland University since 1982.



Blueberry now

THE blueberry has proved to be a glamour crop in Europe, the United States and the Middle East. Few West Australians have tasted fresh blueberries.

They make a wonderful ingredient for pies, muffins, icecream and yoghurt, can be eaten fresh or frozen for future use and make a delightful jam.

NEW VARIETIES:

New varieties for warmer climates have recently become avail-

NEVILLE PASSMORE continues his series on exotic fruit.

able and this has extended the growing areas so that people in Perth can now grow the blueberry.

The commercial potential looks excellent. Australian growers have the opportunity of not only supplying the local market with this exciting fruit, but also exporting to the northern hemisphere countries in the "off" season - there is a

\$7 million growing venture set to go at Bullsbrook in WA.

HOME GARDEN PROSPECTS:

Blueberries are a worthwhile addition to the home garden, being easy to grow and very ornamental with their pretty Lily of the Valley type of blooms through spring and early summer.

These blooms are followed by the berries, which start out green and mature to a deep purple-black.

The foliage colours up vividly in autumn with dashes of red, orange and purple before going into its deciduous phase.

The plant makes an attractive shrub for the garden and, unlike a lot of other berry shrubs, does not sucker up all over the garden.

It is easy to care for and does not overtake the garden, only growing to about two metres high.

VITAL STATISTICS:

Height at maturity two metres (unpruned) spread 2.5 metres flowering distance three to four metres; expectancy 10 years

HOW TO GROW:

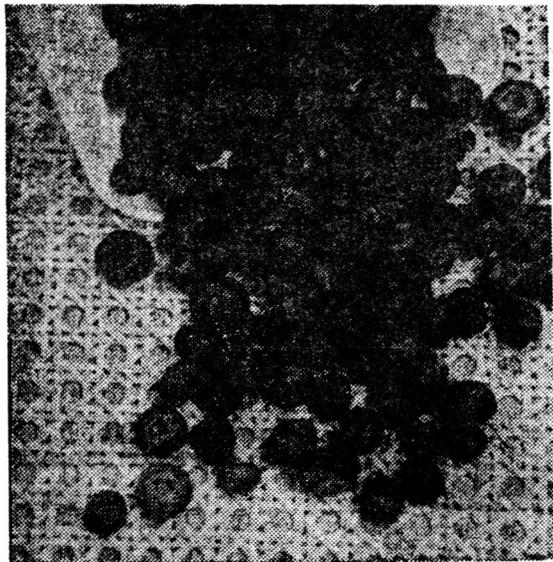
The major reason for failure is an acid soil. This can be achieved by copious quantities of organic material such as animal manure on a sandy soil.

Blueberries like the full sun, but can be planted in a sheltered spot to get light shade in the afternoon and thrive.

One of the keys to success is to plant shrubs with shallow roots. A layer of organic mulch of organic material such as animal manure on a mowed lawn is ideal.

Watering is important in summer - the plants must be kept moist.

It is important to plant the plants regularly and to use regular applications of fertilizer. Nurseriesmen will give you a purpose garden fertilizer. Ideally the plants should be fed every



in WA

STATISTICS:
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they should
six to seven

weeks through the grow-
ing season from Septem-
ber to May.

POLLINATION:

It is important to plant
two different varieties of
blueberry to achieve the
best pollination. Single
plants will not produce a
reliable crop.

PRUNING:

It is recommended that
in the first three years
the plants be stripped of
flowers and fruit in order
to maximise growth. Af-
ter the third year you
should begin in the mid-
dle of winter to remove
old, unthrifty canes to
promote new flowering
growth in the spring.

HARVESTING:

Plants will reach full
production in six to 10
years. Berries ripen over
a period of seven weeks.

Not all berries in a cluster
will ripen at the same
time. Select only the
ripe berries and leave
the others to ripen for
later picking.

Ripe berries will hold
on a bush for about a
week without deteriorat-
ing or dropping. They
are very tender, so
handle them carefully.



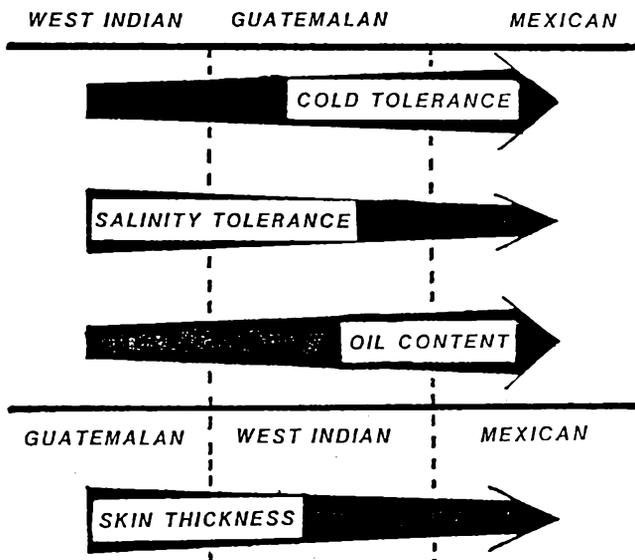
AVOCADO VARIETIES

AVOCADO VARIETIES - A.W. WHILEY & M.F. PICCONE - 11TH MARCH 1986

While basically a sub-tropical plant, the avocado shows adaptability to a wide range of environments. To some extent, this range is due to the genetic diversity of the horticultural races, Mexican, Guatemalan and West Indian, named after their presumed centres of origin.

MEXICAN	THE GENETIC ORIGIN OF VARIETIES	
	GUATEMALAN	HYBRIDS MEXICAN x GUATEMALAN
ZUTANO	HASS WURTZ EDRANOL REED WHITSELL GWEN	FUERTE SHARWIL RINCON PINKERTON

SOME CHARACTERISTICS OF RACES



SEEDLING ROOTSTOCKS

ADVANTAGES

- AVAILABILITY OF SEED
- EASE OF PROPAGATION
- SHORT TIME FROM SEED TO SALEABLE TREE

DISADVANTAGES

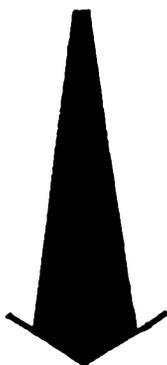
- GENETIC DIVERSITY

SEEDLING ROOTSTOCKS

WEST INDIAN

GUATEMALAN

MEXICAN



COLD TOLERANCE



SALINITY TOLERANCE

CLONAL ROOTSTOCKS

- GENETIC UNIFORMITY
- MAINTENANCE OF DESIRABLE CHARACTERISTICS
e.g. disease resistance
salinity tolerance

ROOTSTOCKS FOR EVALUATION FROM CALIFORNIA

<u>P. schiedeana</u>	<u>PHYTOPHTHORA ROOT ROT STATUS</u>
G755A)	RESISTANT
G755B)	
G755C)	
<u>P. americana</u>	
G1033	TOLERANT
<u>RECOMMENDATION</u>	???

THE ROOT ROT RESISTANT ROOTSTOCKS - G755 SERIES

KNOWN FACTORS

- P. SCHIEDEANA
- RESISTANT TO PHYTOPHTHORA ROOT ROT
- VERY VIGOROUS GROWTH

UNKNOWN FACTORS

- THE EFFECT ON PRODUCTION
- THE INTERACTION WITH SCION VARIETIES
- LONG TERM COMPATABILITY

FLOWERING

The avocado tree has a unique flower behaviour. The flowering patterns of trees are classified as 'A' or 'B' types. All trees of the same variety react identically. A variety is classified as 'A' type if each flower is functionally female in the morning and functionally male the following afternoon; or 'B' type if each flower is female in the afternoon and then male the following morning (see diagram below).

DAY ONE

DAY TWO

TYPE	DAY ONE		DAY TWO	
	AM	PM	AM	PM
"A"	Female functional ██████████			Male functional ██████████
"B"		Female functional ██████████	Male functional ██████████	

"A" AND "B" TYPE FLOWERING PATTERNS

FLOWER TYPE OF SOME VARIETIES

'A'	'B'
HASS	FUERTE
WURTZ	SHARWIL
RINCON	EDRANOL
REED	HAZZARD
PINKERTON	RYAN
GWEN	WHITSELI

FRUIT SET CHARACTERISTICS OF 'A' AND 'B' FLOWERING TYPES

	'A'	'B'
BOTH SEXES PRESENT AT LOW TEMPS.	✓	X
CYCLES OVERLAP AT LOW TEMPS.	✓	X
FERTILIZATION OF OVULE AT LOW TEMPS.	✓	X
FERTILIZATION OF OVULE AT HIGH TEMPS.	✓	X

PEST AND DISEASE SUSCEPTIBILITY

RINCON	MOST SUSCEPTIBLE
FUERTE	
SHEPPARD	
PINKERTON	
SHARWIL	
WURTZ	
HAZZARD	
EDRANOL	
HASS	
REED	LEAST SUSCEPTIBLE

↑

GROWTH HABIT

FUERTE	SPREADING
SHARWIL	TALL/SPREADING
RINCON	SEMI-WEeping
WURTZ	WEeping
SHEPPARD	COMPACT/UPRIGHT
HAZZARD	COMPACT/UPRIGHT
EDRANOL	UPRIGHT
PINKERTON	UPRIGHT
HASS	UPRIGHT
REED	TALL/UPRIGHT

ORDER OF MATURITY TIMES

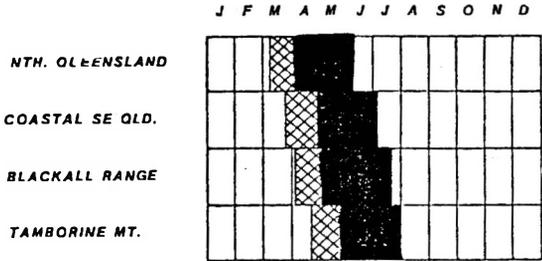
SHEPPARD	EARLY
FUERTE	
RINCON	
PINKERTON	
SHARWIL	
HAZZARD	
EDRANOL	
WURTZ	
HASS	
REED	LATE

↓

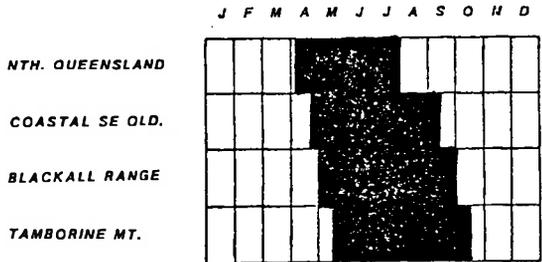
AVOCADO MATURITY TIMES

IN QUEENSLAND

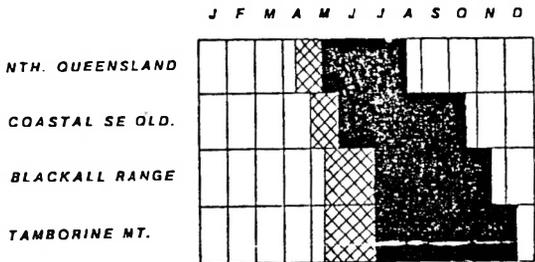
FUERTE



SHARWIL



HASS



Has reached legal maturity level of 21% dry matter.



Best flavour and quality for marketing.

PAWA NEWSLETTER

MULTI-STOREY PLANT ARCHITECTURE WITH USEFUL TREE CROP PLANTS

A huge crowd attended a really fascinating field day in David Noel's large suburban garden in Shenton Park recently.

We have all read about planting tall trees to shade and shelter more delicate, medium and small trees and with herbage or pasture underneath (in other words creating a micro-climate) but to see this multi-storey plant architecture growing successfully was most interesting.

David has used, in several areas of his garden, a local acacia species which grows to 20 or 30 feet as the initial "pioneer" tree, to shade and shelter an understorey planting. (As an example, in one particular area, he has used the acacia to shelter various chestnuts, warm climate walnuts, kei apples, cherimoyas, and the low pepino). As the understorey grows and thrives, and needs more light, he saws off the lower branches. Eventually he ends up with a tall tree with just top foliage to throw light shade, and perhaps a fruiting vine using it as a support - or he takes the tall tree (in this case, the acacia) right out, and replaces it with something like the honey locust which throws only a light shade plus high protein pods.

Other examples of multi-storey

plantings were:

1. Macadamias grouped under a bunya pine;
2. A natal plum and raspberries under a lilly pilly, under an acacia;
3. Pawpaws growing under and up through all sorts of trees, including the Irish strawberry tree;
4. Ajacaranda sheltering avocados and bananas (avocados and bananas being good companion plants) etc.

The two big benefits from this sort of planting and consequent branch prunings - apart from a huge variety of fruits and nuts - is self-sufficiency in firewood and compost.

Compost heaps, 6 foot square, are constructed like miniature haystacks, topped with soil, and left 6 to 12 months to rot, and because there is such a wide variety of tropical, subtropical and exotic foliage included, the resultant compost is of excellent quality - and no potting mix, compost or soil is needed to be brought in. Any branches or trunks are sawn up for the wood heap.

Two essentials for this type of planting are thorough regular waterings, and observation of growth pattern plus regular pruning and sawing sessions.

Altogether a most inspiring field day. Like a lot of other people there, I raced home to plan more trees and plants for my orchard on a multi-dimensional basis.

VALERIE HOPKINS

New Horticultural Courses

● Murdoch University and the University of WA have combined to design courses in *horticultural science*, which includes the production of fruit, vegetables, wine and flowers and related areas such as landscaping and the management of parks and sporting facilities.

THE value of horticultural production in WA, including wine, is about \$108 million, making it the third most important primary industry, and it is expected to increase dramatically in the next 20 years.

The horticultural science degree is a new one and the first students will graduate only in 1989. Students spend time during the four-year course at both Murdoch and UWA.

Material for students points out that a horticultural scientist must first learn the basic sciences. So TES chemistry and maths are necessary.

Further information on horticultural science can be obtained by telephoning either Dr Jen McComb at Murdoch (3322336) or Dr B. McIntosh or Dr D. Turner at UWA (380 2566 and 380 2418). *But here are some examples of the kind of work horticultural scientists are already tackling:*

Bananas grown at Carnarvon often have zinc deficiency. This shows in alternating bands of yellow and green on young leaves.

UWA scientists and others from the Department of Agriculture studied 60 banana plantations and found a connection between low yields and zinc deficiency. But when zinc was added to the soil, it did not seem to reach the plants.

Now they are looking at alternatives: more zinc in the soil, sprays on leaves, or injections into the stems of banana plants.

Other research is being carried out on avocado trees. About 15,000 of these have been planted in WA in recent years. UWA scientists have been looking into the effect of salt on avocados.

Did you know that avocado trees do not pollinate themselves because male and female parts of their flowers mature at different times? You might like to observe any avocado trees in your district and work out how their flowers mature.

Dr McComb at Murdoch has been working on tissue culture of WEA's State emblem, the kangaroo paw, by putting sterilised buds into a nutrient medium. This method is called micropropagation.

..EXTRA..EXTRA..EX

WAIT CAROB AND ACORN STUDIES

Four interesting studies on food products from acorns and carobs have been carried out by students at the Department of Home and Consumer Studies of the Western Australian Institute of Technology. These are:

Stephanie Rewell: Product Development and Sensory Evaluation of Acorn Bread

Tanya Shubin: Food Product Development and Sensory Evaluation of Acorn Cake

Gina Karalis: Product Development and Sensory Evaluation of Carob Biscuits

Fiona Getty: Product Development and Sensory Evaluation of Carob Yoghurt

Each of these reports is about 60 pages long. Further information (and photocopies of reports at a cost of 10c/page) can be obtained by contacting **Dr Frank Flanagan**, Head of the Department. It is very encouraging to see useful local work going on into the exploitation of tree crop products.

West Australian Nut & Tree Crop Association (Inc)

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EXECUTIVE COMMITTEE 1986

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CALENDAR OF EVENTS 1986

Nov 19 Wed Annual General Meeting (Roland Gwynne : TREE CROP INTRODUCTIONS AND PLANT QUARANTINE).

Members wishing any matter to be considered at an Executive Committee meeting should contact the Secretary by 2 days before the meeting.

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