

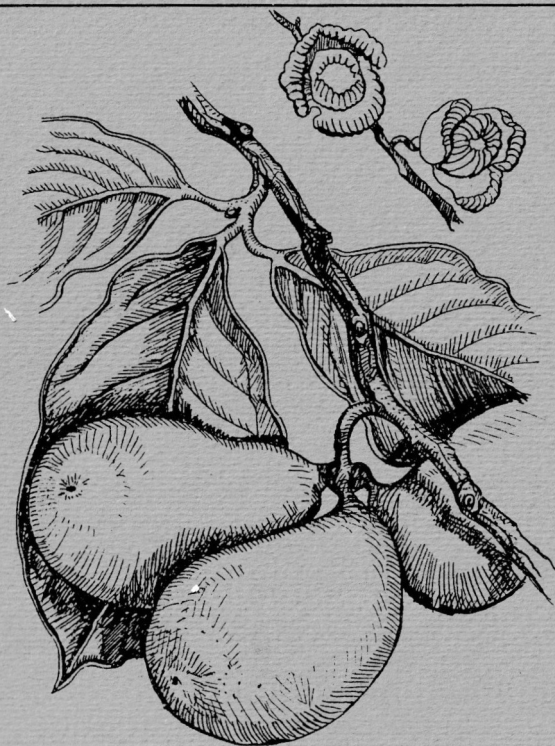
Quandong

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

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THE ASIMINA OR AMERICAN BANANA (*Asimina triloba*)

From 'Complete Book of Edible Landscaping' - Rosalind Creasy

NEXT MEETING

Wednesday August 17 7.30 pm

At the next general meeting our speaker will be

NEVILLE SHORTER

Neville was until recently in charge of the Midland Office of the Department of Agriculture and has had a long and varied career in horticulture. He is a member of the WANATCA Executive Committee and has a special interest in nut crops. He will be talking about

GROWING MACADAMIAS IN W.A.

In addition we hope to have a speaker from the New Age Development Foundation, a body being set up in Perth to promote 'ethical' investment and development—that is, development likely to enhance or have a positive effect on the environment, the human race, and the planet as a whole.

As usual the meeting will be at the Naturalists' Hall, 63 Meriwa Street, Nedlands.

NEXT FIELD DAY

Our next field day will be in the Waroona area, south of Perth.

We will be visiting the Greening Australia Nursery at Hamel, and the spectacular Loeffler Farm at Yarloop.

Sunday September 4 at 11 am

Meet at: The Old Bakery, Yarloop, (on the Southwest Highway) at 11am.

For fuller details consult the liftout announcement with this issue of 'Quandong', or contact the Tree Crops Centre.

Interested non-members are welcome to attend this Field Day, and you may like to display the announcement at your workplace or club.

! FREE ADVERTISING!

With this issue of Quandong, WANATCA members will receive a **FREE ADVERTISING VOUCHER** to the value of \$15.00

Use the voucher to advertise services or goods you have available, or to request items you need.

A Fruit Enjoyment Holiday

I'm sitting at a rooftop restaurant at Chiang Mai in Northern Thailand, enjoying a breakfast Pomelo. Looking over the rooftops to the nearby mountains I can see Coconut, Mango and Star Gooseberry trees popping up in nearly every back yard. Throughout my tour of Thailand I've seen much evidence of the Thai passion for fresh fruit.

Mangos would be the most popular home garden fruit tree. They flower so prolifically that at first I didn't recognize them. The main cultivated variety is the local one, Nam Doc Mai. This variety is looking very promising also around Perth gardens.

Not only are they enjoyed as a fresh ripe fruit - the green half-ripe fruits are eaten as a savoury. These green fruits have a crisp, almost apple-like texture and a very tangy flavour.

At the Kasertsart University in Bangkok I saw trial plantings of Nam Doc Mai mango trees at very close spacings. At 2 metres between trees in rows 2.5 metres apart, root competition is intense. Heavy pruning after harvest also helped to dwarf the trees. This style of planting could be adopted in Perth gardens to keep the tree at a manageable size — some ancient specimens I have seen here are as tall as 20 metres.

The red-fleshed Paw Paws or Papayas are the most popular type, and are enjoyed as breakfast and after-meal dessert fruit. Once again, underripe Paw Paws appear on many menus as a vegetable.

Bananas are available in a range of varieties, including the large Cavendish types that we are most familiar with, the short, fat, sweet, ladies-finger types, as well as a delicate thin small fruiting variety that is very sweet and flavoursome.

Banana leaves are sold in the markets for cooking and preparing food, particularly rice — it's like a natural form of foil. Slightly underripe fruits are barbecued on charcoal broilers on many a roadside stall, and are a delicious hot snack. Sliced green bananas are also deep fried to produce a sweet crisp chip. Another delicious banana product was a sun dried fruit that had a texture of a moist date.

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HELPING YOU GROW !

The Star Gooseberry (*Phylanthus acidus*) is a small attractive tree yet to be proven around Perth. It produces substantial crops of lemon yellow fruits about the size of a Cape Gooseberry. These acid fruits are sold fresh in the markets, but are also pickled and served as an accompaniment to a main meal. I believe they can also be stewed and made into a tangy jam.

Two other fruits that are widespread in Thailand and successful in Perth are the Ber and Jujube. The Ber, or Indian Jujube, produces a cream-green egg-shaped fruit with white flesh that is crisp with an apple flavour. The Chinese Jujube is smaller, usually with a more colourful skin, and has a finer flavour — like a good Granny Smith apple.

Both trees are extremely tough and drought tolerant. They've become naturalized in some of the harsh hilly dry bushland out towards Katchanaburi — home of the famous Bridge on the River Kwai.

Longans, or Dragons Eye fruit, are common home garden fruits in the cooler north of Thailand around Chiang Mai.

Early plantings around Perth are showing good promise, with some grafted trees producing a couple of fruit in their first year. Unfortunately I've arrived in time to witness the flower formation but too early to enjoy the delicious fruits due here around May.

Before I sign off here and head into town to do some more fruit sampling I must tell you more about the Pomelo I've just breakfasted on. It's a sweet and juicy fruit about twice the size of a Grapefruit — but without the acidity. The flesh is lemon coloured and needs to be separated from the tough white bitter skin that envelopes each segment.

Chiang Mai Pomelos develop a lemon coloured skin. In the hotter central area around Bangkok the skin remains green though the fruit is fully ripe. While prodigious quantities of fruit are produced, the fruit is so popular that I had to pay A\$3-4 each. Once again, Pomelo can be grown successfully around Perth, in a warm sunny spot.

Neville Passmore



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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.

BUNYA NUT GLACÉ PROJECT

WANATCA has supported a project to produce Bunya Nut Glacé, carried out by a student at the West Australian College in Nedlands.

Karen Morcombe undertook the project as part of her work in the Department of Home Economics and Consumer Affairs. Each of the students does research on development and consumer acceptability of a new food product.

One of the most high-class and expensive products based on chestnuts is Marron Glacé. Marron (in France at least!) are selected large, high-quality chestnuts. They are made into the candied form, marron glacé, through an involved cooking process using syrups.

Bunya nuts are produced by the Bunya Pine, *Araucaria bidwillii*, a beautiful Australian tree native to the Bunya Mountains of southern Queensland.

They share with chestnuts, the properties of being predominantly a starchy nut (high carbohydrate) rather than one high in oil.

Karen carried out a parallel development program on bunya nuts and chestnuts, using the same recipe. Acceptable products were produced from both these nuts, however

Karen emphasises that further work would be needed to produce a commercial product in W.A.

During the work, Karen made the most important discovery that the bunya nuts must not be oven dried during the candying process. Oven drying causes the nuts to lose their tenderness and greatly reduces acceptability. This discovery would be basic for anyone undertaking commercial exploitation of bunya glacé.

WANATCA arranged supply of the bunya nuts from a tree growing in Shenton Park, which this year had a heavy crop. A copy of Karen's report can be supplied, for the cost of photocopying and mailing, by contacting Karen Morcombe at 24 Farrin St, Attadale 6156

David Noel

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STOP PRESS

Just arrived this morning — new copies of J. Russell Smith's
"TREE CROPS — A PERMANENT AGRICULTURE"

This is **THE** fundamental book in the Tree Crops field, but has been out of print for many years. A full review will appear in the next 'Quandong'.

The book (409 p, pb) costs \$26.95 from Granny Smith.

The Tocte — Juglans Neotropica

While most walnut species are native to the Northern Hemisphere, one exception is the walnut of the Andes of South America, commonly encountered in Columbia and Ecuador at an altitude of between 1800-3000 metres.

In Ecuador this walnut is known as Tocte or Nogal, in Columbia it is referred to as Black Cedar or Nogal Cedar. The trees are commonly found growing on the boundaries of fields and streambanks where the tree freely regenerates. The tree is prized for its nuts, its fine and beautiful wood, and uses not practiced in our world such as the boiling of the leaves to produce a valuable tonic and the preparation of dyes. In the Northern town of Ibarra the nutmeats are used to prepare a famous "sweetmeat", the Nogada of Ibarra.

In recent times the demand for the timber of the Tocte resulted in the removal of most of the sizable trees in Ecuador. Large trees have become quite scarce. Commercial planting of Tocte is not in evidence.

During a visit to Ecuador by the writer in 1977 these trees were first observed. Seednuts were collected and brought back to NZ. The trees raised from these seeds are now more than 10 metres high. This year these trees will bear their third crop of nuts. The introduction of these Tocte trees is believed to be the first of its kind in New Zealand.

Broadly speaking all walnut species have certain growth features in common. All walnut trees are prized for their valuable timber. The compound leaves have a typical pungent smell when crushed. The nuts are large and bony shelled.

The above features are also found in Tocte, in addition the Tocte differs from other walnut species in the following ways:

- The tree is almost evergreen. The native habitat of the Tocte is only a few degrees North and South of the Equator at an average altitude of 2500 metres ASL. The climate in this region is temperate, lacking in summers and winters as we know it in NZ. Temperatures vary between -3°C Min. to 25°C Max. Such temperature variations can occur on a daily basis. The seasons in the the Andes can only be defined as wet and dry seasons. This does influence the growth pattern of the Tocte in the Andes. The Tocte has no chilling requirement. In N.Z. the tree drops its leaves after the middle of July, new leaves develop during September.
- Fast growth rate. In the Auckland region the Tocte will grow up to 1.50m per annum during the early growth phase, comparable to *Pinus radiata*.
- Most suited to warm temperate regions of N.Z. The Tocte grows almost all the year round. It has no chilling requirement.
- Resistant to pests and diseases. Our trees have never been sprayed. No symptoms of disease or pests have been seen.
- The nuts are large and round, the size of golf balls. The kernels have a fine flavour, however percentage crack-out is low due to the massive bony shell in which the kernel is enclosed.

The Andean nut

In Ecuador this walnut is never seen in large plantings or solid stands. Scattered planting or mixed planting may be recommended.

The tree is prone to wind damage. Rapid growth of the young stem may cause breakage when exposed to wind. As the tree gets older this does not seem to happen. Free draining soil is essential for the health of the tree. Any waterlogging around the roots is fatal.

The Tocte is self fertile. No cross pollination is required for nut production.

In Ecuador *J. neotropica* is used as a rootstock for *J. regia*. The Tocte grows extremely well in N.Z. The frost tolerance is not known. In Ecuador regular frosts occur where the Tocte grows. It is not recorded what the minimum frost tolerance is.

Seedling trees will bear nuts six years from planting. The harvesting period for nuts is June-July. The nuts are almost round, pointed at one end. The shell, black in colour is deeply furrowed, 45-50mm in diameter.

In Ecuador the wood of the Tocte is highly prized for carving, cabinet making, and general woodwork. Unfortunately, because of the need for fuel to provide heat for cooking, trees are often sacrificed for firewood.

Conclusion

The Tocte is a tree of promise in New Zealand. The tree has a magnificent shape and form well suited to areas where the tree is free to develop. Heavy clay soils should be avoided. The main commercial value of the tree is in its timber, a high-quality fine-grained wood.

Dick Endt

[Editor's Note: Around 1981, WANATCA made special arrangements and imported 500 Tocte (Tropical Black Walnut) seeds from Ecuador for a seed distribution. These seeds were spread all around the State, mostly through members, although some were given to the Department of Agriculture and to the Forests Department.

Germination of the seed was very varied, Lois Evans got very good results by germinating the seeds on a hotbed. I got only about 25% germination by just potting up and waiting.

Some trees have done very well after planting in the ground. Ones left for a long time in pots tend to die. I have two good trees, about 4-5 metres tall, and Nola Washer has some good specimens also.

Does anyone have any news on any other surviving trees? If so, could they please contact Quandong with the information.]

Terminalia Species

Out of the 12 *Terminalia* species that I collected for CSIRO, some have horticultural potential as fruit trees, and others as nut trees. The best fruiting tree would seem to be *Terminalia ferdinandiana*, which has excellent Vitamin C levels. The best nut producing tree, particularly for a semi-arid climate, would appear to be *T. cunninghamii*.

Seed of both these species will be available through the business I have initiated since the cessation of my employment with CSIRO.

When I have the necessary time I will produce a report on the Kimberly *Terminalia* species, and their possible horticultural potential.

John B. Martin, Minjaroo Native Seeds, P.O. Box 792, Broome, W.A. 6725.

Jujube Species

In your brochure about WANATCA and subscription rates, you mention sample tree crops. One crop mentioned is Jujube or chinese date. Is this the correct jujube? Here in Queensland we have the Indian jujube growing wild.

Would you be able to help me, I am looking for seed of the chinese jujube. Could you tell where I can purchase some from. Also this brochure states "species are available for all parts of the state". Could you advise me, as to where I could purchase some

plants please?

Mrs. Oram, P.O. Box 126, Rockhampton 4700

Editor: Seed of Zizyphus jujuba (chinese jujube), Z. mucronata and Z. spini-christi are available from Ellison Horticultural, P.O. Box 365, Nowra, NSW 2541. Seed of these 3 plus Z. mauritiana (Indian jujube) is available from Fruit Spirit (ads in last 2 Quandongs). Z. jujube is the usual commercial jujube. I know of no-one selling trees. There are Australian native species too.

WANATCA SEED OFFER DISTRIBUTION - 1988

Each of those who participated in the 1988 WANATCA SEED OFFER received a total of 17 different seeds, as described in the list below (sent out with each packet).

Reports we have received to date have said that these seeds have germinated well. If you would like us to set up another seed offer, for 1989, please let us know.

1. Bunya (*Araucaria bidwilli*). Australian Monkey Puzzle. Excellent native nut tree, nuts in huge pinecones, taste between chestnut and pinenut. Stately tree, good timber.

2. Casimiroa (*Casimiroa edulis*). White Sapote. Hardy, subtropics, warm temperate. Seed from cultivar 'Blumenthal'. Plant seed hum up. Excellent fruit.

3. Chempaka (*Michelia champaca*). Champac. Magnolia relative, perfumed flowers are source of oil used in perfumes. Treat like magnolia.

4. Coquito (*Jubaea chilensis*). Pygmy Coconut, Wine Palm. The hardiest palm, will withstand snow. Slow growing. Edible nuts. Seed germinates 1-12 months, hotbed good.

5. Guava (*Psidium guajaba*). Hardy fruit tree, warm temperate to tropics. Seed from variety 'Allahabad'.

6. Jelly Palm (*Butia capitata*). Hardy palm, edible fruit.

7. Martiusella (*Chrysophyllum imperialis*). Sapodilla relative. Grows in Sydney. Striking tree.

8. Phalsa (*Grewia asiatica*). Hardy subtropical. Edible fruit. Takes dry conditions.

9. Pitanga (*Eugenia uniflora*). Hardy, subtropics, warm temperate. Ribbed fruit.

10. Sapodilla (*Manilkara zapota*). Chiku. Excellent subtropical fruit, also source of chewing gum. Will grow in Perth. Seed from variety 'Kra-suey'.

11. Tagasate (*Chamaecytisus palmensis*). Tree Lucerne. Good nitrogen fixer, fodder tree, fast-growing windbreak/ shade tree.

12. Tea (*Thea sinensis*). Source of commercial tea. Germination erratic, weeks to months. Treat like camellia: warm temperate conditions best, some shade.

13. Toronchi (*Carica chrysopetala*). Papaya/pawpaw relative, takes cooler conditions.

14. Trumpet Tree (*Cecropia peltata*). Fast-growing Brazilian pioneer species, attractive leaves, palatable fruit relished by birds. Takes warm-temperate winters.

15. Wampi (*Clausena lansium*). Subtropics, tropics. Often vine-like. Excellent fruit.

16. Yerba Maté (*Ilex paraguensis*). Temperate. Source of South American tea. Small tree.

17. Jojoba (*Simmondsia californica*). Desert nut, will take mild frost. Source of valuable oil.

NEW FRUIT SOLD AT CLAREMONT FRESH

Two 'new' fruits have recently been supplied by the Tree Crops Centre for commercial sale at Claremont Fresh Markets. Only a small trial consignment was available.

These fruits were the Dimpleberry, *Arbutus unedo*, and the Calladine, *Syzygium paniculatum*.

DIMPLEBERRIES

(*Arbutus unedo*)

An attractive fruit of distinctive flavour. Ideal for use whole or sliced, e.g. in fruit salads, decorating cakes and sweets. Ripe when bright red and slightly soft. Eat whole fruit.

Supplied by:

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CALLADINES

(*Syzygium paniculatum*)

An attractive fruit with crisp, apple-like flavour. Ideal for use whole or sliced, e.g. in fruit salads, decorating cakes and sweets. Has single round seed which can be removed with a cherry pitter.

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Labels used with the new fruits

The Dimpleberry, also called the Irish Strawberry or Tree Strawberry, is the fruit of an attractive flowering shrub native to the mediterranean area.

The Calladine, with other common names being Magenta Cherry, Bush Lillypilly, and

Chinese Apple, is one of a large family of Australian trees with edible fruits.

Both trees are growing well around the Perth Metropolitan area.

The Tree Crops Centre is anxious to promote the introduction of these and

other new fruits, and have set up an arrangement with Claremont Fresh to encourage this. If you will have small quantities of an interesting fruit which can be trialed, please contact David Noel at the Tree Crops Centre or contact Claremont Fresh direct.

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Paulownia Development

A small research project, begun in China in 1972, was the first move in the modern development of Paulownia trees.

Paulownia is a small genus of 17 trees, all native to Eastern Asia. Some 16 years ago a Chinese forestry scientist, Zhu Zhao-Hua, came to recognize the potential of Paulownias for production of fuel, building timber, animal fodder and other tree products. But possibly the most important use was for reclamation and protection of poor croplands.

Paulownias can be tremendously fast growing and productive, and look to be an ideal agroforestry tree. In recent years, contacts arranged through the International Tree Crops Institute have enabled Chris Lucas (of Farm Fodder Trees Australia P/L, Victoria) to build up a lot of local expertise in the genus, and now to offer planting stock for trial throughout Australia.

Farm Fodder Trees are offering a Research Assistant Pack of 16 different varie-

ties of Paulownia in a novel competition to grow the tallest tree in one season's growth [the world record is nine metres (30 feet) in one season]. The prize is a study tour for two to travel to China as guests of the Chinese Academy of Forestry.

The Association has decided to purchase a Research Assistant Pack and enter the competition. The trees will be grown at a selected site in the south of the state, possibly in conjunction with Alcoa (see the Auxilliary Tree Project article elsewhere in this issue of Quandong).

A recent special issue of 'Farm Trees News' is devoted entirely to information about Paulownia. Copies of this free newspaper can be obtained from the Tree Crops Centre, and some will be available at the next General Meeting.

Auxillary Tree Project

What are Auxillary Trees? This is a term used to mean trees which are grown primarily to enhance other uses of land, in particular for windbreaks, shelter, and land reclamation. Of course they may have other uses as well, such as nut or fruit production, animal fodder, or timber production, but these are additional rather than primary benefits.

Together with the mining Company Alcoa, WANATCA is investigating the possibility of a joint project to develop a range of suitable auxillary trees for Western Australia. The first moves are likely to be with Paulownia (mentioned elsewhere in this Quandong) and with some newer varieties of hybrid willows. Both are multi-use species with a range of products and uses.

Alcoa have achieved prominence in recent years with their positive attitude towards the environment. They have pro-

duced huge numbers of trees, donated to volunteer groups for land improvement, and have been strong supporters of the Greening Australia movement. Many of their industrial facilities are surrounded by farmland, which has been used in a progressive and productive manner.

Quandong would welcome offers from readers interested in trialling new auxillary tree species and varieties on their own properties.

TWO NEW ACTION GROUPS CHERRIES AND POMEGRANATES

Those with a special interest in Cherries or Pomegranates now have the opportunity to participate in Action Groups in these areas.

The Cherry Action Group (CHERAG) will be led by Neville Shorter. He is the author of a Dept of Agriculture publication on cherries.

The Pomegranate Action Group (POMAG) is being headed by Dr. Marius Loeffler. Marius has a number of varieties of pomegranate under trial at his Yarloop property.

Contact details for Action Group Leaders are on the back cover of 'Quandong'. If you are interested in being part of a specialist Action Group, please contact David Noel to talk about it.

FROZEN MULBERRIES

A New South Wales company is looking for a Western Australian grower to supply mulberries for freezing. The company markets a wide range of frozen fruits throughout Australia and overseas, but has so far been unable to obtain supplies of mulberries in Australia. If you are interested in growing mulberries, or any other fruit which could be snap-frozen, please contact David Noel at the Tree Crops Centre.

WANTED !!!!! **LOCALLY GROWN NUTS**

We are seeking supplies of locally grown nuts for sale on consignment. Small quantities will be handled – give us a go with your nut crops. Wayne Geddes is the marketing expert.

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Book Reviews by David Noel

Growing Custard Apples. G.M. Sanewski.

Queensland Dept. of Primary Industries, 1988. 86 pp. Paperback.

\$14.95 from Granny Smith's Bookshop.

Claimed as the first book available on the subject of Custard Apples, this new DPI publication is an excellent and valuable review of the subject.

The term 'Custard Apple' refers to different fruits in different countries. All, however, are species or crosses within the genus *Annona* or the closely related genus *Rollinia*. The vast majority are native to Central or South America.

In Australia, 'Custard Apple' usually means the *Atemoya*, a cross between *Annona cherimola* (the *Cherimoya*) and *A. squamosa* (the *sweetsop* or *Atis*). Most of the fruits sold here as Custard apples are of the *atemoya* varieties 'African Pride' or 'Pinks Mammoth'.

The book provides a detailed and up-to-date review of all aspects of *atemoya* culture and production, including useful information on harvesting, yields, and market

prices, as well as all the usual aspects such as propagation, planting, fertilizing, soil management, and pests and disease.

Pollination and Tree training are two aspects of Custard Apple culture which are given special attention, because these aspects are somewhat different from other horticultural crops. The Queenslanders are one of the world leaders in matching water and nutrition supplies to a plant's physiological growth cycles, and this aspect is well covered.

The other Custard Apple species, apart from *Atemoya*, are also covered in much less detail. As well as the *Cherimoya* and the *Sweetsop*, these include the *Soursop*, the *Ilama*, the *Bullocks Heart*, the *Soncoya*, the *Pond Apple*, the *Mountain Soursop*, the *Rollinia*, and the *Biriba*.

Highly recommended.

Use of Fodder Trees and Shrubs. S.L. Everist.

Queensland Dept of Primary Industries, 1986. 70 pp. Paperback

\$7.75 from Granny Smith's Bookshop.

A revised edition of a valuable work first produced some 15 years earlier, this book is the standard handbook for those interested in tree fodder for stock feed.

Around 200 different species are covered, including both native and introduced species. Most have only one or two paragraphs, but details such as mode of growth, value for feeding different animals, palata-

bility, and negative aspects are given for each.

As well as the main text, there are general sections on fodder tree management and planting, a useful table of chemical compositions (protein content etc.) of the different species, and an index of botanical and common names. **Recommended.**

Oil Palms and other Oilseeds of the Amazon. Celestino Pesce.

Reference Publications, USA, 1985. 200 pp. Hard Cover.

\$42.95 from Granny Smith's Bookshop.

The fact that the Amazon region has a very rich and diverse flora — it contains some 16% of all the world's plants — is perhaps well known. What is not widely known is that the Amazon is a unique and dense reservoir of trees producing valuable plant oils.

These oils are used for every sort of purpose — cooking oil, edible margarine, fuel oil, protective coatings similar to linseed oil, and a number of medicinal and industrial uses. Some of the edible oils are of very high quality, at least the equivalent of olive oil. Some are solids like fats or waxes, some are liquid at very low temperatures and would make specialist lubricants.

Most of the world's plant oils comes from only ten or so species. This book describes over 300 different species, some producing two different oils, one from the fruit, and one from the seed kernel. It is an unmatched source of botanical, chemical, commercial and cultural information on these actual or potential crop trees.

The book itself has a fascinating history. In the early 1940s, an American research scientist, Richard Schultes, was in Belem, on the mouth of the Amazon, during a project on rubber trees (also Amazon natives).

He was offered a thick pamphlet by a street pedlar — this was Pesce's original book.

Pesce himself was an Italian migrant to Brazil who had worked as a merchant and factory owner in the oilseeds business for many years. He realized the immense potential of these Amazon oilseeds, and wrote and published the book to assist in their development.

In 1979 Schultes commented, within an article in the journal 'Economic Botany', that the book was very valuable and merited translation into English from the original Portuguese. The comment was picked up by Dennis Johnson, a geographer specialising in Brazil.

Johnson could speak Portuguese and, by chance, had also previously bought a copy of the book in Belem and realised its value. Johnson undertook both to translate the original book and also to rearrange, update, and expand it, adding illustrations and bibliographies and indexes.

This fascinating book is highly recommended for anyone interested in the development of new tree crop industries, especially in more tropical climates.

AT LAST .. A MACADAMIA HAND CRACKER

At long last an inexpensive nut cracker has been produced which will really crack macadamias (as well as other nuts).

The cracker operates on a screw principle, and will crack a macadamia in about 10 seconds. It is being sold under the

trade name 'BONK' (Bart's Original Nut Kracker).

You may be able to buy it in your local hardware store, and Granny Smith's Bookshop is also selling the crackers at \$11.95 each—quite a nice Christmas present?

Hodgsonia

[Editor's Note: the following letter was received by David Noel from Dr Keith Hammett of DSIR, New Zealand, in response to a request for information on Hodgsonia. This is a species of perennial cucurbit (pumpkin or gourd) which has very large oily seeds of possible food value. It is a native of Southeast Asia. Other related species with large oily seeds are *Telfairea pedata* (from Africa) and *Fevillea* species (from South America). Dr Hammett's work on Hodgsonia was mentioned in the New Zealand magazine *Growing Today*].

Our interest in Hodgsonia is slight. It arose because a Chinese scientist who worked here for a period felt he owed us something in return.

He sent seed about a year ago which I raised in my glasshouse at home. The seed is very large. Germination was good and growth rapid despite it being winter. In early summer plants were planted in various locations. Two were put in the tropical house in Auckland Domain lest the ones planted outside do not survive the winter. I have just spoken on the telephone to the curator who tells me the plants are doing well.

I had not found a great deal about the plant in the literature apart from botanical

treatments. For this reason I am grateful for the references you have indicated.

The Chinese scientist had indicated that the plant is dioecious and that male and female plants are distinguishable in the vegetative state.

As I was to visit Malaysia last year I arranged to visit South China to see the plants growing. In fact I saw the plants from which seed had been collected and sent to me.

Although part of the plant's range is Malaysia I found no one who seemed to know much of the plant. Certainly there was no interest in it.

Keith Hammett, DSIR, Private Bag, Auckland, New Zealand

[Farm Note No. 37, 1988]

Tax concessions for combatting land degradation

The Taxation Department is now providing concessions for primary producers who spend money on combatting land degradation, by allowing such expenditure to be fully tax-deductible in the year incurred.

Land degradation is any process which makes the land less useful, and in WA covers wind and water erosion, salinity, flooding, and the removal or deterioration of natural or introduced vegetation. In addition, soil acidity, waterlogging, non-wetting and compaction of soil are all contributing to soil degradation.

It is encouraging that the Taxation Department has recognised that there is a considerable problem in our farming districts with soil degradation and is taking practical steps to help farmers solve it. Examples of the sorts of expenditure the farmers can claim on are: establishing or re-establishing plant cover on eroded areas; fencing to exclude stock from areas where tree planting has taken place to reduce salinity; and a range of activities associated with tree planting.

Exotics: Tolerable Minimum Temperatures

Name	Celsius		
Abiu	+1	Lychee	-3
Acerola	+1	Macadamia	-2
Black Sapote	-1	Madrono	+1
Breadfruit	+8	Malay Apple	+1
Casimiroa	-5	Mamey Americana	+1
Charichuela	+1	Mamey Sapote	+1
Durian	+3	Mamoncillo	-2
Fiji Longan	+1	Mango	+1
Galip/Pili Nut	+1	Mangosteen	+3
Grumichama	-2	Marang	+5
Guava	-2	Miracle Fruit	+1
Inga	+1	Nutmeg	+1
Jaboticaba	-3	Okari Nut	+1
Jakfruit/Chempedak	+1	Pitaya	+1
Jelly Palm	-5	Pitomba	-2
Jujube	-2	Pomelo	+3
Langsat/Duku	+1	Rambai/Tampoi	+1
Longan	-3	Rambutan/Pulasan	+3
		Rio Grande Cherry	-6
		Rollinia	+1
		Rose Apple	+1
		Salak Palm	+1
		Santol	+1
		Sapodilla	-2
		South American Sapote	+1
		Spondias	+1
		Star Apple	-3
		Uvilla	+1
		Wampee	-4

WANATCA LINKS UP WITH NASAA

The Association has recently affiliated with the National Association for Sustainable Agriculture, Australia.

NASAA is a body set up to encourage methods of land use which do not rely on synthetic chemicals for their continuing viability. One of their main activities at present is the setting up of a Certification System for 'Organic' farmers and produce.

The NASAA newsletter is received by us and is on display at out general meetings.

John Marshall

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Forest Food

As tropical rainforest is so rich in plant species, it is not surprising that among them are some that could be developed as food plants. (This is in addition to the valuable timbers and other products, such as rubber, that come from the world's stock of rainforest trees.)

Several popular fruits (like bananas) and nuts (such as the Brazil nut) are derived from tropical forest plants that have undergone selection for the traits we find desirable — usually increased size and palatability.

Obviously the products of 'new' plants found in the forest may also benefit from some selection to enhance their potential, but before deciding on improvements we face the problem of identifying what is edible in the first place.

In Australia we are lucky: the Aborigines have identified many edible plants — for example, the kernels of two Queensland tropical rainforest trees. Mr Tony Irvine, of the Atherton Centre, has investigated the food potential of these plants.

The result is the re-discovery of two very pleasant types of nut — the Atherton nut, or 'black-and-tans', from the tree *Athertonia diversifolia*, and the Kuranda quandong (not related to the quandong fruit of the inland) from *Elaeocarpus bancroftii*. The nuts must be removed from within their fleshy fruits, and can be eaten fresh, or dried and then kept.

Mr Irvine's travels in the forest and knowledge of Aboriginal lore have enabled him also to identify scientifically some edible fruits with unusual flavours. The lemon aspen, for example is a small white fruit with a very refreshing taste. We can eat it raw, although some may consider it a little sharp, and it certainly makes excellent marmalade.

Also tart, the native tamarind has an orange flesh and is rather more acid; however, it has a flavour that, when sweetened a little would go well in a cordial.

By contrast, *Buchanania arborescens*, which has no common name, is a tree that produces sweet, black, stone-bearing fruits. It belongs to the same plant family as cashews and mangoes. Another sweet fruit, tasting similar to a cherry, comes from *Eugenia reinwardtiana*.

Figs are well known and popular — and we have several species of fig tree, one of which produces edible sweet brown fruit two or three times a year. The tree's botanical name is *Ficus copiosa*, which means literally 'plentiful fig'.

To close the list of native rainforest food plants we currently know of, we should include the *Davidsonia* plant — a large, garishly covered fruit with a blue skin and bright red flesh. Before eating this one, you need to remove the irritating hairs in the skin. It is decidedly acidic and you may prefer to use it for jam or wine, as the early European settlers did.

(Having tried some of the fruits and nuts in the course of his research for this article, your Ecos correspondent can personally recommend them.)

Now, recognising what's good to eat in the forest is still a long way from commercial production of marketable fruits. Horticulturalists would need to invest a lot of money in investigating the flowering and fruiting biology of the plants and the factors that affect

their yield, and in selective breeding of them.

The Queensland Department of Primary Industries is currently interested in the two edible nuts, but recognises the problems involved in placing a new product on the market. Macadamia nuts, from a tree native to southern Queensland and northern New South Wales, required many years of developmental work before they became a commercial proposition.

Sadly, most of this occurred in Hawaii, following the collection of macadamia seeds by Americans who recognise their potential earlier this century. Although Australia is now producing them, many of the world's macadamias still come from Hawaii! Let's hope Australia won't miss out again.

Athertonia has some advantages over macadamia trees. The fruit ripens more evenly and the shell cleaves into two halves, which may make them easier to remove. And Athertonia could be used for more than just its nuts: the tree itself has attractive foliage and form, which may make it popu-

lar as an ornamental, and the flowers attract the domestic honey-bee.

In his research, Mr Irvine has, unfortunately, not gone personally unscathed. On one occasion he became very sick after eating less than 1/2 gram of a fruit that he was investigating. The occasional accident such as this is more or less unavoidable if you really want to discover new sources of food. The rest of us are lucky — we needn't worry about poisoning every time we bite into an apple or banana, thanks to brave people like Mr Irvine who, thousands of years ago, demonstrated the safety of what have become the common fruits of today.

Further Reading

A.K. Irvine: 'Commercial prospects for edible nuts of *Athertonia diversifolia* (C.T. White) L. Johnson & Briggs (Proteaceae), and *Elaeocarpus bancroftii* F. Muell. and F.M. Bailey (Elaeocarpaceae)'. In 'The Food Potential of Seeds from Australian Native Plants'. Proceedings of Colloquium, Deakin University, 7 March 1984, 1985, 174-89.

CHINESE AGROFORESTERS TO VISIT

A fundraising dinner is to be held to support a visit by a group of Chinese Agroforesters to W.A. later in the year.

Henry Esbenschade asks for your support in this. The invitation is reproduced here—actual tickets can be obtained from the address at the bottom or from the Tree Crops Centre.

An invitation to a

Fundraising Dinner for Proposed Visit of

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**Wednesday August 31, 6 pm for 6:30 start
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Henry Esbenschade (President, ITCI (International Tree Crops Institute): "The Institute — Its Purposes and Objectives"

Cost \$20 includes hot entree, buffet, coffee, cheese & biscuits

Sponsored by W.A. Agroforestry Working Group
and International Tree Crops Institute (Australia)

Further details: *All Forest Tree Services - (09) 321 5386*

[West Australian, July 17, 1987]

Small Seed Business Blossoms

A one-man business that planted seeds on WA's arid land has blossomed into the Australian Revegetation Corp Ltd and a possible second board listing.

The company was started 17 years ago by managing director Stephen Hill and now employs 13 people at an office in Osborne Park and a development farm at Moora.

It has contracts worldwide, including a soil erosion project in Jordan, and is a consultant for the Mines Department in WA and Victoria on the rehabilitation of old mine sites.

"The sky's the limit," is how recently-appointed finance controller John Bird yesterday described the future potential of the company, which has branched into three divisions specialising in seeds, machinery and consulting.

"There is loads of desert to revegetate in Australia and the aid programmes are beginning to realise it's no good dumping food on people without helping them to revegetate their land," he said. As well as supplying native tree, salt-tolerant shrub and marram grass seeds to farmers and gov-

ernment departments in Australia, ARC supplies seeds and machinery to the United Nations Food and Agriculture Organisation for overseas aid programmes.

According to Mr Bird the company has contracts to supply seeding machinery to a German Company in Tunisia and seeds for private revegetation schemes in the Middle East.

In Australia, it has designed equipment for mine-site rehabilitation and developed specialist water harvesting techniques to prevent soil erosion.

For the 1985-86 financial year, a turnover of \$910,000 was posted by the three divisions — Kimberley Seeds, Australian Revegetation Machinery, and Environmental Consultants.

Janet Newman

(Kimberley Seeds have been WANATCA members for some years)

[Australian Financial Review, 10 February 1988]

Queensland gives green light for 'first' cashew plantation

Queensland Cabinet has given the go-ahead for what it claims will be Australia's first commercial cashew nut plantation.

Former clothing retailer, Peter Shearer Pty Ltd will build the plantation at Cape York at a cost of \$2.3 million over the next three years.

Queensland Minister for Land Management, Mr. Bill Glasson, said Australia was about the third largest consumer of cashew nuts in the world, yet it imported 100 per cent of its requirements.

However, Australian Bureau of Statistics figures show that one tonne of cashews were produced domestically during the year ended March 1986.

The plantation is expected to operate at a loss for the first seven to eight years.

BOOK NOTES

A large number of useful tree crops books (and a video) have come to notice recently, too many to review each in detail. Brief notes on some of these follow — some may be reviewed in detail later.

(Books)

- AUSTRALIAN HAZELNUT. Tokolyi (Aust, 1988). 50p. Pb. Reprint of this pioneer work again available. \$8.95
- AUSTRALIAN PLANT GENERA. Baines (SGAP, 1981). 406p. Pb. First-class source of information on every Australian plant species, absolutely indispensable. Highly recommended. \$10.95
- COMPOSTING (CSIRO, 1986). 20p. Pb. Handy summary. \$2.00
- ALL about LEMON TREES. Hicks (Aust, 1988). 64p. Pb. Covers subject well. \$7.95
- GINSENG: the Myth and the Truth. Hou (US, 1978). 245p. Thorough and balanced account of all aspects of this noted medicinal plant. \$9.95
- OIL PALMS and other OILSEEDS of the AMAZON. Pesce (US, 1985). 200p. Hb. Unique source of information on (mostly unexploited) immensely rich flora producing plant oils of every sort. Highly recommended. \$42.95
- MINERAL NUTRITION of FRUIT CROPS. Bose (India, 1988). 773p. Hb. Massive, comprehensive compendium of world literature on nutrition of all major tropical, subtropical and temperate fruit and nut crops. For the professional. Recommended. \$69.75
- FOOD POTENTIAL of SEEDS from AUSTRALIAN NATIVE Plants. Jones (Aust, 1985). 212p. Pb. 15 papers from the symposium at Deakin University, useful source material. Recommended. \$19.95
- FRUIT COOKBOOK. Jonas (Aust, 1985) 238p. Hb. Well-produced, interesting Australian book covering a big range of fruits. Recommended. \$12.95
- GROWING CITRUS TREES. Godden (Aust, 1988) 137p. Pb. Complete practical guide to all aspects of citrus culture in Australia. \$16.95
- GROWING CUSTARD APPLES. Sanewski (Qld, 1988) 86p. Pb. First book on the subject, an excellent practical guide from the DPI. Highly recommended. \$14.95
- LANGUAGE of BOTANY. Debenham (SGAP) 208p. Pb. Detailed dictionary of botanical terms from the Society for Growing Australian Plants. \$10.95
- MANGO in AUSTRALIA. Alexander (CSIRO, 1988). 28p. Pb. Another quality CSIRO summary, well illustrated. \$7.00
- MINERAL NUTRITION of FRUIT CROPS. Bose (India, 1988). 773p. Hb.

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• NORTH AUSTRALIAN PLANTS. Harmcr (SGAP). 132p. Pb. Detailed analysis of native plants of the 'Top End' of NT, beautiful colour photos. \$12.30

• PRODUCTION of GRAPES & WINE in COOL CLIMATES. Jackson (Aust, 1987). 192p. Bds. Comprehensive professional handbook. \$35.00

• TREE CROPS, a PERMANENT AGRICULTURE. J Russell Smith (US, 1988). 404p. Pb. Reprint of the classic work which established the whole rationale of tree crops as an essential component of land use. Essential (and enjoyable) reading, highest

possible recommendation. \$26.95

• USE of FODDER TREES & SHRUBS. Everist (Qld, 1986). 70p. Pb. New edition of popular DPI handbook. Recommended. \$7.75

• WEST AUSTRALIAN PLANTS for HORTICULTURE, Pts 1 & 2. Newbey (SGAP). 128p ea. Pb. Invaluable information, somewhat disorganized, excellent photos. \$10.75 ea.

(Videocassette)

• TAGASASTE STORY. Wesfarmers, 1988. 30 min VHS. Development of tree lucerne as a fodder crop in W.A. \$40.00

(The above items are currently available from Granny Smith's Bookshop at the prices stated.)

[Growing Today, April/May 1988]

Hazel Propagation Tip from N.Z.

While visiting Roland and Betty Clark back in February, I was intrigued to see what I think is a marvellous way to propagate hazels from suckers.

Drop a tyre (the bigger the better) over the hazel you wish to multiply. If there are already some long suckers, bend them down and place the tyre on the top, these will form roots under the tyre.

Once the tyre is in place, allow suckers to grow above tyre height, then start introducing soil, sawdust or compost into the tyre over the spring and early summer.

A refinement I would add is that where possible before introducing the fill, twist a piece of copper wire around the base of the suckers, to cause restriction, which will later aid root formation above the wire. I find that first year suckers of Barcelona and

Butler have few roots formed. Wire restriction overcomes this.

Now you sit back and watch your suckers grow. Come July-August, remove your tyre and scrape away the filling to expose all those beautifully rooted suckers, which you then remove at ground level with a very sharp pair of secateurs. Then replace the tyre ready for the next season's crop of suckers.

If your main concern is the production of plants I have found shortening back the mother plant, quite hard initiates more suckers.

Tom Dinning

Home Processing of Cashew Nuts

Both the nut (after processing), and the apple of the Cashew are edible.

The apple (the large fleshy fruit at the top of the nut) can be eaten at a stage when it is just ready to fall naturally. Care should be taken as the apple is very attractive to fruit flies. Some people find that their mouth blister from eating the apple, so one should experiment a few times before eating any quantity of the fruit. Flavour of the apple varies considerably from tree to tree.

When considering the processing of the nuts it should be remembered that the shell of the nut contains a blistering caustic sap which is released if the shell is damaged in any way. **Do not attempt to crack the unprocessed nuts.**

The processing consists of roasting the nuts at 350-499°F(180-200°C) for 10-20 minutes on fine sand to extract the caustic cashew nut oil. The oil may spurt from the shells when the nut is heated. During this initial roasting the sand will take up the oil and prevent the oil from spurting. **Never attempt this initial roasting without first covering the nuts or else having a lid on the container.**

The temperature used for roasting has to be hot enough to cause the kernel to dry

out. Temperatures of 450-500°F (230-260°C) will cause the oil to vapourise and issue as a choling cloud from the oven as well as causing the kernel to dry out.

A small amount of experimentation may be needed to obtain the exact temperature and time needed for oil extraction.

Care should be taken to avoid inhaling the fumes given off during roasting.

Preferably use an old dish when doing the initial roasting of the nuts as the oil may be difficult to remove from the dish after bakin is finished.

After the initial roasting the nuts are sieved out of the sand and washed in water an detergent to remove the final traces of oil. Care should be taken not to wipe your face or eyes with your hands while washing or cracking the nuts, because of the possible residue of caustic oil.

The nuts are then cracked and the kernels freed of the thin brown skin.

The final process is roasting the kernels in coconut oil at 300°F (150°C) for 5 minutes.

Extracts from Ingham Branch Oct. 1977 Newsletter, extracted from Qld DPI Horticultural Branch. RFCA Newsletter, March 1988

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SELECTION FOR A BETTER QUANDONG

Part 3 (Continued from May 1988)

Alternatively, a number of sterilised seeds may be placed in a plastic bag with moist, sterile vermiculite for germination. The bags should be examined every couple of weeks, and any germinated seed with roots more than two centimetres long can be transferred to pots. It is also possible to plant the germinated seedlings directly into the ground at this stage. Germination takes place best at about 16-20° C.

As quandongs are root parasites it is essential to provide a suitable host. Once the seedlings have reached 5 - 6 cm in height a host should be provided. Lucerne, clover, kykuyu as well as a number of Australian native plants appear to act as suitable hosts. Once planted into the ground it is essential to keep the young plants moist. Although the trees grow naturally in quite arid conditions, they seem to do well with at least some irrigation in the drier areas.

Grafting

As mentioned above, there is enormous variability in quandong seedlings. Therefore, if a uniform orchard is desired, the seedlings should be grafted, using suitable scion material. CSIRO still believes that more research needs to be done on propagation and grafting. The preferred time for grafting is around September and October. The scion material is prepared by cincturing the shoot below the desired material about two weeks before grafting is proposed. When grafting, the leaves are removed from the scion. A simple splice graft, a whip and tongue, or a wedge graft can be used. The graft should be carefully wrapped with grafting tape. A polythene bag placed over the scion and graft to maintain humidity for a period has proved advantageous. The young trees appear to respond to some fertiliser, and a slow release

fertiliser with iron has been used.

Provided the grower is prepared to wait, trees can be grown as seedlings until they start to produce fruit, and then selected. Trees that are slow to fruit, or that produce less than satisfactory fruit, can then be field-grafted to a more suitable selection. Young trees grafted in a glasshouse have produced fruit two years after planting in the field at Koorlong.

Future Research

The research already carried out by CSIRO suggests the possibility of exciting times ahead. The wide variability already in evidence indicates that further selection may well bring outstanding rewards in relation to total yield per tree, fruit size, percentage flesh and fruit shape, colour and rain tolerance.

There are certainly detectable differences in flavour, but if the quandong is to receive general acceptance as a fresh fruit, rather than a processed fruit, it seems essential to find better flavoured fruit. Selection will continue, both from within the orchards already established and from wild trees and other domestic plantings, to select fruit for good flavour, large size, high yield and good weather tolerance.

With breeding, there is potential to produce fruit with good flavour, a fruit size of at least 15 grams, and possibly of more than 20 gm, with at least 70 percent flesh and a yield of at least 20 kg per tree. Initial selection from existing plantings, together with some breeding, may be required, to bring together two or more desirable characteristics within a single plant.

The ability of the quandong to grow when irrigated with saline water, as at Quorn, suggests that selection for enhanced salt tolerance may also be possible. There is a need to improve the germination, propagation and establishment techniques if the crop is to have commercial potential. Of major importance is the ability to quickly multiply up the better selections.

The people of the bush who know the quandong certainly love it. The question is, can it be developed for the sophisticated and pampered palate of the populace at large?

John Possingham

Further Reading

Cribb A.B. & Cribb J.W. 1974. *Wild Food in Australia*. Collins.

Curtis B.V. 1974. Spare a Spot for the Santalum, 'Australian Plants', Vol.7, p 337-338.

Grant W.J. R. & Buttrose M.S. 1978. Santalum Fruit—Domestication of the Quandong, *Santalum acuminatum* (R.Br.) A.D.C. 'Australian Plants', Vol 9, p. 216-31.

Maiden J.H. 1889. *The Useful Native Plants of Australia*. Compendium (1975).

Sedgley M. 1982. Preliminary Assessment of an Orchard of Quandong Seedling Trees, 'The Journal of the Australian Institute of Agricultural Science', Vol 45, pp. 52-56.

Sedgley M. 1984. Australia's First Commercial Fruit? 'Australian Horticulture', Vol 82(10), pp 52-59.

1987 Yearbook Published

The 1987 WANATCA YEARBOOK (Volume 12) has been published and mailed out to all members who subscribed for 1987. Comments received to date have been very complimentary about the standard of presentation and contents of this 'new look' issue.

The 1987 Yearbook is available for sale from the secretary, Lorna Budd, at \$20.00. However, current WANATCA members who subscribed since 1987 can get a special discount rate of \$15.00.

Work has begun already on the 1988 Yearbook, and it is hoped to have this ready for issue in early 1989.

West Australian Nut & Tree Crop Association (Inc)

PO Box 565 Subiaco WA 6008 Australia

EXECUTIVE COMMITTEE 1988

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POMEGRANATE: Marius Loeffler, 097-33 5220 (P.O. Box 22, Yarloop 6218)
CHERRY: Neville Shorter, 367 7879 (62 Preston Street, Como 6152)

CALENDAR OF FORTHCOMING EVENTS

1988

- Aug 15-19 §ACOTANC-4 Conference, Lismore, NSW (4th Australasian Conference on Tree & Nut Crops)
- Aug 17 Wed *General Meeting (Shorter: Growing macadamias in W.A.)
- Sep 4 Sun Field Trip: Greening Australia Hamel Nursery, Waroona; Loeffler Property, Yarloop
- Oct 18 Tue Executive Committee Meeting
- Nov 16 Wed *Annual General Meeting

1989

- Sep 25-29 § 3rd International Mango Symposium, Darwin

*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.

§ For contact details refer to the Tree Crops Centre

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
(includes all publications for the year). Student Rate: \$15.00

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