

# QUANDONG

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August 1981.

Newsletter of West Australian Nut & Tree Crop Association

\$1.00

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NEXT MEETING.

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WEDNESDAY AUGUST 26, 1981.

SUBIACO LIBRARY MEETING ROOM.

7.30 P.M.

( CNR ROKEBY AND BAGOT ROAD, SUBIACO ).

\*

**--STOP PRESS --**

DON MAGGS of CSIRO Horticultural Research Merbein, Victoria will be in Perth on August 26, and he has agreed to speak on **PISTACHIO GROWING** (DON PIONEERED PISTACHIO GROWING IN AUSTRALIA).

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Hawson,  
ing on:

WEST AUSTRALIAN NUT AND TREE CROP ASSOCIATION.

I would like to bring to the attention of all members that the Society has now changed its name to the above to give it a wider scope. The motion was put to the last meeting and carried. In keeping with this move an article on "Avocadoes" will be included in future issues with particular interest in rarefruits.



# **West Australian Nut & Tree Crop Association**

*Incorporating the West Australian Nutgrowing Society*

## BOARD OF DIRECTORS.

Peter Good	President	341 4741
Alex Sas	Vice President	397 5628
Lorna Budd	Sec/Treasurer	458 5918
David Noel		381 7341

## WANS CONVENORS.

Cashew	Derek White. P.O.Box 249 KUNUNURRA. 6473
Little known nuts	David Noel. P.O.Box 27. SUBIACO 6008
Marketing	John Mercer. 45. Bridgewater Dr. KALAROO. 6025 401 4031
Nutrition	Alex Sas 52. Croydon Rd. ROLEYSTONE. 6111 397 5628
Seed supply )	Milan Mirkovic, P.O.Box 69.
Tree supply )	WEST PERTH. 6005
Walnut	Tom Speer. P.O.Box 71 BRIDGETOWN, 6225 (097) 61 1713

## SOCIETY PUBLICATIONS.

Wans publishes its newsletter QUANDONG four times a year. This is devoted to news of meetings and events, details of tree and seed sources, notes about books and pamphlets dealing with nuts, reprinted short articles, notes from members, and other items of interest. The major publication is the annual WANS YEARBOOK, which contains articles drawn from Australia and overseas. covering any aspect of nut horticulture and production, and is regarded as an important research journal in this area. Members receive one copy of each WANS publication as a subscription benefit. YEARBOOK EDITOR. Mr. P. Good President. QUANDONG EDITOR. Mr. Tony Bryant. P.O.Box 98. Gosnells. W.A. 9109. Ph. 459 2449. BACK NUMBERS. WANS began publishing in 1975. Back numbers of publications are still available. Some issues of QUANDONG are available only in photocopy form. Cost of each YEARBOOK is \$6.00: cost of a one-year set of QUANDONG (3 or 4 issues) is \$2.00. Please contact the Secretary for back numbers.

## MEMBERSHIP.

Any person or organisation interested in growing or production of nuts may subscribe for membership. Members are welcomed from outside Western Australia and overseas, as well as in W.A.

Write to P.O. Box 27, Subiaco, W.A. 6008. The current membership subscription rate, which runs for a calendar year and covers all publications issued in that year is \$10.00.

WANSO CO-OPERATIVE ANNUAL GENERAL MEETING HELD ON FEBRUARY 25, 1981.

Points from Meeting.

1. As per notice of meeting resolutions 1 and 2 were passed unanimously.
2. At present Co-operative has cash at Building Society of \$673.00.
3. Co-operative has been placed in hibernation. Should any member have any ideas how the Co-operative could be utilised please contact the Chairman, Mr. David Noel.

N.B

OUR NEW SECRETARY/TREASURER is Mrs. Lorna Budd, and for anyone wishing to contact her the address is:-

MRS. LORNA BUDD. phone 458-5918  
117 THOMAS ST.  
EAST CANNINGTON. W.A. 6107.

Lorna is joining us at a time of change within the ranks and with her a few changes I feel will be welcomed by members, such as the extension of the Society and thus the new name. Also as of next year a separate invoice will be sent for members fees, instead of constant reminders in "Quandong".

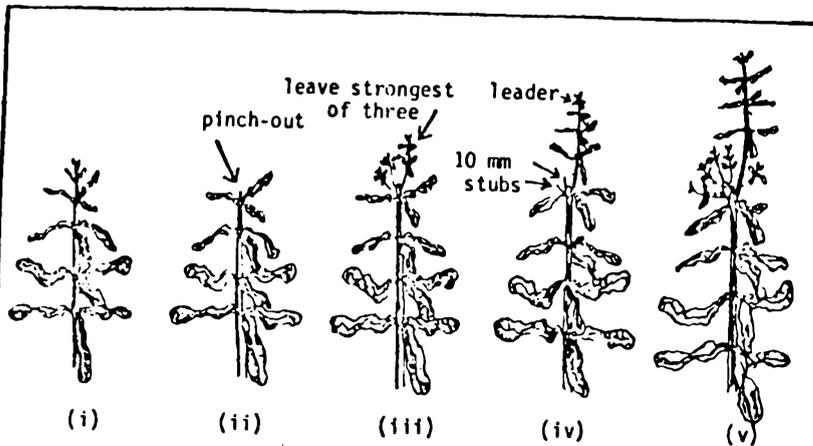
Our first article for August is:-

" TRAINING OF MACADAMIAS. "

The purpose of tree training is to develop a tree of balanced structure that is resistant to wind breakage. If growth is left unchecked, from when the tree is first planted, wide-angle "crotches" will develop too close to the ground. Branching of this type can be structurally unsound and splitting may occur in strong wind. For this reason it is desirable to train the tree from the time of planting.

It is however widely accepted that training will slow the development of a tree for up to two years, but this is made up for in later years because a trained tree is more easily managed and is, on balance, more productive than one that has "grown like topsy". Opinions still differ on the preferred method of training but the most widely adopted is shown in the diagram below.

The aim is to develop a tree with a single leader (main stem) with side branching starting at between 0.8-1.0 metre. The next level at 1.5 metre and finally at 2.0 metres. Upwards of 2.0 metres training should still be practised but branching does not need to be so carefully controlled and some indiscriminate branching can be let to run its course. Ultimately there should be no branches below the 0.8-1.0 metre level and any that arise should be pinched off.



### STEP 1

When tree is between 800-1000 mm high (i) pinch-out growing tip (ii). Three new shoots will develop just below pinch. When new shoots are about 100 mm (4") long keep the strongest and healthiest (iii) but pinch-off other two leaving a stub 10 mm ( $\frac{1}{2}$ ") long on each (iv). The remaining leader (v) will continue to grow upwards.

### STEP 2

When the remaining leader (from (v) above) has grown 500 mm (18") repeat Step 1 on the growing tip of this leader. (The growing tip should be about 1.5 metres above the ground at this stage).

### STEP 3

When the new leader from Step 2 has grown 500 mm (16") repeat Step 1 on the growing tip of this leader. (The growing tip should be about 2.0 metres above the ground at this stage).

Source :- With kind permission:

Mr. T.L. Turner.

Notes on the Culture of the

HOW TO SET UP A TISSUE CULTURE LABORATORY.

Many people may feel inspired to try their hand at tissue culture either as a hobby or as an extension of a commercial nursery. Other people may simply want a tissue culture laboratory to do contract research for them to multiply a particular line of plants, or to use cultures as a means of bringing new material from overseas more easily through quarantine.

1. Courses.

To learn the various techniques of handling plant material, and how to prepare media, etc., it is convenient to do a course. In W.A. no courses are available, but in N.S.W. occasional two-week courses are conducted by Dr. Ron de Fossard.

2. Books of Instruction.

de Fossard, R.A. (1979). Tissue culture for plant propagators (University of New England Press)- \$15. from Department of Continuing Education, UNE Armidale.

Hutchinson, J.F. Peat, R. and Peat, N. (1976). A guide to plant tissue culture equipment. Available from Mr. J.J. Hutchinson, Horticultural Research Institute, P.O. box 174. Ferntree Gully, Victoria, 3156. Price \$1.00. Prices are a bit dated (1976) but at least it gives you a starting point.

A good description of how to set up a commercial laboratory is given in Damiano, C. (1980). Planning and building a tissue culture laboratory.

In Zimmerman (see general reference list) pages 93-101.

3. Media and Equipment.

One company, H.D. Scientific Supplies (address Below); provides kits for people starting in tissue culture.

Various companies provide standard media in powdered form or will make up media to your specifications and keep the ingredients confidential if you wish.

Flow Laboratories  
P.O. Box 91. Annandale. N.S.W. 2038

Local agent - Ramsey, 1064 Hay Street.  
Perth. W.A. 6005

)  
)  
) media in powder form  
) especially Murashige  
) and Skoog Media.

Medos (agent for Gibco Media  
P.O. Box 192. Port Melbourne,  
Vic. 3207.

Local address -. 90. Goodwood Pde.  
Rivervale, W.A. 6103.

H.D. Scientific Supplies Pty. Ltd.  
P.O. Box 2. Ryde. N.S.W. 2112.

) standard or special  
) Media.

Brian Kirkley )  
Plant Culture Laboratory ) Preparation of media  
104 Bray Rd. Lawton, Q. 4701 ) in tubes

4. Another Way to Obtain Information of Plant Tissue Culture is

to join the Australian Branch of the "International Association of Plant Tissue Culture", \$15.00 p.a. (\$8.00 for students). For this you obtain an international newsletter, and a local Australian one which gives information on new equipment and developments and their costs. Contact Mr. J.F. Hutchinson (Address above)

5. Most Growers do not Wish to do Their own Tissue Culture

but might be interested to get a professional tissue culture company to do it for them. In Western Australia, I know only one company prepared to do contract research into new methods for new species or to produce plants using established methods

Micro Culture

lot 60, Russell Road

Landsdale (What everyone knows as Wanneroo)

Contact Mr. Chris Newell 409 8801

Though another company will possibly be interested in doing so in a couple of years time.

Floratechnics

34 Cleaver Street

Belmont

Contact Mr. Stuart Newton. 227 1011

6. Bringing new Material into Australia through Quarantine

Australia is fortunate to be free of many serious plant and animal diseases and the only way that we can hope to continue to enjoy the benefits of this freedom is to strictly observe the quarantine regulations and to encourage others to do so. When plants are established in tissue culture it is reasonably certain that they are free of disease so tissue cultures are a relatively safe way of introducing new plant varieties into Australia. If one tries to bring in normal plants in soil, or even bare rooted, there is a strict limit on the number of plants that can be brought in (maybe two), and then they have to be grown in quarantine glasshouses for up to two years.

In some cases if the culture is already available in Australia new plants cannot be brought in. The regulations on tissue culture are much more liberal. There is no restriction on the number of cultures that can be imported, neither do plants have to be grown in the Department's quarantine glasshouses, though Agriculture Department inspectors may well wish to examine the plants after they are established in soil.

There are two ways of using tissue culture to get material through quarantine:

a. You can import a whole plant or branches of it,

take off the explants you need for establishing a tissue culture then destroy the remaining plant material. If you wish to do this, the laboratory in which the work is done needs to be registered by the local Agriculture Department plant quarantine people so the hobby plant collector/enthusiast cannot bring in material at will, but one of the local plant tissue culture laboratories might well contract to do it for you.

b. You can import cultures from overseas laboratory, and establish the plants in soil here. You do not need to have a registered plant tissue culture laboratory to do this. However there are still a few restrictions on what may be brought in because of the danger that even tissue cultures may carry internal virus diseases. Horticultural plants such as carnation, chrysanthemum, hydrangea or pelargonium, and fruits such as apples, pears, stone fruit and citrus must come from approved sources. There are less restrictions on the importation of nut species but even so, all requests to bring in commercial fruit and vegetable species are given 'individual consideration' in Canberra before approval is granted. The person to contact in Perth regarding imports of tissue cultured material is Mr. Colin Smith, Plant Quarantine Section, W.A. Agriculture Department, Jarrah Road South Perth.

#### 7. Visits to a tissue culture laboratory.

Some people doing tissue culture may be happy to answer questions on the phone, others may be willing to show you around.

Kings Park Board Research Section.  
Contact Miss Lyn Brighton. Ph. 321 5065.

Murdoch University  
School of Environmental & Life Sciences.  
Contact Dr. Jen McComb 332 2336.

Adrians Nursery  
Contact Mrs. Irene Bowden 417 9653.

Micro Culture  
Contact Mr. Chris Newell 409 8801.

#### 8. General References

Butcher, D.N. and Ingram, D.S. (1976). Plant Tissue Culture (Studies)

Biology No.65. (Edward Arnold. London.)  
Small easy to understand, but mostly on theory not practice.

de Fossard, R.A. (1979). Tissue Culture for Plant Propagators. (University of New England Press. \$15.

From Department of Continuing Education UNE  
Armidaie (Instructions and Recipes).

Hartman, H.T. and Kester. D.E. (1975). Plant Propagation Principles and Practices, 3rd. Ed. (Prentice Hall, New Jersey) (The standard horticultural text with one chapter on tissue culture).

Hutchinson. J.F., Peate, R. and Peate, N. (1976)  
A Guide to plant Tissue Culture Equipment.  
Available from M.J.F. Hutchinson. Horticultural Research Ins.  
P.O. Box 174. FERNTREE GULLY Vic. 3156.  
Price \$1.00 (useful but prices out of date).

Pierik, R.L.M. (1979) InVitro culture of higher plants. A list of references Formethods for various species) distributed by Kniphorst Scientific Bookshop  
P.O. Box 67. 6700 AB Wageningen.  
The Netherlands. (US \$32. in 1980)

Reinert, J. and Bajaj, Y.P.S. (1977) Plant Cell Tissue and Organ Culture (Springer Verlag. Berlin).  
Advanced text, expensive with review papers having extensive bibliographies.

Street. H.E. (1977) Plant Tissue and Cell Culture (Botanical Monographs No. 11). Advanced text.

Zimmerman, R.H. (1980) Proceedings of the Conference on Nursery Production of Fruit Plants Through Tissue Culture - Applications and Feasibility (Agricultural Research, Science and Education, USDA, Beltsville, Maryland, USA. 20705). (Available from Zimmerman, Fruit Laboratory, Beltsville, Agricultural Research Center-West, Beltsville, Maryland, US20705.

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ADVERTISEMENT.

"Grafted Pecan trees ex open ground ready for despatch during July - August

Large assortment of old and new varieties.

Free catalogue and Pecan leaflet on request.

FROM- FITZROY NURSERIES,  
Pink Lily.  
Rockhampton.  
Q. 4700.

POSTAL AD. P. O. Box 859. Rockhampton. Q. 4700.

DISABLED GARDENERS ASSOCIATION.

8 Spring Road.  
Roleystone.  
Ph. 396 5036.

May 1981.

Dear Members,

The Disabled Gardeners Association of W.A., wishes to establish a task force of able bodied people to give occasional assistance to disabled people in their gardening activities.

This would involve having a list of names of people who would be able to be called upon to help disabled people living in their suburb with tasks they are unable to do for themselves, for example, turning a compost heap, pruning a fruit tree, repairing or building a shade bench. The need to call would not be often if sufficient people were willing to lend a hand.

Would those people who are willing please send their names, addresses, and telephone numbers to the above address.

Included is some further information about our association.

Yours faithfully,

Christine Wildman,  
Task Force Co-ordinator.

The DISABLED GARDENERS ASSOCIATION has been formed by disabled people, for disabled people. It wants to help the disabled help themselves in carrying on the type of gardening they would like to do.

Type and degree of disability do no longer need to be a barrier for disabled people to engage themselves in gardening, in one way or another.

The association wants to be of assistance to people with all types of disabilities wherever they are; at home, nursing homes or hospitals. These are the services we want to provide:

1. Design, Manufacture and supply aids and splints.
2. More able-bodied volunteer help where aids, splints and structures are not sufficient. (e.g. turn a compost heap, mix soil etc.).
3. Financial assistance in certain cases.
4. A Link-System of addresses of fellow disabled gardeners.
5. A library containing relevant information of gardening with a disability.
6. A quarterly Newsletter.
7. Meetings to view and discuss each other's efforts and findings and exchange experiences.
8. Help with transport where necessary and relating to gardening efforts.
9. Horticultural advice.
10. To offer advice and a range of options in ways of gardening for people with a disability.

To be involved with Nature in some way is a need that we all have. For the more dependent disabled person it can especially be very soul-satisfying to see a plant respond to his or her love and care. For others it may be possible to grow and sell seedlings and pot plants from a backyard business, or grow their own vegetables, orchids, bonsai trees, mushrooms etc.

Membership is open to anyone with an interest in gardening for the disabled.

SEX CHANGE IN AVOCADOES. \_ a matter of timing.

of all the bizarre sexual arrangements plants have, a few are as unusual as those of the avocado tree. Its flowers function as females for a few hours, close, and then re-open as males the following day. The timing of this sexual switch is so rigid that a tree rarely has flowers in both male and female stages at the same time.

Fortunately for avocado-lovers, two distinct flowering patterns occur in different varieties making cross-pollination possible. In some varieties the flowers are female in the morning, close up around noon, and bloom as males in the afternoon of the following day. In others the flowers open as females in the afternoon, close at night, and re-open as males the following morning. Of course while a flower lives for only 2 days, each tree has thousands of them that open and close on different days throughout the 2-8 week flowering season. By planting two varieties with contrasting flowering patterns, a grower can ensure that some male and female flowers are open at the same time throughout most of the season.

In the orchards of the CSIRO Division of Horticultural Research at Merbein and Coomealla, Mr. Don Alexander has been studying flowering in the 40 or so avocado clones grown by the Division.

He has worked out the best cross-pollinators for the two main commercial lines in the Murray Valley - Fuerte and Hass.

In the case of Fuerte, which flowers in early to mid October when the weather is quite variable., the selection of cross-pollinators is not so critical. This is because cool cloudy conditions effect the sex-change process and the male and female stages can overlap.

Mr. Alexander has established that the flowering times of Fuerte overlap with those of Rincon and Jalna, which both have a contrasting flowering pattern. At the prevailing temperatures Fuerte can also be pollinated by Zutano, Bacon and Edranol, which have the same flowering pattern.

With Hass, the other common commercial line, it's a different story. This cultivar differs from Fuerte in having a knobbly purple-black skin and a rounder shape, it flowers in mid to late October, when temperatures are higher and flower opening and closing is much more regular. The flowering times of Fuerte and Hass do not overlap often enough for them to be successful mutual pollinators around Merbein. Varieties with a contrasting flower pattern that can reliably pollinate Hass in the area include Bacon, Edranol, and Sharwil.

MEMBERS CORNER.

NUTLAND NURSERY.  
LOT 6 CARABOODA ROAD.  
WANNEROO, 6065.

By Lois Evans.  
PH. (09) 407 5474.

The beginnings.....

In late 1977, my husband Ted Evans and I decided to "grow nuts" on our two acre property at Gosnells.

Being a pair of greenhorns in this field we approached a friend, Mal Washer, who was among the first in W.A. to realize the potential of nut crops, and had with another partner, established a Pecan orchard in the S.W. Mal had been "talking nuts" for some time and we knew he had accumulated information of Pecans which would be of value to us.

Fortunately for the project, Mal was enthusiastic. To our delight his reaction was to allow us to share his "secrets" in return for a half share in the venture!.....A partnership was formed.

Gradually, after a bit of early meandering, our aims became clear. As there was no supplier of quality grafted trees in W.A. our first step would be to establish a nursery. To this end, Mals wife Nola and I enrolled in the Certificate of Horticulture course at Bentley Tech., a move which later was to be of immense value to the project.

One thing led to another as interest and demand for nut trees snow-balled. It soon became apparent that Gosnells was unsuitable, (for various reasons Eg. high winds and lack of water,) so my husband and I made the rather drastic decision to sell our home and re-invest in another site in partnership with the Washers.

NUTLAND NURSERY, WANNEROO began on a virgin, 8½ hectare property in late 1978. Ted a Civil Engineer by profession was most well equipped to handle development of the site, and due to his efforts from planning onwards, each stage smoothly followed the other. (Although one year of living exposed to the elements half-caravan/half -shed amongst the dirt, flies, ticks, other creepy crawlies, even snakes, was an endurance test neither of us would sit again !)

By this stage the nursery had branched out into Macadamias, Chestnuts, Filberts and Pistachios, so that much more time, effort and postage stamps were to be expended in a world-wide quest for information on these tree crops.

The present.....

Since then we have learned a lot, most of it the hard way-experience.

NUTLAND NURSERY contd.

There are now four shadehouses brimming with healthy plants, a two acre field nursery, plus an extensive mixed orchard of Pecans, Macadamias, Pistachios, Chestnuts, Filberts and most recently, Avocado Pears. All these trees are being established to serve foremost as budwood trees to supply the nursery.

Although as the nursery is so new, not all of the following are available right now, we will eventually be able to supply;

<u>PECANS</u>	Grafted.	Western Schley Wichita Candy Cheyenne Tejas Summer Chickasaw Cherokee	Shoshone Cape Fear Hunter Ideal Texas Prolific Recently Gra Park Giant) Imp Gra King )U.S.
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<u>MACADAMIA.</u>	Seedlings		
	Grafted.	246 333 660 508	344 Own choice Nutty Glen Renown

<u>PISTACHIOS</u>	Seedlings. - p. atlantica		
	Grafted/		
		<u>Female</u>	<u>Male</u>
		15-11	14-4
		15-19	15-19
		Kerman	15-3
		Bronte	

<u>CHESTNUTS.</u>	Seedlings. -C. Sativa		
	Grafted.	Mammoth Nova Moneyman	(All proven, prolific bearers earning their owners high prices each year )

<u>FILBERTS.</u>	Named varieties, prop. by layering.		
		Roshale Italian Hallesche	Webbs Pride Cosford Gros. Fruit R.

AVOCADOS Grafted onto vigorous Guatemalen rootstocks, proven to be the best performer under saline conditions.

Fuerte	Reed	Taplin
Hass	Bacon	Locator1
Sharwil	Wurtz	Nabal
Edranol	Zutano	Linda
Hazzard	Shepherd	Topa Topa
Rincon	Talbot	Yates

Continual efforts are being made to increase our range of varieties,

FOOTNOTE Jojoba - seed or plants available.

RECIPES.

(From;- Woman's Weekly Chinese Cooking Class Cookbook.)

SESAME PEANUT CANDY.

- 2 cups sugar.
- 1/3 cup white vinegar.
- 1 tablespoon water.
- 1/2 cup toasted sesame seeds.
- 1 1/2 cups unsalted roasted peanuts. (without skins).

METHOD.

1. Combine sugar, vinegar and water in saucepan. Stir over low heat until sugar dissolves. Bring to boil; do not stir.
2. Boil mixture approximately 10 minutes or until golden brown. To test, drop a little toffee in cold water; it should form a hard ball when moulded in the water with fingers.
3. While toffee is boiling, oil a 18x28 cm (7x11 ins) lamington tin. Sprinkle half the toasted sesame seeds and all the nuts over base of tin. Pour the hot toffee evenly over this.
4. Smooth surface over with the back of an oiled wooden spoon. Sprinkle over the remaining sesame seeds, cool slightly. Cut candy into strips before it is completely cold.

NOTE.

To toast sesame seeds, spread them on shallow tray, bake in a moderate oven over five minutes, or until golden.

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ADVERTISEMENT.

Grafted Macadamia available at \$4.75., each from;

Mr. T.L.Turner. 7. Bellata St. The Gap; Queensland. 4061.

The cultivar available are: 246, 508, 660,344,333,and H2.

These can be air freighted Brisbane - Perth for about 60 cents each.

## BEEF WITH CASHEWS.

500 g (1lb) rump steak.  
90 g (3 oz) unsalted roasted cashews.  
8 shallots.  
2 cloves garlic.  
2.5 cm (1 in) piece green ginger.  
3 tablespoons oil.  
1 tablespoon cornflour..  
 $\frac{1}{2}$  cup water.  
2 teaspoons sate sauce.  
1 teaspoon sesame oil.  
1 tablespoon soy sauce.

### METHOD.

1. Remove any excess fat from the meat, cut meat into slices, about 5 cm (2 in) long. Heat two tablespoons of the oil in pan or wok, add half the beef, cook until well browned, remove from wok, brown remaining meat.
2. Chop shallots in 2.5 cm (1 in) pieces; peel ginger, chop finely; crush garlic.
3. Heat remaining oil in pan, add garlic, shallots ginger and cashew nuts, saute one minute.
4. Add meat to pan with vegetables, toss well. Combine cornflour, water, sate sauce, sesame oil and soy sauce. Mix well. Add to pan, stir until boiling and well combined.

Serves four.

# BOOK SUPPLY SERVICE

The Association's Book Supply service is to be handled in future by Evelyn Noel. The service is in process of re-organization on a more commercial basis; for example, orders charged to Bankcard and certain other credit cards will be accepted.

Evelyn intends to build up a stock of titles on production of nuts, fruits, and other tree crops, and will have lists available. In the meantime, enquiries may be made to the address or phone number below.

## Granny Smith's Bookshop

Horticultural Book Mail Order Specialists

PO Box 27, Subiaco, WA 6008, Australia

Phone: (09)-381.7341

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