

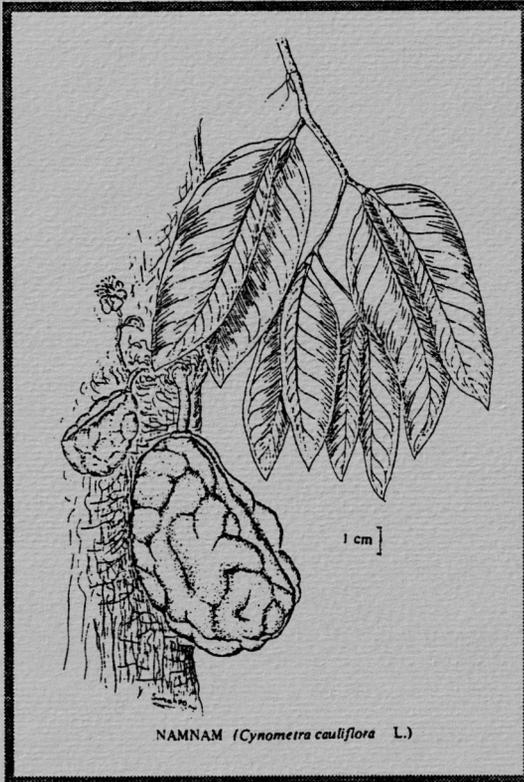
Quandong

newsletter of the

West Australian Nut & Tree Crop Association (Inc)

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NAMNAM (*Cynometra cauliflora* L.)

NEXT MEETING

Fruit Production in Modified Environments

Wednesday February 18 at 7.30pm

Our speaker at the next meeting, Bill Muir of Bunnings Timber Structures, will be dealing with a very important topic. Bill will be describing methods whereby yields and quality of conventional fruits can be greatly increased, and economic crops of some tropical and exotic fruits can be obtained, through modification to the growing environment.

Considerable research and development work has been done in this direction by Bunnings, who originated the Sawtooth Structures which have proved such a success in grape production. Bill was the author of a paper describing this and related work, published in *Challenges in Intensive Horticulture*, the Proceedings of the 1985 Symposium (reviewed elsewhere in this issue). Members are welcome to bring along guests to this meeting, which the Executive believe will be of great value to all concerned.

CHINESE CHESTNUT - (*Castanea Mollissima*)

Selected seed will be available in April and May.

\$50 per 1000. Open pollinated. Trees are very fast growers and precocious bearers; they are also die-back resistant.

Enquiries to M & R. Macdougall, R.M.B. 1328 DENMARK, W.A. 6333,
Telephone 098-409293.

INVITATION TO A FREE SEMINAR

"Tree Crops for W.A. Farmers"

at Muresk Agricultural College, Northam

Saturday February 28, 1987

Registration 9.00 am. Finish 4.30 pm.

This Seminar will look at all the factors involved in growing tree products for profit on West Australian farms: trees for animal fodder, windbreaks, soil conservation, and environmental improvement, trees as crop sources of fruits, nuts, industrial products, fuel, and biochemicals.

Speakers expected include Andrew Campbell from Victoria, Geoff Overheu, Dave Evans, Henry Esbenshade, Alan Barton, Barrie Oldfield, Laurie Snook, Geoff Grewar, and David Noel.

This invitation is being extended to a selected audience, including members of the sponsoring organizations listed below. Please ring Greening Australia on (09)-481.1395 before February 27 to confirm your attendance, so that catering can be arranged. Attendance by others interested can be arranged by ringing the same number.

Sponsored by

Men of the Trees • Greening Australia • W.A. Nut & Tree Crop Association

ASSOCIATION RUNNING SHORT ON FUNDS

Every year your Executive tries to strike a balance between a reasonable subscription rate and the minimum needed to meet the costs of services provided to members. We have always tried to meet current costs with current income, and not penalize present members to build up excessive reserves. Last year, however, our costs were well above income, and our reserves are dangerously low. As from 1987, subscription rates have had to be increased to \$30.00 per year.

To soften the blow, however, and raise income quickly, the Executive have decided on various discounts for early payment. Subscriptions for 1987 paid by June 30 will be discounted by \$10.00, back to the 1986 level of \$20.00. Subscriptions for 1988 and 1989 paid by the same date will be discounted by \$5.00, bringing the rates down to \$25.00 pa. Subscription renewal notices are being sent to all members with this issue of Quandong, even those who have already renewed for 1987, to give them the opportunity to prepay up to 1989 at the discount rates. The concession rate for full-time students will be half the full rate, but is only available for the current year.

If you or your organization would like to support our work with a voluntary offer of funds above the standard subscription rates, we will create a special category of Sustaining Member, with a special certificate and notation in the Membership List, for those contributing \$200.00 or more in any year.

Where the Money Goes

The greatest part of our income comes from subscriptions; last year we got about \$5000. Our biggest cost is the Yearbook; this costs around \$3000, and in 1986 we produced two issues, for 1985 and 1986, at around \$5500 (ulp!). Each issue of Quandong costs around \$400 to print and post, say \$1600 per year, and secretarial and other costs come to around \$1300 per year. Our present cash reserves, taking into account outstanding accounts, are down to a few hundred dollars, the lowest for many years.

The Executive has resolved to publish details of accounts in Quandong in the future (these accounts have always been available for examination at meetings). If any member is able to assist in the auditing of our accounts, would they please contact Secretary Lorna Budd on 458.5918.

Stoneville Research Station

Summer Field Walks

February 20th, 1987

March 20th, 1987

Visitors collect in groups of 8 to 10 and are taken on a tour to see new varieties in season and developments in tree training and management.

Days start at 9 a.m. and continue through to around 3 - 3.30 p.m.

Pecan trees will reward with a lifetime of nuts

By NEVILLE PASSMORE

THE graceful stately pecan tree is a big asset for a garden.

It is not suited to all suburban blocks because it grows up to 10, sometimes 15 metres high. However, where you can fit one or two trees in, you will be rewarded with a lifetime of nuts.

Pecans can easily live to be 100 years old and some trees in Mississippi delta are known to be 1000 years old.

They are well suited to many areas of Western Australia because they enjoy long, hot summers that are in fact necessary to mature and fill out the fruits.

The natural growing region for pecans in WA extends from north of Carnarvon, north of Wiluna through to an area east of Esperance and includes most of the South-West barring the wetter portions close to the south coast.

The pecan nut has a wide range of uses in the kitchen.

It can be added to sandwiches and salads and baked in sweet breads. Of course there is the famous and delicious pecan pie.

The nuts are harvested in autumn and are somewhat oval in shape with pointed ends.

Some varieties drop their nuts when they are mature and others need to be knocked down with long poles. Once the nuts have been harvested, it is advisable to crack the outer shell and remove the nut meat. This can then be frozen in sealed plastic bags for up to 12 months.

These tall stately trees can bear their first crops four to seven years after planting. This is for grafted trees, seedlings may take many more years.

The trees have what is called a low-to-medium chilling requirement — they do need some cold winter weather to set the wood and to let flowers go to form in the spring.

The climate of the suitable growing area in WA satisfies this amount of winter cold. Because of the large size of the trees, it is not advisable to plant them within five metres of buildings or sewerage lines.

Pecans can tolerate infertile sandy soils, however best results are achieved when it is planted in deep fertile loams.

The flowers are in drooping catkins and are not showy. The tree is pollinated by wind.

While pecans have both male and female flowers on the same tree, in most cases there is not sufficient crossover to achieve successful pollination. It is therefore recommended that two trees of different

pollinating varieties are planted together. There are a couple of varieties, however, that are self fertile, sufficient to give a home gardener a good crop from one tree.

Pecans are deciduous trees and can be most majestic when fully mature. They give a lovely deep shade and because of their bushy nature can be used as a large screening tree. They look tremendous when planted along the line of a driveway.

The temperature of your house can be dropped by four to five degrees in summer with a pecan plant on the north side of the home, where they can shade those exposed walls.

Irrigation and fertilisers help pecans to grow. Their natural habitat is very rich alluvial river flats, often with their roots tapping into fresh water. A mature pecan tree needs to be producing new growth to a length of 20cm to 40 cm each year to be growing well.

Anything short of 20cm of new growth means that it needs additional fertiliser. Zinc is one of the critical minor trace elements required to grow pecans successfully. This can be applied either as a foliar spray of zinc sulphate or a side

dressing of superphosphate with copper and zinc added.

Pruning is needed only in the early stages to shape the tree and is not required annually. Early training should aim to encourage the natural pyramid-shaped growth pattern, to develop wide crotch angles for the branches and to remove any criss-cross growth in the centre of the tree.

Transporting a fruiting tree from its natural habitat, in this case from North America, to a completely foreign environment often eliminates many of the natural pests and diseases. This is the case with the pecan which is relatively free of problems in Australia.

There are a wide range of varieties available. Some of the recommended ones for this area are Chicasaw, Shoshuni, Cherokee (this is a very early-bearing precocious tree) and Western Schley. Western Schley is a late-season variety but is the best one for single plantings for the home gardener as it is reliably self-fertile.

Pecans are a long term investment for the gardener. It may well be that your children and grandchildren will reap the greatest rewards from its planting.

BOOK REVIEWS

Nut Harvest Cook Book, by Olive Evans et al. Darling Downs Institute Press, 1986. 136p, boards. \$14.95 from Granny Smith's Bookshop.

For Australians interested in cooking with nuts, this book is a real must. Written by five authors who each have lived and worked in southern Queensland, this book is a cheerful, colourful, and practical guide to culinary uses of nuts. More important, it is the first such book known to me which has been written specifically for Australia.

Preliminary sections on buying, cracking, storing, and preparing nuts are followed by the main recipe section of around 120 recipes, divided up under Appetizers, Soups, Entrees or Luncheon Dishes, Vegetable Dishes, Sauces, Seafoods, Main Courses, Afternoon Teas, Sweets, and Sweetmeats. Each recipe is graded, from easy to very difficult.

Recipes based on 13 different nuts are included, much more than most such cookbooks, and while some could be paralleled in overseas sources, most have a distinctive Australian flavour – Barramundi with Macadamia Sauce, for example. Also included is a recipe based on Bunya Nuts, those delicious Queensland natives which are still more or less unknown outside Australia.

All in all, a highly recommended book, well produced at a very reasonable price.

Challenges in Intensive Horticulture – Floriculture in the 80's. Proceedings of a Symposium, held at the Merlin Hotel, Perth, September 12-13, 1985. Published by Cornucopia Press, 1986. 155p., paperback. \$24.95 from Granny Smith's Bookshop.

With its emphasis on production of flowers, this book seems rather peripheral in interest for the tree cropper. However, it does have some application. Any economic product produced from perennial plants can be regarded as a valid tree crop, in the same way as cloves, which are actually tree flower buds. Two of the flowers dealt with, waratahs and proteas, are worth considering as one component of a mixed orchard.

Other papers of interest include ones on developments in greenhouse technology, on Export Market Development (by Westbrook Haines), Use of Timber in Environmental Structures (Bill Muir), and a major paper on Economic Outlook for the Western Pacific Basin Region by the well-known business forecaster Phillip Ruthven.

David Noel

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HELPING YOU GROW !

ASIAN PEARS OR 'NASHI FRUITS'

From a Draft Farmnote prepared by

R. Pauling & N. Shorter

(Western Australian Department of Agriculture)

Asian Pears or 'Nashi Fruits' (*Pyrus pyrifolia*) are creating considerable interest as a possible new crop for the Hills and South West orchards. There also appears to be a promise of a potential export market to Singapore and Hong Kong, and possibly other South East Asian markets. Trees originated in Japan and China.

Continual selection for improvement has taken place over a long period. Today, there are a wide range of varieties including Nijisseiki ('Twentieth Century'), Kosui, Hosui, Shinsui, Tsuli and Yali. An insight into the scope of these fruits was given in an article in the 'American Fruit Grower' entitled "Good Potential for Asian Pears - Multiple Advantages for Commercial Growers". They are often referred to in California as 'Salad Pears' and are gaining favour in California over European pears. Market acceptance there is good and prices high. Fruits are popular for main course, dessert and table salads.

Some varieties such as Twentieth Century (Nijisseiki) are a smooth golden colour, resembling Golden Delicious apples. Others, such as Chojuro, are russeted. Some are round, others pear-shaped. Trees are understood to have a moderate winter chilling requirement, varieties vary in this regard.

Fruit Qualities

Fruits have juicy flesh and a delicious flavour. The crispness of apples combined with the sweetness of pears to produce an appetising fruit. Fruits are best picked and eaten when 'tree-ripened'. Sweetness varies with the variety. Shelf life is excellent. Cool storage qualities are good to excellent, depending on variety.

New Introductions

New Asian Pear varieties are being continually introduced to the Stoneville Research Station for evaluation.

Rootstocks

Seedlings of the well known D6 (*Pyrus calleryana*) rootstock are suitable for Asian Pears. Other rootstocks used overseas include *Pyrus pyrifolia* and *Pyrus betulifolia*. There is no clear indication that these stocks are any better than D6. Quince stock is incompatible with Asian pears and therefore must never be used.

Tree Training

They can be grown on Tatura trellis, palmette (trellised or free growing) or as central leader trees on an 'axe' or modified 'axe' system. Recommended tree spacing range from 5 m by 1.5 m to 3 m (1333 to 666 trees per hectare) depending on the tree training system adopted. Trees are relatively easy to grow.

Windbreaks

An area to be planted to Asian pear trees should be guarded on all sides by trees and/or large shrubs recommended for windbreaks or shelter belts. (See separate farmnote.)

Pests and Diseases

Trees have a natural resistance to pear scab or black spot, a major problem with European pear varieties. Powdery mildew, rarely a problem on European pears, can become a problem with some varieties. Insect pests likely to be troublesome are fruit fly, mites, pearslug and cherry slug, San José scale, and chewing insects including plant feeding bugs, cutworms, curculio beetles and Fuller's Rose weevils.

Care needs to be taken in the choice of chemical sprayed onto Asian pear trees as the fruit skin is susceptible to marking. Emulsifiable concentrate spray is more likely to be phytotoxic than spray made up from wet table powders. The Hosui and Kosui varieties are known to be particularly sensitive to the effects of sprays.

Birds

Birds and in particular parrots can inflict serious fruit losses on the ripening crop unless protective

measures are taken. A combination of bird scaring devices appears to be the best approach.

Picking, Handling and Coolstorage

Fruit should be handled carefully and picked into plastic or metal containers. It can be packed directly into cardboard or polystyrene trays. Field heat should be removed as soon as possible after picking. Fruits have excellent coolstorage properties and respond to the use of polyethylene liners ('polyliners') or bags and to controlled atmosphere (CA) storage.

References for Further Reading

1. 'Asian Pears - Their Requirements and Potential in Western Australia'. R. Paulin, 1984, Bulletin MA28.
2. 'A Study of Asian Pears in Japan'. J.F. Johnson, Principal Horticulturist (Pome Fruits), New South Wales Department of Agriculture. Miscellaneous Bulletin 1983.
3. 'Nashi Fruit - An Overview'. J.F. Johnson 1986.



FOR SALE/LEASE

Farms near Porongurup National Park

Five picturesque lots, 16 - 106 ha, on fertile soils of the southern Porongurups slopes (north of Albany, WA). Owner has grown triticale, lupins, buckwheat, rye, using biodynamic (organic) methods, for last 6 years, attracting premium prices, and would like to see this work continue. Great potential for tree crops, poultry, nursery, vineyards, health retreat, etc.

Details: Lot A, 16 ha, with mudbrick homestead (ca. 1860); Lot B, 60ha; Lot C, 86 ha; Lot D, 106 ha (approval to subdivide into 20 ha lots applied for); Lot E, 77 ha. Interested in buying or leasing?

Please contact Patrick Spurgeon on 098-532085.



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Pistachio crops could stop WA's soil erosion - TV star

Go nuts - it's a doctor's answer!

□ Dr. David Bellamy warns that unless erosion is halted, we're going nowhere....like this wreck he found abandoned in a barren Toodyay gully



THE English-speaking world's most lovable botanist, Dr David Bellamy, has just spent one of his quietest weeks in Australia.

Instead of throwing himself in front of bulldozers at Franklin River or being dragged away by policemen at Daintree, Dr Bellamy has been strolling the wheatfields of WA.

The British TV star wishes the same sort of attention he gets for his protests could be focussed on the problems soil erosion is causing not only farmers, but ultimately, all of us.

Dr Bellamy flew out of Perth last night at the end of filming of a WA-produced TV documentary, *Wheat - The World's Last Great Harvest*.

On location at Toodyay, he said: "If I were here trying to stop a bulldozer, all the media would have been here."

"But what we are saying in this documentary is extremely important to every person."

The aim of the documentary, made by local producer Nic Partridge and director Barry Oldfield, is to make city people realise soil erosion will eventually affect them.

WA has been chosen as the setting because, despite having the same soil erosion as other countries, it is developing ways to solve its problems.

Dr Bellamy said: "Everyone has been working on the basis that this was an enormous world full of resources."

"They've eroded the land over 80 years and said 'that's all right, there's plenty of land'. But there won't be, forever."

"You can't blame the farmers. It's no good saying they made mistakes because they were trying to get a livelihood."

"But how long can we go on allowing our arable land to turn into desert? We've got to stop it."

Dr Bellamy says the solution, as with most problems he faces, is more plants. Trees, to be precise.

The TV star says sheet, wind and gully erosion, and WA's alarming salination problem, can be halted by planting tree crops, such as pistachio nuts and tree lucerne.

He said: "If the soils go, not only will the farmers' livelihood be affected, but the livelihoods of half of Perth will also be affected."

"No matter where you live, be it Perth, London or New York, you will be affected if it is not stopped."

"The wheat farmers bring in 41 per cent of the State's revenue. If they go broke, so does everybody. This is the point we want to get across."

Dr Bellamy said WA scientists and farmers had come up with some unique ways to solve erosion.

He said: "Any tree crop they can think of, people are trying to grow it here - tree lucerne, pistachios."

"What bloody Australia should be doing is putting its house in order and exporting its expertise."

By ANNE MIRKEL

The Tree Crops Centre

GOVERNMENT COMMENDS TREE CROPS PLAN

Plans for a major development of Western Australia's fledgling tree crop industries, on the drawing board for over two years, are now coming to reality.

The plans, developed by the W.A. Nut & Tree Crop Association, have brought together a range of existing services and businesses in the tree crops area. They have also led to the formation of a new development and research foundation, TANCDARF, which is expected to play a major role in the expanding tree crop industries of Western Australia.

"With the opening of the Tree Crops Centre in Nedlands, we have a good focus for the whole range of activities involved", said David Noel, the Centre's current Director. "These include trading activities in nuts and non-traditional fruits, and bookselling, publishing, consultancy, and employment services. We also have participation by independent companies, such as a group involved in large-scale planting of nut trees on farm properties".

The Western Australian Government has been involved in the plans since their origination, and input has been received from many Government Departments. "The Premier, Brian Burke, has described our plans as commendable", said Mr Noel. "The Government is not making a direct cash contribution at this stage, but has offered help in providing information, and in the possible use of land within the Demonstration Farm being planned at Whiteman Park".

150% TAX ALLOWANCE

"Use of the land at Whiteman Park would be through TANCDARF, the Tree & Nut Crop Development & Research Foundation", Mr Noel said. "TANCDARF will be working closely with the industry, Government, and the Education sector to promote the use of tree crops. It will be registered with the CSIRO as an approved research body, so that company investments in tree crops R & D channelled through it will be eligible for the Federal Government's 150% tax allowance".

Mr Noel is also currently President of the W.A. Nut & Tree Crop Association, founded in 1974 with 16 members, and now with almost 500 members throughout Australia and overseas. During its years of existence, the Association has seen the development of tree crops in W.A. from a largely amateur field into a potentially massive industry, the "Third Component" of agricultural land use. "The Tree Crops Giant is awakening", said Mr Noel. "One day I predict that he will tower above his field-crop and stock-raising brothers in this State, as has happened in California".

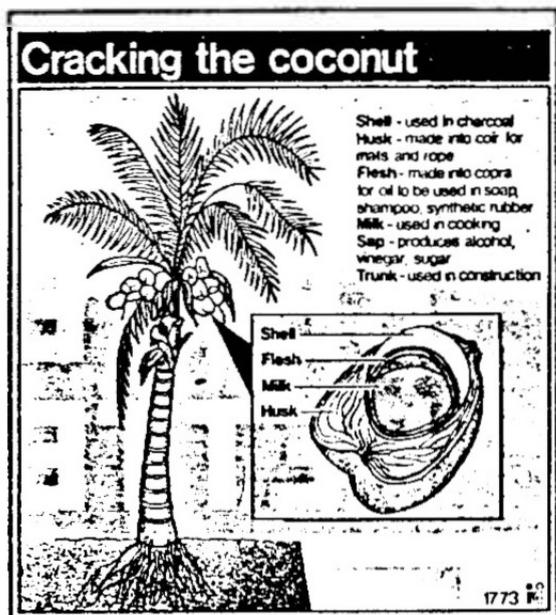
Members of the Association believe that tree crops will be the focus for the blossoming of agriculture in currently depressed areas of W.A. These include the Wheatbelt, for years suffering a massive population decline, where pistachio growing may prove a saviour, and the Ord River in the far North, where a massive expansion into cashew production is under way.

THE TREE CROPS CENTRE

Office: Suite 8, 88 Broadway, Nedlands
Mail: PO Box 27, Subiaco, W.A. 6008, Australia
Phone: (09)-386 8093 Fax: (09)-386 7676

Tissue culture boost for coconuts

The West Australian, Jan 19, 87



FOR the first time, coconut palm plantlets have been obtained through tissue culture, using the lower-most segments of tender coconut leaves as the mother material.

The discovery could be of immense importance to the major coconut-producing nations that cluster in the world's tropics, by increasing the number of disease-resistant "super coconut" trees which yield from four to seven times the normal crop.

In properly maintained plantations, ordinary coconut trees will produce an average of 60 to 100 coconuts a year. A few "super" varieties exist, producing up to 400 coconuts a tree, but the trees are rare and do not always reproduce the same high-yielding variety.

Dr M. K. Muliya, a director of the Central Plantation Crops Research Institute (CPCRI) in Kerala, says the development of high-yielding, disease-resistant trees is an important breakthrough.

He said: "The economic and material benefits for the coconut-growing nations are beyond measure."

The breakthrough was made at CPCRI by a team of scientists working under 35-year-old C. R. Raju. Till now, coconut palm trees have been propagated by seedlings from fully-matured coconut fruit. The unhusked fruit are planted in nursery beds and partially covered with soil, the seedlings are transplanted 4-10 months later and begin bearing fruit at about five years.

Since coconut is a highly-crossed plant, offspring do not necessarily resemble the

parent plant. This results in instability in production.

Tissue culture is used in many countries for growing many types of flowering plants. In Thailand and Singapore tissue orchid plants can be bought on the roadside and grown in test tubes with a little culture medium.

The only reported production of a coconut plantlet in a test tube had been at Wye College in Britain in 1984. After it was

The coconut palm is one of the most important crops in the tropics. Literally dozens of products require coconut based ingredients, and coconut farming is an important part of many developing economies. Thanks to the discovery by an Indian scientist, a big change may be coming to the world's coconut farmers. A. J. Singh reports from New Delhi on the discovery of a way to grow disease-resistant "super trees" with much higher yields than previously.

transplanted to soil, however, the plantlet died. Cell division had taken place too rapidly, creating chromosomal disturbances.

Raju worked out a method to avoid this. Tender leaf tissues selected from a two-year-old cross of two strains of tree were used. The lower-most five centimetres were sterilised and placed in a sterile medium enriched with growth hormones and other nutrients.

For 16 weeks the cultures were kept in test tubes at 29C under white fluorescent lamps to incubate. By the end of the incubation the white leaf tissues had grown into green plantlets.

About 48 plantlets were grown from one small segment. Half died, leaving 24. After six to eight weeks they could be made to "sprout" and develop into normally-rooted plantlets.

Raju's discovery could radically increase the worldwide yield of coconut fruit. Most coconuts are grown on small plantations; South-East Asia and the Pacific are important coconut-producing areas, as are India, parts of Africa and the Caribbean.

The uses of the coconut tree and fruit are almost limitless. Coconut oil is one of the world's main vegetable oils and is used in manufacturing soaps, shampoos, edible oils, synthetic rubber, hydraulic brake fluid, safety glass and a host of other products.

The husk of the fruit is a source of coir, which is used in rope and mats. The hard inner layer of the fruit is used in charcoal and bottle production.

The milk inside the fruit is used as a beverage and in cooking. The soft flesh is dried to make copra. The tree itself is used in construction and the sap produces alcohol, vinegar and sugar.

Not least, coconut is a vital ingredient in the cuisine of much of the South Pacific.

Raju's use of tissue culture is also cheaper than current methods of coconut breeding. Raju says a plantlet produced through culture tissue will cost about half as much as growing a plant by conventional methods.

Development of the tissue culture plantlets is continuing. Meanwhile, Raju says his work on the coconut has not ended. "We are experimenting on raising plantlets from roots, flowers and other parts of the coconut tree these days."

LETTERS

We have received a copy of the following letter (addressed to Dr. Frank Flanagan) from Graham Brookman, Roseworthy Agricultural College, Roseworthy, S.A. who would be glad to receive information from any member.

Dear Dr. Flanagan,

I wish to purchase copies of the papers on acorn bread, acorn cake, carob biscuits and carob yoghurt advertised in the recent WANATCA journal. I grow both carobs and oaks and thus have a keen interest in product development. Neither crop is in production yet, however I expect some of the carobs to produce beans next year. My planting includes 250 carobs and about 100 oaks, such as *Quercus macrocarpa* (a white, sweet acorn also known as the Burrкуп Oak) and *Quercus canariensis* (Mirbeck's oak, a fairly bitter red acorn).

I will be grafting some of the carobs and wonder if you have any information about the characteristics of the various carob cultures. About 9 varieties have been imported from a Californian "World Collection" into SA recently, and I must decide which ones to use next year. Any references about acorns and carobs would be appreciated too. While I don't expect you to have hordes of information about carob growing, if you do have any knowledge of commercial or semi-commercial growers in WA I would love their addresses.

In SA we now have about 90 acres under semi-commercial carob cultivation and the issues of harvesting, storage and processing are rearing their heads. If you happen to have contacts who may be interested in dealing with whole or processed acorns, carobs or pistachios, once again I would appreciate same.

Mrs. Helen Sheridan, P.O.Box 119 , Carnarvon 6701 writes:

We found the Yearbook very interesting. We have a property at Adelaide River in the Northern Territory, and so tropical plants are particularly interesting. We have been in the NT only two years or so. Bananas and melons have been the main crop, but we hope to get an opportunity to try out a variety of crops.

Was there a book about the Conference in Auckland, NZ held this year (1986)? I was unable to attend that conference and would be interested to hear about it.

For the information of others who might also want to know:

We are sorry to report that the proceedings of ACOTANC-3 will not be published as a separate book. Some of the papers have been published in various issues of 'Growing Today' (the New Zealand Tree Crops Association's journal).

(Editor)

A low-fat nut with many uses

By NEVILLE PASSMORE

A TASTY chestnut is an unusual member of the nut family because it has little protein, contains only traces of oil and has a high percentage of carbohydrate.

As such it is a low-fat food and the only nut recommended in diets such as the Pritikin. Its increasing popularity is not only attributed to its low calories, but to the interest of Greek, Spanish and Italian migrants.

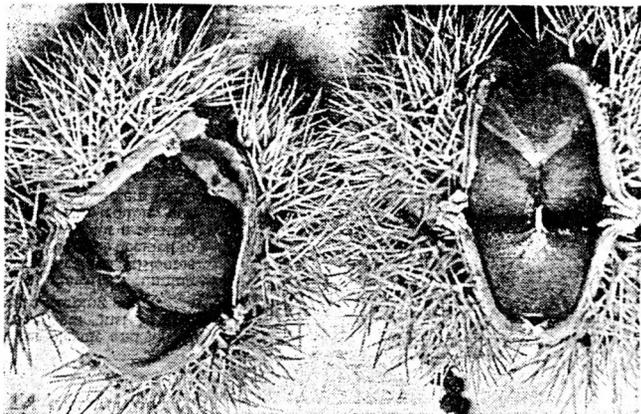
The chestnut has many uses. It can be eaten fresh or roasted; dried and ground into flour which is then used in soups and confectionery; boiled instead of potatoes and baked and turned into stuffing for poultry. When added to cakes it makes them moist and improves their keeping qualities.

A simple recipe that is ideal for introducing chestnuts into the family diet is to cover fresh chestnuts with water and boil them for an hour. Drain and peel the nuts, then cut right through the centre of each one and sprinkle with salt and butter. This makes a delicious and filling meal.

Another factor that has led to interest in growing chestnuts is the tale of \$1000 worth of nuts coming from one tree. A mature tree can produce 100-150 kilos of nuts, whereas big old trees have been known to produce in excess of 300 kilos.

Castanea Sativa is the botanical name of the European, or Spanish chestnut as it is known. These are big forest trees and are related to the beech.

The chestnut tree is not for every backyard. It is a big and spreading specimen, sometimes reaching 20 metres in height with an equal spread. It is a very showy and attractive tree with handsome foliage and small white flowers in clusters. It is able to withstand hard frosts and the flowers are rich in nectar, making it very popular with honey bees



GROWING NEEDS: Chestnuts appreciate shelter from hot winds, and while they have a moderate chilling requirement — that is a need to experience either light frosts or fairly low temperatures through the winter months — they will grow in the Perth area. Free-draining soil is essential and they will grow in sand or gravel soils. However, growth and productivity will be improved in rich, deep loams.

The geographical area that is best suited to them in WA runs from the inland region round Eneabba through to Esperance.

However, it is recommended that you avoid planting chestnuts in near-coastal areas. Chestnuts will not tolerate limey soils and the micro-climate near the coast tends to be a bit too warm and adversely affects cropping.

POLLINATION: While chestnuts have both male and female flowers, usually round November and December, not all trees are self-fertile. It is recommended that two trees be planted in the same hole and a multi-stemmed style of tree be cultivated.

The nuts can be harvested in autumn and early winter. It is recommended that the ground beneath the tree be cleaned. Usually the whole nut — including the burr-surround — falls to the ground. However, some varieties drop the nut and leave the burr on the tree.

The burs contain very sharp spines and gloves are needed to handle them. It is easier to remove a nut from the burr if it is slightly moistened. Nuts should only be washed if dirt has gathered on them and they should be rapidly dried out in a shaded spot.

STORAGE: All storage methods require that the nut is removed from the burr. Because of their high starch and water content, chestnuts tend to deteriorate very quickly without treatment. They can be soaked in water for a few days (it is important to renew the water daily) then dried and stored in ventilated plastic bags at room temperature for short periods of time up to a month. During this time the starch in the nuts turns to sugar and the nuts become sweeter.

Another method is to store the nuts in perforated polythene bags in the fridge. A third alternative is to cut the nut, place it in boiling water for a few minutes then peel the skin while the nut is still hot. Nut meat treated in this way can be frozen for long periods of time.

VARIETIES: The development of varieties is still in its infancy in Australia. Some recent work has been done in Victoria and NSW, and now some WA varieties are becoming available for planting. As with most nuts and cultivated fruits, grafted trees are far superior to seedling varieties. They will produce crops in two to three years, whereas seedlings can take between four and 10 years for the initial crop. The cultivated nuts are bigger with generally superior flavours and keeping qualities.

PESTS: In WA there appear to be relatively few pests of chestnuts. We are fortunate because some lethal diseases such as chestnut blight, which has virtually eliminated chestnut growing in the United States, has not entered Australia as a result of our effective quarantine barriers.

While the chestnut isn't for every garden, it is an asset for those who can afford the space and have a suitable climate:

Going troppo over the future for domestic exotic fruit sales

North Queensland rare fruit grower and advocate of domestic market development, John Marshall, says, "Why worry about exports when we can send all our fruit to Melbourne for phenomenal prices."

Marshall, a northern antidote to "Westbrook Haines" fever, offers an alternative directive to the nation's tropical fruit producers: forget about exports and start selling at home.

"The Australian market is all we need for twenty years. For instance,

we are exporting nearly all our lychees, but at the same time we are importing them from South Africa."

Marshall, who has 40 years experience in tropical fruit production, believes most "exotics" will fit into at least three, solely Australian markets: novelty, local commercial and interstate commercial.

"I went to South-East Asia last year and was offered \$5.50 a kg for 20 tonnes of lychees. I said forget it, I can sell them at home for \$5 a kg with a lot less trouble."

Export development, he believes, should be left to the big producers or companies who can afford the necessary time and money and guarantee a regular supply of product.

Marshall reckons Australia's Asian population, coupled with the novelty market, should keep smaller growers in business for quite some time.

A frequent Asian traveller, Marshall grows more than 100 types of fruit on 6ha near Cairns. He offers this layman's guide to exotic fruits.

Lychee: Great market potential both internally and export "if you can be bothered". Market research has found only one in 20 Australians has tried the fruit. Selling for around \$5 a kg on Sydney and Melbourne markets, although unscrupulous agents have used South African imports to drive prices down.

Longan: Similar potential and prices as the lychee and probably

more adaptable climatically. Yields up to 40kg a tree in year five.

White Sapote: Suits a range of climates, including semi-arid and subtropical. Not suited to export. Marketable yields in three years.

Sapodilla: Very popular in South-East Asia. Sells in Australia for around 80¢ a kg and can be grown in sub-tropical and dry areas.

Carambola: Short term market potential. Reasonable yields possible in year two and capable of producing 100 kg a tree in year three. The domestic market could be flooded very easily. Could be treated like a cash crop and grown in conjunction with a longer maturing species.

Durian: Limited potential. Only suited to tropical climate and awkward to transport because of pungent smell. Export unlikely - Thailand sends out around 50,000t a year - and internal market limited to Asians with taste for "sweet cheese" fruit.

Rambutan: Only really suited to climate north of Innisfail. But early maturing and produces large crops - up to 50kg a tree at five years.

Mangosteen: Reasonable yields usually around year 10. Fruit currently worth a dollar each. Mature trees have produced 2-3000 fruit.

Abiu: Can be grown in a wide range of climates above the "Brisbane line". May produce up to three crops a year. Five year old trees yield 50-100 fruit now selling for a dollar each.

Marshall, who admits he could spend all day talking fruit, says jack fruit, star apples and the more specialised varieties of bananas may also find a market. He predicts an exciting future for rare fruits if a number of cultural, economic and market factors can be overcome.

"Every week a Melbourne or Sydney agent phones me to try and line up a supplier, which is a bit of problem when no one can supply regularly," he says.

"Australia is waking up to exotic fruit and there is fantastic potential. 'It's developing as fast as it can, but it's still painfully slow.'

PETER FRAY



Rambutans: headed for home



Durians: a taste for Australian consumers

The Java plum by any other name . . .

By NEVILLE PASSMORE

THE Java plum or jambolan is a plant with more botanical names and name changes than Susan Peacock-Sangster-Renouf.

The current accepted names are *Syzygium cumini* and *Syzygium jambolana*. The most recent name changes occurred from *Eugenia cumini* and *Eugenia jambolana*.

To further add to this confusion it has also been commonly called the jambu, and in China, the Hainan cat-tail peach.

Whatever name you choose to call it, it is an attractive and useful member of the large myrtle family.

The word *Syzygy* is defined as the meeting point of two heavenly bodies. I am not sure what the connection is but I'm sure it's a great word for my next game of scrabble.

Java plum is a very useful tree, or large shrub if pruned, that makes an excellent windbreak, bears terrific crops of olive-size fruits, has extremely attractive flowers and is hardy for most WA locations that don't get heavy frosts. Young plants grew right through the last frosty winter under a cover of 50 per cent shade cloth. This makes me think they will succeed in open locations once the trees have toughened up after one or two winters.

Its olive-size and shape fruits are a purple-black

colour with shiny skin. The pulp varies in colour from purple through to yellowish-cream and is sweet with a mildy acid flavour.

There is quite a variation in the quality of the fruit as they are grown from seed and the more astringent ones should be pre-soaked in salt water before eating or cooking to remove the astringency.

A rich source of riboflavin, calcium, phosphorus and ascorbic acid, the Java plum can be made into tasty jam, an excellent jelly, particularly when combined

with guava juice, and a first class wine.

As the fruit contains no pectin it's necessary to combine it with fruits such as guava or liquid pectin when making jams or jellies. In addition to pie fillings and juice drinks, the Chinese use Java plum steamed as medicine for chronic coughs and asthma. To remove the flesh from ripe fruits, push them through a hole in a thin board, sized to strip off the pulp.

The tree is fast growing with glossy dark-green foliage. Java plum can grow to 15 metres high.



The jambolan or Java plum is an attractive and useful member of the large myrtle family.

Small red fragrant flowers are borne in large pyramidal clusters that look like bunches of grapes. Heavy crops of fruits develop in the early summer months and will fall to the ground staining paths if they get half a chance. An ornamental tree when grown singularly. Jambolan makes an excellent windbreak or hedge when grown in clusters or lines. A first-class shade tree, it will bear crops within four years from seed.

The timber is valued for indoor furniture uses.

Jambolan appears to be a fairly tough customer that can tolerate salt spray and poor drainage as well as sandy undernourished soils.

It certainly performs much better in deep loamy soils. Mature trees can withstand temperatures of -1C.

I would recommend a tree surround for the first two winters to enable the plant to become acclimatised. Generally speaking it is a very easy tree to grow and it is quick to respond to regular fertilising and summer irrigation.

I see the Java plum as a dual purpose tree that can be planted as a windbreak for a home orchard and that will produce, in its own right, a good crop of unusual and very usable fruits.

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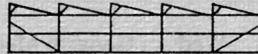
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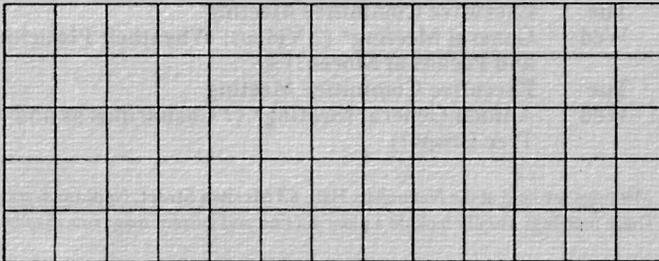


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CALENDAR OF FORTHCOMING EVENTS

Feb 18	Wed	General Meeting* (Bill Muir : Fruit Production in Modified Environments)
Feb 20	Fri	Summer Field Walk, Stoneville
Feb 28	Sat	Muresk Seminar: Tree Crops for W.A. Farmers
Mar 20	Fri	Summer Field Walk, Stoneville
Apr 7	Tue	Executive Committee Meeting
May 20	Wed	General Meeting* (? The Kimberley Cashew Project?)
Jul 7	Tue	Executive Committee Meeting
Aug 19	Wed	General Meeting* (? Videos: Wheatbelt Pistachios and Pecans at Moree?)
Oct 6	Tue	Executive Committee Meeting
Nov 18	Wed	Annual General Meeting* (? Casuarinas as and for Tree Crops?)

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

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

Current Subscription Rate: \$30.00 per year
(includes all publications for the year) Student Rate: \$15.00
