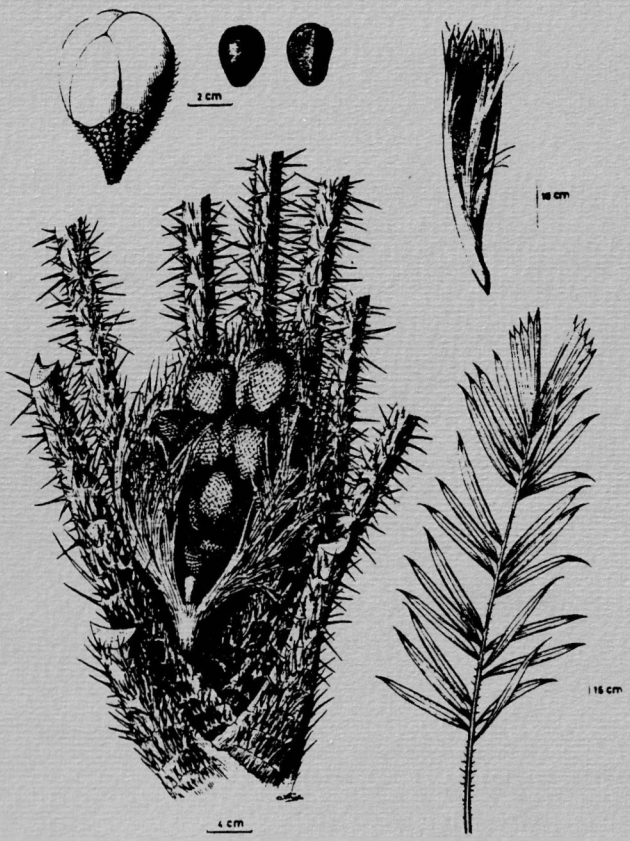
NEWSLETTER

Quandong

WEST AUSTRALIAN NUT AND TREE CROP ASSOCIATION

May 1986 Vol 12 No 2 ISSN 0312-8989

Registered by Australia Post : Publication no. WBH0868



SALAK *(Salacca edulis* Reinw.)

NEXT MEETING
EXOTIC FRUIT CULTURE IN PERTH SUBURBS

** Wednesday May 21: 7.30 pm **
(Naturalists Hall, 63 Meriwa St, Nedlands)

For our next meeting we have been fortunate in getting Tim Enright of the W.A. Department of Agriculture to talk on Culture of Tropical and Subtropical Fruit in the Perth Metropolitan Area. Tim is one of the people running the Aggie's Home Gardening telephone help service, and he has a wealth of knowledge and experience on what has actually been successfully grown in the suburbs and around Perth. He will be illustrating his talk with slides, this promises to be a really valuable meeting - make sure you come!

OPEN DAY AT STONEVILLE
MAY 17 : 8.30 - 3.00

From Doug Johnston, Manager of the Stoneville Research Station, we hear that they are having a Public Open Day on Saturday May 17, 1986. Come along any time between 8.30 am and 3.00 pm to see the Station and the various varieties of fruit; pruning and planting techniques will be shown, and questions answered on water and fertilizer needs and pest control.

The Station, on Anketell Road, Stoneville (in the hills east of Perth) is the Ag Dept's main centre for work on fruits and nuts, and has plantings of pecans and pistachios and many different fruits. Lunches and morning and afternoon teas will be provided (free!), sample fruits are often to be had, so this can be an informative and interesting outing for the whole family. Any queries, please phone Mrs P Budden on 295 1137.

TREE CROPS COURSE AT BENTLEY COLLEGE

In conjunction with the Horticulture Department, Bentley College of TAFE (formerly Bentley Technical College), the Association is presenting a 10-week course on TREE CROPS on Monday nights (5.30-8.30), from April 7 to June 9. Lectures are being given by David Noel, Alex Sas, Nola Washer, and Andrew Blake. Topics include importance and rationale of tree crops, temperate, subtropical, and tropical fruits and nuts, berry and vine fruits, non-food tree crops, orchard management, economics of tree crops, agroforestry and ecology, and propagation.

This course is open to anyone interested and costs only $5.00 (amenities fee) for the whole course. Unfortunately we had very little notice of the starting date, and much of the course will be past by the time you receive this. If you would be interested (or you know someone who would be interested) in attending another staging of this course later in the year, please phone or write to the College (362 1088) and indicate your interest to Chris Oliver, Head of the Department of Horticulture.

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NORTHERN NUT GROWERS ASSOCIATION

ORGANIZED IN 1910—FOR THE PROMOTION OF INTEREST IN NUT BEARING TREES, THEIR PRODUCTS AND THEIR CULTURE

2-16, 1986

David Noel
West Australian Nut and Tree Crop Ass'n.
PO Box 565 Subiaco WA 6008 Australia

Dear David:

I have read Quandong during the past five years and enjoy reading your reports. Dr Bill Gustafson asked me to respond to your request for an article I wrote about Paw Paw for the Nebraskaland Magazine. The article is enclosed.

For some time I have had a desire to visit your country. If this comes to be, I would like to spend a month there and in New Zealand when the nut trees are being harvested. Dr. Gustafson and I went to China on a People to People trip three years ago with a fruit and nut delegation. This was very interesting. I have also been to South America and Europe.

We finished a two day conference here in Lincoln called "Trees for Nebraska Conference". This was the eighth annual conference. The theme was "TREES for Food and Fun". There were over 200 people in attendance. The Nebraska Nut Growers Association sponsored a Saturday morning workshopentitled Nut Tree Culture and Cooking. I presented slides showing nut trees growing in Nebraska. We had a taste test of nut kernels-heartnut, black walnut, and shagbark hickory. Most people had never tasted heartnut or hickory before. Bill Gustafson demonstrated the use of a microwave oven to roast American Chestnut. This was very interesting as few had ever eaten roasted chestnuts. Four demonstrations were presented by members on Roasted chicken with Hickory nuts, a dressing with Chest nuts, meatballs and sauce with no meat, and Pecan pie. All in attendence were allowed to taste samples of the food following the demonstrations. We also had nuts in the shell for the people to crack and eat. These included American Hazel nut, heartnut, persian walnut, Pecan and American Chestnut. We had 60 people register for the workshop. It was well received and I am sure we will get a few new members in our organization as a result of the program. We fellows had fun planning and carrying out the program too.

Sincerely yours,
Cyril Bish
Cyril Bish
President, NNGA

NOTES ON NEBRASKA FLORA

PAW PAW

BY CYRIL BISH, PROFESSOR EMERITUS, EXTENSION SERVICE
University of Nebraska, Lincoln

"Pickin' up paw paws, puttin' 'em in your pocket,
Way down yonder in the paw paw patch"

CHANTING those lines from a once common grade school singing game is probably the closest that most Nebraskans have been to the paw paw. Even then, most children, and perhaps a good share of their teachers, had no idea what a paw paw was beyond some vague notion that it was a fruit of some sort that grew wild in patches and was small enough to put in one's pocket. With more knowledge of the fruit, (which becomes soft and squishy when ripe), one wonders why anyone would have put them in a pocket at all.

The paw paw, *Asimian triloba*, is the largest native fruit found in North America. Mature plants send out a network of root stolons that sprout new plants at a considerable distance, explaining the fact that paw paws are usually found in colonies.

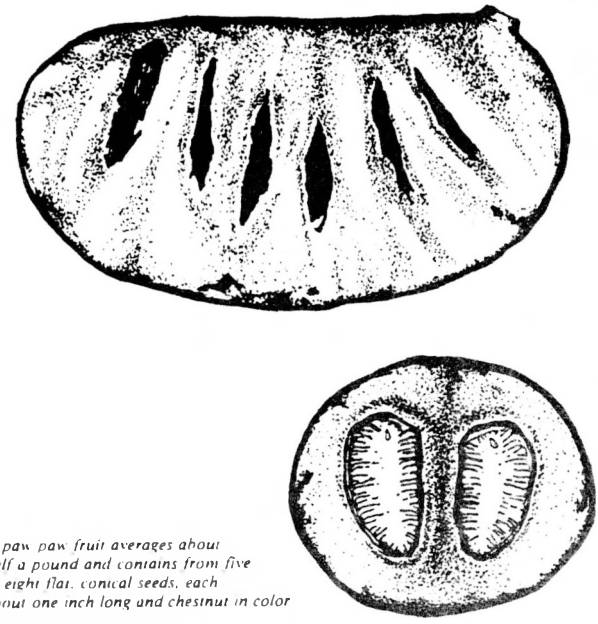
In some parts of its range the paw paw may attain a height of 40 to 50 feet, but in Nebraska a 20-foot-high tree would be considered large. Fond of shaded areas, the paw paw is most often found as an understory plant in deep, rich, loamy soils along streams and riverbottoms. When the tree is grown in open sunlight, it assumes a pyramidal shape.

As an understory plant in woodland forests, the paw paw has a spreading crown; grown in the open it assumes a pyramidal shape

Paw paw leaves are large, eight to 12 inches long and four to six inches wide. The tree's peculiar flowers appear in April and are purple to maroon, wrinkled and leathery. The paw paw's bark is dark brown and marked with ashen blotches and shallow, irregular fissures.

In Nebraska the paw paw fruit matures in late September or early October, and does not require a frost for ripening. Before maturity the fruit is green, but it changes to yellow as it ripens and later turns dark brown. When fully ripe the flesh of the fruit is yellow and custard-like, and hence has been called Indiana banana, wild banana and custard apple. The fruit contains from five to eight flat, conical seeds about one inch long with a smooth surface and a brown or chestnut color. An average paw paw weighs about a half-pound, but occasionally some reach a pound. Paw paw fruits that grow in clusters are generally smaller. The fruit is fragrant, delicious and nutritious when ripe. It has been described as banana-like, but it's pungent taste and aroma are unique.

Paw paws are usually eaten from the hand after they have been peeled, but they can be used to make splendid custard pies, puddings, or may be eaten with cream. Marmalade, equal to that made with pears or peaches, may be made of paw paws, and they also are reported to make an excellent ice cream. In days gone by, paw paws were kept in their natural state until mid winter or longer by storing them in



A paw paw fruit averages about half a pound and contains from five to eight flat, conical seeds, each about one inch long and chestnut in color

oats, when they were said to be just as good as when taken from the tree.

Native plants have been found along river valleys in Richardson, Pawnee, Nemaha, Otoe, Douglas, Saunders and Washington counties in southeast Nebraska. A farmer living southeast of Nebraska City recalls eating paw paws as a small boy some 60 years ago. In the fall of each year his rural teacher took the entire school on a paw paw hunt which always ended at the thicket near his family's farm. This same thicket has provided seed for distribution in 300 Nebraska Nut Growers Association seed packets, planted all over Nebraska this spring.

Paw paw has also been found in Indian Cave State Park, Peru State College's Thousand Oaks Arboretum, and Neale Woods in Washington County, a part of Fontenelle Forest. Trees have been planted in the Children's Zoo and at other locations in Lincoln. Last year two paw paw trees were planted in the Earl Maxwell Arboretum on the University of Nebraska-Lincoln campus.

Paw paw trees can be grown from seed, but the seed must not be allowed to dry out. Once extracted from the fruit and washed, place seeds in a plastic bag with moistened sawdust or moss and refrigerate. Treated this way, the seed will be viable until the next July or later. When planting in the spring, place seeds one inch deep in the soil as early as the ground can be worked. The soil should be deep, rich, and loamy. Mark the row and mulch lightly with lawn clippings and provide partial shade for the seedlings the first year or two.

Another method is to plant the seeds directly in the fall where you want the mature plants to grow. Mulch to keep seeds from heaving or washing out as they over-winter. Young plants begin to come through the soil in July.

Paw paws have a deep taproot which is easily broken when transplanting. To transplant, dig carefully and never pull on the tree. Get as many of the fine feeder roots as possible and do not allow the roots to dry out. At the new location, dig a hole big enough to accommodate the roots. Carefully place rich, loamy soil around the roots and water to settle the soil. Transplanted trees should receive one-half to one inch of water a week the first growing season. Some of the branches should be pruned back when transplanting as is done with commercial fruit trees.

Perhaps the most reliable way of raising paw paws from seed, though, is by seeding out in large container pots. The pots should be filled with a rich, loamy soil and the seeds, several in each pot, planted as with other methods. The container should be at least partially buried in the ground in a shaded spot. Container-grown plants have the advantage of being easily tended in the nursery, and the soil mix and water can be controlled for optimum growth. Plants grown with this method are less affected by transplanting. They may be moved to the field at any time, but for best survival wait for the dormant period after the first frost or in early spring before the buds swell.

The paw paw will probably never challenge the more common fruit trees for a place in the average backyard orchard, but they make an attractive ornamental tree and certainly are an interesting novelty.

A book by James A. Little in 1905, reputed at the time to be the first ever written on the paw paw, sang high praises for the paw paw and its potential commercial value:

"...it is one of our most excellent fruits, perfectly adapted to any situation; has no insect enemies; always bears; more trees may be planted to the acre without crowding than any other fruit tree; fruit sells higher in the market than bananas; comparatively few people have ever tasted or even seen the fruit, consequently there will be a great range for marketing the fruit. So I will conclude by saying, plant the trees and nature, guided by a kind Providence, will do the rest."

Original art of the Paw Paw was done by Michele Farrar, and is for sale. She will also do artwork on a commission basis, and can be contacted through NEBRASKAland, Box 30370, Lincoln, NE 68503. Also, a set of note cards featuring her art is still available, with a set of 12 (4 subjects, 3 of each, in color) selling for $2.50 with envelopes. Order from above address.

NEW WANATCA COMPETITION: BIRD DETERRENTS

Entries are now open for the Raynes-Napier Award in Bird Deterrence. To enter the competition, just send in your bright idea on Keeping The Birds Off to Raynes-Napier Award, WANATCA, PO Box 565, Subiaco WA 6008, by October 1.

The Competition will be judged by well-known bird sufferers Murray Raynes and Bill Napier, who will also provide the Raynes-Napier Perpetual Trophy and Award. The winner of the Competition will be allowed to hold the trophy for display in their home for one year, and will also receive a suitably engraved item to keep, plus an honorary degree of MBS (Master of Bird Scaring).

Entries will be judged on their effectiveness, ingenuity, and plausibility, and the judges' decision will be their own affair, no appeals to the High Court will be allowed. Variations on the classic Rabbit Deterrent (scatter pepper on lettuce leaf on brick, rabbit chews leaf, sneezes, and knocks itself out) will be considered if sufficiently outrageous.

From: CULTURAL INDUSTRIES FOR QUEENSLAND
by Lewis Adolphus Bernays (1883)

AMATUNGULA, or NATAL, PLUM.

(*Carissa grandiflora*.—APOCYNACEÆ.)

A native of South Africa; a large shrub with strong thorns in couples at every leaf-bud. The foliage is rich and glossy, and the flower white, with a strong perfume similar to that of the orange, which, as an ornamental tree for garden purposes, it much resembles. In the wild state it is found chiefly about Natal and district, growing near the sea, the salt water often washing up to its roots. Here and there a stunted specimen may be found on the high land in the dense bush which skirts the coast, after which it disappears altogether. Although like most plants it responds by vigour of growth to generous treatment, poverty of soil at least, if not restricted rootrun, seems necessary to make it flower and fruit. The close habit of growth of the plant, and its formidable thorns, would probably make it useful for hedges. It is very hardy under the pruning shears.

The fruit is well worth growing, as, when quite ripe, it is decidedly pleasant in a raw state, and makes an excellent preserve. When ripe, it is a light but bright-red colour, of an olive shape, varying in size from a large olive to a pullet's egg, although I have not seen it attain the latter size in Queensland. The flavour is sweet and slightly astringent; the appearance of the fruit when broken in two being oddly similar to that of strawberries and cream. In eating it should be put well into the mouth, as the creamy appearance is due to an exudation which, when in contact with the lips, is somewhat sticky. It has the high quality, however, of being remarkably wholesome; and in Natal it enters largely into consumption in the form of jam.

The plant is readily propagated from seed, layers, or cuttings, and is well adapted for profitably occupying much of the poor land near high-water mark, which is comparatively worthless for any other purpose. I cannot say if, like the cocoanut, it will thrive in pure sand, but the experiment is worth trying.

EFFECTIVE GRASSHOPPER CONTROL

Tim Udall Box 991 St. Johns AZ 85936

Here in northeastern Arizona we're suffering our third major grasshopper infestation in eight years. The grasshoppers causing the damage are migratory species that eat range grasses. When these grasses dry out the hoppers migrate to irrigated fields and orchards, eating not only leaves, but bark and fruit as well. Seeing 200 to 400 per square yard is common here.

Over the years various methods of control have been tried with limited success. My favorite was an ingenious contraption that rolled down alfalfa fields causing grasshoppers to fly up and strike a metal shield, ending up on rollers that squashed them. The only trouble was that it didn't work.

In the early 1900's an enterprising businessman hauled a flock of 500 turkeys from farm to farm for the then unheard of price of $10 per day. The turkeys performed quite well, but the coyotes did even better, and it wasn't long until this thriving business "died out."

Some mix a poison such as Sevin with sugar water and bran, and scatter it along ditch banks and fence rows. Though it isn't too effective, it is highly satisfying to go out and make a "body count."

After trying many methods I finally found a satisfactory one for me: guinea hens. They make a constant irritating noise which makes it hard to have guineas and be popular in the neighborhood, but with the right management system, guineas make ideal grasshopper stoppers. They're born bug killers, sharp eyed, quick, agile, and single minded. Nothing bothers them during the day, but they are vulnerable to predators at night.

To solve the problem I built a narrow high coop with the top perch about 6 ft. off the ground. The roof and three walls are made of wood, but the front is 4x4 in. reinforced concrete wire that they can squeeze thru. At dusk they're roosting high up before the predators come out.

The openings are too small for dogs and coyotes and the wire is too thick and tough to chew thru. Skunks can crawl in, but the guineas perch too high for them.

Guineas do little damage because they don't scratch and dig, nor are they very interested in the fruits and vegetables. My orchard hasn't suffered grasshopper damage as it did in the past, whereas neighbors' fruit trees have been denuded and killed.

Guineas save me expense and time because I don't have to bother with sprays, baits, or hand picking. They really work for me!

'POMONA' Fall 1985

Chestnuts conker import barrier

Newly imported varieties will soon be injecting fresh life into Australia's chestnut industry.

Until recently imports of chestnut planting material into Australia were banned, because of the risk of bringing in dreaded chestnut blight. That's changed, Graeme Evans, of the Australian Agricultural Health and Quarantine Service, says.

Evans, who heads the Service's Canberra quarantine station, says that with the technology now available, it has become feasible to import both seed and vegetative material.

Recently Chinese chestnut varieties were brought in to help supply Australia's burgeoning gourmet market. They should also help develop a useful export industry.

Perhaps the main advantage of the Chinese material, however, is that it is resistant to blight - a disease which has the potential to devastate the local industry if it ever got into Australia.

"Resistant varieties could be an insurance policy for the future," Victorian horticultural officer, Tony Allen, says. He adds, however, that he's not convinced they are better than existing Australian selections in other respects.

The Australian industry is based largely on European or Spanish chestnuts, Allen says. A large number of good selections have been made from these, and last winter the Victorian Agriculture Department planted out a test block at its Toolangi Research Station.

According to calculations carried out by the Department, chestnuts should provide gross returns in excess of $10,000 a hectare.

Total Australian production has for long languished at around only 120 tonnes a year, but that's set to change. By 1990 the figure should be over 500t.

Stimulus to the local market has come largely from migrants from Mediterranean countries, where chestnuts have been a staple food for centuries. Then there's a potential export market to South-East Asia - provided growers can come up with the high quality varieties now obtainable. In the past most Australian chestnut trees were grown from seedlings - producing poor quality nuts.

Another point in the industry's favour is the ability to store chestnuts in coolrooms for sale in the northern hemisphere's off-season.

Evans says the Chinese variety is similar to the more conventional European type, although some people claim they are more flavoursome.

Material imported as seed has to be grown out for two years under quarantine before being released - ensuring it's disease-free.

Vegetative imports must first be grown under quarantine and the new wood re-propagated in isolation. All the initial material is destroyed as a safety measure.

The plants currently being grown in Canberra consist of rootstocks produced from imported seed and grafts from US budwood.

BOOK REVIEW
FRUITS OF INDIA: TROPICAL AND SUBTROPICAL

The appearance of this book represents a real publishing landmark for anyone seriously involved in the production of tropical and subtropical fruits. Edited by T K Bose, and published by Naya Prokash of Calcutta in 1985, this is an exhaustive, up-to-date, and scientific review of the topic.

The 637 pages of the book are split among 28 chapters. The first 4 deal with history, importance, and scope of tropical and subtropical fruits in India, orchard planning, soil management, and training and pruning. The next 23 chapters deal with individual fruits or families of fruits, as follows: mango, banana, citrus, grape, guava, pineapple, papaya, coconut, litchi, cashew, sapota (Achras zapota), avocado, custard apple (Annona species), jackfruit, bael (Aegle marmelos), fig, ber (Zizyphus species), pomegranate, loquat, phalsa (Grewia asiatica), date palm, jamun (Syzygium/Eugenia species), and aonla (Phyllanthus/Emblica species). The last chapter deals with post-harvest handling of fresh fruits.

Each chapter is presented in greater or lesser detail, with full references to results of local and foreign studies, and treated under a range of main and sub-headings. As an example, the mango, a major fruit in India, has 57 pages devoted to history; composition and uses; origin and distribution; species and varieties; soil and climate; area and production; propagation; cultivation; flowering, pollination and fruitset; fruit growth and development; biennial bearing; pests, diseases and physiological disorders; mango malformation; harvesting; yield; packaging and transport; storage and ripening; marketing; and breeding and varietal improvement. About 200 references to published studies on mango are given.

The book is hardbound, with colour and black and white photographs, and in distinction to most books made in India is very well produced with a special slip-case. The presentation and content is first-class, and Naya Prokash are to be congratulated on this book, which has no real competitors in print. About the only criticism concerns the index; one is given, but it is really only a rearrangement of headings within each chapter. It is possible to look up the route Cashew: Propagation: Vegetative: Airlaying, but not possible to look up where the Behat Coconut variety was referred to, unless you already knew it was a type of guava.

Even at $59.75, the book is good value, when nowadays many specialist books from overseas are costing $120-150 each, sometimes over $200. The book may be ordered from Granny Smith's Bookshop, PO Box 27, Subiaco WA 6008.

(David Noel)

WANATCA AWARDS GRANT-IN-AID FOR AUSTRALIAN NUT INDUSTRY SURVEY

The Association has awarded a Grant-in-Aid of $100 to Lisa Mahoney, a student at Muresk Agricultural College, to assist her in compiling a survey of the Australian Nut Industry. We were able to arrange for a draft of the report to be prepared for Lisa on a computer word-processing package, and her grant was put towards the cost of this. The Association will receive a copy of the final report when completed later this year. The report is extensive, running to around 100 pages, and it may be possible for us to publish the full report at a later stage.

A SAFER FASTER START FOR TREES

Wilfred J.B. Crane
CSIRO, Division of Forest Research, Canberra

'Planting Trees is easy' - or so the posters say. It's GROWING that is often more difficult, especially in getting trees established through the first critical year. An unconfirmed statistic suggest that well over half the tree stock produced in Australian nurseries, might not make it through the first year.

The hazards include animals such as rabbits, rats, and wombats, weeds, drought, frost, and wind. Just one or two rabbits can bite of 500 freshly planted pines in a night; not eaten - done purely for spite !

Last year's drought following such a promising spring took a heavy toll on establishing trees, especially if any grass was left as a weed to compete with the tree for water. Both native and introduced grasses can out-compete establishing trees for moisture in the first year.

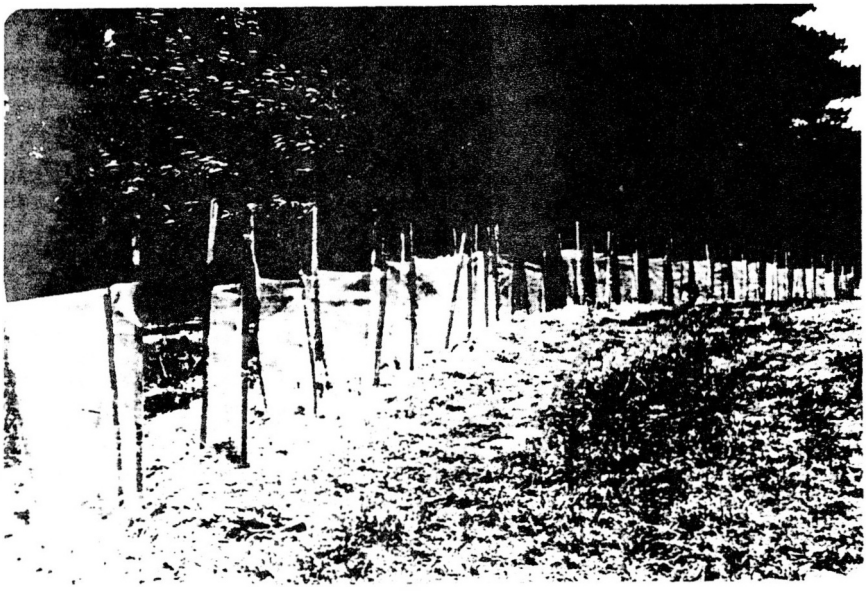
Thus an essential rule of planting, is to ensure that newly planted trees go into summer without grass or other weeds in the immediately surrounding area Modern weedicides and knapsack or spot-gun sprayers make this a relatively simple task. But what of the hazard of animals, wind, frost and drought even if weeds are controlled?

One obvious tool is a tree guard, and a search has been on in Australia in the last few years for THE cheap and easy tree guard.

The breakthrough appears to have come from the UK, with a guard now called a 'tube', and which does much more than protect trees from small animals.

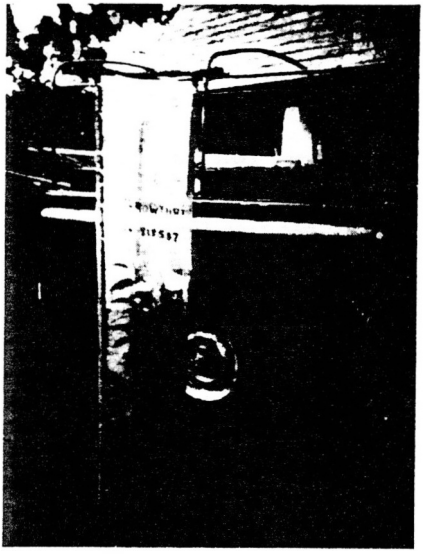
In the past five years Grahan Tuley (Tuley, 1985) of the British Forestry Commission has been testing the idea of placing a tube of clear or opaque plastic around freshly planted trees. The concept is lateral; rather than plants to the greenhouse, bring a greenhouse to the plant!

The results in the UK and in Australia have been spectacular. In the UK, Tuley found that oak trees which traditionally have taken 3 or 4 years to establish over the top of grass, could be grown through the top of a metre-high tube in just one



year. He also found that a wide range of tree species also established and grew very rapidly in the tubes. When biomass was measured, Tuley found that the trees inside the tubes had grown up to 10 times faster. The tube is now being hailed as one of the most important recent advances in the management of trees in the UK.

In the past several years similar plastic tree guards have been used in Australia, particularly in Tasmania and on the Southern Tablelands of NSW. The trees which have been tubed include pines, cypresses, natives (eucalypts, acacias, blackwoods, Casuarinas, etc.), and a range of broadleaves such as poplars, oaks, elms, fodder trees such as 'tree lucerne' and nut, fruit and orchard trees. It has also been tried and found to be very advantageous on other plants such as tomatoes and grape vines.



The concept of forming an inside cuff at the bottom of the tube as a water trap to increase humidity around the plant has been found to be very advantageous - particularly in the tableland region where humidity can be relatively low. Atmospheric humidity is often a major factor in determining the rate of growth of many arborial plants in Mediterranean climates; plants can be under considerable stress in low humidity, even in a well watered soil.

Scientists in the UK are now investigating why the tubes work so well to increase growth. The answer will doubtlessly confirm that the tubes act as do greenhouses; temperature is increased - especially in the soil, and an enhanced atmosphere of carbon dioxide in the tube is most probably maintained. Additionally atmospheric moisture is often 'condensed' over night or in foggy conditions thus helps water the trees. The tube protects plants from the effect of wind (hot or cold), and hence reduces evaporation from the soil and transpiration from the plant. At the surface of the soil the tube thus acts as does a mulch. The tube also protects from salt sprays and makes the safe spraying of weedicide a relatively easy preparation. Planting smaller stock or even spot sowing seed is also possible. This can often be advantageous in a number of ways, not the least of which is economic.

The tube doubles as a tree guard giving some protection from small animals, although the strength of the three stakes used to support the tube will determine just how big an animal might be discouraged. Larger animals such as cattle and horses need at least several strands of barb or electric wire. However for rabbits the tubes generally work well.

The tubes still need to be treated with some caution, as being a relatively new idea they have not been tested in all situations. For instance lifting the skirt in summer to allow convectional air flow through the tube may be necessary in warmer more western districts. The optimum diameter of the tube for Australian conditions has been found to be larger than that for the UK, the average used in Australia so far is about 30 to 40 cm. In the UK tubes 2 metres high and as narrow as 10 cm in diameter are being used. Wind firmness is another factor which

needs attention. Recent experience on the tablelands suggests that letting the tree grow well out of the top of the tube helps ensure stability.

Tough UV resistant tube is now available at a cost which together with the 3 stakes, is about $1.60 to $2.00 per tree for a 80 cm to 120 cm guard. Tree planters might consider the advantage of actually planting less trees in order to afford guards for those which are planted and ensure a safe and flying start to the windbreak, woodlot or agroforest.

There are few things more satsifying than to admire the successful showing of trees in a planting during the first year, especially after the effort of nursing seedlings or cuttings, preparing the soil, fencing, weeding, planting, and whatever else has been necessary to get them planted. But most who have planted trees will know the discouragement or frustration that can result from just one of the things that can go wrong - like an Australian drought, a devastating day of drying wind, frosts, or those ** rabbits.

Tuley, G. (1985). The growth of young oak trees in shelters. Forestrym 58 (2): 181-195.

ACORNS AS HUMAN FOODS

Stephanie Rewell, a student in the Home and Consumer Studies Department of the Western Australian Institute of Technology, is undertaking a research project to develop food products based on acorn flour. Acorns, the general name for the nuts produced by any of the hundreds of species of oak trees growing from cold to tropical areas, are high in food value. They are excellent as stock feed, but the nuts of many species are high in bitter tannins (although some are sweet and comparable in taste with chestnuts). Stephanie wrote to WANATCA for information, and we were able to refer her to some descriptions of how the North American indians processed bitter acorns for human food; in some areas acorns were a staple part of the diet. We hear that Stephanie has been able to produce some excellent muffins and bread products using acorn flour.

TEMPERATE LEUCAENA FORAGE- WANATCA TRIAL PROJECT

Through the good offices of member Ivan Laszlo, we have arranged to obtain seed of a cold-hardy species of Leucaena, L. retusa, for tree forage trials. The seed, which originates from Mexico, is specially imported and must be germinated and grown in quarantine before release; WANATCA will be funding the quarantine charge of $100.00.

Leucaena species are well publicised for tree forage, and have been the subject of CSIRO trials in northern Australia, as most are suited to tropical conditions. After an initial problem in animal digestion (found to be caused by the lack of a micro-organism in the animals' stomachs), the tropical leucaenas have proved very successful for stock feed (they are fast-growing legumes, some have edible pods also, most are good timber producers). The aim of the present trials is to extend the benefits of leucaenas to colder regions.

TREASURER

PARLIAMENT HOUSE
CANBERRA 2600

Ms Lorna Budd
Secretary/Treasurer
West Australian Nut &
Tree Crop Association
PO Box 565
SUBIACO WA 6008

Dear Ms Budd

I refer to your letters of 27 September 1985 and 20 December 1985 in which you sought clarification of the sales tax treatment of nuts and nut products.

With effect from 20 September 1985, "savoury snacks", as defined in the sales tax legislation, are taxable at the rate of 10%. The expression "savoury snacks" is defined as goods being, inter alia, nuts that have been shelled or have been processed or treated by salting, spicing, smoking or roasting or in any other manner and that are of a kind sold exclusively or principally, or put up for sale, as food for human consumption without requiring processing or treatment. Nuts that have not been processed or treated by salting, spicing, smoking or roasting or in any similar manner, being nuts of a kind used exclusively or principally as ingredients of food for human consumption or as goods mixed with or added to food for human consumption are excluded from the savoury snacks definition.

Examples of the kinds of nuts which are now taxable at the 10% rate are salted or roasted peanuts, cashews etc. With regard to raw nuts, the Commissioner of Taxation, who is responsible for the administration of the sales tax legislation, has advised that as an interim measure pending further enquiries into the matter, it has been decided to accept that all raw nuts, whether shelled or not, may be treated as exempt from sales tax, provided they have not been salted, spiced, smoked, roasted or otherwise processed. Raw nuts which have been blanched, split or crushed are also regarded as exempt from sales tax.

The Commissioner also advised that a review of the various nut products on the market is presently being undertaken. Upon completion of that review it is intended to issue a Taxation Ruling covering the sales tax classification of

nut products. Copies of that Taxation Ruling will be available at the various Taxation Office branches. In the meantime, the Commissioner said that if your members are uncertain as to whether any particular product is taxable the Deputy Commissioner of Taxation in Perth will be pleased to assist on receipt of full details of the product.

I trust the foregoing clarifies the matter for your members.

Yours sincerely

CHRIS HURFORD
Minister Assisting the Treasurer

AMLA.

(*Phyllanthus Emblica—Emblica officinalis.*—EUPHORBIACEÆ.)

A small tree found in dry situations all over India, in Burmah, Ceylon, and the Indian Archipelago, at various levels up to as high as 4,000 feet. The name *Phyllanthus* is a compound of two Greek words indicating the growth of the flower at the foot of the leaf.

The foliage is singularly pretty, being of a bright green, shading off towards the terminal points of the branches to a golden brown; a singularity which, combined with a graceful arrangement of the leaves, produces a charming effect.

The small round fruits are plentifully produced, and are used for pickling and preserving, but are too sour to eat raw. In the Punjab they are made the basis of ink and of a black dye.

The timber is very valuable, being hard, fibrous, flexible, and straight-grained. It is durable, indeed remarkably so, under water; and for this reason is much used in India in the construction of wells. For building purposes and furniture, as well as for such uses as gunstocks and turning, it is in great demand.

The bark is in requisition for tanning, and is used medicinally for diarrhœa. The young leaves, infused in sour milk, are given by the natives in dysentery cases. Infusions of the leaves are also applied with effect to sore eyes; and the root-bark is similarly applied for inflammation of the mouth. Both seeds and leaves are used medicinally by the natives in diabetes, fevers, and bilious affections. The flowers are also credited by the native doctors with refrigerant and aperient properties.

The young branches and chips of the wood thrown into impure or muddy water are said to clear it effectually.

From the root an astringent extract, equal to catechu, has been prepared, both for medicine and the arts.

The tree has been largely distributed in Queensland and has probably found a home in many of the gardens north of Brisbane. A specimen may be seen at Bowen Park.

From: CULTURAL INDUSTRIES FOR QUEENSLAND

Tree-Planting Day

Prime Minister Lee Kuan Yew planted a chiku sapling at Spottiswoode Park to mark the 15th annual national tree-planting day. Other Ministers and Members of Parliament also led their constituents in the tree-planting exercise in an effort to make Singapore a greener city.

Like the previous year, the emphasis of this year's tree-planting day centred on the planting of fruit trees. Of the 1,824 trees planted, 1,296 were fruit trees. The rest were 438 ornamental trees, 50 palm trees and 40 shrubs.

Since the launching of the first national tree-planting day in 1971, a total of 262,577 plants comprising fruit trees, ornamental trees and shrubs had been planted.

Between January and October this year, the Primary Production Department sold a total of 18,782 fruit saplings to fruit tree growers and distributed another 2,074 to various government departments, statutory boards and schools. Mango, guava, rambutan, chiku and dwarf coconut were the popular fruit plants sold and distributed. Several types of rare fruit plants such as kedondong, sentul, avacado, jujube, duku and langsat were among those distributed.

'PRIMARY PRODUCTION BULLETIN'
SINGAPORE November 1985

DIEBACK ANALYSIS SERVICE

Ray and Ros Hart have set up a commercial service for the mapping, sampling, and identification of the 'dieback fungus', Phytophthora cinnamomi. This fungus is the one responsible for 'jarrah dieback', and in some countries has proved a scourge of avocado plantings; strict dieback controls are used in W.A. avocado orchards. There have also been reports of chestnut losses due to P.C.

A complete service is offered, including field work, management advice, and laboratory testing. Contact Hart, Simpson & Associates, 21 Rankin Rd, Shenton Park WA 6008, phone 09-382 2086.

Welcome relative from Brazil

By NEVILLE PASSMORE

BIRIBA or Countess Fruit are both common names for a curious and yet delicious custard apple relative known botanically as Rollinia deliciosa.

The custard apple family is a large one and includes cherimoya, sugar apple and the fascinating soursop.

Great commercial interest is now being focused on them as Australian climatic conditions make it one of the most promising areas for successful natural pollination and fruit bearing in the world.

Rollinia has come from Brazil as a result of expeditions to South America to find promising new members of the family. Selective breeding trials are under way in NSW and Queensland to produce superior trees and fruits for an eager Australian market. Right now premium custard apples — mainly the variety "African Pride" — are appearing in our markets and fruit shops.

If you have tasted a custard apple you have the first inkling of what Rollinia is about. The flesh is creamy white with numerous black seeds embedded. With a texture of smooth banana, the flesh flakes like well-cooked fish.

Rollinia deliciosa — a mouth-watering dessert fruit.

Flavour is always difficult to describe. A combination of sweet custard apple with slightly acid pineapple is probably as close as I can get. The sweet yet tangy flesh is much admired by those who have been privileged to try it.

An attractive yellow skin fruit, Rollinia is about the size and shape of an apple cucumber. Fruits are usually eaten fresh, however, as with soursop, many delightful drinks can be made with pureed flesh. Because the tree crops from March to July it will be a valuable crop filling a large gap in the fresh fruit calendar.

THE TREE:

A semi-deciduous tree of good vigour, Biriba will grow to five or seven metres high with a similar spread. Being a tropical species it requires special care during our cold wet winters for at least the first three years.

I would recommend a vertical windbreak curtain of shadecloth two metres high be placed around the newly planted tree. As winter approaches a second layer of clear plastic should go around the shelter. This will further aid wind protection as well as affording some protection from frost.

Because it is self-fertile, only one tree is needed for fruiting. First crops can be expected within three to four years from planting. Basically the growing requirements — soil, water, sunshine, fertiliser and mulching — are the same as citrus trees.

Rollinia has very attractive large green foliage and a semi-weeping growth habit. I believe it would make an attractive front garden tree particularly when loaded down with ripe golden yellow fruits.

THE WEST AUSTRALIAN SATURDAY APRIL 19 1986

ARGAN TREE.

(*Argania sideroxylon—Sideroxylon spinosum.*—SAPOTACEÆ.)

This is a low, spreading, evergreen tree of a shrubby nature, with very small leaves and covered with short spines. The branches start a few feet from the ground, inclining downwards until they reach the earth at a considerable distance from the stem, when they ascend again. The roots also extend a great distance underground and send up suckers at intervals. The branches of the tree closely interlace in every direction, and from its bushy, thorny character it would appear well calculated, if properly trimmed, for hedges which would be utterly impervious to sheep or pigs. To show the character of the growth of the Argan, a tree is mentioned measuring only 16 feet in height, while the circumference of the branches was 220 feet. It thrives in poor light stony and arid soil, and is eminently adapted for cultivation in warm countries subject to drought.

The Argan is a native of Morocco, being common in the States of Western Barbary, in certain provinces of which it grows in woods. The fruit is like a small plum, egg-shaped or roundish, and is greatly relished by all ruminant animals, who in chewing the cud reject the hard seeds, which are afterwards collected for the extraction of their oil. Large quantities of the fruit are collected and fed to cattle under conditions where the rejected nuts can be easily collected. As the crop ripens also, herds of camels, goats, sheep, and cattle are taken out among the trees, which are beaten with a long pole; the fruit, as it falls, being devoured voraciously. In the evening the flocks and herds thus fed are driven home, and when comfortably settled in their yards they commence chewing the cud, throwing out the nuts; and these are collected each morning as soon as the animals have departed on their daily excursion. The nuts sometimes pass through the stomach, but this is only a casualty. It is a curious circumstance that, while the fruit of the Argan is greedily devoured by the above-named animals, the horse, the ass, and the mule do not like it. Large quantities of the fruit are also collected by women and children, and well dried. The hull is then removed and stored as fodder for the camels and mules travelling in winter, and is considered very nutritious. The mode of extracting the oil is primitive. The nuts, which are very hard, are cracked by women and children, and after being roasted to a brown colour the kernels are ground in a rude handmill. The resulting matter is then put into a pan with a little hot water, and is kept constantly stirred and kneaded with the hand. The cake—in which, when the method of pressing is defective, a good deal of oil remains—is generally given to the milch cows and goats. During the operation the oil runs out at the sides, and is from time to time poured into a clean vessel. The process of kneading is carried on until the mass becomes so hard that it can no longer be kneaded; the harder and firmer the coarse residuary parts, the more completely is the oil extracted. At the last, cold water is sprinkled on it in order, as they say, to expel the last particles of oil. The main point to be attended to in order

From: CULTURAL INDUSTRIES FOR QUEENSLAND
by Lewis Adolphus Bernays (1883)

to extract the greatest quantity and the best quality of oil, is that it should be well kneaded, and that the proper proportion of hot water for the extraction of the oil should be used. The residuary mass, often as hard as a stone, is of a black-brown colour, and has a bitter disagreeable flavour. The oil itself, when it has settled, is clear, of a light-brown colour, and has a rancid smell and flavour. It is capable of purification, but when used without preparation in cooking it has a stimulating and pungent taste. The vapour which arises when anything is fried in it affects the lungs and occasions coughing. The common people use it generally without preparation; but in better houses it is the custom, in order to remove the pungency, to mix the oil previously with water, or to put a bit of bread in it and let it simmer before the fire. The empty husk of the nut is used as fuel, and the best charcoal is made from the timber of the tree, which is hard, tough, fine-grained, and of a yellow colour.

The foregoing account is chiefly derived from a report made to the Secretary of State for the Colonies by the British Consul at Mogador, some twelve years ago, and reached the writer through the Acclimatisation Society of New South Wales, which was then in existence. Accompanying the report was a package of the nuts, from which hundreds of plants were raised and distributed throughout the warmer parts of the colony. A good specimen may be seen at Bowen Park, strongly exemplifying some of the characteristics of the tree.

The Argan is propagated either from seeds or cuttings. The wood is very hard, and so heavy as to sink in water.

ELEPHANT—or WOOD-APPLE.

(*Feronia elephantum.*—AURANTIACEÆ.)

This is a large deciduous tree found throughout India, and in Ceylon and Java, in dry situations, ascending to a height of 1,500 feet. It is also a good deal cultivated in India. It has a symmetrical trunk reaching to four feet in girth. Both leaves and flowers have a strong smell of anise, and at the axils of the leaves are stout straight thorns. The bark is dark-grey or nearly black, corrugated with long shallow furrows. Although not so valuable a tree as the Bael-fruit, the Elephant-apple possesses uses which entitle it to rank among economic trees. The flowers, which are of a dull-red colour, are followed by round pale-green fruit about the size of a cricket ball from 1½ to 2 inches through, with a hard external shell; the interior is full of a brown soft mealy subacid substance, not very palatable uncooked, but convertible into a very pleasant jelly, which is hardly distinguishable from black currant jelly. The leaves are used as a stomachic and carminative.

A white transparent gum, used for medicinal purposes, exudes from the bark; it much resembles gum arabic, and together with the gum from a number of other trees, including the mango and acacia arabica, forms part of the East Indian gum arabic of commerce. The Elephant-apple is also one of the trees upon which the Lac insect works. The timber is hard, close-grained, and tough, and is used for various purposes for which these qualities are especially useful. The tree can be propagated by seed or cuttings. This tree has been frequently introduced into Queensland, and has been largely distributed.

1985 WANATCA YEARBOOK PUBLISHED

The 1985 WANATCA Yearbook has finally been published and sent out to all members who subscribed for 1985. Some very complimentary comments have already been received (' ... the best Yearbook yet ...'), and generally it seems as if the wait was worth while. Congratulations to Yearbook Editor David Turner for a splendid job. David reports that, now the bugs are out of the system, work is going on well for the 1986 Yearbook and this should appear on time.

** SMALL ADVERTISEMENT SECTION **

This is a new section appearing in 'QUANDONG' for the convenience of members and others. Send ads to 'QUANDONG ADS', PO Box 565, Subiaco WA 6008 with your remittance for the cost - $1.00 per line. The deadline for Small Ads will be 1st of February, May, August, and November at present

NEW-ZEALAND TRAINED NURSERYMAN seeks employment anywhere in W.A., interests pecans, chestnuts, and other tree crops. Contact Ken Herivel, 1/52 Kent St, Rockingham 6168.

'CASUARINA ECOLOGY, MANAGEMENT AND UTILIZATION', review of this powerful family of nitrogen fixing trees, able to colonize sand dunes, deserts, beach swamps, salt soils etc. Produce timber, forage, fuel. CSIRO, 1983. 286p. $10.00 from Granny Smith, PO Box 27, Subiaco 6008 or 09-381.2607.

Approx 100 MATURE (3') GRAFTED PISTACHIO TREES available, $12 each, also some GRAFTED PECANS, $12 each. Contact Pecan Industries, 15 Kyarra St Innaloo 6018 or phone 446 2316 after 5pm.

Just arrived, TREES OF SOUTHERN AFRICA (Palgrave), over 1000 pages, describes every species south of the Zambezi, tremendous under-exploited source of fruits and nuts. First-class production, colour, hardbound, highly recommended. $37.50 from Granny Smith as above.

Complete DIEBACK (PHYTOPHTHORA) testing and management service, contact Hart Simpson & Associates, 21 Rankin Rd Shenton Park 6008, phone 09-382 2086.

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WEST AUSTRALIAN NUT & TREE CROP ASSOCIATION (Inc)
PO Box 565 Subiaco WA 6008 Australia

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CALENDAR OF EVENTS 1986

(General Meetings are held quarterly at the Naturalists' Hall, No. 63 Meriwa Street Nedlands, at 7.30 pm on Wednesdays)

MAY 21 Wed	General Meeting (Tim Enright: TROPICAL AND SUBTROPICAL FRUIT CULTURE IN SUBURBAN PERTH)
MAY 22-25	ACOTANC-3 Conference, Auckland
JUL 8 Tue	Executive Committee
AUG 20 Wed	General Meeting (Ray Hart: PERMACULTURE AND TREE CROPPING)
OCT 7 Tue	Executive Committee
NOV 19 Wed	Annual General Meeting

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 : $20.00 per year (includes all publications); Students $10.00.