



QUANDONG

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Newsletter of **WANS** the West Australian Nutgrowing Society

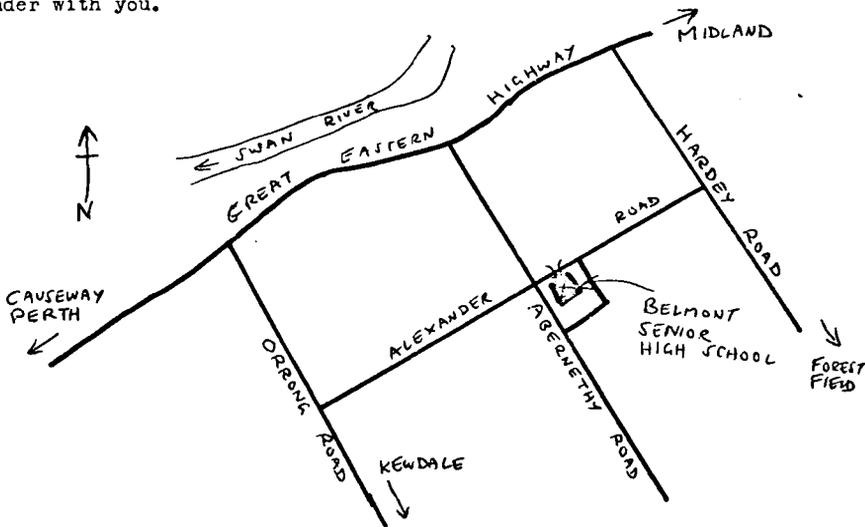
NEXT MEETING

The next meeting of the Society will be a BRAINS TRUST. We hope that all the best brains of the nut-growing world will be there to answer your questions and ladle out advice, while cunningly picking your brains to see what really happens! At the same time, it will be a good opportunity to hear your views on what we should be doing in the Society, what information we should be acquiring and publishing, and so on. In short, this will be much of a free-format meeting in which you can have your say in what takes place.

The meeting will be held in the STAFF ROOM, Belmont Senior High School (Belmont Technical Education Centre), 271 Alexander Road, Belmont, on:

TUESDAY · MARCH 15 · 7-30 PM

The sketch below shows how to get there. If you want to renew your subscription at the meeting, please make sure to bring the renewal reminder with you.



CO-OP TO OPEN NUT STORE

Your WANSCO Cooperative intends to open a retail nut shop next month (March 19) at 225 Onslow Road, Shenton Park (telephone 818656). It is intended to offer the widest range of nuts and nut products in the country, possibly in the world. A discount will be offered to WANS members. See the WANSCO Supplement inside for further details, and watch the local press for late information.

QUANDONG

is edited by David Noel and is the Official Newsletter of the

WEST AUSTRALIAN NUTGROWING SOCIETY

PO Box 27 Subiaco WA 6008

WANS

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BOARD OF DIRECTORS OF THE SOCIETY

Peter Good (President), 414741; Paul Sinclair (Vice-President), 805519; Mrs Carolyn Blackwell (Secretary-Treasurer), Lot 9, Spring Road, Roleystone 6111, tel. 955036; David Noel (Publications Editor), 98 Herbert Rd, Shenton Park, 811139; Edmund Czechowski, PO Box 12, Wanneroo 6065.

CONVENORS

CASHEWS - Derek White, PO Box 249, Kununurra 6743
INVESTMENT & TAXATION - Edmund Czechowski, PO Box 12, Wanneroo
LITTLE-KNOWN NUTS - David Noel (811139)
MARKETING - John Mercer, 45 Bridgewater Drive Kallaroo (926031)
NUTRITION - Alex Sae, 52 Croydon Rd Roleystone (250101 xt 2155)
TASMANIA - Bill Mollison, 316a Strickland Ave, South Hobart
TREE SUPPLY - Tim Lynn-Robinson (921852)

SOCIETY PUBLICATIONS

WANS publishes a newsletter QUANDONG 3-4 times a year, devoted to news of meetings and events, details of tree and seed sources, notes on books and leaflets about nuts, reprinted short articles about nuts, and other items of interest. The major publication is the annual WANS YEARBOOK, which contains articles drawn from Australia and overseas, covering any aspect of nut horticulture and production, and is regarded as an important research journal in this area.

Members subscribe for the Calendar Year, and receive one copy of all Society publications issued in that year as a subscription benefit.

BACK NUMBERS

WANS began publishing in 1975. Back sets of 1975 publications (3 issues of Quandong and the 1975 Yearbook) are available still to members at a cost of \$6.00. Contact the Secretary for back numbers. The cost of a set of 1975 publications (same as subscription) is \$8.00.

MEMBERSHIP DETAILS

Any person or organization interested in the growing or production of nuts may apply for membership. Members are welcomed from outside Western Australia and overseas, as well as in W.A. Write to P.O. Box 27, Subiaco, W.A. 6008, Australia, or to the Secretary as above.

WANS CO

Members of the Society own a co-operative, West Australian Nut Supplies Co-operative Limited, a legally registered Co-operative Company set up to buy and sell nuts and nut products. Shares in the WANS CO co-operative are sold only to WANS members, each of whom is entitled by the Articles to apply for and hold between 10 and 100 shares of \$1.00 each. Members wishing to acquire WANS CO shares (currently available at par, i.e. \$1.00 each) should write to WANS CO Secretary and Director, Edmund Czechowski, at PO Box 12, Wanneroo, W.A. 6065. WANS CO will always endeavour to sell nuts produced by members, or supply nuts needed by members. Enquiries should be directed in the first instance to Catie Ruben, 1d Violet Grove, Shenton Park, WA 6008 (tel. (092)-811579) for all trading needs.

TRAVELS WITH TIM-PE.4 (TIM LYNN-ROBINSON)

..... Robert O'Mara gave us our next lead when I asked him about what was happening in the Pecan field. He said that we should visit a Mr. Jim Rogers, who was over the mountains from Mamour and just south of Gympie at a small place called Dagon. We decided that really the crowded "Gold Coast" wasn't for us -- we were finding it increasingly difficult to locate quiet camping spots with reasonable facilities. After making a few enquiries from the local people and a phone call to the State Forest Department, we were put on to a very delightful camping spot on the edge of the Boorumba State Forest.

I left the family here alongside a creek with crystal clear water to swim in, and bellbirds to listen to.

I set off to visit Mr Jim Rogers at Dagon, about 20 miles north of our camping area. At his property was a tall Norfolk-Island-pine-looking tree, which of course offered the best shade. On the side of the gate was a notice: 'Watch Out For Large Falling Bunys Nuts' --- and they could do some damage! This was my isolated and somewhat apprehensive first meeting with the Bunys Nut tree.

Having negotiated this hazard, I drove up the drive and could already see a truly stirring sight, to me anyway, of large, graceful, leafy pecan trees. After parking under them, I met Mr Rogers and his family, gratefully accepting a very welcome cup of tea, and told him (in brief) where my nut investigations had led me.

He told me that he had bought the property only a few years ago, and that the pecan grove had been planted by an American, the late Mr. Doyle, some 20-30 years previously. It was the first commercial pecan grove in Australia, and one seedling pecan near the house was some 60 ft high.

The property is a fairly steep one, in an old pineapple area. Some terracing had been done for ease of handling, and 14 varieties of pecans had been planted; the only one that really wasn't producing too well was Frotcher. The planting had been made fairly close (30 x 50'), with a view to pulling out every other tree at a later stage, but as Mr Rogers said, no man in his right mind can cut down a producing tree that he had been caring for and watching grow for 15-20 years. This is quite a consideration, and a point against initial close planting, which I heard advocated quite often. It would be a hard decision for a tree lover to make, to suddenly pull out half his trees. Jim Rogers said that a planting space of 45-60' was ideal in good soil and moisture conditions.

I noticed all around the house and grove, pecan seedlings, and commented on these. "Oh", he said, "They grow like weeds around here, and are a damn nuisance!". Which doesn't say much for all the complex techniques written about in some literature on raising seedlings. Jim does his own propagating, and sells grafted trees, using old mallee fowl nests (a mixture of just about everything) for his potting mixture.

Again I posed the question of the chilling requirements of pecans, and again it was said that the chilly gully winds are sufficient. Jim sells all his crop, mixed graded varieties in shell, to an outlet in Melbourne. He does a little de-shelling himself, which he demonstrated, for local consumption.

He told me a lot about varietal characteristics as far as the nuts themselves were concerned. One thing that he mentioned to me about

in-shell pecans was, that unless stored correctly they 'go off' very quickly. This was said to be due to the fact that inside the outer shell of the pecan and walnut are some woody, thin pieces holding a tannin-like substance, which breaks down and goes back into the oil of the nut under heat. This causes the nut to taste bitter or rancid, although in many cases this is the flavour one is used to in imported nuts, and perhaps has turned Australians away from walnuts and pecans. Looking at nuts in shell, you can tell the pecans that have 'broken down' by their darker, oilier appearance.

It gave me a marvellous, contented feeling sitting in the shade of these graceful trees yarning away with Jim, who like myself had spent some years 'roughing it' in the northern Station country. I got the distinct impression from Jim, that there is far too much written which in his opinion is too technical and too far removed from the natural logical way of growing plants, of whatever sort. This might be all right for the large grower, but puts the beginner off, and the beginner is important.

One commonsense point that Jim noticed was that a tree that had severe wind damage one year, with loss of limbs, bore a tremendous crop the following year. With this in mind he decided to give one of his 'poor croppers' a shock. He did this by bruising it around the trunk with the back of an axe. Presto -- fruit everywhere the following year; you can see the logic in it.

There is a problem in combatting disease in these large trees, in that a fair pressure is needed in your spray unit to get a good coverage. These trees didn't look as if they were suffering from very much. Mchawk and Western Schley seemed to be favoured varieties. The Queensland Department of Primary Industry have taken over the lower part of the grove for experimental work, I couldn't find out what.

While at the property of the Australian Macadamia Society secretary (Mr. Richards), we also contacted the President, Mr Colin Heselwood, who is also Editor of a local paper. He resides at Beerwah, south of Brisbane, and south of the Glass House Mountains. But first we visited Nutta Products again and I spent a couple of hours talking to Ian McConachie about varieties and the industry as a whole. I believe that the processors, such as Nutta Products, are very interested in future growers, for obvious reasons, and offer all the help they can. Ian had recently been for a trip to America and Hawaii and was very impressed with what the Hawaiians had done about the macadamia. Nutta Products had just acquired a macadamia sheller from America, very expensive and kept behind locked doors, so they, for one, see a future in nuts.

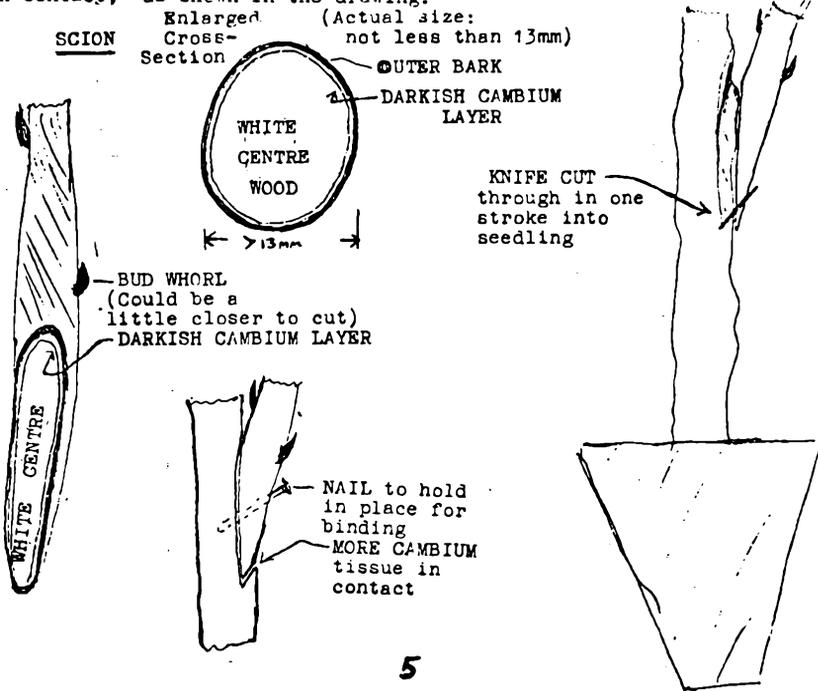
On now to Colin Heselwood's grove of mixed-age macadamias and avocados. His trees looked well too, but he was having some wind problems after the State Forestry authorities had cleared all the natural shelter belt which was next to him. Some of the young trees were showing signs of being pushed about by the wind. Colin believes that trees do a lot better if seedlings are planted in the field, and grafting is done in the field in cooler weather. The seedling develops a much better root system. He also believes in spraying as little as possible, and an observation he made after the elimination of the forest trees next door was that there was a definite increase in insect problems, which he puts down to the fact that the insect-eating birds etc. had gone with the forest.

Colin received top grading and price for his nuts the year before, which speaks well for his management, even though he works on the property only part time. He has tried training young trees, with mixed success. His main macadamia variety was 246, with a sprinkling of others. He carried out regular spraying of weeds around his young trees and all trunks were painted. Phytophthora was in evidence and again was a headache.

Colin did feel that communication between WANS and AMS should be beneficial to all concerned.

Our next visit was a very fitting end to our macadamia research, and I felt personally very privileged to have had the opportunity to meet and talk with Mr. Norm Greber, who was the man in Australia responsible for developing simple grafting techniques for Macadamia. Before his time, it was believed either to be impossible or to have a very low take percentage. Norm Greber did all the work at CSR's large plantation at Meleny (which unfortunately we didn't see), and is still working for CSR trying to find new varieties. He has a small grove of macadamias at his Beerwah property, and he spends his time grafting seedlings, top-working old trees of varieties he doesn't like, and talking to visitors or interested people.

As you walk through his grove you notice trees with what look like extra rooted trunks. When I asked about it he told me that he believed that natural ways were always the best to use where possible, and he had let seedlings grow around his trees, and then when a good 6' high he had grafted them back onto the main trunk so that the tree had good natural support against strong winds. A great idea if you can graft. He actually showed me his technique of grafting, which can be done at any time of year, but preferably in the cool weather. The scion wood (the piece grafted on the seedling) is cut six weeks after cincturing the bark below where the scion is to be taken; the cincturing or ring barking is done simply with an ordinary pair of fencing pliers, but not too hard down. You try to choose 2-3 year old wood which is reasonably straight, has 2 bud whorls, and is growing vigorously and healthily. The bud whorls should preferably be widely separated, so that in the actual join as much as possible of the cambium layers are in contact, as shown in the drawing.



A very sharp knife is used to cut the scion wood, and then a plane (again honed very sharp) is used to plane the scion cut flat. You then hold the scion up against where the graft is going to be made on your seedling (remembering that this is a side graft), and cut through the bottom of the scion into the trunk of the seedling as shown. Scribe on your seedling bark with the knife the shape of the scion cut, and in one clean stroke cut this piece out, not too deep. You are left with a small wedge on the bottom of your scion wood which matches the one on your seedling, as shown.

Now try the fit and adjust accordingly; the object is to have as much of possible of the two lots of cambium layer in contact when the scion is in place. The wedge is important, because it holds the scion wood in place while it is being tied with tape and grafting mastic (e.g. Shell Colgraff) is being applied.

Norm Greber suggested that for beginners, a nail tapped through the scion into the seedling is a good idea. Also, don't cut your seedling top off straight away because if the graft doesn't take, the seedling keeps on growing and another chance may be had later. Don't bind grafts too tightly, and use grafting tape.

After leaving Norm, we then headed over the mountains through Warwick, Tenterfield, Glen Innes, and Inverell, and through the Gwydir River area to Moree, where we struck our first real deluge of rain. Before we got to Moree, we reached our next visiting place, 'Trawalla', a pecan plantation owned by one of the biggest private growers of pecans in North America, the Stehmann family.

(to be continued)



GARDEN WEEK



The Society will again be exhibiting at GARDEN WEEK this year. As usual, our stand will be in the Societies' Pavillion set up by the W.A. Horticultural Council. Make a note of the place and date:

PERRY LAKES : MARCH 24-29
(THURS) - (TUES)

This is the only occasion each year in which the Society 'goes public', and it is the only time when we ask for general help from members. Please make your resclusion now to give us 3 hours of your time on a morning, afternoon or evening, to help in manning or setting up the stand. You definitely don't need to be an expert on nuts, several of those who helped last year claimed that they learned more from the passers-by than vice-versa!

If you may be able to help please phone
PETER GOOD (414741) or DAVID NOEL (811139)

wansco supplement

MARKETING AGREEMENT

The WANSCO Cooperative is about to swing into operation on two fronts. A MARKETING AGREEMENT has been concluded with B.MERCER PTY LTD of the Perth Metropolitan Markets (Wellington St.). Under this agreement; WANSCO will pass on to Mercer's for sale all large nut consignments offered or located by WANSCO shareholders, provided that these are of the type handled in the Markets (generally, in-shell nuts grown in W.A.). Mercer's will deduct the standard 12½% commission and return the balance direct to the consignor. In addition, Mercer's will cover the administrative costs of the scheme, which will release other WANSCO funds to improve dividends and other benefits enjoyed by shareholders. Mercer's will also make a pro-rata grant toward the WANS Research Fund which is being set up to finance studies into the production and marketing of nuts.

NUT SUPPLIES ARE URGENTLY NEEDED

If you have grown any nuts yourself, or can locate any in your neighbourhood for sale, please arrange for their consignment to us. Lots over about 10 Kg, please consign direct to

B.MERCER, Metropolitan Markets, Perth (213166; John Mercer)

Smaller lots please deliver or mail to the WANSCO shop

SQUIRREL NUTKIN, 225 Onslow Road, Shenton Park (818656)

In either case, please mark the consignment with your WANS membership number, e.g. "WANSCO 313". Shareholders' dividends will be paid on all consignments so marked, whether your own produce or that of a non-shareholder neighbour whose consignment you have arranged.

Members supplying nuts thus benefit in three ways:

- * They receive the sale price less normal commission from Mercer's;
- * They receive dividends based on volume of supply from WANSCO;
- * They benefit from application of the Research Fund, by WANS.



WANSCO

**WEST AUSTRALIAN NUT
SUPPLIES CO-OPERATIVE LIMITED**

P.O. Box 27, Subiaco
W.A. 6008, Australia

Trading Address: 225 Onslow Road,
Shenton Park. Tel: 81 8656

SQUIRREL NUTKIN

The WANSKO Cooperative has arranged to open a NUT SHOP at 225 Onslow Road, Shenton Park (Telephone 818656) as from Saturday, March 19. The shop will sell only nuts, nut products, and related materials. As well as the usual range of nuts, it will also have as wide a possible range of less usual nuts, such as ginkgo, olive kernels, kaya nuts, bunya nuts, etc., whenever these can be obtained. We hope to offer the widest range of nut products in the world. The name of the shop has been registered as SQUIRREL NUTKIN.

Squirrel Nutkin would like to hear from nearby members or their families who would be interested in helping to run the shop. Expenses will be paid at the rate of \$2.00 per hour. Opening times will be dependent on the demand. Initially they will start off at:

THURSDAY afternoons from 1 pm;
THURSDAY evenings till 8.30 pm;
SATURDAY mornings from 9-12.30.

We hope to expand these opening times as soon as possible. We would also like to hear from handy members who would be able to help in setting up the shop, in the week up to MARCH 19. Contact David Noel on 811139 before this date, afterwards ring the shop direct on 81856.

A discount of 5 cents per complete dollar will be given to members of the West Australian Nutgrowing Society on all goods sold, at retail.

Members who will not be able to call at the shop can get a price list of goods available by sending in a stamped, self-addressed envelope. Members will have to pay postage, but still qualify for discount.



Squirrel Nutkin

225 Onslow Road Shenton Park

Tel 818656

WANSCO SHARES

Over a thousand shares have now been sold in WANSCO, enabling it to make a start into business as described in the previous two pages.

Our initial budget is stretched very thin. If you have thought of buying shares in the Co-op, don't delay, fill in the form of application overleaf and send it to WANSCO, PO Box 12,
WANNEROO, W.A. 6065.

APPLICATION FOR SHARES

To the Directors,



West Australian Nut Supplies

CO-OPERATIVE
LIMITED

wansco

PO BOX 27, SUBIACO, WA 6008, AUSTRALIA

Regd. Office - 9B Herbert Road, Shenton Park

Please send all applications to: **WANSCO**
SHARE REGISTRY - PO BOX 12, WANNEROO 6065

Sirs,

I request you allot to me

..... ordinary Shares in the Company, of one dollar
(Nominal Value)

each and I tender herewith the sum of \$

..... in full payment thereof.

This application is unconditional and I authorise you to register me as the holder of the above shares or any smaller number that may be allotted to me and I agree to be bound by the Memorandum and Articles of Association of the Company.

Dated at this

day of 19

Signature

Name in full

Address

OFFICE USE ONLY

Agreed to allot shares as per
minute dated

Entered in Register of Members

Share Scrip Issued

Soil Management in Non-Irrigated Orchards

Prepared by R. L. STUBBINS, *Extension Horticulture Specialist*
Oregon State University, Corvallis

Cultivation or flailing, weed control, and cover cropping can aid in maintaining a productive orchard. Good soil management can assure maximum availability of moisture and essential mineral nutrients, maintain a soil structure that permits the ready penetration and movement of rain and irrigation water, and prevent undue losses from erosion and leaching.

Non-Tillage Soil Management

Non-tillage weed control using a flail mower between the tree rows and herbicides in the row is a new practice which offers the following advantages over cultivation: (1) it eliminates the need for extensive ground preparation for mechanical harvest of nuts; (2) it eliminates all damage to tree roots due to cultivation; (3) it greatly reduces soil erosion; (4) tree roots can grow in the fertile top 6 inches of soil; (5) cost of operation is reduced; (6) sometimes water penetration is improved; and (7) non-tillage can also protect against loss of top soil in a flood.

It does require purchase of special equipment, a flail mower, and smooth-tread high-flotation tires on all vehicles used in the orchard when the soil is wet. Another disadvantage is that it is difficult to travel steep slopes on a wet cover crop with smooth tractor tires. In an unusually rainy summer, more frequent mowing will be required, thereby increasing costs. Suppression of cover crop or weed growth very early in the season is absolutely essential to success of non-tillage weed control using a flail mower.

Commonly subterranean clover or annual blue grass, plants which normally die early in the season, are used as cover crops. Competition from more vigorous perennial plants is a problem, especially where much sunlight reaches the orchard floor. If the cover is allowed to remain too tall too late in the season it will use moisture which is needed for tree growth. Mowing will usually begin in March or early April. Usually the cover should be clipped to within $\frac{1}{4}$ inch of the ground by late May. Very soon after the rains stop the cover must die. Such close mowing can only be achieved if the orchard is dragged and floated the season before flail culture is begun in order to remove all hillocks and depressions. Sometimes it will be necessary to drag or scrape the flailed surface to fill small ruts prior to nut harvest. Rapid re-growth of perennial weeds before harvest is a serious problem if it occurs.

Although flailing has been practiced primarily in non-irrigated nut orchards, flail culture is also suited to cherry and prune orchards. If prunes are chertier than is usually desired for drying are shaken onto the hard flailed surface, they may split. Although volunteer

weed growth is often all that is required to prevent erosion, a cover crop of subterranean clover is quite compatible with non-tillage using a flail mower. Cover crops with more vigorous growth habits are less easily handled in this system. Mole and gopher mounds are particularly troublesome in flail-mowed orchards.

Cultivation

Except under the flail-mowing system, cultivation is necessary in the early spring to kill the cover crop and winter weed growth in order to avoid unnecessary competition for moisture and plant nutrients. This dead and decaying plant material provides continuing protection from erosion by slowing runoff. It also helps the soil take in moisture from rainfall or irrigation. Additional cultivation may be necessary during the season to control weeds. In some orchards it may be necessary to smooth over irrigation rills or other roughness before harvest, and sometimes it is necessary to prepare a seedbed before seeding the cover crop.

Cultivation does not conserve moisture by preventing evaporation from the soil surface. An extra cultivation on a weed-free soil may result in unnecessary moisture losses since most of the usable moisture is lost from the soil to the depth that it is stirred. It is obvious that the operation of an implement that will kill weeds will also kill tree roots. Deep cultivation, especially if repeated, can keep the trees from using moisture and plant food to the depth of cultivation. Small cracks that form on the surface of a weed-free soil do not indicate a need for cultivation. Heavy cultivation can create a surface layer of light dust, which may hamper establishment of a cover crop.

Excessive cultivation, regardless of moisture content, destroys the natural soil structure. The resulting fine material runs together, severely limiting the movement of water and air, and impedes root growth. Moisture losses from runoff increase with slow water penetration and extra runoff increases erosion. Cultivation of soils that are on the wet side is especially damaging to structure, leading to formation of near-indestructible clods and development of "plow pans" or clay pans that limit moisture movement and root growth.

Here are some common-sense guides for orchard cultivation: (1) cultivate to kill the cover crop as early as possible in the spring to stop unnecessary competition for moisture; (2) cultivate no deeper nor more often than necessary to kill the cover crop and weed growth; (3) use implements that mix the vegetative materials with the surface soil; (4) equip discs or other implements with some means of depth control to avoid over-deep penetration; and (5) never cultivate when the soil is wet and sticky.

Herbicides

Recommendations for use of herbicides in orchards are changed each year because of changes in federal registrations. Herbicides must be registered for use on a specific tree fruit or nut crop at a specified rate and timing. Since registrations may also be rescinded, follow published recommendations for the current year only.

Usually one of the pre-emergence herbicides with a long-term residual action, such as Princep (Simazine), Diuron (Karmex), or dichlobenil (Casoron), is used as the principle chemical in a weed control program for orchards. Contact herbicides are used to kill those weeds not controlled by the principle herbicide. By alternating chemicals every few years the orchardist can avoid or reduce the problem of herbicide-tolerant weed species.

Precise application is important since an overdose could injure the tree. Use a herbicide sprayer specifically designed for the purpose and carefully calibrated. Never put herbicide in equipment used to spray trees. Avoid spraying herbicide on the tree leaves. Avoid spraying the trunks of trees in the first two seasons and minimize spraying the trunks as much as possible after that. Do not let livestock graze treated cover. Read and follow label instructions closely.

Mulches

Mulches, particularly sawdust, can be effectively used to control weeds. Mulches likewise permit the tree roots to utilize the moisture and plant food in all of the surface soil since the roots are not excluded by cultivation. A sawdust mulch around the trunk of a newly planted tree is especially helpful in preventing competition from weeds. Completely mulched orchards need not be cover-cropped. The temperature at the surface of a sawdust mulch sometimes becomes high enough to injure very young filbert trees. It is essential to protect young filbert trunks with white latex paint at the ground line. Since a mulched surface absorbs less heat during the daytime than bare ground, radiation frosts would occur more frequently in a mulched orchard.

The cost of applying the mulch heavily enough to control weeds—a minimum of 3 or 4 inches thick—is practically prohibitive. However, it is often practical to use mulches to control weeds around trees or in tree rows.

Mulches have some additional drawbacks. They provide cover for mice which may girdle the trees at the ground level. Gopher control is difficult where mulches are used. Mulches composed of loose material such as shavings may be a fire hazard. With mulches it is always necessary to apply extra nitrogen fertilizer to make up for the nitrogen tied by the soil organisms that live in part on the organic mulch.

Cover Crops

Annual winter cover crops are a necessary part of orchard-soil management in Oregon orchards under cultivation. Cover crops prevent erosion and reduce the loss of soluble nutrients by leaching. The growing cover crop slows runoff and aids the penetration of rainfall and irrigation water.

Cover crops reduce the amount of damaging soil compaction resulting from the operation of spray or other equipment in the orchard during the late fall, winter, or early spring.

Usually the cover-crop growth will be adequate if it is seeded early enough to permit germination with the first fall rains. Annual cover crops adapted to western Oregon north of Josephine County include:

1. Willamette vetch, 40 to 50 pounds per acre with Abruzzi rye, winter barley, or winter oats at the rate of 60 pounds per acre.
2. Austrian peas, 75 to 90 pounds per acre.
3. Crimson clover, 20 pounds per acre. Crimson clover should be seeded in late July or August.
4. Subterranean clover (seeds itself once established).

Annual cover crops suitable for eastern Oregon and southern Oregon include:

1. Rosen rye, 30 pounds + 70 pounds hairy vetch.
2. Winter wheat + Austrian winter peas.

There are a number of other annual cereals and annual legumes that make a highly satisfactory growth.

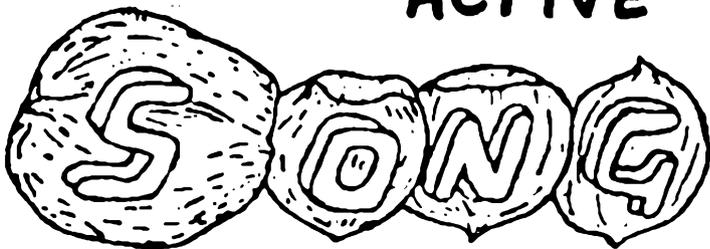
A light application of nitrogen fertilizer applied at seeding time will often aid in growing an effective cover crop in advance of the heavy winter rains. Nitrogen application should not exceed 30 pounds of actual nitrogen (N) per acre to avoid the possibility of increasing the susceptibility of the trees to winter damage.

Some orchards are so situated that a winter growth of annual weeds or other volunteer plants makes an effective winter cover. If the stand is adequate to prevent erosion during the winter, these volunteer cover crops will be as effective as a seeded cover crop.

Drainage in Orchards

Trees make little or no growth and often die if planted in wet, poorly drained soils. One of the first symptoms of "wet feet" in an orchard is yellowing and stunting of new growth similar to that caused by boron, zinc, or potassium deficiency. Often a sub-surface layer of heavy non-porous soil restricts drainage. Sometimes tiling is helpful. If the layer is not too thick, sub-soiling may temporarily improve drainage. Subsoiling, as with any tillage, should be avoided when the soil is wet. Frequently, the effect is too temporary to be worthwhile because the subsoil quickly reverts to its original condition. With sweet cherry, mazzard roots are better than mahaleb on poorly drained soils while with prune, plum roots are better than peach. In the final analysis, it is best not to plant an orchard on poorly-drained soil.

NUT SOCIETIES ACTIVE



SOCIETY OF ONTARIO NUT GROWERS
Mr. G. Robert Hambleton, Treasurer
R. R. #2, Niagara-on-the-Lake
Ontario, Canada LOS 1J0

DUES: \$3.00 annually.

NEWS

FALL 1976

No. 9

NEWSLETTER OF THE SOCIETY OF ONTARIO NUT GROWERS

PRESIDENT - E. Grimo SECRETARY - P. Easson
VICE PRESIDENT - J. Gordon TREASURER - R. Hambleton
EDITOR - D. Campbell

SONG NEWS is published twice yearly by the Society of Ontario Nut Growers. The Society promotes all aspects of nut growing and welcomes all interested individuals/organizations to become members.

NUT GROWERS MEET AT GUELPH

On July 31, 1976, more than 60 avid nut growers converged upon the Arboretum at the University of Guelph to attend the Annual Meeting. Those in attendance were introduced to the elaborate tree planting program in progress at the Arboretum. See inside this Newsletter for more details.

HEARTNUT WEEKEND

Saturday, October 9, 1976, was set aside for the Society's Fall Meeting at the farm of Elton Papple. Although the day was cold, wet and miserable, more than forty durable members showed up for the occasion. Look for more details in...HEARTNUT DISTRIBUTION PROGRAM.

A BOLD NEW VENTURE - N.P.C.A.

SONG is on the threshold of an exciting new partnership. The NIAGARA PENINSULA CONSERVATION AUTHORITY has resolved to establish a six acre NUTTERY at Virgil, Ontario, and the Authority has invited SONG to participate by making available its knowledge, expertise and from time-to-time some "elbow grease". Several of your Executive Officers of SONG have reviewed in detail the plans for the Nuttery and are impressed with the outstanding benefits which will be available to SONG members as well as the good citizens of Regional Niagara and the Province of Ontario...refer to the feature article on the Virgil Nuttery.

SPRING AUCTION - 1977

The Spring 1976 Auction at the Royal Botanical Gardens was such a success that a repeat performance has been voted by popular demand. The 1977 Auction will be held at the Guelph University Arboretum on April 15, 1977.

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ALL THIS AND MUCH, MUCH MORE IN SONG NEWS NO. 9.

NUT NEWS

World nut prices have risen very considerably over the last few months, and may double within about a year. Bad news for nut eaters, but good for nut growers. With the Australian devaluation last November, the effects are further increased for our imported nuts, which make up the bulk of those consumed. All the more reason to increase your plantings, whether intended for your own use or for sale.

In the 'West Australian' of November 6, 1976, it was noted that the W.A. State Government would cover any loss on the processing of peanuts at the Ord River in 1977.

Mr Old, the Minister for Agriculture, announced that this assistance was expected to amount to \$17,000 for peanuts this year.

The State Government is getting well known for helping Ord Farmers and fruit canners in the South-West. If only they would provide even a little encouragement towards further nut plantings in this State, California has almost half a million acres under nut trees, and plantings increase by several thousand acres each year. Yet they have even higher labour costs, higher land prices, and less water resources than us. Why not contact your local Member of Parliament and point this out?

SEEDS

Dennis A. Hearne of Tropicus Nursery, PO Box 505, Darwin N.T. 5794 has advised that he currently has available seeds of Horsfieldia australasica (mentioned in the 1976 WANS Yearbook) at \$8.00 per 100. These are, of course, tropical nut plants. Behaviour in the south of the State is completely unknown.

BOOKSHOP SERVICE

The Society has an arrangement with the UNIVERSITY BOOKSHOP, Stirling Highway, Nedlands, W.A. 6009, (Telephone 865578), by which the Bookshop maintains stocks of recommended books on nutgrowing and allied topics. Members can call in, or order through the post - for postal ordering or by phone, the Bookshop first sends you an invoice (including postage cost), and if you pay this, they send the book. On most books WANS members can get 10% discount. Prices change rapidly.
Current recommendations: (Note: (Q1-3) means reviewed in QUANDONG Volume 1, No.3). Ratings run from **** down to *.

- **** JAYNES, R.A. - Handbook of North American Nut Trees. \$13.30 (Q1-2)
- *** RIOTTE, L - Nuts for the Food Gardener. \$4.50 (Q2-1)
- *** SMITH, J.R. - Tree Crops. \$8.95 (Q1-1)
- ** REED, C.A. & DAVIDSON, J - Improved Nut Trees of North America. \$10.00
- ** MOYER, J - Nuts and Seeds. \$2.95 (Q1-2)
- ** SUNSET Western Gardening Book. \$8.80 (Q2-2)
- *** The JOJIBA HANDBOOK. \$5.00 (Q2-1)

BOOK REVIEW

** WOODROOF, Jasper Guy : TREE NUTS - Production, Processing, Products. Avi Publishing Company; Westport, Connecticut. Published 1967 (2 volumes - U.S. \$20.00 each).

** WOODROOF, Jasper Guy : PEANUTS - Production, Processing, Products. Published by Avi Publishing Company, Connecticut. 2nd edition, 1973. Price U.S. \$19.00.

** WOODROOF, Jasper Guy : COCONUTS - Production, Processing, Products. Published by Avi Publishing Company, Connecticut. 1970. Price U.S. \$20.00.

These three books by Professor Woodroof, Chairman of the Division of Food Science at the University of Georgia, are part of a series of books put out by the Avi Publishing Company on food technology. As would be expected, the three titles are similar in character, format, and approach.

The books are comprehensive, even massive, compilations of material drawn from a wide range of sources, although naturally the slant is American. These compilations contain information not available in any other books about nuts, with particular emphasis on government standards, processing techniques, and trade figures and other economic factors. Extensive references are given to sources consulted.

The two volumes on Tree Nuts, probably of most interest to WANS members, contain chapters on Almond, Brazil nut, Cashew, Chestnuts, Filbert (Hazel), and Macadamia (Vol.1), and on Pecans, Pine nuts, Pistachio, Black walnut, and Persian walnut (Vol.2). The second volume also has a short section on less important nuts (apricot, beech, butternut, chinquapin, heartnut, hickory).

Unfortunately this great mass of material appears to have been compiled uncritically, almost as if bits have been cut out of hundreds of sources and pasted together. It is possible to find instances of one sentence contradicting the one that went immediately before it. Woodroof is essentially a professional author rather than a practising nut grower, and in these books it shows. Essentially the books are made up of what he has found out, and not what he knows. They must therefore be read much more critically and carefully than a gem like the NGA Handbook.

At around 350 pages per volume, the prices are expensive. The standard of proof-reading is strikingly poor; in the volume on coconuts the botanical name of the plant, *Cocos nucifera*, is spelled three different ways on two consecutive pages. Nevertheless, the fact that the books contain information not easily available elsewhere is a strong counter to criticism. The volume on Peanuts, for example, is one of the very few currently available. All the volumes can be borrowed from the W.A. Library Board through local public libraries -- the Editor suggests doing this before laying out your money.

IN A NUTSHELL (No. 10)

The peanut or groundnut, *Arachis hypogaea*, is not the only nut producer with the strange habit of burying its seed pods underground. In Africa grows the Bambarra Groundnut (*Voandzeia subterranea*), a distant relative (the peanut originated in South America). Cultivated forms are grown for food by the African natives of the tropics. The pods around the nuts are much thicker and harder than in the peanut, and are rounder.

LAST MEETING

The Society's last meeting, a field trip to David Noel's bush planting near Dwellingup, on November 28, 1976, was well attended. About 80 members and their families turned up, from as far away as Bridgetown.



AT THE BARBECUE SITE

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