

ANNUAL BULLETIN 1988

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Introduction

This Bulletin could well be strawberry flavoured! And not just any old strawberry flavour either. The strawberries we know today have been bred from many species of *Fragaria*, e.g. *F. vesca* (European woods), *F. virginiana* (North America - large) and *F. chiloensis* (South America - disease resistant) [botanical names.] Garden strawberries are varieties of these species, and their crosses. Hundreds have been bred over the last century, some of them with the exceptional flavour older folks would remember.

Australians are becoming aware that if we are to save what is left of the wonderful old strains of cultivated plants, then we have to be specific about their varietal name, e.g. "Royal Sovereign", "Noble", or just plain "Myatt's prolific" strawberries. (Some of them may have been in a family for so long that the original name has been forgotten - in this case it is a family heirloom and can be renamed after the family.)

Too few strains have been kept in cultivation; as with other fruit, they disappear mainly for economic reasons. So it was very pleasant to hear just this week that an elderly woman from Taree (N.S.W.) had passed on a strawberry that had been in the family for 140 years, to her grandson, an English teacher in our area. This strawberry is said to have a rich, full flavour and carry a strong resistance to fungus and virus. This is what could happen with this strawberry: the English teacher uses the story for creative writing; the science teacher looks at genetics; the geography teacher follows the strawberry migration story; The Seed Education video has a scenario (see page 3).

Twenty-two people came to the seed saving weekend workshop last December, some staying overnight; practical exercises included collecting and cleaning seeds of cucurbits, tomatoes and lettuces. The twenty potato varieties that we had just dug up were distributed. There will be another workshop the last Saturday in May, the 28TH **TOPIC: GARDENING - PLANNING FOR SEED SAVING.**

In February fifty people came to hear Bill Mollison lecture on home garden and orchard design. Such is the demand that we are holding another one the last weekend in June. The topics will be: pioneer planting for forest and orchard, mulch sources, aquaculture, and seed collecting.

We will be speaking at the Mudgee Field Days in July. We may see you there.

On the last weekend in October, the first Annual Seed Savers' Gathering will take place near Nimbin. Plan to come and visit at that time. We will be organizing guest speakers, tour of the gardens and a seed swap. If you would like to talk on a subject, or can approach someone that would, let us know before July 15th so that we can include it in the Spring Newsletter. There will be slide shows, and hopefully, the video for schools will be ready for showing. We are looking forward to meeting those of you who live further afield.

Many of us are keen with herbs, so watch out for herbal exchange, in the Spring Newsletter. We will extract all the herb seed listings from the forms you fill out (page 17).

A special thanks to Barbara Mackenzie for doing the layout and illustrations these last four days. Conditions have been a bit severe. We three have been flooded-in at our office, the Media Centre, with a computer, a rusty old nib, and dampish paper.

JULY 15TH DEADLINE for the Newsletter.

1500 copies of this Bulletin to be printed.

SEED SAVERS' NETWORK

BOX 24, NIMBIN 2480

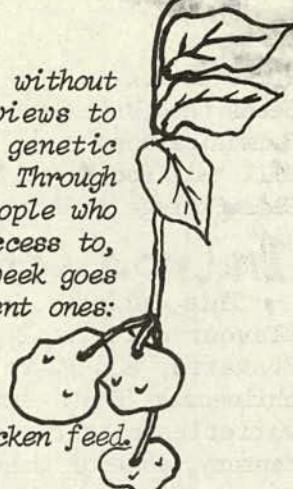
Gardeners preserving our
vegetable heritage

1

Jude and Michel
Fanton April 1988



Seeds need Friends



The Seed Savers' Network has been expanding its activities and membership without spending much on publicity. We have been writing articles, giving interviews to journalists and issuing press releases about our concern for the loss of genetic diversity in cultivated crops, about seed saving, and about the Seed Savers. Through this media exposure we receive lots of letters, and seed offers. The more people who make contact with the network, the greater the range of seed you will have access to, and the greater will be the number of older varieties being preserved. Not a week goes by without some interesting variety being offered to us. To mention some recent ones:

- a black potato with purplish flesh from Tenterfield, NSW
- an heirloom potato (pre 1900) from Tasmania (see Ron Collins, page 12)
- tomatoes that have self-seeded for forty years
- corn (dent style) kept for four generations in one family, used for chicken feed.

These finds were a direct result of publicity. Here are some suggestions about how you can spread the word:

1. You can write a **letter to the editor** of your favourite magazine, the local paper or a national newspaper about the importance of saving old varieties because of the precious characteristics they have, e.g. flavour and nutritional value. They are the reservoir of genetic qualities we may need for the future.

2. You can **contact a local journalist/photographer** when you have an interesting plant in the garden. They are usually keen to have a story (please send us a copy of what you write and have published, no matter how small it is).

3. When it is **'talk back time'** on the radio, ring up and have a chat about why you are part of the Seed Savers' Network and save your own seeds. One of our members from Adelaide casually dropped the network's name when asking the gardening expert on ABC radio how to grow gourds and luffas that we had sent her. He was interested enough to ask her for details of the network before giving the horticultural hints. It's a good method of lobbying.

4. Some of you will have noticed we sent more than one **pamphlet** to you. Everyone knows at least one person interested enough in gardening to want to know about seed saving. We had 8,000 pamphlets printed (cheaply) and so have many more available. Feel free to ask for a dozen or more. You can leave them at your doctor's, chiropractor's, dentist's, health food shop or church hall.

5. Last November a team of three from ABC television came to our gardens and shot a segment for **'Country Wide'**. It took two and a half days to complete and should be shown some time in April, at 6:30 p.m. Sunday. They seemed to take a lot of film for a ten minute segment. You may see hand pollination of pumpkins; rarities in the garden, e.g. black chilli, and European spinach going to seed; our meagre office facilities; some of our local members helping; even the kids winnowing seed.

6. We are now able to print from **black and white photographs and slides**. If you have any that you think would be suitable, please send for inclusion in the Spring newsletter. We are also preparing a slide show for showing at agricultural shows, to garden clubs, etc. So far we have compiled thirty or so good ones. Please feel free to send any you have and we will copy what we need and return them to you, e.g. slides of exceptional looking vegetables, plants going to seed, a group shot of harvest diversity (a pile of pumpkins), the proud gardener in the garden, grandma and her beans, or an exceptional fruit tree. We plan on duplicating them to make up several sets so that we can send them out to be shown further afield.

For printing, photos and slides need to have good contrast, that is, not too many greys, and it's good if you label each picture in as much detail as possible.

~ Communications ~

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Making the general public more aware of the issues surrounding seeds was a priority for the Seed Saver over the last year. Articles originating with Seed Savers' material include:

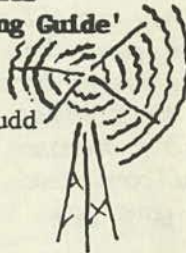
'Simply Living', Volume 3, No. 2, page 77
'Australian Gardener', "Seeds for Posterity", December 1987, page 26
'Grass Roots', letter, Jan-Feb 88
'Maggie's Farm', note, 87
'Unicorn', Jan-Feb 88, page 28
'Shepparton News', Vic, March 88
'Penrith Star', NSW, March 88
A Blacktown newspaper, Sydney, March 88
'Northern Star', Lismore, NSW, March 88
'The Plains Producer', Balaklava, SA, March 88
'Kindred Spirits' quarterly
'Nimbin News', January-February 1988

Also watch out for articles in

'Reader's Digest'
'Organic Growing'
'The Greenleaf Garden Series'
'Complete Gardeners' Buying Guide'

Television programme

ABC 'Country Wide', John Budd
yet to be screened
6.30 p.m. Saturday



We prepared a submission for the **Inquiry into Folklife**, for the Commonwealth Department of Arts, Sport, the Environment, Tourism and Territories. Its report gives only one page out of 300 to gardening, while recognising that gardening is "one of the most practised forms of folklife." Included were far too few lines, we felt, on the aims and activities of this preservation project.

Invited to comment on the report, we sent a strong response to the Minister, only to receive a dismissive reply.

We will insist that gardening for preserving our vegetable and fruit heritage be given proper recognition at government levels.

Radio interviews:

March 88 - 2LM Lismore with Garth Astill
Oct 87 - 2MR/ML Grafton with Sally Dakis
Feb 88 - Kempsey with Stephen MacDonald
March 88 - ABC Orange with Lucy Broad, 'Morning Extra'

SEED AID

Aid agencies have been contacting The S.S.N. and we have sent off parcels of seed to Botswana, Zimbabwe, Nepal and India. To do the job right, we have sent fresh, non-commercial seed of varieties likely to adapt to the growing conditions of the recipient's region. We have done our best to ensure that they are free from disease and pest.

To be more exact, we have to compile a map comparing the climates of the areas of our growers and those of our contacts in the third world. **Maybe you know a willing geographer for this job?**

If you would like to grow for Seed Aid, please let us know. A wide range of climates from which we can choose would be desirable; the harsher the better. Tree seeds will be included in future shipments.

SEED EDUCATION

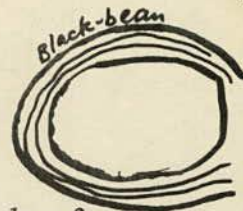
The production of a video film on seed awareness is scheduled for this winter. Some of it will be shot in local schools, for whom we have provided planting material.

Children especially enjoy unusual-looking vegetables like multicoloured popcorn, giant cucumbers, purple chard and weird gourds.

Locals, Jenny Kendall and Paul Tait, makers of many documentaries including "Earth First" and "Give Trees a Chance" (which are about the need to preserve rainforests), will be producing this video.

It will be offered to schools and will show how to get a school garden going. Seeds will be sent in the package. Children will be encouraged to search for home-saved seeds in their neighbourhood. It's a social exercise: friendly talk over the garden fence.

Bill Mollison — on collecting



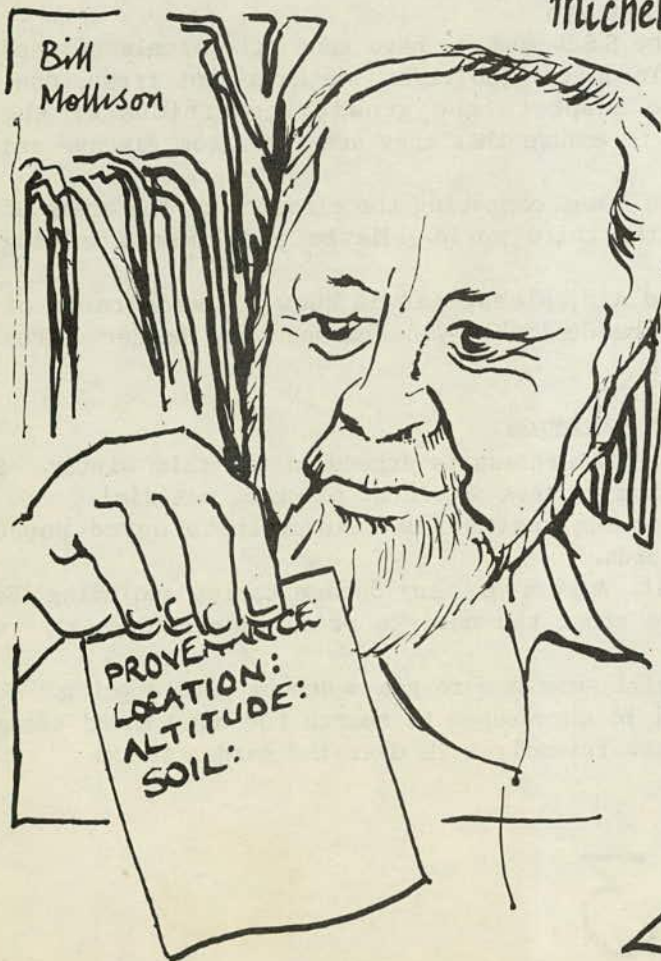
So far the Seed Savers' Network has concentrated its efforts on seeds of vegetables, and to a lesser extent herbs and flowers. Tree seed collecting has been a major personal hobby of ours for a long time. That trees have great value is fast becoming a truism in today's media. To help you to collect tree seeds better, here is an interview that Michel made with Bill Mollison, in March 88.

Michel What can we write about tree seeds for the average dweller in the bush? Most of our members live in the country.

Bill Well, like any other natural collection, no seed is any good without a label. Every tree has a thing called A PROVENANCE which means you have to describe where the tree comes from. It has to have an accurate location, an altitude and at least a note about the soil; like acid sand, heavy clay, or good loam. Say you are in the desert, you want trees for dry granite ridges and if you can obtain that sort of seed then it doesn't matter what sort of tree that is, it belongs on a dry granite ridge. You soon get used to it, accurate information. You are seven kilometres east south east of Nimbin NSW, light to no frost, red lateritic clay, high rainfall so that's your provenance, if you collect from wild trees there.

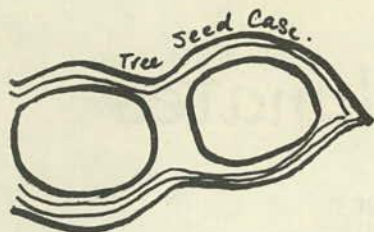
There are amazing differences in provenances. Take the river red gum [*E. camaldulensis*], it goes from Darwin to southern Victoria, it goes through the desert. If you collect a hundred provenances of river red gum, they all look different: some have broad leaves, some have narrow leaves, some look like cabbages when they are young, some look like thin leaved acacias. They are all river red gums. Say you want to irrigate. There are only a few river red gums that like irrigation so when you test them, say, for disposal of sewage in the desert because you have to put a lot of water on it, then it's a "walloona" one that comes out shining, from Western Australia. You can then recommend a specific provenance of river red gum for sewage disposal in the desert. That means the wallouna seed is very high value for that particular purpose. That's an actual case I gave you.

Michel It's being really particular about the seed.



Yes, it's not even just the species—river red gum—that's not good enough. There are forest and shrub types of nearly every tree. If you go to the Central Tasmanian plateau you find the white wattle is a FOREST TREE. It is three or four feet through, it goes up 150 feet straight, and if you look at the same wattle out on the heathlands, IT IS A SHRUB so you can gather the seed as a shrub or you can gather it as a forest tree. Now there's *Leucaena leucacephala*. You can buy it as a shrub type if you want to set it out as a forage for cattle or you may want it as a forest type; if you want to set it out as a forest pioneer, choose a tall tree and make quite good timber out of it. So provenance and a description of the tree are important.

Now say you are selecting for a particular characteristic. Say what you are looking for is extreme frost hardiness, then that's called "selected seed". The characteristics in trees are to do with the wood or the bearing or the flowering or something like



Tree Seeds

this. Take *Acacia fimbriata*: there's a sub species which is very heavy flowering, that means very heavy seeding, that means excellent chicken forage so you can highly recommend it. Lea Harrison has some and the chickens spend all day underneath them because there's kilograms of seed for them. So that's worth two or three times as much for chicken forage, as a seed from a *fimbriata* which is unselected.

I know of three trees of *Ulli uti*, (which is quandong), that have super thick-fleshed fruits which are two or three hundred miles apart. You are only ever going to get five kilos of that seed per year. It's highly selected, very rare. Same with the Ashworth oak in the United States: it's a sweet acorn; you can eat it; it always has a good progeny. Now if you know that that tree's progeny, (that's the young ones grown from it) have the characteristics of the parent, then it becomes ELITE SEED, a totally different category.

Every acorn from the Ashworth oak produces a sweet acorn every year that's 50c an acorn.

Michel Why is that? Is that because it's an inbreeder?

Bill It may be because it's a double recessive tree and it's not crossing with anything else.

Michel It's a very lucky thing happening.

Bill Maybe it's a double dominance. No matter if it crosses out, it still reproduces that one character that you have selected it for no matter how much it's crossed with, that tree will produce that characteristic. Its progeny may not, but that tree will.

Michel Is there any purpose in mapping elite trees?

Bill In terms of the national interest, they should all be fenced and have a label on them, should be highly identified and highly preserved. We should have an elite tree recording programme. I mean, to find an elite tree, well, it's something that's worth buying a farm for: that tree.

Michel How do you recognise a very good tree?

Bill What for? See, let me put it to you. We were going to plant quandongs in Nepaburna. I asked the people there, the rock people, which are the best quandongs. They said, "What for?" and were told it was wanted for good fruit. They call that sort "Ulli uti" and they only knew three; one at a cattle trough 100 miles north, one 150 miles west and another somewhere else. Very small seed, beautiful fruit. There are other quandongs, beautiful nut quandongs, so you have to say "WHAT FOR?" Then you can specify for pest resistance. Some pine trees are attacked by the syrex wasp. Others put out a little bead of resin and they trap the wasp by its ovipositor and it can't move and so whereas it may not be a good timber tree, it doesn't get attacked, it kills the wasp. About small hard seeds: they will keep a long time. The more fleshy the seeds the shorter the time they will keep. In this climate you have to keep them in a fridge. There's a certain number of seed, that, the day you collect them, you must put them in wet peat.

Michel Some of the tropical ones?

Bill Yes.

[This valuable interview went on much longer and we have omitted parts of it for brevity's sake only. Thankyou Bill. Write and let us know what tree seeds you collect.]

Seed storage in Warm Climates

Excerpt from Qld. Dept. of Primary Industry booklet, 1983

1. **Species** — Species vary in the ability of their seeds to survive in the soil. Seeds of tropical trees such as rubber and durian are difficult to store for more than one month, whereas legume seeds such as lotus have been reported to survive for 1,000 years. There is much evidence of weed seed survival for periods of more than 100 years.

2. **Effects of Temperature and Relative Humidity (R.H.)** -- Temperatures and relative humidity of the storage environment are the most important factors affecting seed quality during storage. Of these, relative humidity is the more important. Each type of seed will attain a characteristic moisture level at a given relative humidity. There are exceptions with some fleshy seeds, such as certain tropical fruits, palms and most citrus species which should be harvested and stored in a cool situation without being dried.

3. **Safe Conditions for Storage** -- There are many kinds of "safe" conditions for seed storage but the selection of a particular set of conditions depends on the expected length of the storage period:

- (a) Short-term storage of 1-9 months for maintenance of seed quality from harvest to the next planting season.
- (b) Intermediate term storage of 18-24 months for carryover seed.
- (c) Long-term storage for up to 10 years for plant breeding material.

4. **Short-Term Storage** — [We left out details of intermediate and long term storage.] Good quality seed can be safely stored under the following conditions:

- (a) 30°C-50% R.H. (seed moisture content ranging from maximum of 12 per cent for cereal seed to 8 per cent for oil seeds).
- (b) 20°C-60% R.H. (seed moisture content ranging from maximum of 13 per cent for cereal seed to 9.5 per cent for oil seeds).
- (c) Other combinations of temperature and relative humidity approximating to the above.

5. **Packaging** — Properly dried seed can be safely stored in moisture proof containers and this has advantages for the humid tropics. However no form of packaging can protect seed against the effects of very high temperature except in the short term. Storage areas should therefore be as cool as possible.

SEED CERTIFICATION CIRCULAR NO. 58

Acid Extraction of Tomato Seed (Use non-metal containers)

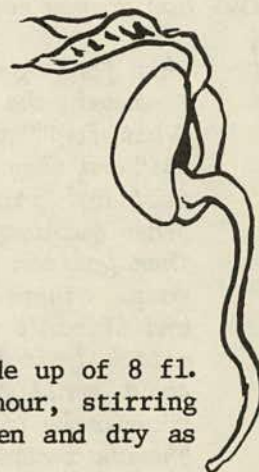
To the extracted pulp add 1 oz. commercial hydrochloric acid for each 5 lb. of fruit. Stir well and stand for three hours, stirring again at intervals. Then decant off as much liquid as possible and wash well either by repeated decanting or against a screen with water from a hose. (In the presence of acid, metal screens may discolour the seed. Non-metal screens would be more suitable). Dry the seed as quickly as possible.

Tomato Seed Treatments Following Extraction by Fermentation

Acid Treatment (Use non-metal containers.) Soak seed in a solution made up of 8 fl. ozs. of commercial hydrochloric acid in one gallon of water for one hour, stirring occasionally. Wash well by decantation or with a hose against a screen and dry as quickly as possible.

OR

Trisodium Phosphate Treatment Soak seed for one hour in a 10% solution of trisodium phosphate (1 lb. in 1 gallon of water); wash and dry quickly.



R.L. Harty, Assistant Standards Officer, Qld. Dept. of Primary Industry.
[Compare this with bio-dynamic principles of seed treatment, page 8]

Seed Saving 'Know-how'

A member, Alan Johnstone, from Bellingen NSW, sent us a photocopy of this material. We would like to share it with you. The name of the book was not mentioned. It is cold climate specific and it was written for the northern hemisphere.

Excerpts from several articles by Heinz Grotzke

In general, commercial seed-growing has followed the trend of specialization within agriculture. It is probably true to say that no seed house today is growing all the varieties of seeds which are listed in their catalogs. Many individual growers specialize in one or a few seed-crops, grown mostly under contract with one or more seed houses. It very well might be that a seed customer who, for example, buys cabbage seed of the same variety from different seed houses, receives seed of the same origin...

Experts in seed-growing still know the value of animal manures and their relation to germination qualities. Also the humus content of the soil bears on the quality of the seed. And insects are needed for the pollination of many seed-crops; their undisturbed activity has to be watched very carefully during blossoming time.

The two fundamental methods of seed-breeding are crossing and selection. Crossing is employed if a new variety is desired. The reason might be to bring together two characteristics of the mother-plants in the following generation. This generation, though, consists then of many individual plants of which different strains are chosen for further investigation and breeding. The strains are stabilized by methods of selection over many years. Existing varieties can also be improved by continuous selection according to the image and idea the plant-breeder has of the plant species. Natural or artificial mutation is another means of producing a new variety.

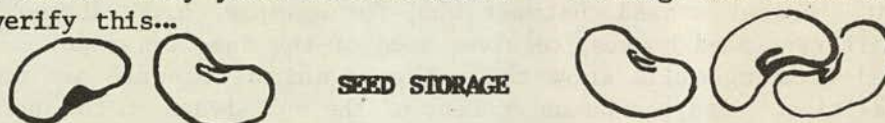
In harvesting, there are two fundamental groups of seeds. The one group is harvested dry and continuously dried; the other is harvested wet and the seeds have to undergo a fermentation process, and are then washed and finally dried. The first group is more easily harvested and needs less skill. Vegetables such as radishes, sweet corn, beans, cabbage, lettuce and others are members of this group. The seeds of cucumbers, tomatoes, cantaloupes, for example, are harvested wet and need fermentation so as to get a clean seed. They have a coat of a gelatinous substance which is dissolved in fermentation. Commercially, this method of fermentation is very often replaced by a faster method which uses hydrochloric or sulfuric acid to bring about the same result. The fermentation method is, however, superior, if a healthy seed is the desired goal, because in the process of fermentation certain diseases that might be present are eliminated. We use the fermentation method only.

The following process of drying needs careful supervision since appearance and quality of the seed largely depend upon the right handling. The seeds that undergo fermentation and afterwards thorough washing, have to be dried fast- within twelve hours- in order to prevent possible germination. The coat of gelatine, which surrounds the seed in the fruit, contains substances that inhibit germination as long as it clings to the seed. After this substance has been dissolved in fermentation and the seed is bare, germination will occur under favourable conditions, and also if the seed is kept moist too long in the process of drying.

All the other seeds mostly require a certain period of curing before storage. Curing is the method of drying the seeds after harvest. It can be done either in the sun [but do not cook the seeds in the hot Australian sun!] or in shade, with the main emphasis on protecting the seeds from becoming humid again during nights or periods of rainy weather. In our climate it mostly will be necessary to bring the seeds inside a building, at least over night and during unpleasant weather. To speed up the curing, the seeds ought to be moved around a few times a day. The storage qualities of seed depend to a large extent on the proper curing methods...

Influences of outside substances reaching the future plant through the seed can be understood by realizing the tremendous powers which are enclosed within a seed. Everything is stored in its hull that enables a young plant to develop. The only fuel needed is water. This water has to penetrate through the seed hull in order to be of service. Consequently a watery solution of herbal or other nature will penetrate and become part of the seed, no matter whether the seed is dried after treatment or directly planted. Every substance has a different influence — though in most cases not studied — on the tender germ which is going to change into a plant through growth.

If the practice of treating seeds with chemical substances in the form of disinfectants and insecticides is viewed from this point of view doubts about the ultimate results must arise. Even the watery solution which a seed finds in a given soil in which it germinates ought to be given some thought. In this field most probably the key to the problem of virus diseases in plants can be found. Many years of observation — although not scientifically carried out — seem to verify this...



A seed is useful for the gardener only if it will germinate. When I previously described the parts of a seed I neglected to mention the decisive entity: Life. It is invisible and may be present or not, the seed looks the same. In investigating a viable seed by peeling off the husk, dividing the two seed lobes, and separating the germ, the life escapes during this procedure, though no one will see it leave. And if we put the parts together again, life does not return. Goethe considered this truth a law in living nature: The whole (organism) is more than the sum of its parts.

Life also escapes a seed naturally, without disturbing the structure of its being. Every variety of seeds has a different life expectancy, and ages and dies after a different lapse of time. The size of a seed seems to play an important part in this respect. As a rule, small seeds lose their life earlier than large seeds. Onion seed, for example, loses its life faster than cucumber seeds, and camomile earlier than borage. The reader may study this relationship by way of the attached list. It must be kept in mind that the decisive regulator in this instance is the seed kernel itself, without the hull. Some seeds have a rather impressive hull but a small core, take calendula for example.

The time of germination is a final factor to be studied in relation to the size of seeds. As a rule of thumb it is correct to assume that large seeds require a shorter time to germinate than the small seeds. The germ in large seeds seems to acquire a functioning system and turn into an independent little plant relatively fast, very often, of course, needing the aid of warm temperature. Among our vegetables, most large seeds (sweet corn, bean, cucumber etc.) are annuals and in addition sensitive to frost, and therefore cannot lose much time in getting established. They are the fast growers and warm weather plants.

from HOW LONG DO SEEDS KEEP? by Ehrenfried E. Pfeiffer

Seeds do not keep their germinating quality indefinitely. Some lose it rather quickly, other varieties keep it for longer periods of time, but there are limits for every kind of seed. For instance, red clover keeps well for 2 years, but its power of germination fails after from 3 to 6 years. The story of the "mummy" seed from ancient tombs, which keeps for thousands of years, is not supported by any evidence out of present day experience.

[This comes as a surprise. Any comments, or facts, on this?]

Wheat, if of the best quality, germinates up to 100% in the first year. The same wheat, after 3 years, still had 97% germination, but after 9 years the figure had dropped to 3%. Oats lasts longer, with 87% in the eighth year as against 97% in the first year. Rye holds its germination for 2 years, but has lost it after 4-5 years. Barley holds out well for 2-3 years, but drops to zero after 8 years. Oats, by the way, rarely lasts more than 11 years.

Seed Saving 'Know-how'

Here we might interrupt this catalogue of factual observations with a rather amusing incident out of World War I. Some Russian prisoners of war were told early one morning to go out to the fields connected with the prison camp and plant cucumbers. The officer in charge gave them the seed and went on to other duties. After a few hours he walked out to the cultivated area to see how the planting was progressing. No Russians!

Finally he found them, in the barracks, in bed, covered to the ears with blankets and sweating profusely.

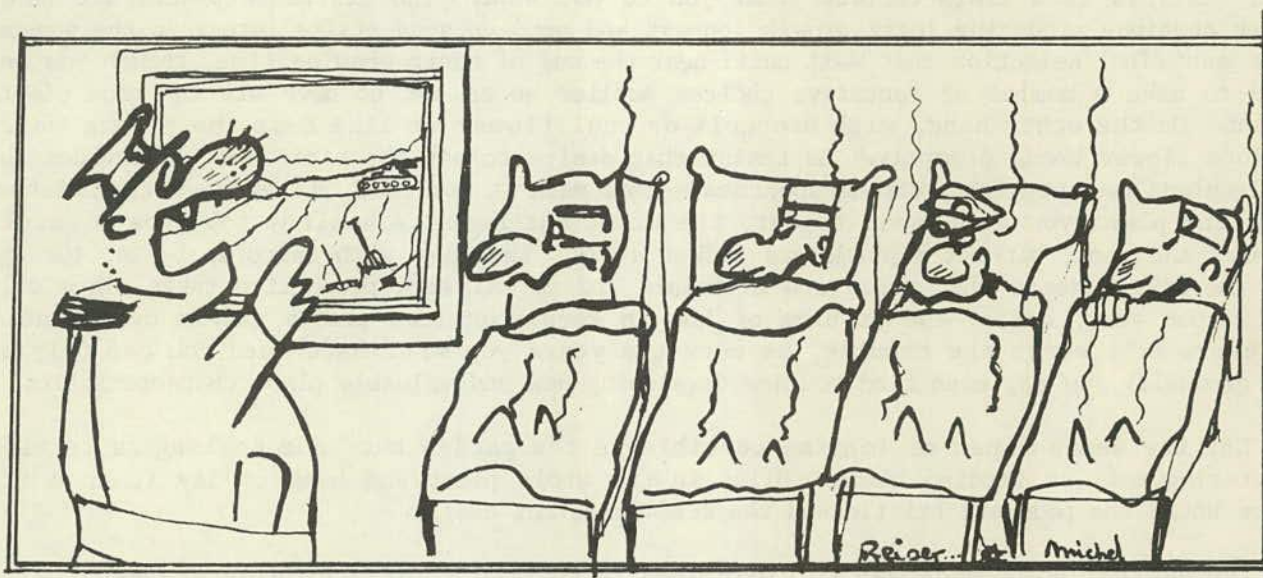
"Do you call this planting cucumbers?", he barked at them.

They were quite astonished.

"Yes, of course. This is the way we do it at home".

They had divided the seeds among themselves, each man putting his share into his socks, which he had then put on before starting his sweat bath.

"This way," they said, "they will germinate much better when we have sweated them out for a few hours".



Certainly it seems as though hormone and enzyme treatments, while not known to them as such, were here approximated in old peasant practices. [We would appreciate comments on this story.] The seeds should never get dry; too much moisture, on the other hand, will cause mildew or other fungi to grow. The more even the temperature and moisture is, the better. For vegetable seed, temperatures between 60° and 68° F. are best.

Now comes the question: What is the "proper time" to allow for germination? Some seeds need only a day or two, others several days, to germinate. Garden cress is one of the fastest, taking less than one day, wheat takes a few days, oats three or four.

In nature we also observe the phenomenon of dormant seeds. Certain weeds, such as wild mustard and hedge mustard, can stay in the soil for many years and will germinate only if proper conditions again exist. They will stay dormant, i.e. under grass, clover, pasture or hay fields, but germinate at once when the field is plowed and again used for arable cultivation. Other seeds, such as birdsfoot trefoil, will germinate only a little in the first year, but the rest come up in the second and third year.

In general, the seed which germinates faster than another lot of the same species (or variety) grows faster to a stronger plant, is preferable to the slow-germinating seed of the same kind.

from **SAVE YOUR OWN SEEDS** by Evelyn Speiden

1. At the beginning of the season prepare some stakes or strings or some other form of distinctive and noticeable marker to label the plants you select to keep for seed. Make sure everyone who works in the garden knows the meaning of these markers.
2. Watch your plants as they develop and select a few of the outstandingly healthy ones to preserve for seed. Make your selection on the basis of the whole plant. Seed development is an all-season job for you as well as the plant, not just a hurried trip through the frost-bitten garden to salvage the largest seed pods that happen to be left. Make a habit of observing your plants with seed selection in mind. Any moment of relaxation in the garden can be an opportunity to consider the qualities that are desirable in any given plant. You'll form new ideals of what the "well-balanced" plant really can be.
3. Remember there are different characteristics to encourage in each kind of plant. In spinach or Chinese cabbage, for example, do not mark the first few nice ones which go to seed, as this is a characteristic that you do not want. The desirable plants are those which continue producing leafy growth longest and send up seed stalks latest in the season. Here your final selection must wait until near the end of their growing time, though you may need to make a number of tentative choices earlier so as not to have all the good plants eaten. On the other hand, with broccoli or cauliflower we like best the plants which produce flower heads promptly. So resist that desire to eat the first one — provided the whole plant is a straight, strong specimen — and mark it for seed. Likewise with radishes, save the plant you want most to eat, the first fat root. A healthy top growth should balance the root, but not a premature flower stalk. The same with carrots, beets, turnips and the like, except that these are biennials and normal seed production takes place only the second year, adding the problem of how to keep your best plants safely over winter. However, it's worth the trouble, as over the years you will have seed you can rely on and gradually you may even find you are developing new and valuable plant characteristics.
4. Let the seeds ripen as long as possible in the garden but not so long as to risk shattering out or feeding birds. Bring in the whole plant and hang or lay it in a dry place until the pods are brittle and the seed comes out easily.
5. The easiest home-made way to clean seed is to keep a collection of pieces of wire screening of as many sizes of mesh as you can find. With one size or another you can sift out either the seed or the chaff sufficiently for storage purposes.
6. Keeping seed safely over winter requires consideration, as mould or insects can spoil it. Store in a dry, cool place (some seeds can stand freezing, others from heat-loving plants cannot), covered, but not in airtight containers. To prevent insects from multiplying in wheat or bean seed, Dr. Pfeiffer has recommended frequent stirring of the seeds. Every day or so shake up the box or bag containing the seed and also look it over occasionally, removing any spoiling material...

INDIVIDUAL VEGETABLES

The Cabbage Family -- All types of cabbage cross with one another [broccoli, brussels sprouts, kale, collards, cauliflower and kohlrabi are all Brassica oleracea and will cross with one another and with cabbage. All the Chinese cabbages, Brassica rapa, will likewise cross with one another, but not with B. oleracea, as different species do not readily cross.] If it is not possible to grow different varieties at great distances from one another, then one kind only is grown for seed. The firmest heads are selected and stored very carefully over winter. These are set out early in the following April [spring]. They must be set quite deeply and support provided for the seed stalks. The seed must be protected from the birds (Grape gauze). The mature seed stalks are hung indoors and allowed to dry until it is possible to thresh them or remove the seed by hand. [Keep at least three for seed, as Brassicas are self-incompatible, which means that one plant needs pollen from another plant to pollinate it even though it produces pollen itself.]

'Seed Saving Know-how'

Head Lettuce — Select two or three of the firmest heads from amongst those that are slowest to bolt to seed, and leave them in the garden to blossom. The large inflorescence should be well staked. When a large portion of the seed is already developed pull the plants out and hang them in the shade to dry... The removing and cleaning of the seed is a rather tedious task which can be done in the winter. [Self-pollinating, but some crossing can occur when planted closely.]

Cucumbers — We can always have our own cucumber seed if we let the earliest maturing, fine, well formed, healthy fruits from healthy plants hang until ripe. The seeds are scraped out of the fully ripe cucumbers. They are then put in a warm place in a little water to ferment. Afterwards put them in a sieve and wash them, dry gently with a cloth and then spread out on blotting paper until they are completely dry. [Cucumbers are insect-pollinated. You might like to try hand pollination as in the last Spring Newsletter, but use many male flowers.]

Sweet Corn — The earliest, best developed, full-grained ears are allowed to ripen on the stalk (hybrid varieties do not produce fertile seed). When the husks are bleached and straw-like, pick the ears, pull the husks back, tie two ears together and hang them up to dry. [Corn is wind-pollinated, so ensure that only one variety is flowering at a given time.]

Leeks — Seed bearers are hilled very high to protect them from freezing in the winter. The plants should stand at least a foot and a half apart in all directions. The blossom stem needs good support. Leeks cross easily with pearl onions. The seeds mature fully only in favourable summers and in a warm situation.

Onions — Select solid, well-ripened onions, which were grown from sets the previous year. These should be set out as early in the year as possible in sunny, well-protected situations. The blossom stems must be carefully supported. A mulch of mature compost is good. The seeds ripen slowly and must be dried under cover (they fall out easily). Ripe seeds are coal black.

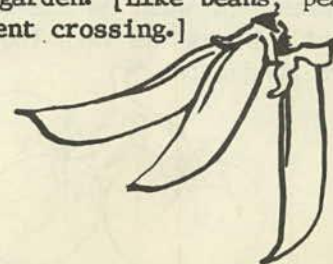
Carrots — Carefully keep the best developed roots with medium tops, over winter. Set them out in March [spring]... (A mulch of composted oak leaves and bark rich in tannin, is helpful if they are attacked by root lice). Seed stock must not be forced! Cut the ripe umbels, dry them in the shade, rub the chaff out by hand. Seed propagation only has sense if the area is not surrounded with meadow land since the wild carrot (Queen Ann's Lace) crosses with the garden carrot. [Replant six to ten roots to ensure good cross-pollination.]

Beets — The perfectly formed beets which have been kept over winter are set out early in April [spring] about twenty inches apart. The ripe seed stalks are cut and hung in the shade to dry. Later the seeds are rubbed out by hand. [Beets will cross with silver beet. Save six to twelve roots to replant next spring because they are sometimes self-incompatible.]

Radishes — Seed culture occasionally succeeds with early radishes. The plants which bolt to seed quite late are left standing. The blossoming plants are very brittle and must be carefully staked. The harvested seed stalks ripen completely when hung in the shade. [Insect-pollinated, so keep only one variety for seed.]

Early Turnips and Rutabagas — The chosen plants are lightly covered and remain in the ground over winter. In the spring they should be uncovered early. Further treatment is the same as for beets.

Peas — ...The first and best pods should be left hanging for seed, and those which mature later picked for eating... The seed pods should be healthy and uninjured. Hang them up under shelter to dry or, better still, let them ripen in the garden. [Like beans, peas are self-pollinated; a row between varieties is sufficient to prevent crossing.]





String Beans — The first, best formed beans are left on the vine to ripen. [Pull the whole plant before the frost or rain, as they will keep on maturing.]

Potatoes — For a seed stock choose perfectly healthy, scab-free potatoes from healthy plants surrounded by plants which are also healthy. The plants should be marked beforehand, and the potatoes dug before harvesting the others. Store these very carefully over winter, dry and frost free, in the cellar or in a pit. They require good ventilation. The best way to store is to bury them in layers of dry sand and spray them with preparation 501. [One of the bio-dynamic preparations.] Potatoes stored in this way keep very well.

Tomatoes — choose healthy, early-ripening, well formed fruit from good plants. These should not be left on the stalk until they are over-ripe, but should be picked before this. Later, when they have become dark red, scrape out the seeds. Set these in a little water and allow them to ferment. [If it is a juicy enough type, no water is necessary, as it tends to retard fermentation.] Then put in a sieve and wash off well under the tap. Spread out on blotting paper to dry. The process of ripening and fermentation must not be too long drawn out. It can happen that the seeds begin to germinate in the flesh of the fruit. [See also seed saving tips in *SSN* previous publications.]

New Permaculture Book at Last!!

Bill Mollison's *PERMACULTURE: A DESIGNER'S HANDBOOK* will be published by August, 1988, and pre-publication orders are being taken. These pre-orders will help to fund the publication of the book, so your help is essential!

This large, hard cover book includes:

- permaculture design principles and methods;
- designs and strategies for tropical, arid, and temperate climates;
- aquaculture;
- all you need to know on soils;
- earth-shaping (terraces, swales, benches);
- understanding alternative funding systems;
- bioregional organisation; and
- all aspects of farm and garden design.

Hundreds of illustrations and colour plates are included.

Get this book now for a special pre-publication price of \$40 (postage free).

In Australia and New Zealand the price is A\$40; for USA and overseas countries, please send US\$40 in bank draft form.

Send your money, your name, and your address to:

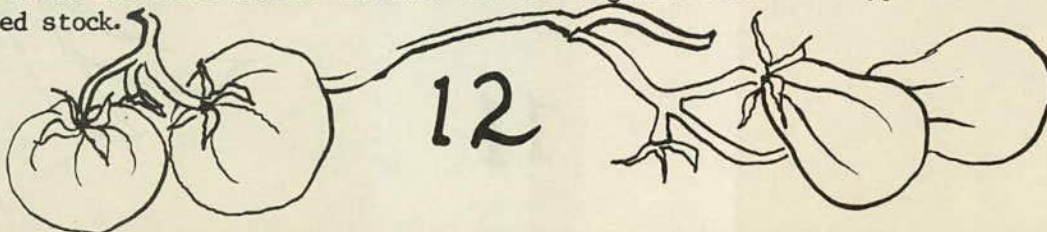
TAGARI PUBLICATIONS,
PO BOX 1
TYALGUM,
NSW 2484,
AUSTRALIA.

This offer ends 30 May, 1988.

RON COLLINS' TASMANIAN NOTES

We visited the Huon Horticultural Research Station in Tasmania recently and picked up the list of over 400 apple varieties that are currently grown there. The manager is Phil Andrews and I understand that if you write to him, he will arrange to ship scions for grafting at the appropriate time (August to September I think). I don't know the cost but no doubt a letter to the research station would get that information. It is in Grove (7109) and the telephone number is 664345.

As we were travelling from Stanley to Wynyard in the north west of Tasmania, we saw a sign saying "organic vegetables". In talking to the gentleman, we got onto old-style vegetables. He said he had a variety of potato called "Beauty of Hebron". It has been in his family since the late 1800's. He also was selling four different types of tomato from his own seed stock.





Letters from Members



Ah, the ingenuity of the Seed Savers! As I opened letter after letter, my incredulity grew at the sheer inventiveness of the senders, as they packaged their seeds. There were half- and quarter-used envelopes, homemade envelopes made out of writing paper sealed at the edges with gum, old seed packets, even my own seed packets emptied and returned full of new unasked for gifts of their treasures (many thanks), tiny bought envelopes, wage packets, banks' plastic cash-self-seal envelopes, some stuck, some cellotaped, some stapled. The love, the care and the time they showered on me (us)! One 9" x 4 1/2" envelope with its so welcome tinkly rattle ("more seeds!" said the Postmaster as I opened the box) revealed a grass green card onto which were cellotaped 8 coloured seed packets labelled AUFGUSSBEUTAL whatever that means -- with coloured pictures of hawthorn, fennel, apple and camomile flowers and fruit in black white red yellow green orange and mustard, so pretty -- on the names of the seeds I'd asked for. Danke schon.

But the one that made me exclaim aloud with delight was a sardine tin -- the smooth edged type containing a host of 1/2" x 3/4" tiny silver slabs. Using slab chocolate foil in small squares, the sender had carefully folded the seeds inside and stuck the end with stamp edging leaving the name of the seed, prewritten. Incredible.

No wonder we are Seed Savers; like me, I reckon you are all hoarders!! Personally I use free envelopes. Donating to church monthly, I use the other three envelopes, but then I'm a Yorkshire Scot -- "save it, it will be useful one day".

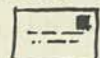
Happy seed sowing, Frances Durdin, Port Elliot, SA

P.S. Have you noticed how shop seed prices are going up in huge jumps \$1.00 to \$1.30? A very unfair increase.



We used to buy "golden bantam" sweet corn, but now it is unobtainable. We grow our own Grosse Lisse tomatoes. I suppose I'd better save a tomato or two for seed this season.

I cannot get the old bluebell seeds; they have been removed from sale; I don't know why. I would dearly like some if obtainable. They have a deep purple large flower. I can't get them; it is so frustrating. D. Evans, Ringwood East, Vic. [Yes it is worthwhile saving seeds of a seemingly common vegetable. After a number of years in one location, with discriminate selection, they display adaptation to your area and tastes.]



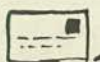
[regarding the Spring Newsletter] ...It wasn't Equity Investments but Industrial Equity Ltd (I.E.L.) run by Brierly. There's quite a bit about this set up in 'The Foodmakers' by Sargent, publ. Penguin. Since the takeover of Cheethams, I.E.L. has taken over Woolworths and I.C.I., I've heard on the grapevine, and is up to its ears in P.V.R.

Betty Singh, Dollar, Vic.



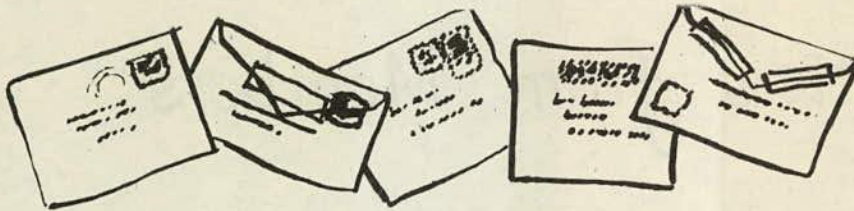
We have a five acre orchard next to Canberra airport. It is about 30 years old and when we took it over had about 15 varieties of apple in it. We now have more than 30. We sell fresh apples but are currently gearing up to propagate trees too. In addition to those on our card we have Lord Lambourne, Bramley, Egremont Russet, Winesap, Winter Banana, Lady Williams, Discovery and some from old orchards that we have not been able to name. Our Red Delicious and Granny Smith are both old clones and more tasty than the modern ones. No guarantees on freedom from virus... I work with CSIRO on protection of grain in storage, largely by non-chemical means. You might say I am an expert in seed storage technology and disinfestation of stored seeds from insect pests.

H.J. Banks, Piallago, ACT



Lots of people around here are becoming interested in saving seeds, and soon I'd like to establish a network here, but I'll wait until my personal seed bank is a bit bigger.

Belinda Bartlett, Brogo, NSW



 Although we have actively campaigned against food irradiation, the hard headed attitude of our Queensland government in the past holds out little hope for success in having it stopped. The seed monopoly is also a great concern and we are keen to do so much as we can to counter it.

David & Kris Wheeler, Deception Bay, Qld.

 Regarding PVR -- I personally don't think that you should be too concerned about PVR. I agree that it is a bureaucratic encumbrance on seed exchange, but the genetic drift has been prevalent for many years and to my mind at least by giving the breeder some kudos and possibly some financial reward at least you will encourage people to do some breeding. Without PVR I believe that breeding would almost cease to exist outside the large multinationals.

At this time in Australia only two private vegetable seed companies are doing any breeding work: Yates at Narromine in NSW and Henderson in Victoria. All the other companies to my mind have given up and either work with existing varieties and/or import. The pilfering of the work of breeders is frustrating and we've all been guilty of it -- so at least with PVR if someone puts the time and expense into the development then they stand to be rewarded.

Regarding the loss of old varieties: unfortunately they become uneconomic to stock due to changes in consumer demand or culinary fashion. That is why I believe that the Seed Savers' Network is important. At least it is one way of maintaining varieties for posterity.

Jeff Billing, Alphington, Vic.

 Our observations of seeds, organic vegies and the need to demand them in supermarkets.....is a follow-through from our recent long stay in U.K. where many large mainstream supermarkets have given over parts of their fruit and veg depts to organically grown produce.....all done by enough people demanding it. Where there's a buck to be made etc etc.

Naomi and Bill Lewis, Bega, NSW

 My job is at the Research Centre for Agrobotany, that has done the same as Seed Savers for 30 years. They have collected landraces, old varieties of cultivated plants living in the Carpatian Basin, Central Europe. It was interesting to see in the Seed Saver several tomato varieties originated from here: Kisbugaci, Nagykatadi, Nagykalloi (1 & 2 on page 10).

Bela Baji, Tapioszele, Hungary

 The world seems headed for some cataclysmic destruction that will take away perhaps more than half of its population! It could be nuclear war, conventional war with other than nuclear destructiveness that gets out of hand, epidemics, some consequence of destruction of the ozone layer, famine, or a host of other possible things. Survival for the remnant will depend largely on what they can grow for themselves. Supermarkets (with the present-day means of distribution) are not apt to survive such a cataclysm! I am neither wishing nor making any firm prediction of what will happen to destroy so much population -- I am just comparing many highly dangerous things on the horizon with past history of how human beings behave under specific circumstances!

There is still talk in some quarters about living on the moon, in space, on some distant planet, etc. Perhaps that will happen. But as I see it, there is NO EVIDENCE that food for man can be produced in quantity anywhere but on Planet Earth! I am all in favour of progress, but I deem it extremely unwise to lose touch with the land -- which, after all, IS our food source! I cannot stop the greed of those seeking monopolies in merchandizing seeds, but I will fight for my right to grow my own food and keep as wide a variety of seeds as possible. So I say, Keep up the good work you are doing. The day will come when there will be nationwide thanksgiving for the Seed Savers' Network!

Carmelo Casella, Burnie, Tas.

Stop Press.....

Early in 1989, our family plans on going on a working tour for several months. In preparation for our absence, we are trying to rationalize the office so that it can be workable for a different team.

We are presently looking for people to come and work with us. This should be soon enough so that we can overlap nicely.

An interim pair of directors will be needed. The task is: one to two days a week office work including — receiving and sending seeds, rationalising seed bank

- publishing the newsletter
- maintain and extend contact with the media
- keep up with seed aid and education

Do you enjoy reading and writing letters and creative writing for magazines and newspapers and magazines? The Network cannot pay a salary but expenses will be reimbursed. It could be that someone from afar will be interested, but closer neighbours would make the training period go more smoothly.

If you would ALSO like to take over our house, garden, chooks and orchard, that would be great: basic accommodation, large kitchen garden, three acres of orchard on permaculture lines. We are hosts in the Willing Workers on Organic Farms scheme, so it is a learning exchange as well. Quiet relaxed atmosphere (no television).

TOWARDS AN EARLY NEWSLETTER

The Spring Newsletter is only three and a half months away. We would like you to receive the seed listing, which is included in it, by mid-August, ready for early spring planting. **The deadline is 15th July.**

If you already know what you will have to offer, why not send in your listing soon? It won't cost you a thing to send out your seeds: with every request comes a self-addressed, stamped envelope **PLUS** you will receive one dollar (\$1.50 for large seeds and \$2 for cuttings, sets, nuts and tubers) for each sample if the requester does not have his or her name in this year's listing. You will receive 37 cents (74¢ for large seeds and \$1.11 for cuttings etc.) if the requester is also offering this year.

SEED BANK

We are upgrading our seed bank with mid-term and long-term storage facilities. If you have excess seeds, it would be a good thing to send them to The Seed Savers' central collection here in Nimbin. The mid-term seed bank will be used to supply new members with some seed stock, and for Seed Aid and Seed Education projects. The long-term seed bank is an essential back-up system in this preservation network.

BENEFACTORS

FOUNDATION MEMBERS:

Bill Mollison, Sally Smith, Neil Walker, Carmelo Casella, Jeni Edgley and friends.

These people have donated \$300 for the long-term goals of The Seed Savers' Network. We have invested it in an ethical investment fund. The interest will see that the project is long-lived. Our deep gratitude.

ASSOCIATE MEMBERS:

Julian Bamping, Andrew Jeeves (Permaculture Institute), Homeland Foundation (Bellingen), Michael Self (Phoenix Seeds), Jacqui Fithall (Turf Doctor).

We are grateful to our Associate Members for their donations of \$100 which are used to cover the cost of publicity activities (e.g. 430 press releases), computer hire, office rent and paraphernalia.

— Guidelines —

1. GROWERS

For the Spring edition, The SSN will ONLY be offering NEW varieties of seeds that are given e.g. more than thirty varieties of beans, recently received. We still have stocks of most of the seed offered in the last Newsletter. These are used to send to new members, and for Seed Aid and Seed Education. Now it is up to the members who have received seed from the network, to offer in the newsletter. **DEADLINE JULY 15th**

We find our region too wet (at harvest) to grow and multiply all the Seed Savers' Network collection of rare seeds. So it is up to other growing members to put seeds back into the listing, and/or send fresh viable seeds to Nimbin for the Seed Bank (in cool storage).

HOW TO MAKE AN OFFER: You can't just write "pumpkin". If you don't know its varietal name, give a description of its growth habit; appearance of leaves and fruit; quality of the fruit; why it is good in your garden; its origin (i.e. who had it before you, and how long it has been in their family, or in your family). The length of time it has been growing in one district is an indication of how suitable it is to that district. Note that some plants are adapted to a wide range of locations, e.g. "Darwin" lettuce which does well in both N.T. and Brisbane (we got it from Brisbane Organic Growers' Group).

BUT I HAVE ONLY ONE VARIETY: Even if you have only one common type of plant - no matter, other members are pleased to be able to obtain their seeds from non-commercial sources.

BUT I ONLY HAVE A SMALL AMOUNT OF SEED: which means you really don't have much, or don't expect to have much, of a particular variety. Other growers who offer seed should have priority for these, so L.Q., **Limited Quantity**, means only those listed growers should apply.

BUT I DON'T WANT TO BE FILLING SEEDS REQUESTS ALL YEAR - you may choose to offer seeds for a restricted length of time, e.g. September to December so that you do not have requests all year round.

BUT I DON'T HAVE ENOUGH SEED FOR VERY MANY PACKETS - a couple of dozen fresh seeds is all that is necessary. No need to compare with commercial seed packet size. For corn seeds and sunflowers, however, send at least 100 seeds in order to have a not-too-restricted genetic picture of the cross-pollinated variety.

BUT I CAN'T AFFORD THE MAIL COSTS - people must send a self-addressed and stamped envelope, plus an extra stamp (37c) for each variety if they also currently offer seeds, or three extra stamps for each variety if they do not offer.

2. NON-GROWERS

Not all our members are active gardeners, nor should they be. If you cannot offer any seeds, you could have a skill we could use. **Graphic illustrators** are needed for our publications.

We are very happy to hear of people's knowledge and experiences and to be able to publish them. We are in need of ideas and organizational skills for the **Seed Education project**. The video and slide set, and accompanying kit material are scheduled to be compiled this winter. Seed Savers' Network needs to tap into the resources and knowledge that **all** our members have, in areas like photography, film and video making, graphic design, ecology and environmental studies, etc., etc. Members living in those areas with unusual eco-systems and climate are especially invited to share their knowledge of seed raising with their localised varieties.

There is room in our team for an **aid worker**. If you live far away, we can correspond.
SEE YOU AT THE FIRST ANNUAL SEED SAVERS GATHERING - NIMBIN - LAST WEEKEND IN OCTOBER

Please send ☐ The Seed Savers' Network pamphlets for me to disseminate.
number
(my name and address is overleaf)

GROWERS

SEED OFFERING: I am offering these for the Spring Newsletter:

Same as last year: ☐ tick and either ignore the rest, or add more.

Seed, cutting, tuber offered: _____

(optional) -- Limited Quantity ☐ Available for a restricted length of time
DETAILS: PROVENANCE:

- | | |
|---|---------------------------------|
| 1 Origin: who had it before you? _____ | 1 Nearest large town: _____ |
| from where did that person obtain it? _____ | 2 Soil type: _____ |
| 2 Description of plant: _____ | 3 Rainfall: _____ |
| _____ | 4 No. of frost free days: _____ |

You will need a copy of this form for each seed offered. Please write on another sheet.

NON-GROWERS

HELP OFFERING: I can offer some help this year:

Background (education / experience): _____

Skills: _____

WORKSHOPS

I am interested in knowing more about (tick the box)

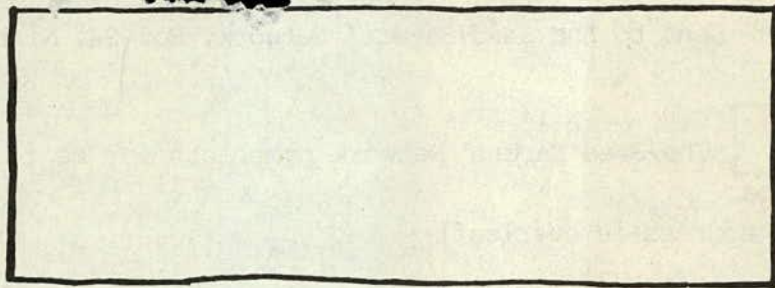
☐

the Gardening for Seed Saving Workshop, May 28th

☐

the Garden and Orchard Design Workshop with Bill Mollison, June 25th and 26th

Send to "Workshops", BOX 24, NIMBIN, 2480

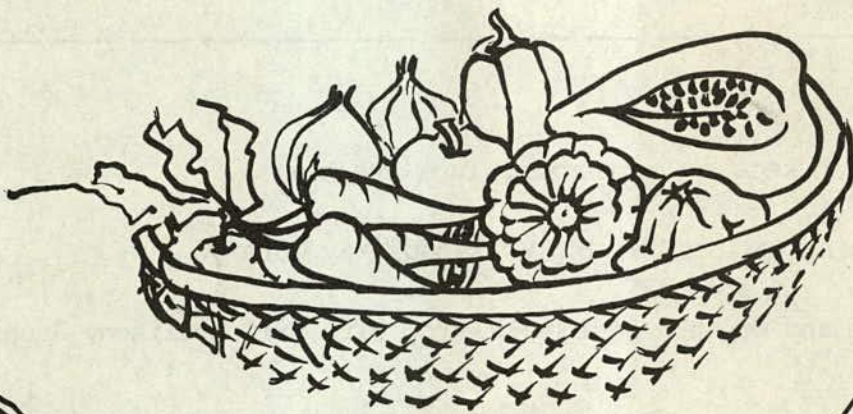


The Seed Savers' Network,
P.O. Box 24, NIMBIN. 2480

IF UNDELIVERED RETURN TO:

The AUTUMN BULLETIN

No. 4 1988



The Seed Savers' Network