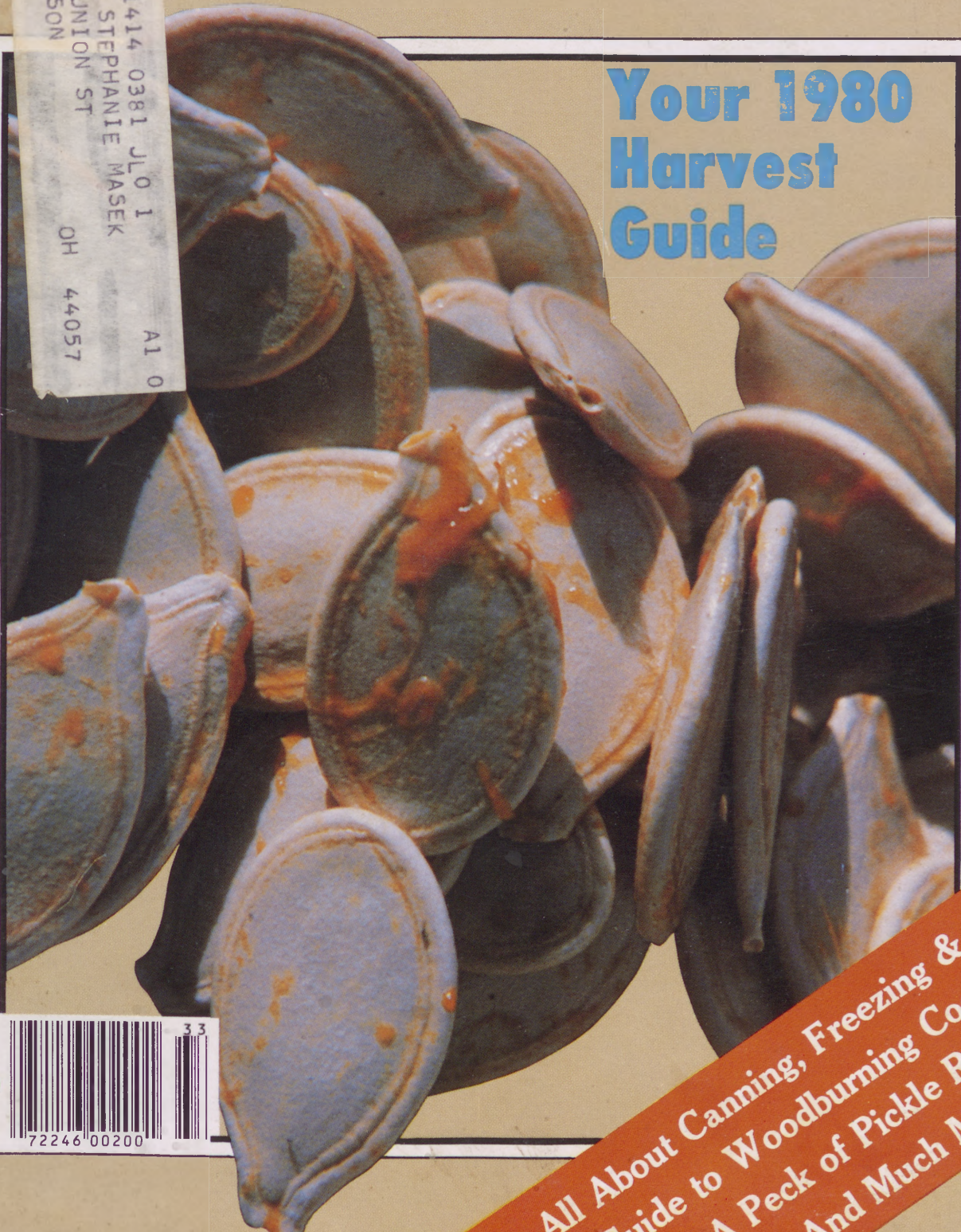


FARMSTEAD MAGAZINE

Gardening & Small Farming

**Your 1980
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Guide**

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All About Canning, Freezing & Drying
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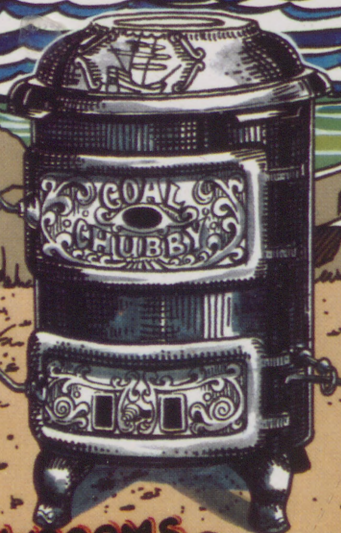
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Third, the Garrison design necessitates fewer welds so the body of



→ 1/4" ←

the stove expands and contracts without separating or becoming brittle. This maintains the Garrison's airtight firebox.

Some better known facts about Garrison.

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In short, that's the Garrison story. A 1/4" can be the difference between a bargain and a steal. When you're shopping for your stove, shop wisely. Be sure to ask your Garrison dealer lots of questions. He knows better than to give you anything but honest answers. And remember, after you make your decision, you're going to have to live with it.



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FARMSTEAD

Table of Contents

Volume 7, Number 5

HARVEST 1980

4	Letters	
10	Ask Farmstead	
14	The Feedbag	
19	Special Section: Your 1980 Harvest Guide	
20	Woodstove Harvest	Susan Restino
26	Harvest Kitchen Checklist	
28	A Guide to Woodburning Cookstoves--Part I	Albert A. Barden III
34	Hooray For the Freezer	Leslie Land
35	My Ice Cream Freezer Freezer	Leslie Land
36	In Praise of the Cider Press	Frederick Burrell
38	My Favorite Cider Press Recipes	Frederick Burrell
38	Sunflower Seed Recipes	Barbara Vukovich
40	A Peck of Pickle Recipes	Lucretia Douglas
42	How to Dry Your Harvest's Bounty	Barbara Sturdevant
44	Preparing Vegetables for Drying	Barbara Sturdevant
45	How to Cook With a Haybox	Sandy Dews
47	Taking Stock: The Farmstead Harvest Accounting	Barbara Ellen LaConte
48	Harvest Inventory	
50	Accounting for the Harvest	
51	Storing Your Harvest	Lynn Ann Ascrizzi
54	Moot's Root Cellar	Edmund Northrup Moot
55	Build A Basement Root Cellar	
56	Gathering in the Harvest: Safe Keeping for Your Crops	
58	Reap What You Sow	Bill Bateman
61	Perennial Cooking Herbs	Madeleine Siegler
74	If You Decide to Buy a Cow	Rose M. Hoover
80	Grow Your Own Oriental Vegetables	Louis V. Wilcox, Jr.
84	Wild Rice	Beatrice H. Comas
86	Heirloom Beans	John E. Withee
88	The Farmstead Reviewer	
92	The Kindling Box	

PUBLISHER-EDITOR

George Frangoulis

BUSINESS MANAGER

Mary Weaver

EDITORIAL STAFF

Lynn Ann Ascrizzi

Fiona Fitzpatrick

Barbara Ellen LaConte

Melissa Wentworth

BUSINESS STAFF

Vicki Brown

Diane Cody

Holly Ingraham

Jane Ingraham

Gigi Meader

Terri Nivison

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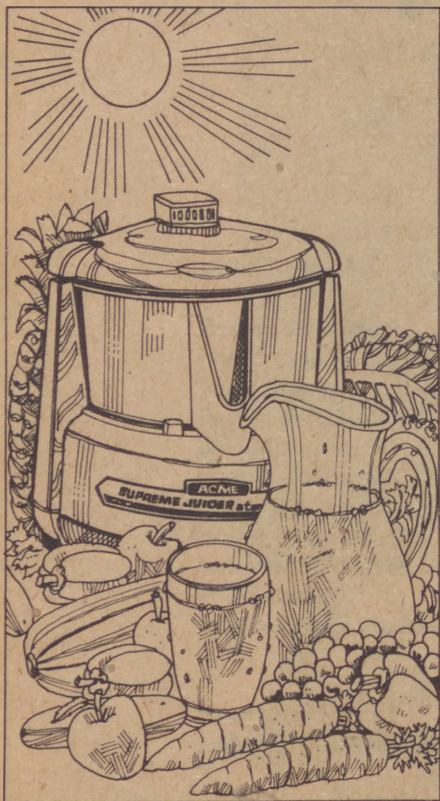
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Letters

SURPRISED BY CRAWFISH

Dear FARMSTEAD,

I have read your magazine with great interest for about six months. We initially purchased it during a magazine sale at school. We are city people and enjoy a limited amount of gardening. You can imagine my surprise when I saw the article on one of South Louisiana's greatest delicacies--the crawfish--printed in a magazine from so far north. There are so many ways to prepare Les Escrisses or Mud Bugs as many people call them. Thank you for your recipes.

Joyce Eiserlib
New Orleans, Louisiana

BEE STINGS

Dear FARMSTEAD,

It is always interesting to hear of remedies for different things. For me nothing takes the place of Aloe Vera for bee stings. I keep plants for a variety of remedies. But for bee stings, it removes the pain immediately and later there is no itching.

John Kirk
East Elmhurst, New York



Dear FARMSTEAD,

I have a remedy for bee stings. It is mud. When I was walking home as a child, I stepped on a bee, then happened to walk in some mud. The sting stopped right away. I tried it several other times and it always worked.

I enjoy your magazine very much.

Pattie Yates
Boise, Idaho

Dear FARMSTEAD,

I greatly enjoyed your Summer issue--especially the stories on bee-keeping and about the sheep lady from Morrisville, whom I have known for several years. She is everything the article says she is--and more. She is a prime example of what women can do in agriculture today.

As a beekeeper myself for the past six years, I have been stung plenty and have several of my own bee sting remedies. A wad of chewed tobacco helps to draw out the venom and relieves the itch and sting. Often when I enter the hive I collect out

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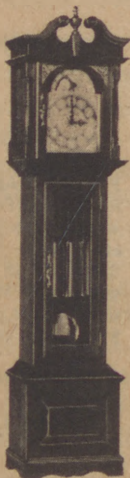
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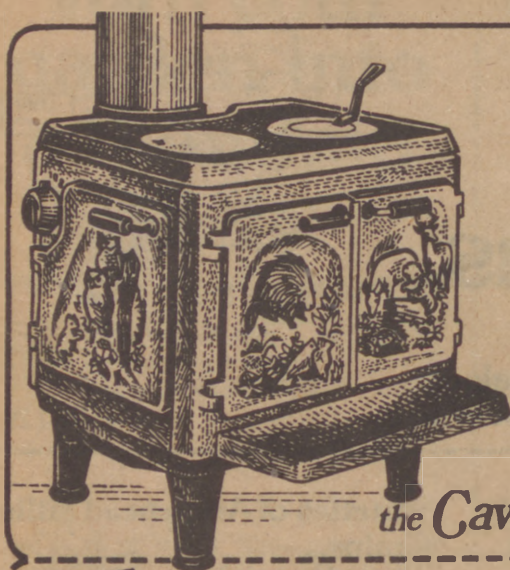
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several tablespoons of foundation with honey. If you chew the wax and honey for a good ten to 15 minutes it seems to act as an anti-venom agent.

I have noticed that whether I swell or not from a bee sting depends on the time of year and also the various flowers the bees happen to be working at the time.

Mary Elfer
Hyde Park, Vermont

THANK YOU

Dear FARMSTEAD,

We enjoy your magazine very much. It opened new doors for us. We have a mini farm and have various kinds of animals. We try to provide food on the farm without depending too much on store buying. With energy costing as much as it does, we manage to do without oil entirely. We think we've made progress. Thanks again for opening these new avenues for us.

Mrs. John Sylvani
Goffstown, New Hampshire

WALNUT CRACKER WANTED

Dear FARMSTEAD,

I have looked everywhere for an old-fashioned, antique "walnut cracker". These were heavy duty, cast iron devices with a lever and two vise-like jaws which cracked the walnut when the lever was pulled. I have been unable to find a new model that would do the job. Do your readers know of any company reproducing such a walnut cracker?

Joseph Carter
Somerset, Kentucky

NO STINGS

Dear FARMSTEAD,

I really enjoyed "Bees: Are They Endangered?" in the Early Summer issue. As I read it, I recalled an unusual incident involving wild honey bees when I was a high school student. Perhaps another reader can offer an explanation.

Some years ago, several friends and I were wandering around in the hills of west-central Arizona when we came upon a badly weathered Saguaro cactus skeleton. These normally serve as home for critters seeking refuge from the sun. In this old cactus I found an abandoned honeycomb. It was pretty dried out and I assumed it had been there for years. I examined the comb.

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Grape Hyacinths. (Muscari). Blue flowers in grape-like clusters for naturalizing. Apr.-May.
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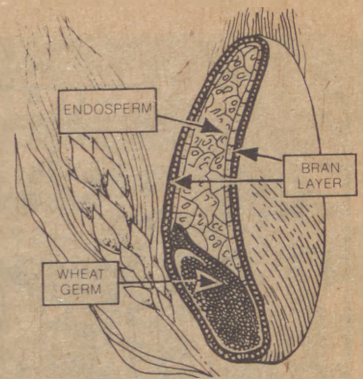
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What you should know about grains.

How they are grown and processed, their nutritional values, and how Arrowhead Mills' organic grains compare with others.



"Behold, I have given you every grain bearing seed... it shall be food for you."

Genesis 1:29

Why Arrowhead Mills grains are organically grown.

Arrowhead Mills, the natural whole foods people, believe in biological farming—farming in harmony with nature.

That's why our grains are organically grown without the use of synthetic fertilizers, herbicides and pesticides.



Most of us have been farmers all our lives. For example, Frank Ford, our founder, has logged over 20,000 tractor hours over a period of 25 years of biological farming.

Soil fertility is enhanced by the addition of compost and other natural soil building materials—not synthetic fertilizers.



Instead of pesticides, beneficial insects, such as the ladybug, are used to control insects that damage crops.

The importance of cleanliness and lab-testing.

To preserve the grains' wholesome taste and freshness,

they are cleaned by a special three-stage cleaning process. Then grains are stored in clean, dry bins which are fan-blown with cold winter air—without fumigation.

Additionally, our grains are lab-tested as an extra precaution.

Nutritional values of grains.

Grains are one of the best sources of essential protein, bran, complex carbohydrates, B vitamins and trace minerals.

Below are a few typical examples of nutrients contained in grains.

100 Grams of Uncooked Grain (About 0.6 Cup)	Wheat, Hard	Millet	Corn, Yellow	Brown Rice
Protein-%	14-17	10	10	8-10
Fat-g	1.8	2.9	3.9	1.9
Carbohydrate-g	71.7	72.9	72.2	77.4
MINERALS AND VITAMINS				
Calcium-mg	46	20	22	32
Phosphorus-mg	354	311	268	221
Iron-mg	3.4	6.8	2.1	1.6
Potassium-mg	370	430	284	214
B1-mg	.52	.73	.37	.34
B2-mg	.12	.38	.12	.05
Niacin-mg	4.3	2.3	2.2	4.7

g-gram; mg-milligram

Data from U.S.D.A. Handbook No. 8, "Composition of Foods" except for protein. % protein data are from analyses of Arrowhead Mills grains.

Whole grains are delicious in hot cereals, soups, stews, casseroles, meatloaves and many other dishes. You can find these recipes in our "Simpler Life" or "Deaf Smith" country cookbooks.

Varieties of Arrowhead Mills Grains.

Whole Grain Wheat • Millet • Buckwheat • Groats • Barley • Triticale • Corn • Brown Rice

Sold in 2 pound cello-packs, (except corn—50 lb. bags only) which can be easily reclosed (retied), at natural health food stores across America.



Our other products.

Organic Wheat Bran & Raw Wheat Germ • Beans, Seeds & Nuts • Whole Grain Arrowhead Mills/Olde Mill Flours • Cereals & Flakes • Whole Grain or Multi-grain Mixes • Old-fashioned Arrowhead Mills/Deaf Smith Peanut Butter. Unprocessed Oils & Other Products.

Our SIMPLER LIFE

Cookbook (\$1.95), featuring 200 natural tasty food recipes, is available at your natural food dealer.



Arrowhead Mills' Pledge:

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Frank Ford Founder
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Catalog

An hour or so later, we discovered an active hive in a crevice of one of the granite walls of the canyon. When I got to where the rest of the party was standing—an unwise six to eight feet away from the bees—a large number of bees flew after me, landing on my shirt and in my hair. I howled and ran for several hundred yards where my friends removed the last dozen or so bees.

The surprise? I wasn't stung. Not once. I had been covered with bees on and inside my clothing—but received no stings. I have always suspected that the bees swarmed over me because of the honeycomb I had handled earlier.

Leonard M. Urban

Albuquerque, New Mexico

HIS OWN QUAIL

Dear FARMSTEAD,

I read your article on the quail and I couldn't help but remember one early hot Sunday morning five years ago when we first bought our farm.

We were living in town, but stayed out at the farm some weekends. This particular Sunday morning, I rode up early and was sitting on the back porch watching the sun come up when I heard a Bobwhite call. I answered him and he called again. We called back and forth a few times and I noticed he was getting closer all the time. I looked around the side of the house and saw him coming up the drive way, his wings spread out slightly with tips almost touching the ground and when I called he would stop and just quiver, he was so mad. My whistling must have seemed a challenge to him.

I thought maybe I had better not take him on so early on a Sunday morning, and thinking that, I stepped out where he could see me. It didn't scare him a bit. He kept on coming. He came within ten feet of me as I stood there and didn't fly away until I started walking toward him.

We still hear him once in awhile. We leave some old pasture around some old gravel pits on the place and we tried to start trees and shrubs out there to make a fence row to provide shelter for wildlife. I read in our paper that there are very few quail now in Minnesota. All I can say is, if they are all as scrappy as that little fellow, there will always be some here.

Jack Kenning

Spring Valley, Minnesota

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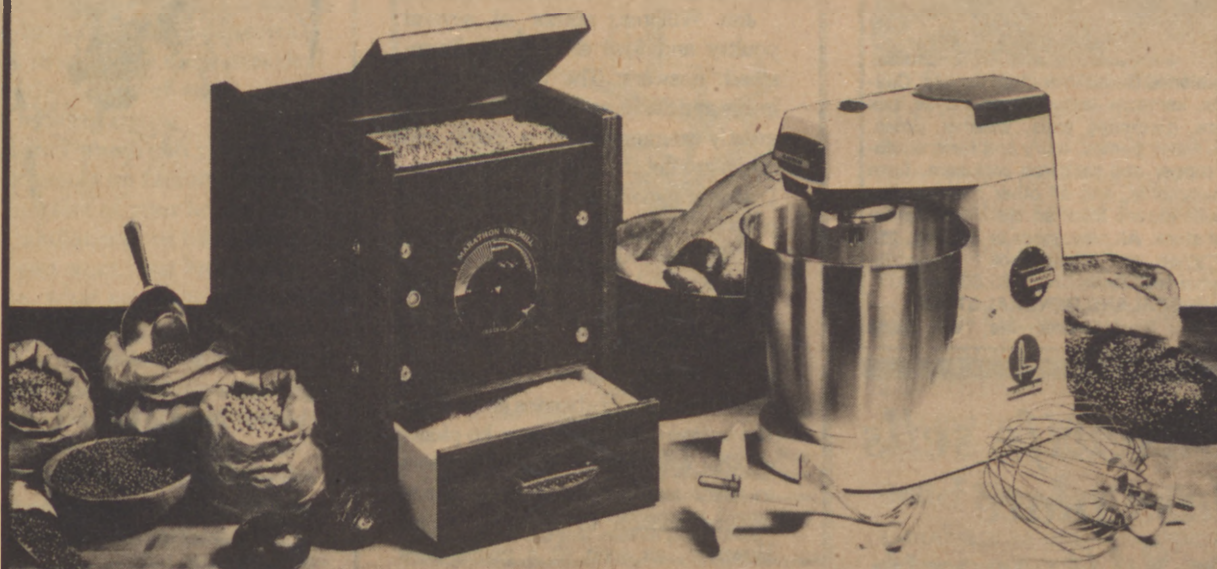
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Housewife sells 'glass plate' for \$40; worth \$1,800

NILES, Ill.—The story of a small fortune, lost because a housewife had no idea her glass plate was a collector's item, recently came to light.

In a letter to J. R. MacArthur, chairman of the Bradford Exchange, world's largest trading center in collector's plates, a Madison, Wisc., woman wrote: "I had a Lalique 1965 plate . . . which I sold to a friend for \$40. I had not heard of you at that time."

The plate she sold is actually valued at more than \$1,800. Although MacArthur points out that this price is exceptionally high, he said, "I'm afraid others may be losing hundreds or thousands of dollars by not knowing what their plates are worth."

To aid in identifying valuable plates, the exchange issues a report that includes current prices on more than 900 plates, guidelines on what to look for and when to buy, and the plate evaluation checklist used by the exchange.

To obtain a copy without cost or obligation, just send your name, address, and zip code before Saturday of next week to: The Bradford Exchange, Dept. A86308, 9301 Milwaukee Avenue, Niles, IL 60648. A postcard will do.

I have been told I could turn my few ducks and geese out into my garden to do weeding after seedlings are grown. Is this reliable advice?

Jan Williams, author of several poultry and fowl articles for *Farmstead*, answers: The importance of geese and ducks as weeders is usually greatly exaggerated. First, geese and ducks are not the same in this aspect. Ducks are more weeders of garden pests like snails and various bugs, but will, as reward, gladly rob you of every vegetable they like in your garden. The notion of using geese as weeders is based on their dislike of coarse or hard leaves. The common examples are strawberries and cotton. But in that case, there must be plenty of other weed leaves on hand for them to savor and they must be lean and hungry enough to go after them. However, as soon as a goose sees some young and succulent growth, he'll go after it. For your garden as a whole, I would ascribe to them the selectiveness of a lawn mower. Furthermore, there are certain geese (I have an old African female) who always dig for young roots and therefore might do considerable damage to young plants they are supposed to weed around. In general, my experience is they you can get many more uses out of your geese and ducks than counting on them as weeders.

I am interested in converting my tractor and farm truck to alcohol. Can I buy this or have it delivered?

Not easily. You should begin by contacting your state department of agriculture and your county agricultural extension agent. Ask whether there are any agricultural cooperatives producing and distributing fuel alcohol in your area. You may have to form or join one of these. Also, contact the American Agriculture Foundation, Clearinghouse for Farm Alcohol Information, Box 57, Springfield CO 81073. There is as yet no centralized, national production/distribution system or plan for fuel alcohol. There was none for petroleum one hundred years ago. While it is doubtful that alcohol will ever be managed centrally or corporately quite as petroleum now is, it may be that it can be handled more like milk.



Micki Nellis, biochemist, microbiologist and co-editor of *American Agriculture News*, suggests that the "success of the [11 billion gallon] milk collection system proves that large amounts of liquid can be produced in small, decentralized plants economically and efficiently" and eventually, brought direct to you.

I had a great number of cucumber beetles on my vine plants this summer, but I treated them quickly and they did not return. Still, nearly all of my squashes, some of my cucumbers and pumpkins wilted and died in mid-summer. What might have caused this?

Bacterial wilt. While wilt is encouraged by, and often associated with, cool, humid weather, its cause is the striped or spotted cucumber beetle. Droppings of infected cucumber beetles fall into the wounds they create on leaves. Leave holes alone until activity ceases out the plant. One week produces a few wilted leaves. Several weeks are required for a plant to die. Plants cannot be saved.

You can check for bacterial wilt. Several days after a beetle infestation, snip off a leaf. Squeeze sap from the stem. If it is sticky and stringy, a wilt infection is present. Clearly it is important to quell populations of squash beetles early. Best of all, prevent them altogether by mulching heavily under and around squash plants (the beetles can't crawl up through), dust with rotenone, plant late (after mid June) if your season permits, and encourage the beetles' natural enemies, the soldier beetle, tachnid fly, the braconid wasps and nematodes.

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Ten years ago, wood- or coal-burning stoves were a quaint throw-back to frontier America. Today, they're the most practical alternative to out-of-sight home-heating costs.

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Do you know what that means in dollar savings in just one year? And, for anyone trapped with electric heat, a **VIW airtight stove** could mean the difference between being warm and being wiped out. Yes, we say a **VIW airtight stove** because not all stoves are alike.

Beware Hot Air Claims.

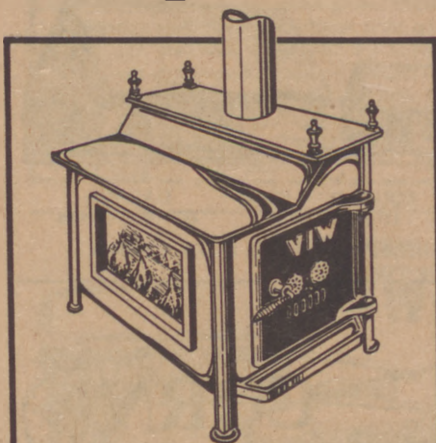
More than 1100 companies are making or importing various "wood-burning stoves." Many ads don't tell the whole truth about how the stoves work; they often mis-use terms like "air tight," "baffled heat" and "guaranteed." You know, wood-burning stoves can also waste money, smoke up everything or explode and set fire to a house. Consumer beware!

16 Questions and a Lifetime Guarantee.

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A wood-burning stove is an important investment. We want our customers to look at it that way — as we do. We tell it like it is in our concise booklet, "16 Questions to Ask Before You Buy a Wood-burning Stove."



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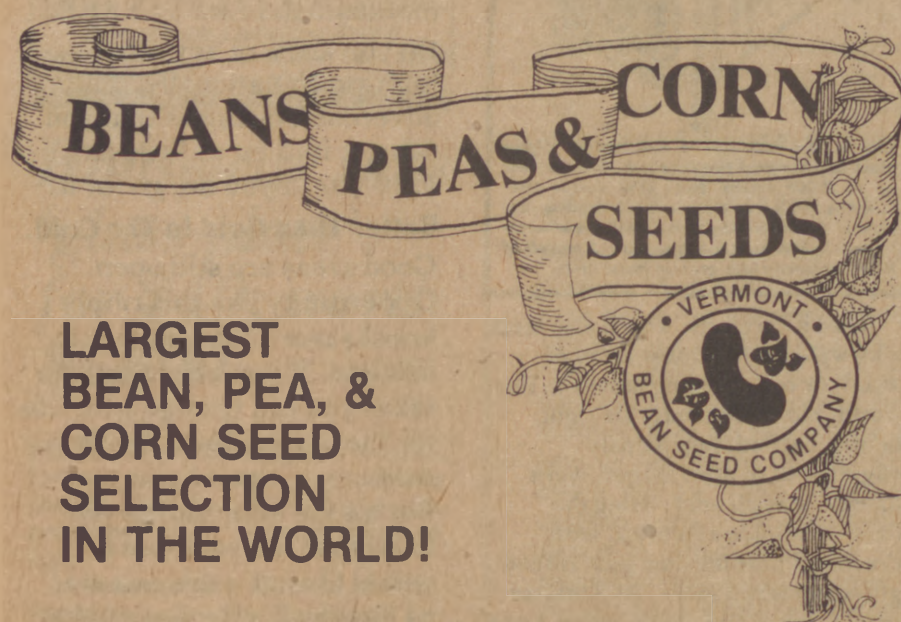
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Before my daughter buys a horse we need to know what the feed costs will be. How much do we really need to feed a horse?

Less than most people think. Unfortunately there are a great many stable-born, chatter-carried myths about equine feeding requirements—they lead to a great many overfed and a great many poorly fed horses. Dr. Doyle Meadows, animal scientist at Oklahoma State University suggests that mature family horses can be fed for 60 to 70 cents per day if the diet is well-managed.

Local hay—timothy, burmudagrass or alfalfa—should be fed in the amount of one percent per 100 pounds or 10 pounds for a 1000 pound horse. For a mature horse, eight percent protein is sufficient. Varieties of hay may be chosen on the basis of age and purpose of the horse. Higher protein hay, like alfalfa (15 percent protein) may be fed to a working or heavily ridden animal, but should be mixed with or replaced by lower protein hay for less frequently used or wintering horses. Oats, after all the most easily digested and fibrous grain, are best for horses that are working or training or for bred mares and young, growing animals. They are not a daily necessity nor even a desirable daily supplement for mature, normally used horses.

We've had signs of some insect tunneling in the wooden overhangs of our barn and sheds. The holes are about a half-inch across. But I can't find any evidence of ants and we are too far north for termites. Are there any other possibilities?

Watch the freshest holes for signs of carpenter bees leaving or entering their nests. Carpenter bees are pollen gatherers. They are hairless, black-backed and about one-half-inch long.

Prevention of damage by carpenter bees involves painting wooden surfaces or wrapping possible nesting sites in aluminum. Cures for infestation of carpenter bees range from the application of a five percent solution of Sevin or less potent pesticides to the safer application of organic pest controls, like oils or nicotine. Treatments should be applied into the holes after dark in cool, dry weather. Leave holes alone til activity ceases for several days. Then plug the holes.

I have a considerable supply of honey and would like to make mead. Can you tell me where I can get a recipe? Is there more than one kind of mead?

Because honey is one of the elders among sweeteners, mead is an ancient brew. It can be made very sweet to very dry, heady at 16 percent alcohol or light at 9 percent and with a variety of flavorings. Spices, such as rosemary, cloves, nutmeg, ginger, mace or cinnamon may be added—beginning with tiny quantities and working up to your own taste preferences. Flowers can be used to flavor mead, as other wines. The commonest are mauve or purple clover, rose petals, dandelions (two to three pints of the petals of either to one batch of mead) or elderflowers and hawthorn flowers (one pint of either to one batch).

The basic recipe for plain honey mead comes from H.E. Bravery's *Home Brewing Without Failures*. For medium sweet mead use four to four-and-one-half pounds of honey and for sweet mead use four-and-one-half to five pounds of honey.

DRY MEAD

3½ pounds honey

¼ ounce citric acid

¼ pint strong freshly-made tea

yeast

nutrient

Mix honey with about ½ a gallon of hot water, bring slowly to boil and boil for two minutes. Turn into plastic pail, add citric acid and tea and make up to one gallon with more boiling water. Allow to cool to approximately 65 degrees Fahrenheit and then add yeast and nutrient. Cover with plastic cover or tightly secured plastic film cover. Ferment in warm place for ten to fourteen days.

If using hydrometer to test for alcoholic content, take reading when mixture has cooled to the point where yeast is added. After ten to fourteen days, pour into gallon jar, leaving behind as much deposit as you can. Fit fermentation lock and leave in warm place until all fermentation has ceased. It may be several months before this happens, but when fermentation has ceased and the mead is clear, it should be siphoned off the deposit into another jar and bunged down and kept for a year. Or it may be bottled and sealed. Then some may be used right away and a few bottles kept to mature. Don't judge young mead for it is not at its best. At a full year old it will have mellowed and developed its full flavor.



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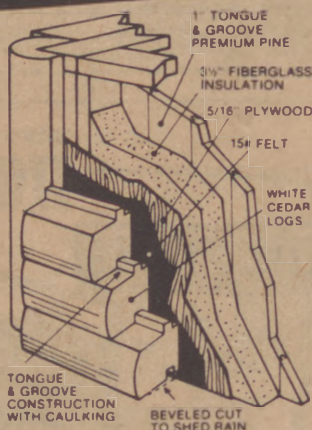
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The Feedbag

counting sheep

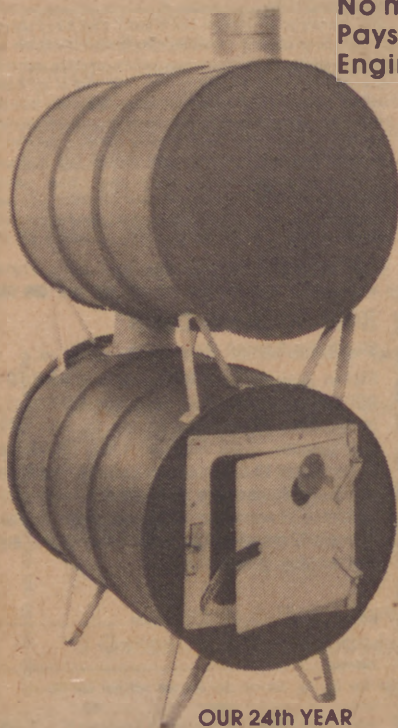
In an area once known for its production of quality lamb and wool the sheep population is once again on the rise. In New England, the population of sheep rose five percent in the last year to 40,500. For sheep farmers, the value of their stock rose even more dramatically by 34 percent to nearly \$80 per head. Pig farmers note that one 150-pound sheep is worth a 250-pound pig-and-a-half in the current market.

you can eat more beef

The use of the word "turkey" as a pejorative term for certain people may not be so farfetched. Like people, turkeys suffer from hypertension, hardening of the arteries and heart attacks. For that reason, the Oklahoma Medical Research Foundation and Oklahoma State University have completed studies which indicate strongly that beef consumption not only does not cause cardiovascular disease, but may actually raise chances of surviving stroke or heart attack. Turkeys that were fed human equivalents of beef had 33 percent higher levels of desirable high density lipoproteins than turkeys fed on other protein feeds.

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bacterial pain killer

Dr. John Baxter, with his colleagues then at the University of California at San Francisco, has employed techniques of genetic engineering, using mouse genes, to encourage bacteria to produce a pain-killing chemical—beta-endorphin. A highly effective pain killer, beta-endorphin is produced in tiny quantities by the pituitary gland. Synthetic beta-endorphin has been found to be useful in the treatment of psychological disorders such as schizophrenia and depression. However, synthetic beta-endorphin has cost upwards of \$100 per milligram to produce. Bacterial production should lower the cost dramatically and increase production to enable further research into other possible uses and side effects of beta-endorphin.

ecological backfire

The US Forest Service started a fire in Michigan. The fire was intended to burn over 200 acres of jack pine forest, the habitat of the endangered Kirtland's Warbler, appropriately nicknamed the "bird of fire". Under natural conditions this Kirtland's Warbler nests only in the Huron National Forest area of northern Michigan and only on the ground under the protective lower branches of the scrubby jack pine. Under natural conditions, the jack pine grows tall, its lower branches die, the warblers have fewer nesting sites—the population is controlled. Then, natural fires roast and crack stubborn jack pine cones. They drop their seeds and begin new plantations of sheltering pines to house growing populations of warblers.

But in contemporary forest culture, widespread natural fires are not permitted, jack pines grow tall and warbler populations are unnaturally diminished. So, the US Forest Service started a fire in Michigan. Unexpected winds spread the flames over 25,000 acres of forested and residential areas. One forester died. Still, of that 25,000 acres, only 100 were warbler nesting sites. Forest Service spokesmen suspect that only one to two dozen "birds of fire" will have to relocate.

--Science News

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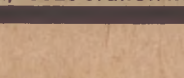
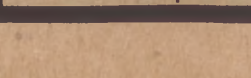
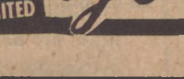
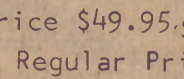
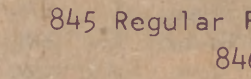
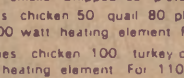
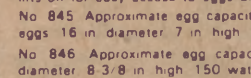
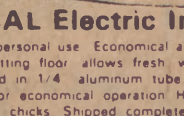
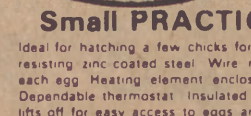
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cloned oats

Scientists have learned in recent years how to clone tobacco and potato plants from single plant cells. But efforts to coax cereal crops to reproduce under laboratory conditions have been unsuccessful. Now Arthur Galston and his colleagues at Yale University have found a way to treat oat clone cells with chemicals called polyamines. These polyamines enable DNA molecules to transmit genetic information to newly created cells. The infant cells then replicate exactly the parent oat cells and develop into complete oat plants. These laboratory reproductive procedures would permit the development of healthier more productive strains of oats.

and a bale of poplar

"Trees are really only tall grass", claims a brochure advertising as livestock feed chipped and pressure-cooked hardwood trees. Stake Technology Ltd. of Ottawa, Canada, which has developed the process, has set up its first commercial plant in Dover-Foxcroft, Maine where it hopes to offer the aromatic, soft, fibrous feed in competition with less convenient, labor-intensive corn, hay and potatoes to dairy and sheep farmers. While animal nutrition specialists do not predict a national rethinking of livestock diets, early interest in the product has persuaded Stake Technology to go on with plans to open other plants in Minnesota, British Columbia and Florida.

--Wall Street Journal

the fatted calf

The increased demand for hamburger in the American diet has caused a similar increase in the market for feeder calves—animals raised as quickly as possible for consumption. Just as poultry raisers have found changes in breeding and feed schedules can produce meat more rapidly, cattle raisers have found ways to fatten the pasture calf more quickly. The newest technique involves the implanting of a growth chemical—zeranol—at spaced intervals into the ears of each feeder calf. Assuming quality pasture, zeranol implants can bring about as much as an 18 percent growth gain, as tested at Pennsylvania State University.

sunflowers on the rise

Over the last decades about five million acres in states like Idaho have been planted to sunflowers. The crops of seeds have traditionally been marketed as wild bird feed. Recently the new health consciousness in America has brought about an increase in the use of sunflowers in the production of 87 percent polyunsaturated cooking oil and margarine and as an increasingly popular nutritious whole food.

Ohio extension agronomist Walter Schmidt agrees with predictions that the developing markets for sunflowers will cause as many as 15 million acres of sunflowers to be planted over the coming years. Farmers in states like Ohio and Maine and in other agricultural areas with light, well-drained soils and cool fall weather are expected to meet the need for increased production. The USDA is currently developing market grades and guidelines for small farmers who want to raise this increasingly popular crop.

big is bigger

Often a very accurate indicator of agricultural economics, *The Kiplinger Agricultural Letter* has predicted that the power of agricultural production and decision-making will fall into even fewer hands in this decade than in the previous two. The newsletter suggests that one of every four or five farms will survive the current energy/economic confusion and that 250,000 to 300,000 of the current 2.37 million farms in America will control 90 percent of the nation's agricultural profit by the end of the decade. Modern subsistence farms, small, part-time farms and farmsteads have little impact on statistics involved in this financial projection.

who's got the garbage?

In New York City, where a sanitation strike can produce mountains of refuse in a few days, enterprising businesses have found a low-cost solution to their private refuse disposal woes. Dump it in somebody else's backyard. Illegal refuse carters are hired to haul refuse to the nearest vacant lot at night and leave it. City-paid special forces—the "sanit-police"—have been empowered to patrol, set up surveillance and arrest black market super-litterers. The newest CB game in the Big City? Warning garbage truck drivers of approaching "sannies".

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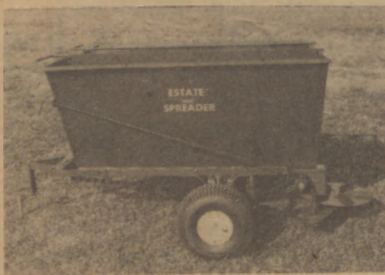
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run it up the flagpole

Those who are appalled to learn that the majority of Americans under 30 prefer the taste of artificial strawberry flavor to the real thing, will be "appled" at the newest wrinkle on food synthesizing. Food engineers at MIT have developed artificial fruits "that would satisfy most peoples' sensory perception of food". They are concoctions of artificial color and flavor, vitamin additives, sugar, gelatin and pectin for firm form and seaweed derivatives.

In another attack on natural foods a California firm has contracted with fast food chains to provide ready-to-sprinkle-on shredded lettuce. It is convenient and faster—but nutritionists note that lettuce loses its vitamin content quickly after shredding.

--Rural Advance

IPM victory

The center for 'Integration of Applied Sciences in Berkely, California reports that the city of Modesto has used careful integrated pest management studies to reduce pesticide useage by 99 percent. The studies included information about key pests, their life cycles, habits and natural enemies. Pesticide treatments were monitored to complement and encourage natural controls and to have maximum effectiveness. Even with increased labor costs, the IPM program used by Modesto cost taxpayers 41 percent less.

--Self-Reliance

fungus among us

The tiny fairy goblet or bird's nest fungus is entering the range of domesticatable flora employed in alternate energy production. The miniscule cup-shaped fungus, when encouraged to live on wheat straw for 62 days, digests the lignin in the straw. The lignin otherwise prevents the cellulose in the straw from being readily processed into sugar. After the fungus removes the lignin, the broken-down wheatstraw can be easily digested by cattle or used to feed yeast that produce fuel alcohol. Another fungus—the edible oyster mushroom—may render waste wood similarly into an alcohol producing crop.

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Special Section:

Your 1980 Harvest Guide

This Harvest Guide Contains:

Canning on a Wood Stove

A Guide to Woodburning Cookstoves

Hooray for the Freezer

My Ice Cream Freezer Freezer

Evenings grow chill now, and morning's coolness lingers about tall stands of corn, suppressing the prolific growth of bush beans, yellowing already resigned onion tops.

There's a rumor circulating about a possible early frost with the approaching full moon. And, you can't believe it--already two or three leaves atop the maples have reddened like faint banners of forewarning. Yet, days are disarmingly warm and smiling.

Tomato vines groan with their ripening red and green globes. You notice with dismay some have actually split their skins, and from the thin cracks a juicy pulp oozes. Pumpkins and winter squash, round and jolly, taunt you as they peek from summer hiding places beneath curling tendrils and broad leaves.

You've given up on counting zucchini and cucumbers are hopelessly legion. Row on row of fat carrots push their broad crowns above the rich humus, and while a pear tree in the back yard bows with its bright green galaxy of fruit, you inspect your troops of cabbage, escarole and beans with pride.

Never has the garden smelled so pungent and wholesome. A sort of chorus rises over garden plots and ascends above field and hills. It's the old song of the harvest, swelling with the last surges of cricket chanting and raucous concert of birds gathering in growing numbers in tree and pasture, discussing their future migrations in shivering syllables.

It's a proud song for a gardener, yet urgent too... a strange mingling of the satisfaction of labors past and poignant apprehension of hard weather ahead.

Uh-oh. Better get a move on, you tell yourself, and save all the reflections for later when the larder is full of your stored produce. Harvest is the critical moment where timing and perseverance makes all the difference between spoilage and safe storage. So, you hasten to the kitchen to make a list of all things practical: cooking utensils, canning jars and equipment, freezer bags and all the happy necessities of preservation, preparing yourself for the short but intense days of harvest ahead.

L.A.A.



In Praise of the Cider Press

My Favorite Cider Press Recipes

Sunflower Seed Recipes

A Peck of Pickle Recipes

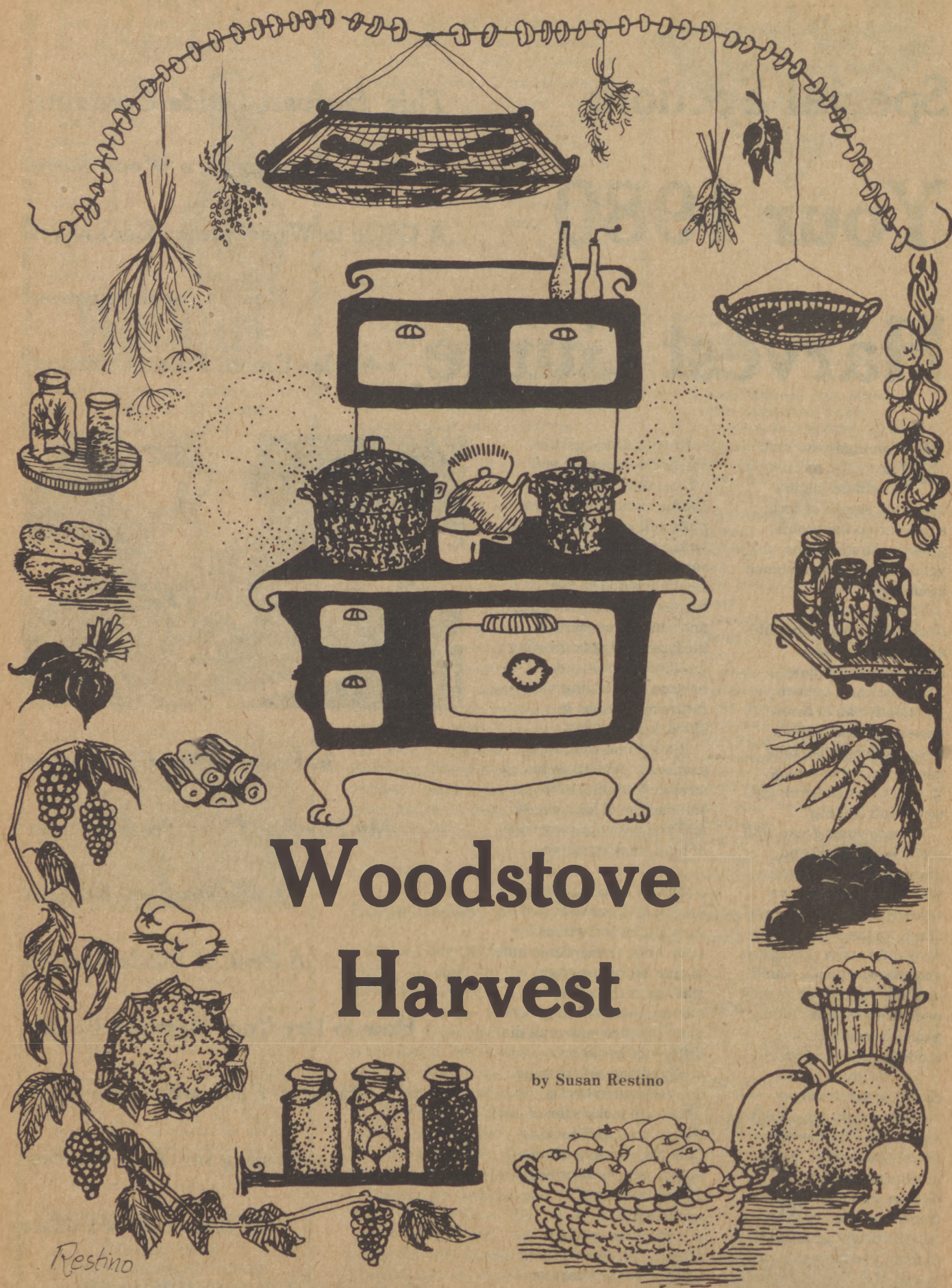
How to Dry Your Harvest's Bounty

How to Cook with a Hay Box

Accounting for Your Harvest

All About Root Cellars

Gathering & Keeping Your Harvest



Woodstove Harvest

by Susan Restino

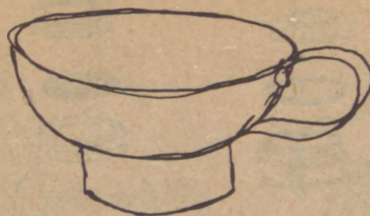
The season is upon us. Abundance is everywhere--in gardens, berry-patches, fields and orchards. Whether your aim is a few jars of jelly or a whole year's supply, it's a satisfying feeling to get involved in harvest, in putting food away for the winter.

There is, to my knowledge, no tool as well suited to this sort of activity as the wood cookstove. It's the only cooking surface on earth with enough space to hold a canning kettle, a vegetable steamer, a couple of pots of pickles and a pan of lids--plus the teapot. It's flat. Things don't wobble when you slide them around. Pots don't develop hot spots. It's almost impossible to burn the applesauce, as I've done many times over gas and electric heat. And, of course, it uses a good, renewable resource: wood.

There are, of course, a few tricks to using any wood stove, and the cookstove is no exception. For example: One morning, in mid-July, you sally forth to visit the garden and discover that the cucumbers are really coming in. You get a basket and start picking, every one you can, knowing that if you leave them for another day or two they'll be too fat to be really prime canning material. You head for the kitchen to wash, trim, and chop them up. Next you locate the bottles and lids (there are, luckily, enough seals) and wash them thoroughly. Then you split up some wood, and make yourself a sandwich. Finally, at 1:30 on a hot July afternoon, you are ready to make pickles on a wood stove. A bright little voice in the back of your mind says "Want to go swimming?"

Go. Absolutely. If you touch one stick of kindling, you'll be a dead duck. Take all those cucumbers and chuck them into a bucket of cool salty water. Shove the whole lot under the sink. The next day, can them in the cool of the day, starting the stove at dawn. That's the way our grandmothers did it on their wood stoves, and that's probably also the reason why you find so many recipes for two-part procedures: one step taken just after gathering, and, a day or more later, a cooking step. Harvest has always taken place in hot weather, and even if you have the latest modern stove,

Susan Restino, author of *Mrs. Restino's Wood Stove Cookbook*, farmssteads and gathers in the harvest in Baddeck, Nova Scotia. She drew the accompanying illustrations.



it's pretty uncomfortable working in the kitchen on a hot summer afternoon, with a couple of boiling pots, which is what you need for either canning or freezing.

Another trick our grandmothers and great-grandmothers used was organization and planning. Make sure you have all the essential ingredients before you start any sizable harvest project: freezer bags, canning jars, lids and seals, spices, clean dishcloths, buckets, enamel pans. Canning kettles often chip and wear through. Make sure yours is in working order before you set it on the stove with five gallons of water in it and fifteen quarts of beans waiting.

If you're using a wood stove, go out and have a serious look at the woodshed before you get into the season. Is there plenty of dry hardwood there, split and ready to go? You don't want to be running out between batches to whack up another armload. Do it ahead of time, and you won't have to.

While I'm on the subject of wood stoves, I should mention another important factor to be considered in wood stove summer-time cookery--ventilation. Lots of people set up their stoves without thinking about this too much, but it's essential to have an openable window on both sides of the stove. If you put the door on the side from which your summer breezes come, so much the better. You'll love the cool ground air coming in. It's also helpful to have shade, such as trees or a porch, on the intake side.

Choose clear weather for working in the kitchen with a wood stove in the summer. The stove will draw better, and the wood will be drier and burn fast when you want it to. (Besides, it's more likely that the other people in the family won't hang around the kitchen getting in your way, if it's sunny outside!)

Many people who cook on a wood stove prefer to use a summer kitchen for harvest work. A summer kitchen can be built adjoining the house, or completely separate. I have a friend

who does all her canning and freezing--a whole year's worth--on a leaky old wood stove which billows smoke every time the wind blows. She does it out in a little screened-in gazebo, in a grove of shady trees, and doesn't even notice the smoke.

Organize your kitchen so that you can find things, and have plenty of working space for bags of dripping fruit, or rows of bottles. When I have a big project going on, I sometimes drag an extra table into the middle of the kitchen, too, just for piling and chopping vegetables and fruit.

Think about meals ahead of time. Fortunately, there's a lot of variety available in season--you don't have to look too hard to find a meal. If you're making up pickles, have a big salad made out of the ones that were too ripe to can. Tomato time is great. Just ladle out some of the processed tomatoes and make a spaghetti sauce or Eggplant Parmesan. When you're doing the freezing, pick enough different varieties of vegetable to make an easy stir-fry accompanied by rice and fish or chicken. One trick I learned from rural housewives is that of serving up dinner at noon, during the summer months. It's so much more sensible than trying to make up a major meal at the end of the afternoon. For supper, serve what you would have had for lunch--something light and easy.

Finally: Clear the decks of people, before you begin. Preparing food for storage isn't really difficult, but it's exacting. You have to watch the clock (and your pots) carefully. If you have children, this may be difficult, but try to get them out of the way. It isn't really safe, anyway, to work with scalding water and children under foot. Be inventive. A bucket of water in the sandpile, and a pile of old tin cans--tell them to can up some mudpies for the winter!

Canning On the Wood Stove

There are two basic methods of canning: hot water bath and pressure canning. They are quite different.



In hot water bath canning you submerge a jar of hot food in boiling water for a prescribed length of time--generally 15 to 30 minutes--long enough to kill any yeast or mold and to create a small air vacuum in the air space at the top of the jar to hold down the lid so that no more air can get in. Hot water bath is used for acidic foods such as fruits, including tomatoes, and pickles.

Pressure canning is a more difficult process, but necessary because the conditions created by hot water bath canning are ideal for incubating botulism. Botulinus is a toxic bacteria that can grow in the sealed air space above any bland foods, like meat, fish, or non-acidic vegetables--peas, corn, pumpkin, etc. For these foods it is safer to use a pressure cooker. Botulism is usually fatal.

I have found pressure canning difficult on a traditional old-fashioned wood stove. The level of heat must be very constant to keep the cooker at an even 10 or 15 pounds of pressure for the length of time required--30 to 90 minutes, depending on the density of the food. I find it easier to freeze that sort of food. Even though I don't have electricity, it's easier to freeze and keep the freezer at a neighbor's house.

Freezing

Most freezing is done in the hottest weather--so this is one job for which you need good ventilation in the wood stove kitchen. Before vegetables go into the freezer, they must be blanched, briefly subjected to high heat, in order to destroy certain enzymes which, if allowed to remain, rob your vegetables of tenderness,

flavor, and vitamins. There are two methods of blanching: steaming and boiling.

I favor boiling on a wood stove, because it is easier to see if a pot is boiling than whether it's steaming. In steaming, the water level is down at the bottom of the pot, under the steaming basket. You lift the lid and great clouds of water vapor come out, but that doesn't necessarily mean that the water is boiling or that the cloud is steam. Steam, you may recall is the stuff that burns you when you put your hand over a whistling kettle. It's what you need for steam-blanching. Otherwise you fail to destroy enzymes, thereby losing vitamins. I have had this happen enough times to be wary of wood stove steam-blanching.

Processing Fruits and Juices

The wood stove is a great appliance for cooking up huge pots of simmering berries, apples or other fruit to be used as jam, sauce or fruit juice. This juice is an endlessly versatile commodity and can go on to become jelly, gelatin desserts, or wine--or you can drink it, as is, hot or cold, fresh, canned or frozen.

You can make it out of almost any fruit: rhubarb, apples, pears, or any kind of edible berry. Just set a pot of clean fruit on the stove with a little water in the bottom to keep it from scorching at first. As it cooks, it makes its own juice. As soon as it's soft, line a colander with cheesecloth or washed muslin. Place over a large bowl or plastic container and dip in about two cups of fruit. Tie the cloth up into a bag with a half bow, and make a loop at the other end to hang

on a nail or hook. Don't squeeze the bag if you want clear liquid. This juice may be stored in the refrigerator or a cool place for up to ten days without further processing.

Drying Near the Stove

Wood cookstoves and drying herbs are a natural combination. Both the annuals (such as dill, savory, caraway, and basil) and the perennials (such as thyme, marjoram, oregano, parsley, and sage) should be picked when the plant is at its fullest height, just before it blooms. Herbs retain maximum scent and flavor if dried quickly, in a few days, so a wood stove is especially helpful if you live in a basically damp climate. Hang herbs in loose bunches, upside down, until they are completely dry. To remove leaves from large herbs, stuff them in a pillowcase, and rub or shake the bag until the contents separate. Dump out on a newspaper or clean sheet and remove stems, etc. Bottle at once in a sterile, dry jar with a good lid. Place in a warm spot for 24 hrs., over the woodstove for example, checking for moisture condensation in the jar. If there is any, your herbs might mold, so you should dry them further in a very slow oven, spread out on a cookie sheet (leave the oven door open!)

Greens like chard, spinach, and edible weeds such as lamb's quarters can be quite successfully dried in the summer to provide flavor and vitamin C for the winter soups and stews. You may spread them on drying racks (improvise with window screens) and hang near the kitchen ceiling, or string up leaves on kite string with a darning needle. Space them about three inches apart. Crumble them when they are dry and store as for herbs.

If you wish to dry apples, choose firm, dense ones. Slice and core them into thin doughnut-shaped pieces. If you want them to stay light in color, dip the pieces in a mixture of one quart water and three tablespoons lemon juice or 500 milligrams ascorbic acid (vitamin C), at once. String the apples on kite string, horizontally, or on knotted twine, vertically. Hang them outside on clear days to dry in the north wind. Bring them in at night and hang near, but not directly over a wood stove. Store as any dried fruit, in a jar or plastic bag, in a cool, dark place.

Suzy Restino's Mixed Pickles

Harvest vegetables in the early morning, while the dew is still on them. Choose only firm, perfect, slightly under-ripe vegetables. Any or all of the following may be included:

pickling cucumbers
beans
snow peas
peppers
cauliflower
three to four inch baby carrots
radishes
small onions

Slice cucumbers lengthwise, peppers in strips, cauliflower into florets. Leave the rest of the vegetables whole. Wash and trim as necessary.

Measure the vegetables into a large crock, plastic bucket or stainless steel container, and cover with brine. Lay a plate over them, to hold them under, and weight it down with a canning jar full of water. Leave the pickles to sit in a cool place over night, or no more than two days.

To make the brine: For every gallon of water, use one cup pickling salt. Thoroughly dissolve salt by mixing it with a small amount of hot water before adding the rest of the colder water.

For wood stove canning, choose a clear day. Get up as early as you can, and get the fire going. Pile on hardwood, and bank the stove to produce a good bed of embers, necessary for maintaining a steady fire while you work. Fill the canning kettle with water and set it on the stove to heat up. Place clean canning jars upside down on a clean cloth in a warm spot. Then sit down and have a good breakfast, wash up quickly and shoo everybody out of the kitchen.

In a large stainless steel or enamel pot, mix up whatever amount you think you will need of the pickle juice, using these proportions as a guideline:

2 cups water
2 cups vinegar
2 cups sugar
¼ cup mustard seed
2 tablespoons whole coriander
2 tablespoons whole pepper (optional)

You will need about ¾ cup of this mixture for every jar of pickles, but it varies, so be prepared to make more. Heat this stuff up. Meanwhile, drain

brine from vegetables. When the pickle juice boils, add the vegetables and return to a boil, covered.

In between these steps you will be sterilizing jars and lids. The lids, seals, and rings go into a separate pan, covered with water, and get boiled for five minutes. Then remove them from the high heat, leaving the lid on the pan.

To sterilize the bottles, bring the water in the kettle to a full rolling boil (you can open the draft on the stove now) and insert bottles, upside down. If your canner has a rack, this is easy. Fit them all in, lower the rack, and boil for five to ten minutes. Lift rack and remove bottles, to a clean dishcloth, upside down, in a warm place. If you don't have a rack, use tongs and a clean dishcloth to pull them out slowly, one by one.

Don't forget to check the fire!

As soon as the vegetables come to a boil, give them a good stir and start filling bottles. There is a small tool which makes this a lot easier--a sort of cup-shaped funnel, worth its weight in gold. Fill jars with vegetables up to the shoulder; then dip in liquid, up to ½ inch from the top rim of the jar. Wipe the rim of the jar carefully with a clean, damp cloth. Adjust the lid. In

glass top jars, fit on the rubber ring, then the glass lid, and leave jar with wire clamp up. In ring-and-seal jars, place on the seal, and screw on ring, but not tightly. This is so that a small amount of air can escape in canning, and create a vacuum as it cools.

Slip bottles into boiling water as soon as they are full. Pile on wood as necessary to get the kettle back to a full rolling boil as soon as possible. I have found that a four-bottle batch is about right for my stove. Any more than that is too demanding.

The jars should boil for twenty minutes, while you either fill more jars or have a cup of tea. Then remove lid and carefully pull them out, one by one. Place on a draft-free counter. As they slowly cool, you may hear a soft "pop" from the metal seals. This is the vacuum sealing, signalling a well processed batch. When jars are cool enough to touch, remove the outer ring to see whether the top really is sealed. If not, return to boiling water for another ten minutes or so. With glass lids, push the clamp down as soon as the mixture in the jar stops boiling. There is no way to tell whether they are sealed, but I have never had one fail yet. At least the pickles have never gotten moldy. □



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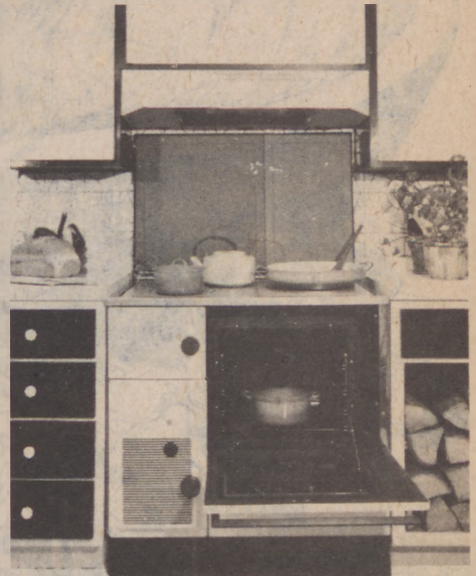
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depth of stove, inches	23.6	23.6	23.6
height of stove, inches	34.8	34.8	34.8
oven thermometer	yes	yes	yes
cooking surface, square inches	666.5	666.5	666.5
appr. output boiler w/coke II, btu	—	30.000	51.200
appr. output boiler w/wood, btu	—	31.740	56.300
radiated power wood:			
insulating cover open, btu/h	—	11.950	15.000
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weight gross/net, lbs. approx.	547/463	560/476	635/551

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Harvest Kitchen Checklist

Clean the kitchen and clear off the counters! Time to get everything all ready to can, freeze or pickle that harvest bounty.

Here's a handy checklist to refresh your memory as to what items are essential for safe and snag-free food processing:

CANNING EQUIPMENT

- * Fresh Produce in perfect condition
- * Water Bath Canner (For processing high acid foods using hot water method.)
- * A clean Steam Pressure Canner (For processing low-acid foods.)
- * Two 6 to 8 Quart Kettles (For precooking food or for jelly making. Use stainless steel or enamel...NOT aluminum.)
- * Jars or "Tin" Cans in top condition
- * Lids, Sealers & Gaskets of highest quality
- * Sealing Machine (Hand operated...if you're using cans.)
- * Spoons, Ladles & Dippers
- * Wide Mouth Funnel
- * Jar Lifter
- * Paring Knives & Vegetable Choppers
- * Sieve or Strainer, Food Mill or Blender (For pureeing.)
- * Colander for draining
- * Large Measuring Cups
- * Lots of clean Dish Towels, Pot Holders & Dish Cloths
- * Muslin Bags or Cheese Cloth (For straining juice or for spice bags.)
- * Wire Basket (For blanching.)
- * Cooling Racks (You can use your oven racks.)
- * Canning Salt
- * Sugar or Honey (As called for.)
- * Spices
- * Markers & Tape (For Label-making.)



FREEZING EQUIPMENT:

- * Fresh Produce in top shape
- * A Freezer in good operating condition (There should be no "warm" spots or area higher in temperature than the rest of the storage space. It should have the ability to provide the initial sharp-freeze for 24 hours at minus 20 degrees F.)
- * Clean Cutting Boards & sharp Paring Knives
- * Freezer Bags (Heat sealed type, or the kind closed with a wire band. Read labels to discern if material is truly moisture-vapor proof and suitable for freezing.)
- * Freezer Wrap
- * Freezer Boxes (Cardboard cartons often used with moisture-vapor resistant bags or wrap materials.)
- * Rigid Containers (Glass, plastic or plastic-coated cardboard with tight sealing covers. Used instead of plastic bags.)
- * Large Pot (6 quart size.)
- * Steaming Basket (For steam blanching.)
- * Blancher Basket (Wire Basket with handle. Should fit inside pot.)
- * Enamel Pans (For cold water cooling after blanching.)
- * Colander
- * Ice Cubes (Many, to make cold water for cooling vegetables.)
- * Markers & Tape for labeling.

JELLY-MAKING EQUIPMENT:

- * Full-flavored Fruits
- * Pectin for gel. (Apples & quince have a lot of natural pectin.)
- * Lemon Juice or Ascorbic Acid (Vitamin C to add to low-acid fruits.)
- * Sugar, Corn Syrup or Honey (Helps gel to form.)

- * Big Spoons & Ladles
- * Large Stainless Steel or Enamel Pot (6 to 8 quart size... NOT aluminum!)
- * Paraffin (If you seal with wax.)
- * Double-Boiler (To slowly melt paraffin. Or, use old metal teapot set in pan of hot water.)
- * Jelly Glasses (Straight sided containers without inner lips)...or...
- * Sterile Glass Canning Jars (Discard all cracked or chipped jars.)
- * Jelly Bag or Cheese Cloth (Four layers of cheese cloth laid in colander equals one jelly bag.)
- * Label-Making Things

PICKLING EQUIPMENT

- * Fresh prime produce
- * Unchipped Enamelware or Stainless Steel Pot. (Do not use copper, brass, galvanized iron or aluminum which reacts with acid or salt.)
- * Crock, Stone Jars, Unchipped Enamelware Pans, Large Glass Jars (#10, one gallon size), Hard Acid Resistant Plastic Containers, or Large Glass Bowl or Casserole Dish.
- * Heavy Plate or Large Glass Lid to keep vegetables submerged in brine.
- * A Weight to hold down above plate or lid. (A clean rock or glass jar filled with water will do.)
- * Jars in good condition (For canning pickled foods.)
- * Spices (Dill, garlic, etc., as called for.)
- * Plain Salt (Pickling, Dairy or Kosher only. NO table salt for it contains additives. NO rock salt.)
- * Vinegar (High grade cider or white distilled vinegar of 4 to 6 percent acidity.)
- * Sugar

L.A.A.

A Guide to Woodburning Cookstoves, Part I

by Albert A. Barden III

As few as seven years ago, old-fashioned cookstoves were being sold for twenty-five dollars or less. Many that weren't sold were often given away, hauled to the dump or sledge hammered into oblivion and sold for scrap. Others survived in barns, sheds and attics covered with cobwebs, dust, hay or chicken manure. The sheer effort required to move these stoves often guaranteed their survival when other odds and ends around them had long since been tidied up or junked.

Then in 1972-73, when the cheap fossil fuel illusion was shattered, people suddenly began to remember that these old stoves had once served noble purposes in life and could do so again for this generation with a little effort. Wirebrushed and then scraped clean, greased with fat or shortening, polished with stove black, propped up here and there with a brick or mended with a piece of sheet metal, they began to cook and heat once again. Wallpaper and thimble plugs high on the walls of old farm kitchens were removed, and shiny blue steel pipe, hidden behind voluptuous mantles, rose to the high thimbles. Chrome trimmings or their remains gleamed as they were able. Almost overnight, the secrets and mysteries of wood

stove cooking were embraced by a totally unschooled wood cooking generation.

My First Stove Was a School Drop-out

My first wood cookstove was a boarding school dropout I rescued in pieces from a large, trash-strewn crypt in the school's defunct maintenance shed. I had spent hours searching through this shed and various other rubbish heaps hoping to find the last coveted piece, the right hand warming shelf that enabled the cook to slide pans off the hot cooking surface to a cooler area. When I at last found the piece, I was ready for my first lessons of serious indoor wood cooking.

When I left the school the next spring, the stove remained behind to educate others as it had educated me, and I began my search anew, this time using the cast off post office boxes of my boyhood home town as barter. I called antique dealers from all over and found one seventy miles away with a good cookstove ready to trade. Before the rainy day was over, the dealer had my mailboxes and I had his Glenwood C range.

My 1912 Glenwood C threw off prodigious amounts of heat as long as it stayed lit, which was about three or four hours with all the drafts shut tight. We resorted to another old tradition by cutting a hole in our ceiling and letting the excess heat rise to our bedroom during our winter's evening cooking. It made going to bed tolerable, but getting up still took a lot of grit. That first winter in our old Cape, we accumulated many hours on

our knees blowing on wet elm logs trying to get the cook stove fire established. We resolved to do better by fuel for ourselves another winter.

Our Glenwood, like most cast iron cookstoves built around the turn of the century, had removable fittings at the rear of the firebox for the insertion of a "water coil" or "jacket." A hot water coil was usually made of heavy brass pipe threaded and fitted serpentine fashion into a cast iron frame on the left hand side of the firebox. A water jacket, designed to sit in the same place as the coil, consisted of a hollow iron casting. Finding a water coil or jacket to fit an old cookstove is usually more difficult than finding a stove. After haunting a number of antique dealers for some weeks with no success, I received a hot tip one day that the basement of an appliance store in a nearby town was covered ankle deep in cast iron replacement parts for old stoves. Before cheap natural gas and electricity had helped make the old cast stoves obsolete, this store had dominated the central Maine cookstove market with its own name-brand stoves.

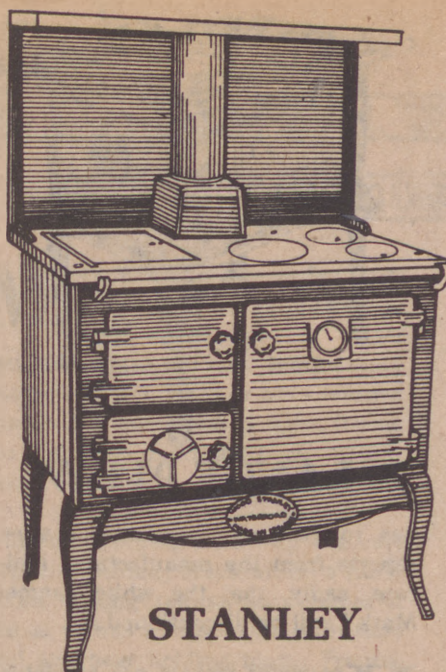
I raced over to the store and was allowed access to the parts cellar at my own risk. I pawed through the piles of odd castings and found as many as a half dozen water coil frames, but none of them that would fit my stove. At three or four dollars a frame, I decided that even a misfit would be worth a try; so I bought one and determined to make it work somehow. My solution involved get-

Albert A. Barden III runs the Maine Wood Heat Company in Norridge-
wock, Maine. Stove illustrations by
Margaret Campbell.

ting a welder friend to cut a section out of the frame to reduce its length. Rewelded, I found a shop, specializing in electric motor repair, willing to run it through their oven one night to ease the stresses in the welded joint. One local hardware store was able to scrounge enough brass pipe and elbows for the coil. Threaded and sealed, the coil and frame were placed in the stove at last. Hitching up a recycled electric hot water heater and plumbing the coil and tank into my existing water system, however, took me longer than I'd thought necessary. By the time we were ready to turn on the water, the coil joints had been thoroughly fried, destroying the sealant. Water leaked out of every joint as fast as the pump could push it in, creating an embarrassing pool on the kitchen floor. Discouraged for a spell, I shut off the water, drained the tank and replaced the coil and frame with the original liner. I decided that blowing on wet elm was enough of a challenge for one winter.

We lived with our Glenwood until summer and by then our honeymoon with the stove was over. It would be of no use to us during the summer, so we decided to move it out to the garage and look for a better stove.

By fall we had sold our Glenwood to another wood cooking novice and were ready for a modern wood cookstove, a Canadian stove made by the Enterprise Foundry of Sackville, New Brunswick. This stove came equipped with a glass doored oven, a harvest gold finish, a large rectangular top loading door (as well as a front loading door) and a chrome, glass, and sheet metal instrument panel replete with electric clock, timer and fluorescent light. We removed the instrument panel and squared off for another round with the hot water challenge. This stove had come with a properly fitted hollow cast iron water jacket which we knew would not leak. With such a snazzy new stove, the cast off electric hot water tank would not be up to our standards. I began a diligent search through several copies of a buy, sell and swap-it magazine until I found the sought-after item, an antique 300 gallon copper range boiler tank. I drove half way across the state to retrieve it, and a cast iron stand, and quickly had it hooked up to the new stove with a pressure temperature relief valve on top of the tank to deal with any potential overheating.



**STANLEY
MK-1**

In Search of the Perfect Cookstove

This time around there were no leaks, and even with an uninsulated tank, we had plenty of hot water after a long burn. The experience of complete cookstove fulfillment continued to elude us, however. The oven did not seem to bake evenly and the fire rarely lasted more than three or four hours. And although the stove had some insulation, it was still too uncomfortable for us to use as our primary cooking source in summer. Without the cookstove we were right back into a summer dependence on fossil fuels or, as yet innocently unchallenged, nuclear power.

It was a very hot, humid July night in the summer of 1976 that I became a wood cookstove radical. As I lay in bed at 2:00 AM, I heard the oil burner gun come on to keep the domestic hot water temperature up to "normal." The next day we shut off the oil burner and vowed to never use it again. We began our search for the perfect cookstove in earnest. It would have to meet four exacting criteria:

1. Year round reliable cooking and baking capability.
2. Year round domestic hot water production.
3. Cool weather, all night space heating capability.
4. Quality construction and acceptable appearance.

Our search for the perfect cookstove had already left this country

with our Canadian purchase. The cookstoves still being made in the U.S. rarely equalled the quality of the Glenwoods, Fairmounts, Crawford's, Kalamazoos, Kineos, McGees, Atlantics and others of an earlier wood cooking era.

One day we stumbled across information about a cookstove made and used throughout Ireland that was airtight, had a large oven and a very fine, domestic hot water boiler. Its only limitations were that it was short (because in Ireland it was generally placed on a raised hearth) and its firebox, while not tiny, was both small and top loading. The Irish could not be blamed that Americans were suddenly interested in burning wood in a stove designed for peat and coal. Top loading any stove can be a smoky affair, and this stove was no exception unless one made appropriate adjustments with a rear, top surface draft flap that often had pots and pans sitting in front of or on it. Nonetheless, the stove was so clearly an improvement over our Canadian cookstove, we did not hesitate in buying the Stanley 8B.

The Stanley 8B made its cooking heating and hot water debut in March, 1977. We used the stove throughout that spring and summer, proving to ourselves that with a bit of discretion and planning, we could cook comfortably and keep our bodies, dishes and clothes clean with our hot water supply. The early importers of the Stanley 8B knew that the stove had limitations in height and firebox length and set about straight away to rectify things by redesigning the 8B and producing the Stanley Mark I for the American market. They also realized that the Stanley stove was virtually without competition in the quality cookstove field. We were impressed with the claims and decided to get a Mark I, especially since a domestic water jacket was being promised for it some time "down the line."

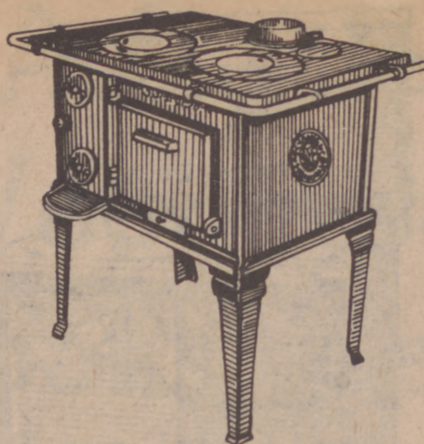
The Stanley Mark I cookstove is probably the best known stove in America's return to wood cookstoves. It has a firebox which takes 16" wood and which will hold a fire overnight. Limited insulation on the sides makes use tolerable for all but a very few days during the summer. We used one quite successfully during the summer of 1978 without any electric or gas backup stove. The Stanley oven is ample and boasts a good thermom-

eter. It also has a towel rack body guard across the front and a stainless steel warming rack above the top. Much of the Stanley's appeal, in addition to its good heating and cooking and baking capabilities, has been its old fashioned American look. The original boxier-looking Stanley 8B was modified with cabriole legs and touches of chrome to make it a bit more American looking. The Stanley cookstove has been the biggest seller thus far in the new cookstove market. Most of those who own them are quite satisfied after a trial period of use. Some people are able to use the Stanley in modest, well-insulated new homes as their only heat source.

Nickel Plating and White Enamel

The same nickel plating on the handles that helps give the stove its more American look, however, also makes the handles too hot to hold. The new top loading lid (which supplements a very satisfactory front loading door) opens improperly, in my opinion, from right to left rather than the reverse. Top loading through this lid during a burn often dumps a fair amount of smoke in the room. The castings on the Stanley, while made of good material, are rough. In Ireland, this rough cast surface is the base for a white enamel finish. Importers of the Stanley decided the white enamel look was not attractive, so ordered the stove in the hard-to-clean rough black casting. While the stove can be blackened, it is very difficult to "polish." Finally, the shipping crate for the Stanley consists of a mere cardboard box and a lightweight pallet bound together with plastic straps. The fatality rate on the straps is high in our experience and the jouncing that the stove gets in transit in such a crate means that we have often had to assist customers in elaborate facelifts, top lifts and thorough recementing jobs along critical joints to regain air tightness and good performance in the stove.

The Stanley has occasionally been available in this country in white enamel and should cost more but has instead cost less because it has been in less demand. A surplus of enamelled stoves survived from early shipments after prices on new shipments went up on the plain black. The white enamel is, of course, very easy to clean. We do not expect it to cost less in the future if white enamel contin-

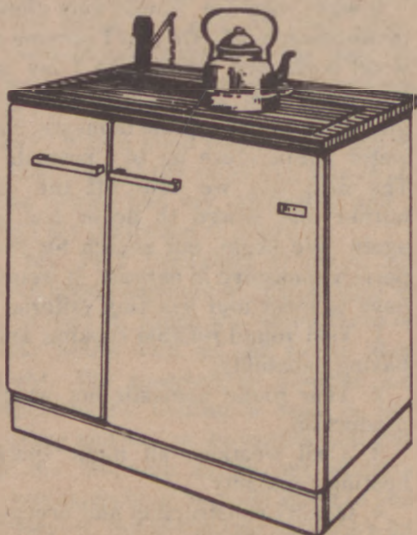


LANGE 911-W

ues to be made available. (Latest reports from the manufacturer indicate, sadly, that the white enamel Mark I will be discontinued.)

Hot water jackets are available now, after a long wait, for the Stanley Mark I. They are typically owner or dealer installed and involve a replacement rear panel with proper holes in it as well as the boiler. Many people resist even this long delayed boiler option because it reduces the firebox length by an inch or more, making the magic three cuts to a four foot long log but a memory.

We have experimented for some time now with a stainless steel domestic hot water boiler of our own design which replaces the left side liner and causes no loss of firebox length. About a half inch of width may be lost. The boiler has been tested to 80 p.s.i. which is quite ample for home water systems operating in a 40 p.s.i. range. For people on a higher pressure city water system, a pressure reducing valve will be required.



FRANCO-BELGE

The Lange 911-W cookstove is best suited for someone wanting good radiant heating as well as cooking. With the grate in the "low" position, it might well serve as the only woodstove in a 3000-5000 cubic foot space. The Lange will hold a fire overnight. It has a large loading door and will hold 16" long wood. The quality of the castings on the Lange is very high. Aesthetically, it is a very pleasing moderately sized stove. The Lange can be purchased with a plain black finish or in cobalt blue, dark green, cranberry red, or black enamel. A lightweight brass towel rack-body guard wraps around the front and sides of the stove and is an attractive accent.

Lacking any insulation, the Lange cookstove is best used as a cool and cold weather stove. Neither does the stove have a thermometer in its modest oven. If one can settle for three modest loaves of bread at a time rather than six or eight, and is willing to use a portable in-oven thermometer, then the Lange cookstove would be very acceptable.

The Franco-Belge 1700 series of cookstoves made by a well-established French firm, is really three appliances in one. In addition to cooking and baking, the Franco Belge units produce ample domestic hot water (thereby making another hot water heater unnecessary) and will central heat a home through circulating hot water. While the concept of central heating a home from a kitchen cooking appliance is new to most Americans, it is a widely practiced tradition in Europe. Very high quality wood-fired cookstove central heating combination units are made in Switzerland, Austria and England as well as France. I will discuss the Austrian and English units a bit further along.

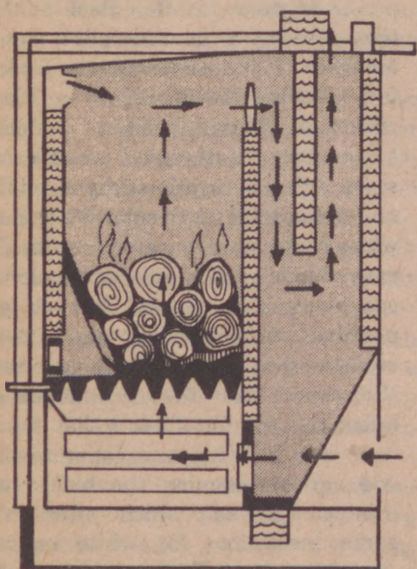
The heating output of the three Franco-Belge units range from 35,000 btu's per hour for the smallest one to 67,000 btu's per hour for the largest. When the cook is in the kitchen, a turn of a stove top lever temporarily directs a majority of the heated gases to the cook surface and around the oven. When cooking is done, the lever is switched back and the units settle back into their central heating and domestic hot water production tasks. Even during cooking, some heat will reach the boiler surfaces to maintain temperatures elsewhere in the house.

During the summer, when central heating is no longer required, the homeowner cook has the option to purchase and use a summer hearth and grate that raises the fire closer to the cook surface and restricts even further, heat transfer to boiler. The top surface of the stove, which is carefully ground and polished heavy casting, can be covered between summer meals with optionally available insulated lids.

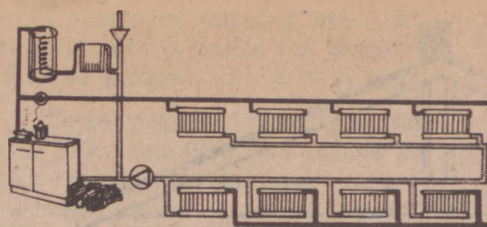
We have been able to inspect a large Franco-Belge cooker-boiler, but have not been able to test one yet. It is clear that the stove has an excellent central heating and surface cooking capability. Without testing its baking oven we cannot report on its baking capability. Little insulation or heat retaining mass seemed to be in evidence around the oven.

To insure even, steady baking, a good cookstove must either be able to maintain a steady fire or have a large enough thermal mass surrounding the oven to hold even temperatures during fluctuations in the firebox output. Austrian and Swiss cookstoves always seem to feature a large amount of firebrick mass around their ovens. Manufacturers in these two countries are influenced by the long tradition of building firebrick-lined, heat retaining Kachelofen (ceramic tiled masonry heaters).

Literature on the Franco-Belge indicates an oven thermometer in one picture and none in another. The unit we inspected had an oven thermometer. We expect the Franco-Belge units sold in this country will have oven thermometers.



FRANCO-BELGE



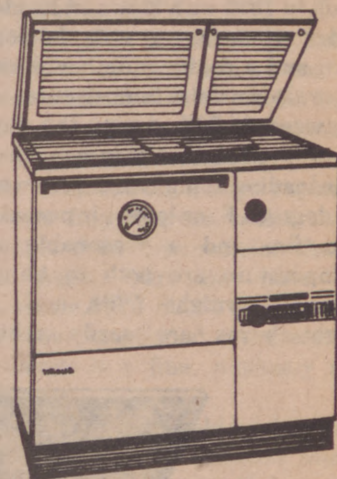
FRANCO-BELGE Central Heating

Many European manufacturers do not use oven thermometers. Users either have a better intuitive sense of oven temperature than most Americans or have learned that with a wood-heated oven, timing may be more important than temperature. Unlike an electric stove, the oven of a woodstove is always "on" and except during a start up or a very hot burn, usually stays within a fairly stable baking temperature range if the stove has a reasonable burn time and any heat holding mass. Franco-Belge units also have a warming oven under the main oven. The smaller stoves have smaller main ovens than the largest model, the 1707, and they also have considerably smaller fireboxes. The stoves come with a white enameled cabinet finish.

The novice woodburner should be cautioned before jumping into a purchase of a woodburning appliance upon which one is dependent for so many things. One would do well to apprentice to a smaller heater stove and learn the ins and outs of proper wood preparation and storage, creosote avoidance, and the like before seriously contemplating such a unit. As in any wood boiler, very dry (20% moisture or less) wood should be used. If one is starting a new fire in a water-jacketed central heating cookstove with the grate in the winter position, it will take a little while, even with the lever turned to cook, to generate lots of heat to the modest cooking surface. With a continuous fire, however, this should not be a problem. It is possible that in a well designed highly insulated home, the 1707 model could alone provide the heat required by the home.

A second consideration which a prospective buyer of a central heating unit should have, concerns the fundamental question of whether one wants a relatively "active" or relatively "passive" heating system. In and out of appropriate technology circles, are advocates for both active and passive systems. The delivery of heat throughout a house via a circulator pump makes the Franco-Belge, and other

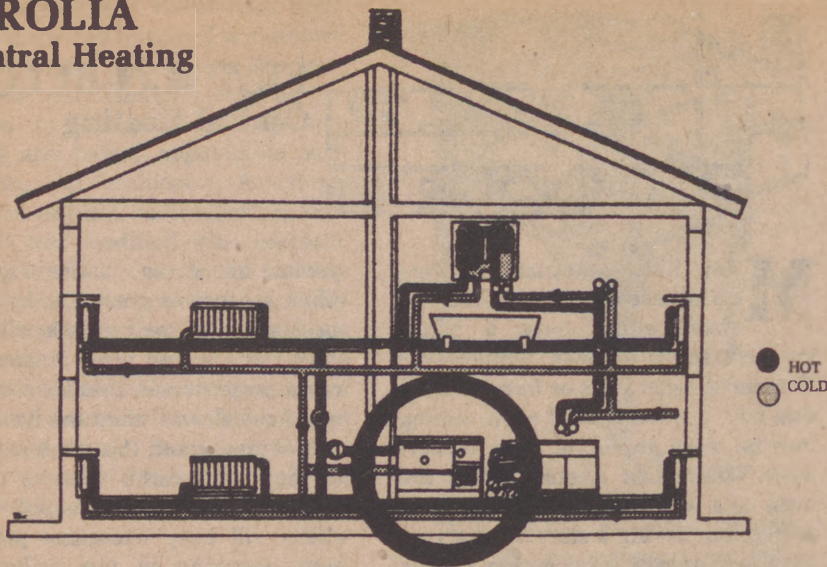
systems like it, an "active" system. When the power goes out, however, automatic passive controls will slow down the fire and bleed excess heat into a large domestic hot water tank by gravity flow. If the tank itself gets too hot, then both the stove and tank are equipped with "passive" pressure and temperature relief valves which will keep excessive pressure from occurring in the boiler. The Franco-Belge is often set up as an "open" system with an open vented tank in the attic and essentially no pressure in the system at all. Running a small circulator on a continuous basis is equivalent, I am told, to continuous burning of a 100 watt light bulb.



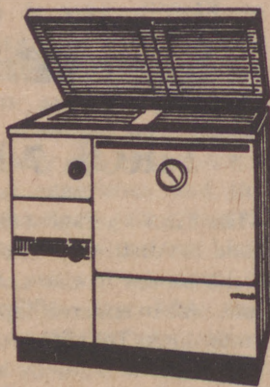
TIROL 7-HT

The Tirol 7 series of three stoves is made in Austria by Tirolia. All three of the stoves in the series have the same size oven, cook top and exterior dimensions. The differences lie in the firebox area. The 7N model has a firebrick-lined firebox with a two-position grate for summer and winter use. The firebox is fifteen inches long and should hold coals overnight in the winter grate position. (We have not tested the 7N.) The 7HT model has a domestic hot water jacket built into the firebox. Like the 7N model, the HT has summer and winter grate positions. This model is designed for limited central heating (approximately thirty feet of baseboard or three

TIROLIA Central Heating



large radiators). The 7ZH is the full central heating hot water model and is the model we are currently testing in our home. Rated at 56,000 btu's per hour, we are able to heat a space approximately 1,200 square feet with our cookstove. This is one floor and an upstairs room of a two-story house built in 1830 with blown-in insulation, storm windows, a granite slab foundation and a drafty wide board kitchen floor. Downstairs temperatures range between 65-70F. during the day and 55-65 F. at night. Using wood, at least one loading at night in severe weather (0 degrees F. or lower) is necessary if the fire and a reasonable house temperature are both to be maintained overnight. With coal, overnight burns are easily achieved.



TIROL 7-N

During the day we keep less than a full firebox using sixteen inch long logs loaded through the front and lying on their sides, or slightly longer logs loaded through the top and lying at an angle. If we do not have a brisk fire going and want to achieve a rapid

surface or oven temperature buildup, we use a large "T" shaped handle to literally crank the grate up to within just a few inches of the top surface. This effectively shifts the heat production to cooking and baking rather than central heating. Once the desired surface or oven temperature is achieved the grate can be lowered again in a matter of a few seconds and all functions of the unit can be easily maintained at a steady plateau.

From the beginning of last winter's heating season in October of 1978 through April of 1979, we used the Tirol 7-ZH as our sole cooking, baking and hot water source. During very severe weather (zero degrees Fahrenheit and below), we used a Garrison II stove as a back up radiant heat source. During this seven month period we burned fewer than five cords of wood.

Like the Franco-Belge units, the Tirol 7 ZH comes with an automatic thermostat and is properly installed with a large thermosyphon, gravity flow, domestic hot water tank, fitted with pressure and temperature relief valves. Like the Franco-Belge units, the Tirol 7 cookstoves have top-mounted back splash lids. The Tirol lids are a standard, not an optional, feature of the stove. The ZH and HT model lids are insulated for summer heat control. Any extra heat left in the firebox is diverted to hot water production when the insulated lid is down. Comfortable summer cooking should be the norm on all three Tirol 7 models. All three offer a summer grate position as a standard feature.

Because the stove works always in a bake or downdraft position with gases exiting at the lower rear corner of the stove, we have learned on hot days to

prime the stove by lighting a single sheet of rolled up newspaper and inserting it through the cleanout port located behind the cleanout panel below the oven. Once the chimney is primed with a flow of hot air from the burning paper we then light a pre-laid fire in the firebox and the stove draws well. Without this procedure, the stove might smoke. In the winter, winds and indoor-outdoor temperature differential make priming quite unnecessary. We used our stove for five months before we encountered a warm day when priming was necessary.

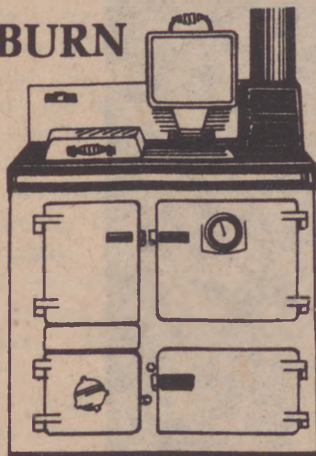
The Tirol 7 oven is very large and easily holds eight standard loaf pans. We have baked numerous batches of bread in our enamel lined oven. Temperatures seem quite even throughout. In an unusual design, heated gases and smoke are allowed to pass down the left side as well as the right side of the oven to achieve this even temperature.

Without some sort of compensatory feature of this sort in a fully water jacketed firebox, the left side of the oven would generally be cooler than the right. To further assist the stove's baking performance, extensive use of heat retaining firebrick is employed down the right side and underneath the oven.

The Tirol 7 series is currently available in white or coppertone enamel in either right or left side firebox models. Flues always exit at the lower side or rear corner diagonally opposite the firebox. Tirolia has in the past manufactured matte black enamel stoves as well as the standard white and coppertone, but we cannot persuade them to offer black at this time without a guaranteed demand for them. We consistently encounter a few people who insist on a black cookstove. This attachment to black as the only "authentic" wood cookstove color is irrational, yet totally understandable. Any color other than white costs more to purchase. In the case of black, the matte black color of cast iron look is achieved by creating a pebbled surface which mars more easily and is more difficult to clean. We expect that the second reason (after the comfort factor) that found American housewives a generation or two ago abandoning the black cast iron cookstoves (which often had some insulation) for white enamel electric and gas cookstoves, was the ease with which a white enamelled surface could be sponged off.

Another Austrian stove series of extremely high quality is the Styria line of stoves. More expensive than any of the other cook stoves, the Styrias are jam packed with firebrick and are handcrafted from very high quality materials. Domestic hot water is available only from a dipper reservoir at the right side of the large model stove.

RAYBURN



The English Do It Differently

The English Rayburn is a relatively expensive cookstove with a newly designed firebox for wood and other solid fuels. Made by the same company that makes the world famous Aga cookers, the newly designed Rayburn exhibits some of the highest quality construction we have ever seen in a cookstove. Like the Tirol 7ZH and the Franco-Belge series, the Rayburn has some central heating capabilities, albeit a bit more limited than the larger Franco-Belge and Tirol 7ZH. By removing large firebrick slabs on the left side of the firebox, the water capacity is expanded from domestic hot water production to central heating (perhaps two to four rooms).

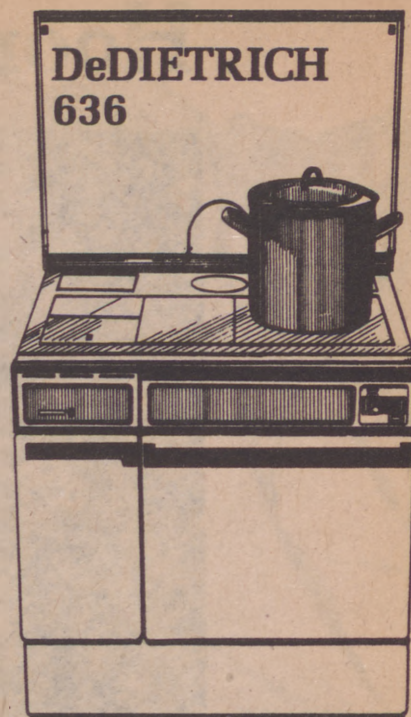
Very unlike the Tirol 7 and the Franco-Belge series or any other cookstove mentioned in this article, direct radiant space heating has been largely designed out of this cookstove. Insulated to the gills and loaded with internal heat retaining mass, this stove can be operated twenty-four hours a day summer and winter with no apparent discomfort. Over a modest sized (7 3/4" x 21 1/4") heavy cast cookplate with heat absorbing fins extending a full five inches into the firebox, two heavily insulated waffle-iron type lids close down to keep heat in when no cooking is being done. The stove, while a bit smaller than the Stanley, weighs twice as much as the Stanley. It has a fine oven

and a smaller warming oven with handles which, unlike the Stanley's can be grasped with a bare hand.

We are concerned that the insulating lids create their seal against the top hot plate with large exposed asbestos ropes. We hope that this feature can be changed. Available in matte black enamel, white or cream enamel, the stove's modest appearance understates the obvious high standard of workmanship, design and materials used in the stove. Do not consider this stove if you wish a stove that can serve as a large space heater.

An uninsulated domestic hot water tank next to the stove, however, can replace to a large degree the lack of direct radiation from the stove. During the summer months, an insulating jacket can be wrapped around the storage tank. In England, the heat from an uninsulated storage tank may be appreciated year round. This stove would seem to be ideal for someone with a good income, a small tightly spaced kitchen, a modest house (three to five rooms) and access to one or more solid fuels.

The DeDietrich 634 and 636 (sometimes called 635) cookstoves are French and are somewhat similar in appearance to the Tirol 7 series and the Franco-Belge series. DeDietrich also makes a smaller cookstove, the 631. The 634 and 636 are basically the same stove. One has a three sided water jacket (the 636) and the other doesn't. We tested the 636 for several months in our own home and were very impressed with the domestic hot water and limited central heating capacity of this stove, but like most Americans, were not enamoured with having to cut our wood to a 12" length. The top, the loading door, and draft controls are all very fine castings. A fire could be completely shut off with these controls but we had difficulty in holding heat and coals over four hours on an average, even with a damper in the flue. (It should be said that our chimney is quite tall and has a large flue.) People with a lower draft in their chimney might do better. The stove comes complete with an adjustable barometric draft damper to adapt the stove to any chimney. Cheryl and I felt the oven needed more thermal mass around it and found out that the left side of the oven was cooler than the right because of the water jacket and nothing to compensate for its cooling effect. We have since talked at some



length to people familiar with the 634 model and they report much better baking results than we achieved in the hot water model.

The oven thermometer, probably a concession to American tastes, is a recent addition and is placed in the outer of two shells around the oven. In our home tests, the stove's built-in oven thermometer always registered at least fifty degrees cooler than a portable oven thermometer that we kept inside. Ours may have been inaccurate, but I doubt it. Except for the above mentioned considerations, this stove is a fine, modestly sized cookstove.

The 634 model would be, I think, an excellent choice for someone wanting a stove for daytime heating, cooking and baking. As with the Rayburn or the Tirol 7HT, the use of an uninsulated water tank with the 636 model during the winter months should keep a well-insulated kitchen warm at night. There is enough insulation or double wall construction in this stove to make cooking possible during most months of the year. The lid that covers the stove top is not designed, in my opinion, as a means to control heat excesses. It has no insulation. It is very useful, however, as a grease fighting and easily cleaned back-splash. □

This is the first of a two-part series by Albert A. Barden describing the various quality cookstoves available in his shop currently.

Hooray for the Freezer



Bags of plump strawberries, ready for the freezer.

by Leslie Land

When I started gardening in earnest in my first seven years in Maine, I lived from May to November in a secluded cottage at the foot of a ten-acre field. There were several gardens, a standard refrigerator, an electric stove and a wood cookstove, well-warped in its top.

There was a small, formerly coal-burning Franklin in the living room, no running water, and an atmosphere of truly fearsome damp. Not surprisingly I learned more about canning, jam-making and pickling than about drying, but my real history of harvesting and putting by can be neatly divided into two periods: B.F. and A.F. because the freezer altered everything.

This wondrous appliance quintuples the amount of produce you stash away, without much expanding the

Leslie Land is a syndicated food columnist who lives and writes in Midcoast Maine.

Photos by Kent Thurston

amount of time required to stash it. In addition, the food tastes better and, as a bonus, vitamins are as well-preserved as flavor. Even when I have become noble and self-sufficient, riding everywhere on my bicycle and buying not a watt from the powers that be, I intend to have some way of running the freezer.

Not only can a freezer hold the harvest of the earth, it can also hold the harvest of the day you decide to bake rather than clean the cellar. With a freezer you can be ready when somebody offers you a twenty-two pound fish and prepared when your meat man goes mad.

Absolutely best of all, a freezer is the ideal pantry--an endless stockpile of ideas and ingredients. Only in a freezer can pots of heavy pork mole and bags of airy brioche, piles of plain unbaked filo leaves and plenty of fully wrapped won ton be stored away like so many sacks of flour, awaiting the hour of need.

Guides for successful use of the freezer (most of which speak at great length about nutritional benefits, too) outnumber even the herbals, so the observations that

follow are by way of ammeldments rather than basics.

Most manuals tell you that the freezer works best when nearly full--the stored cold makes it cheaper to run when life is serene and keeps the contents colder longer when the electricity is off.

Water-filled plastic milk jugs are perfect space fillers. Stand them on their noses once they freeze and you get a flat surface, like an additional shelf, to stack things on. Don't forget to allow air space for their expansion when frozen.

These giant ice cubes can be used to cool vegetables you are preparing for the freezer. They work admirably in styrofoam coolers (or heavy cardboard boxes) for picnics and for extended journeys. It takes them a long time to thaw.

Any ice cube will be denser, hence slower-melting, if you boil the water before freezing it. This removes air.

Frozen bread dries out less on reheating if it's thoroughly thawed beforehand. Still, frozen bread dries out fast, and there it is. The lighter the bread, the drier it gets.

Some enlightened manuals tell you to process berries by spreading them out in single layers on cookie sheets, letting them freeze and then bagging them up airtight. It works wonderfully--no sugar, no blanching, no messing around.

Frozen cherries hold better flavor, longer, if they are frozen with pits still in place.

Ten packages each of frozen mine-strone, ratatouille and vegetable me-lange with lots of fresh dill and parsley are much more interesting, as winter wears on, than three packages each of ten different vegetables. I make up big vats of these combinations altering the usual seasoning only slightly. The manuals give specifics concerning the way garlic, spices, and salt change over time in the freezer. Mostly, they tend to bland out.

Which brings me to the all-important conclusion: Don't hang on too long. As the inimitable Mrs. Rom-bauer puts it in *The Joy of Cooking*, "The freezer is not meant for miserly hoarding." Wine, cheese, and for some people, ham, are exceptions, but by and large, nothing edible profits from age--not frozen, not dried, not canned.

Fastest, Best Tomato Sauce

A friend of mine who doesn't believe in complicating her life any more than necessary, once quite simply washed a bunch of extremely ripe tomatoes, packed them three and four to a plastic bag and thrust them into the freezer. What she thought would happen, I do not know. What did and does happen is an effortless, concentrated tomato puree.

Put the little billiard balls into a deep bowl after you remove them from the freezer and let them thaw. They will sink into a small, depressed heap submerged in a sea of pale yellow tomato-water. Pour off the water and let them sink some more. Repeat until no more water comes. Do not exert any pressure to hurry things up. When no more water comes, put the tomatoes through a food mill or press to remove the seeds and skins.

The result is as thick as any long-cooked version and considerably fresher tasting since it has not been cooked at all. Just heat this puree with about one sixth its volume of butter, salt to taste and serve over green noodles in January and your reputation is assured. □



Spooning fresh strawberries and their juice into freezer bags.

My Ice Cream Freezer Freezer

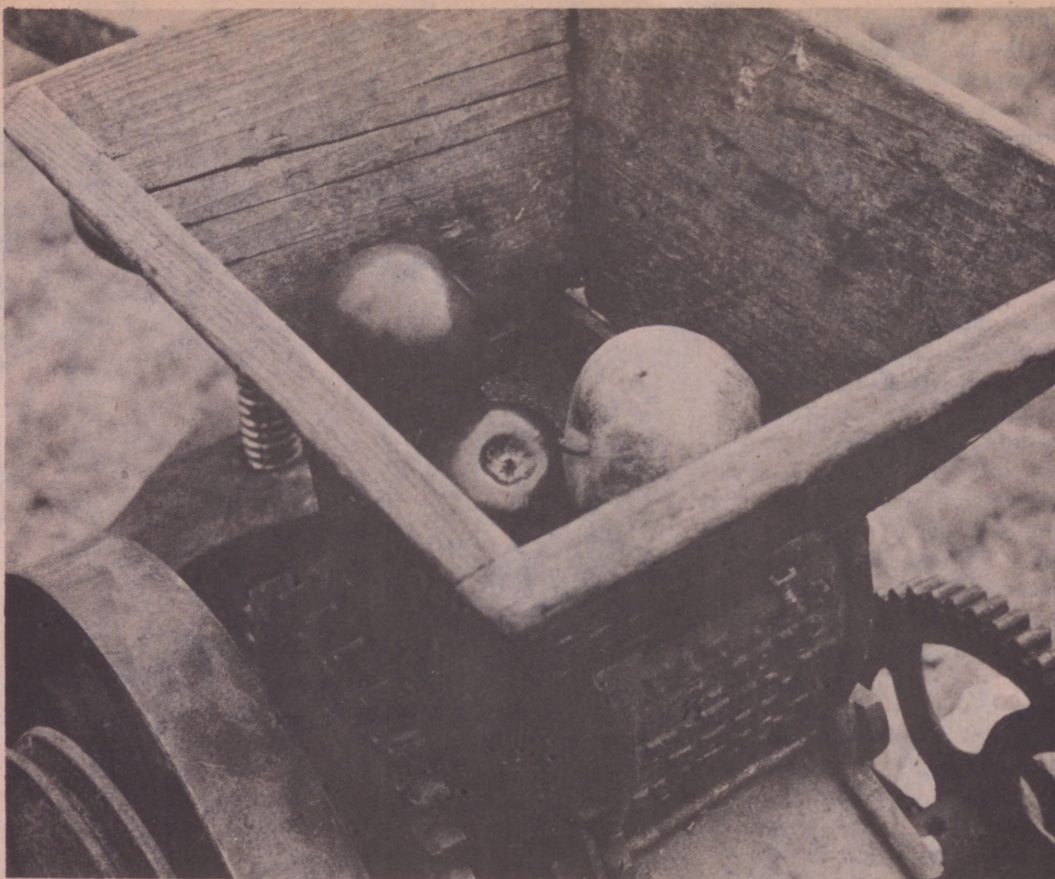
The pleasures of homemade ice cream, already immense, have been infinitely enhanced by the advent of small, relatively cheap ice cream makers designed for use right in the freezer.

Goodbye floor full of newspapers. Goodbye hard-to-find rocksalt. Goodbye never-enough-ice in a thick brown bag and whacking it with a hammer. With these small units, you just spoon the ice cream mixture into a canister, attach the canister to the motor mount, place the assemblage in the freezer--and plug it in.

The motor turns the dasher and then stops it at about the appropriate time. There is a fan that accelerates freezing and disperses motor-heat, so the machine does make a machine-ish noise. But it's not a bad one.

The process takes about 40 minutes--less for sherbet or water-ice, more for rich custard creams and mixtures with liquor in them. Be sure your freezer really reaches freezing before you acquire one of these dandy items. They won't work unless you can get the temperature down to five degrees or below.

Caveats notwithstanding, I've wrought considerable frozen delights with my in-the-freezer ice cream freezer. Rum ice cream with nuggets of candied ginger. Double chocolate chocolate-chip-cookie ice cream made with Tobler chocolate. Brandied raspberry custard ice cream with swirls of raspberry jam. Apricot sherbet made with dried fruits that were reconstituted in sweet white wine and lime juice. Honest-to-goodness with actual pistachio nuts pistachio. And best of all--vanilla, made of actual Guernsey rich cream and a lavish hand with Madagascars' finest beans. □



In Praise of the Cider Press

by Frederick Burrell

Don't overlook the cider press as a valuable helpmate at canning time! A cider press has been the most recent addition to our canning tools. After looking at the different models that are available, both new and used, we decided to invest in a kit. This is a rugged, simple machine that should last for years. It is designed to hold a bushel of chopped apples, which makes it worthwhile to squeeze a couple of gallons of juice from a small amount of fruits. However, several people working together can process many bushels in one day. Clean up is easy, for all that needs to be done is a quick wash down with a hose.

The press stands ready in the shed, and one person can move it outside to do the messy job. This useful item has been used for making gallons of delicious apple cider, but its usefulness has not stopped there. Every canning season, new ideas bring new uses for our press.

Forty pounds of very ripe tomatoes led us to our first experiments in pressing foods other than apples. First we washed them in a large tub of cold water, handling them very carefully, for the ripe fruits would split open very

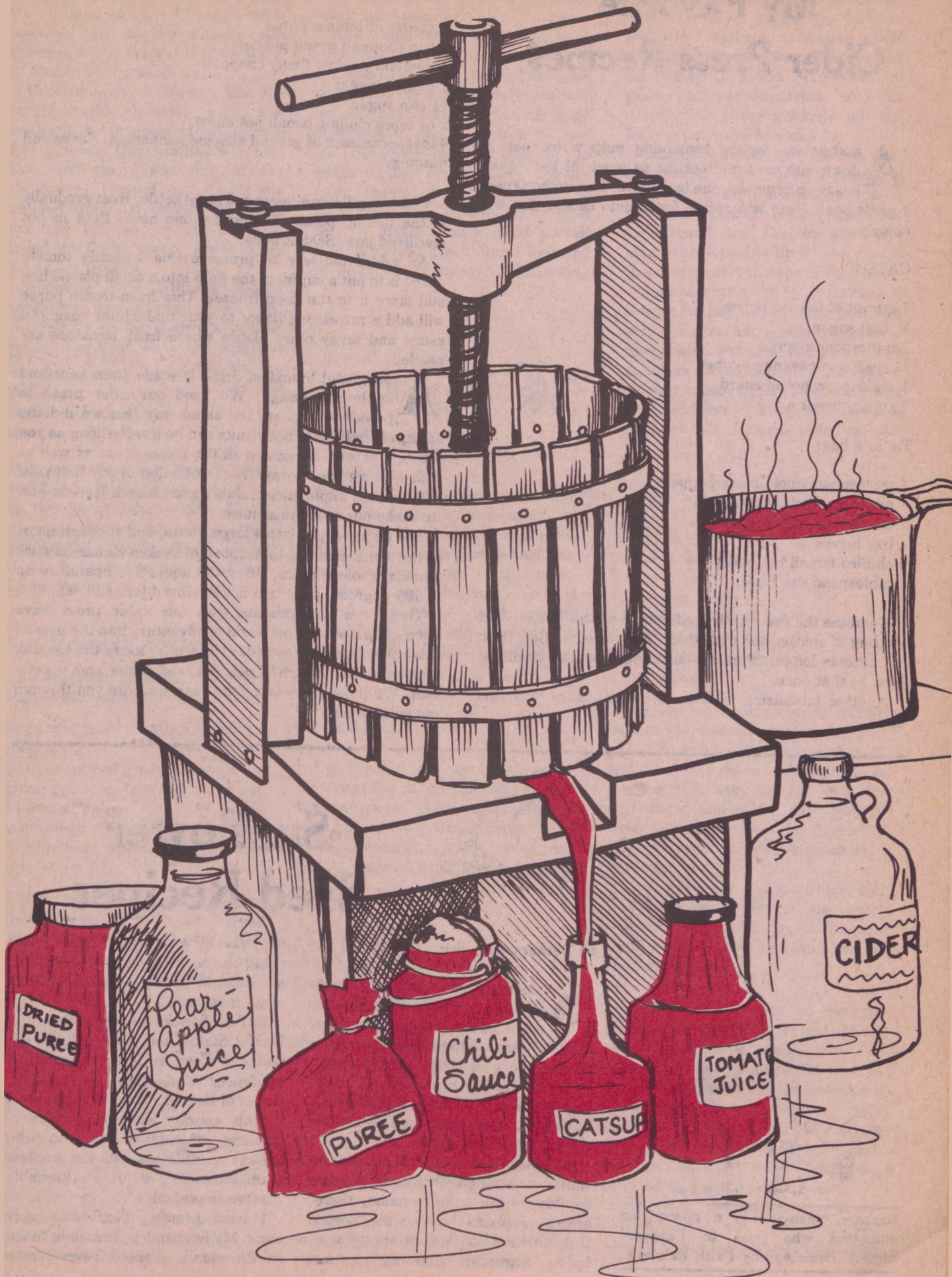
easily. Next we dipped each tomato into boiling water and slipped their skins. We removed any bad spots and plopped the whole tomato into the nylon mesh bag that lined the tub of the press. We found that tomatoes squeeze better if they are not chopped. When the tub was full, the top was put on, and the screw plunger was run down. The juice started to flow immediately. We pressed slowly, keeping a steady small stream of juice flowing by a constant pressure on the pulp. We found that we couldn't ring the juice out of the tomatoes as fast as we could apples.

By this method, the juice and pulp were separated giving a clear liquid and a pulp of flesh and seeds. The liquid was set aside, and we ran the pulp through a berry press where the seeds were separated from the flesh. The seeds made good chicken feed, while the remainder of the pulp was used in several ways.

About one fourth of the puree was reconstituted with the liquid, placed into plastic glasses, frozen, and later removed from the glasses and stored in the deep freeze in plastic bags. All winter we enjoyed fresh-frozen tomato juice as a breakfast treat. For a change of pace, we would add a shot of Worcestershire Sauce to a glass of juice. What a zing!

Frederick Burrell presses many things in Sequim, Washington. Illustrated by Liz Buell.

Please turn page for cider press recipes.



My Favorite Cider Press Recipes

Another use for the remaining pulp is to cook it down into catsup. Because so much of the liquid has been removed, the boil-down time is shortened a great deal. Here is a recipe for tomato catsup that we enjoy.

CATSUP

7 quarts of tomato puree
 $\frac{2}{3}$ cup sugar
1 tablespoon paprika
 $\frac{1}{4}$ teaspoon cayenne pepper
1 tablespoon hot mustard
2 cups vinegar

Tie in a bag:

1 tablespoon whole black peppers
1 tablespoon whole allspice
1 tablespoon mustard seed
4 bay leaves
4 chillies (small hot ones)
1 tablespoon dry basil

Combine the first five ingredients in a large kettle. Add the bag of spices. Boil until thick. Add vinegar. Boil 10 to 15 minutes longer. Remove bag. Pour hot into sterilized jars. Seal at once.

Another tantalizing taste treat is chili sauce. Try this one.

CHILI SAUCE

5 quarts of tomato puree
1 cup chopped green pepper
4 medium onions, finely chopped
1 quart vinegar
 $\frac{2}{3}$ cup sugar
2 or more chillies (small hot ones)
4 teaspoons each of ground allspice, cinnamon, cloves and nutmeg.

Combine all ingredients in a large kettle. Heat gradually to the boiling point. Simmer for one hour. Pack in hot sterilized jars. Seal at once.

An additional way to preserve this versatile tomato puree is to put a cupful of the pulp into a small plastic bag and store it in the deep freezer. This fresh-frozen puree will add a refreshing flavor to your mid-winter spaghetti sauce and many other dishes where fresh tomatoes are needed.

A delightful breakfast drink is made from pear and apple squeezings. We used our cider press to process the pears the same way that we did the apples. Windfalls of both fruits can be used as long as you are very careful to remove all the rotten spots as well as fruit with signs of worms. A combination of one half pear and one half apple juice makes a good blend. Here is how we make our apple-pear juice.

The nectar is put into a large kettle, and for each quart of the drink, add one tablespoon of broken cinnamon stick and six whole allspice. Bring the liquid's temperature up to 180 degrees, pour into hot sterilized jars and seal.

These few experiments with our cider press have opened up a whole new world of adventure into the uses of this versatile tool. Yesterday the apple, today the tomato, tomorrow the...peach? Look out, soft fruits and vegetables. We'll bet there is a good reason to run you through our cider press!

Sunflower Seed Recipes

by Barbara Vukovich

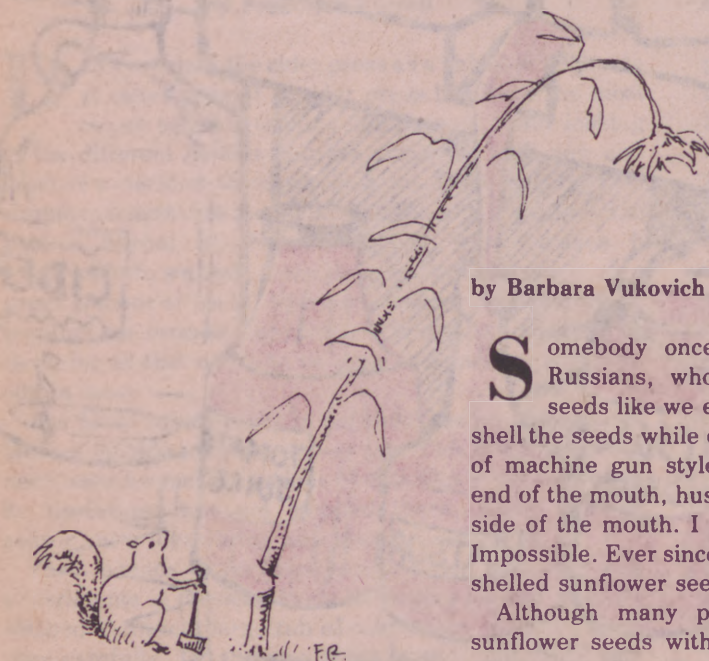
Somebody once told me that Russians, who eat sunflower seeds like we eat popcorn, can shell the seeds while eating them sort of machine gun style, seeds in one end of the mouth, husks out the other side of the mouth. I tried that once. Impossible. Ever since then, I buy the shelled sunflower seeds.

Although many people associate sunflower seeds with Russia, where sunflowers are quite common, there are other places besides the Soviet Union where sunflowers are grown: India, Argentina and Egypt, for

example--all growing the flowers and using the seeds to extract sunflower oil, which is used as a salad oil or to make margarine.

But sunflowers are common in the United States, too, especially in the plains states. In fact the common sunflower [*Helianthus*], is the state flower of Kansas. Many organizations in this country sponsor sunflower-growing contests: the person who grows the sunflower with the greatest diameter, wins a prize. (Probably sunflower seeds!)

I tried growing sunflowers only once. My husband and I, while living in Cleveland, planted twenty sun-



Barbara Vukovich is a newspaper journalist who lives in Chicago, Illinois. Drawings by Faith Rainbolt.

flower seeds in our backyard, in a very sunny spot. All the seeds sprouted, and as the summer progressed, it was evident that we were, indeed, growing sunflowers.

Unfortunately, it seemed that the neighborhood squirrels were also enjoying the prospect of eating sunflower seeds. One morning we came out, and there was one of the sunflowers, chewed at the stalk and toppled over. Of course, it hadn't matured yet, so the squirrel that felled the flower got no seeds for all his or her trouble.

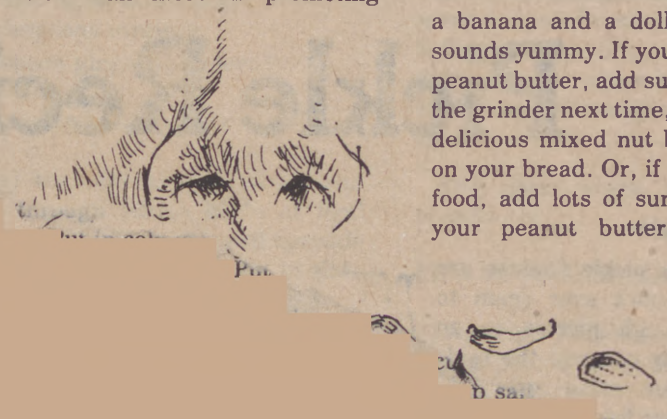
About a week later, a second sunflower was gnawed down and checked out by the squirrels. Still no seeds. The next week the squirrels cups cold vineg... bit the And

I nor the squirrels--got any sunflower seeds that summer.

As the squirrels may have guessed, sunflower seeds are not only delicious but wonderfully nutritious. Sunflower seeds are very high in a polyunsaturated oil, linolic acid. They are also high in potassium, niacin, pantothenic acid and Vitamins A, E, and D. In addition, they contain fiber. Studies have shown that the protein in sunflower seeds (one-fourth of each seed is protein), is a great animal food. It's also a great human food and is better than meat in promoting

growth. Of course, like all seeds and nuts, sunflower seeds are high in calories: a half-cup of shelled seeds contains 280 calories. This breaks down into 12 grams of protein, 10 grams of carbohydrates, and 26 grams of fat. (Remember, though, the fat is a polyunsaturated oil.)

Sunflower seeds can be eaten raw, out of hand. They can be toasted and then eaten. They can also be sprouted and then eaten. Sometimes the seeds are ground and sold as sunflower meal. Some people blend one cup of the seeds with two cups of fruit juice, a banana and a dollop of honey. It sounds yummy. If you make your own peanut butter, add sunflower seeds to the grinder next time, and you'll get a delicious mixed nut butter to spread on your bread. Or, if you like crunchy food, add lots of sunflower seeds to your peanut butter, then spread.



A Peck of Pickle Recipes

by Lucretia Douglas

Already my pickle shelves are empty--I can't ever seem to make enough pickles to go around--especially to stand the raid of my two pickle-eating daughter and their friends. I don't think I'll be the first

For a spice bag in this and other recipes, I use several thicknesses of cheese cloth tied with white thread. Even a boiled piece of an old sheet could be used--about six inches square is enough. Bring corners together and tie so it forms a little bag of spice in a clear pickle juice.

When I'm in a hurry, I make a few jars, either quarts or gallons of sour pickles. They are easy and so foolproof.

SOUR PICKLES

Wash your cucumbers well, rinse and pack them in clean sterilized jars.

Mix together in an enamel kettle:

3 cups cold vinegar
1 cup cold water
1 cup sugar
1 cup dry mustard
1 cup canning salt

Pour over whole cucumbers in jar to cover. Seal. No cooking. Leave at least two weeks before eating. If you have some vinegar mix left you can use it another day. Small cucumbers are best, but some people use up to a medium size for these sour pickles.

THICK MUSTARD PICKLE

Thick mustard pickles are my boys' favorites with anything.

2 large cauliflowers broken into small pieces
2 quarts chopped green tomatoes
6 green peppers; take out seeds and cut in small pieces
1 quart small whole onions, peeled
30 cucumbers, whole, 2 to 3 inches long

Put in big enamel kettle and cover with brine (made of 1 cup canning salt to 1 quart of water). Leave over night. In the morning, drain. Cover with plain water, scald, and drain. Heat $3\frac{1}{4}$ quarts vinegar. Mix in:

1 cup sugar
 $\frac{1}{4}$ pound dry mustard
 $\frac{1}{2}$ ounce turmeric
 $\frac{3}{4}$ cup flour
water, to make thin paste

When vinegar boils, add paste gradually, stirring constantly so it won't burn on. Cook and stir until thick, about twenty minutes. Do not use high heat. Add vegetables, cook and stir five minutes more. Can in sterilized jars. Seal tight.

I used to sell thirty pints a year of this relish to the treasurer of the Chase Manhattan Bank in New York. You can't taste the ginger and the flavor is delicious with almost anything.

GINGER RELISH

7 large cucumbers
5 large onions
 $\frac{1}{2}$ bag of salt
 $2\frac{1}{2}$ cups vinegar & $\frac{1}{2}$ cup water
 $\frac{1}{2}$ cup all-purpose flour
 $3\frac{1}{2}$ cups light brown sugar
2 tablespoons turmeric
1 teaspoon ginger (powdered)
1 cup water
 $\frac{1}{2}$ teaspoon black pepper

Peel cucumbers and onions and grind through coarse blade of food chopper. Put in colander and sprinkle with salt. Set two hours. (Put in sink, as it will drain.)

Put vinegar on to heat in enamel kettle. Mix dry ingredients in a bowl with the cup of water (add a bit more if necessary to make a paste) and stir into hot vinegar. Cook until thickened, stirring over medium heat (and remembering trivet). Add drained vegetables. Cook and stir for 10 minutes more. Seal in hot sterilized jars.

SWEET DILL STRIPS

Use fresh-picked cucumbers only--for crispness in the finished pickle. Cut one dozen clean, medium-sized cucumbers into strips lengthwise. Place in enamel pan and cover with boiling water. Let stand four hours.

Heat:

3 cups vinegar
 $\frac{3}{4}$ cup water
6 cups sugar
3 tablespoons salt
 $4\frac{1}{2}$ teaspoons celery seed
 $4\frac{1}{2}$ teaspoons turmeric
 $\frac{3}{4}$ teaspoon mustard seed

Place head of fresh dill in bottom of each sterile jar, pack solidly with cucumber strips. Top with another head of dill and cover with boiling vinegar mixture. Seal tightly.

Kids of all ages love these--one of our favorite "more" pickles. Make more than one batch if you can.

CUCUMBER PICCALILLI

4 quarts small cucumbers
4 medium green peppers
4 medium onions
1 quart vinegar
4½ cups sugar
 $\frac{1}{2}$ tablespoon celery seed
 $\frac{1}{2}$ tablespoon mustard seed
 $2\frac{1}{2}$ tablespoons pickling spice in bag

Slice cucumbers very thin. Seed and slice peppers. Peel and slice onions. Set overnight in brine of 9 cups water and 1 cup canning salt in enamel pan. Bring vinegar, sugar and spices to boil. Drain cukes and add to boiling vinegar. Bring again to boiling point. Remove spice bag and can in sterile jars. Makes approximately five quarts.

This last, which may be your favorite, is:

RIPE CUCUMBER RELISH

8 large ripe (yellow) cukes
2 cups peeled, chopped onion
 $\frac{1}{2}$ cup salt
2 tablespoons flour
2 cups sugar
1 teaspoon celery seed
1 teaspoon mustard seed
1 tablespoon dry mustard
2 teaspoons turmeric
1 pint vinegar

Pare, remove seeds and cut cucumbers in approximately one-inch squares. Add onions. Sprinkle with salt and set overnight in enamel pan. In the morning, heat vinegar. Mix dry ingredients and spices with enough water to make paste in bowl. Add to boiling vinegar and stir and cook until thickened and smooth.

Drain and rinse vegetables and add to hot sauce. Cook on low heat, stirring often until vegetables are transparent. About an hour. Can in hot sterilized jars.

Some final thoughts on making pickles: Never cook or let vinegar set in anything but an enamel pan. For additional keeping insurance, any of the jars of pickles can be processed for five minutes in boiling water bath except the Sweet Slices, Sour Pickles, Cucumber Piccalilli and Ginger Relish as they do not need additional processing. I don't do it myself.

Fill your cupboards with these pickles. Even when you think you have more than enough--you probably don't!

*Do your canning and freezing first, but when
you have excess food, try the art of drying ...*



How to Dry Harvest's

by Barbara Sturdevant

Modern cooks have the advantage of the pressure canner and the freezer in preparing the fall harvest for winter use. But more and more people are making the effort to store some of nature's bounty, and in recent years they have been sorely frustrated by the shortage of such items as canning jars, lids and freezer space. Now, with the inflation in food prices and the power and fuel shortages, the value of that most ancient method of food preservation called "drying" becomes more apparent and decidedly more attractive. Drying vegetables for later use is no more difficult than canning, nor is it any more difficult than preparing food for freezing.

Barbara Sturdevant is the author of "How to Build Flat Racks," Farmstead, Summer 1980. She lives in Vernonia, Oregon. Illustrations by Larry Decker.

Your Bounty



Do your canning and freezing first, but when you have excess food or a shortage of space, the art of drying may be your solution. Herbs, chili peppers, Indian corn, onions and garlic have long been dried and used in our diets. American Indians were experienced in the art of food drying long before the first colonists arrived on their shores. When Native Americans still follow any of the old-time ways, they still reserve this drying method for certain wild foods. Most Indian tribes dried meat, berries, roots; this was the food that carried them through long severe winters.

Drying foods is a natural process in which approximately 80 to 90 percent of the water is removed. This prevents spoilage bacteria from developing on the produce. Not only is storage space conserved (four pounds of fresh food yield approximately one pound of dried), but on a pound for pound basis, dried food has a greater increased concentration of many nutrients, especially minerals.

Most vegetables can be dried in the sun, in areas and seasons where

warm sunny days are assured, but where such weather is not customary, a dehydrator will be a great help. These are quite easily built, and patterns can be obtained through your local extension office or from your state agricultural service.

For my first attempt at drying foods, I merely laid an extension cord with a 100 watt bulb on an aluminum pie pan, in the bottom of a rather good sized box. Over the top of the box, I laid clean window screen. On this went a layer of cheese cloth, and it was atop this I laid the pieces of fruit I was drying. I was quite successful in drying apricots, berries, apple slices, plums and cherries. I did not realize then that the ideal heat would be about 110 degrees Fahrenheit, and so what I didn't know, didn't worry me. I was well satisfied with the results.

If you dry your produce too quickly at high temperatures, you risk losing more vitamins. Too low a temperature (90 degrees F.), will cause mold or bacteria to spoil the food right in the dryer in humid climates. A moderate 110 degrees is considered the ideal.

My next effort at the dehydrator was to make one of an old solid-sided apple box which I had cleaned thoroughly. In this I mounted a porcelain socket on one end, added slats to set trays upon, drilled holes in each corner of the opposite end for ventilation, and constructed a door for the front. I now use a 150 watt bulb in this most of the time. If the weather gets very warm, I switch it to a 100 watt bulb. Each day I rotate the trays from bottom to top, with the exception of green peas, which I leave on the top two shelves. This has been quite successful, and while I have not done all the vegetables in it, I have dried satisfactorily, tomatoes, peas, bell peppers and minced onion.

Remember though, that the aim is to remove moisture and not to heat the food. Ventilation is essential in the dryer to let air through top and bottom. The best drying trays are those which let air through.

It is possible to use your oven for drying, but if it's electric, it can also be costly. A friend of mine dries her herbs in one, and they turn out very

well. But she warns that it takes care and watching. Again, food should be exposed top and bottom. If the oven racks are too far apart for your food, put cheesecloth over them and put the food on top of that. Set your oven no higher than 145 degrees Fahrenheit. If the lowest your oven goes is 200 degrees, set it to warm and use an oven thermometer to check the real temperature inside. You must check your food drying in the oven, regularly, and stir often. By "cracking" the oven door slightly you can create necessary ventilation. Sliced fruits and vegetables and whole berries take from four to twelve hours to dry in a warm oven.

Drying some of our common vegetables can be done by simply stringing and hanging. Shell beans, still in the pod, onions, garlic, chili peppers and most of the herbs, can be done in this manner. A well-ventilated attic is an excellent spot for this job.

Many vegetables such as broccoli, corn, carrots and peas require blanching after they are sliced or prepared, just as though you were getting them ready for the freezer. This can be done either in boiling water or steam. Steam is preferred, since it saves more of the valuable vitamins and minerals. Boiling is a little quicker. It takes only two-thirds as much time per batch. Every rule must have its exception, and some vegetables do need complete cooking. Some also require no blanching at all. Most of the latter can be hung to dry, and

most of the former can be winter stored. So, unless you are given to long winter campouts or are planning a lengthy trip, it hardly seems worthwhile.

If you wish fruits such as apricots, apples and peaches to retain their color, you can pretreat them in an ascorbic acid solution. Take three or four 500 milligram ascorbic acid (Vitamin C) tablets and crush them in a quart of water. Dip the fruit in this solution or into unsweetened lemon juice.

When you have dried your produce, store it in clean, perfectly dry, airtight containers in an area where the temperature is fairly constant, quite cool and close to forty degrees. Plastic containers with lids are good for this as are glass jars. Get a friend or two to save them for you, or advertise for them. They can be purchased quite cheaply in this way. If you use cans like coffee cans, put the dried food in plastic bags before placing it in the can.

Rejuvenating your dried produce is quite simple—just soak or simmer it in water. There is a difference in the amount of liquid each vegetable needs, so cover one cup of dried foodstuff with one and a half cups of boiling water and let stand until most of the water is absorbed and the food is soft to the touch. Add water if needed. If the day's selection of dried vegetables are intended to be used in long-cooking dishes, such as stews and soups, they can be added in their dried form, but remember to allow

sufficient moisture for their complete rehydration. Dried foods often have a slightly different taste than their fresh counterparts, so be prepared for some new taste adventures.

Here are some ways to enjoy your home-grown, dehydrated vegetables:

Peas and Carrots: Rehydrate separately. Cook the carrots until almost done. Add peas. Serve in cream sauce with a touch of ginger (preferably fresh ginger) or in a cheese sauce flavored with a tiny amount of Worcestershire sauce.

Herbal Salts: Spin dried herbs in a blender, or crush in mortar and pestle. Add salt and mix well. Use dill, onion, garlic, chives, celery and sage.

Boiled Onions: Rehydrate and cook slowly in a small amount of water until they are almost dry. Add butter, your favorite herbal salt, and stir until they are well coated. This is nice done with minced onions and used on mashed or baked potato.

Winter Squash: Rehydrate and simmer until tender. Whip if desired. Add salt, pepper, a touch of cinnamon and stir. Serve in a casserole dish.

Chips for Dip: Celery, cucumber slices, summer squash all can be used in their dried form with your favorite dips. As a personal preference, I like dried asparagus tips for dippers, but this is only practical if you have dried many of them, and if you like the taste of raw asparagus.

Preparing Vegetables for Drying

Asparagus: Clean. Use slender tips and steam four to five minutes.

Beans, green : Snap ends. Cut to lengths and steam for two to three minutes if small. Steam seven to eight minutes if large.

Beans, in the pod: Dry on vine or string and hang. To treat for insects, freeze for two days, or heat to 150 degrees in oven.

Bell Peppers: Clean. Remove stem, seeds and ribs. Cut in strips or chop. No blanching needed.

Broccoli: Steam small florets three to four minutes.

Cabbage: Shred and steam two to three minutes.

Cauliflower: Small florets steam four to five minutes.

Brussels Sprouts: Cut through stem. Steam four to five minutes.

Carrots: Clean and cut 1/8 to 1/4 inch slices. Steam three to four minutes.

Chili Peppers: String and hang to dry. No blanching.

Corn: Steam for five minutes. I like a longer period and usually steam for longer than five minutes. Cut off cob to dry.

Cucumbers: Peel. No blanching. Cut in slices or strips.

Edible Pod Peas: Steam four to five minutes.

Peas: Shell and steam two to three minutes.

Potatoes, white: Peel. Cut in slices or strips. Blanch six to eight minutes.

Squash, winter: Peel. Cut into strips. Blanch two to three minutes.

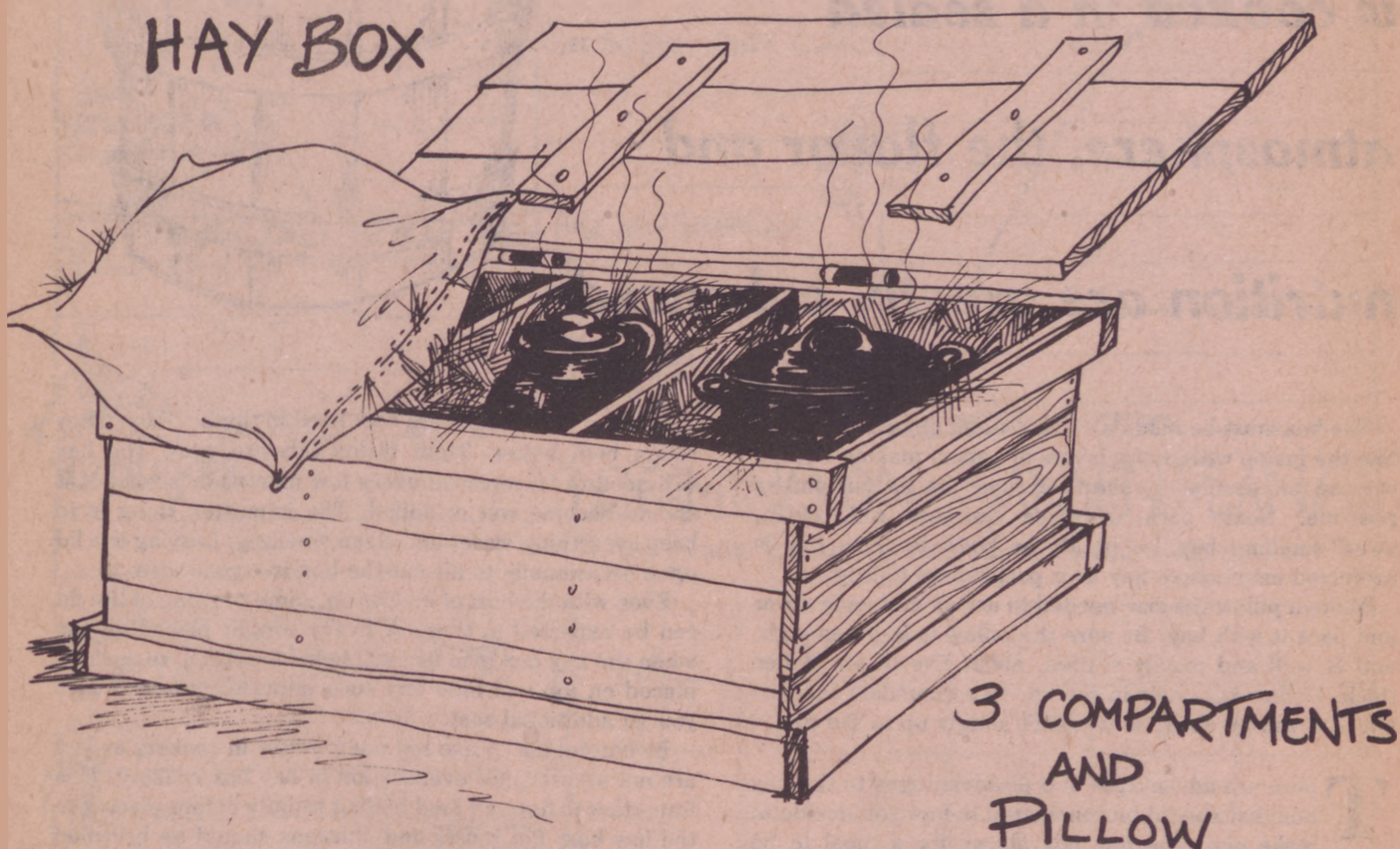
Summer Squash: Snip ends, slice. Steam two to three minutes.

Tomatoes: Slip skins. Cut in wedges or inch-thick slices.

Yams: Cook until tender in skins. Cool peel, slice and dry.

How to Cook with a Hay Box

HAY BOX



by Sandy Dews

The hay box principle of cooking is well over a century old and at one time enjoyed a following of dedicated users. The introduction of more modern stoves that replaced the wood cook stove was the beginning of the gradual decline in the use of the hay box. Whether or not this method of cooking returns to general use, it is worth a look back into time to see how one generation of cooks saved time and fuel.

The principle of fireless cookery is simple enough: When any food has reached the boiling point, all that is

needed is to keep it there. This is accomplished by boiling for a few minutes on a stove and then putting the tightly covered kettle of food into an airtight receptacle that is closely packed with non-conductive material which will retain the heat. This is what the hay box does.

The hay box can easily be built at home with few materials by any person who is moderately handy with tools. The size of the hay box is strictly a personal matter, although it must be made big enough to allow at least two inches of insulating material around all sides. The hay box can be made to accommodate one or more kettles and separate compartments can be created in one large box. An old trunk works nicely and saves having to build a box. Castors on the hay box will make moving it a lot easier.

Sandy Dews farmsteads and writes in Detroit, Maine.
Illustrations are by Liz Buell.

***The hay box allows for a meal
to be cooked with almost no effort ...
and because the food
is cooked in a sealed
atmosphere, the flavor and
nutrition are greatly enhanced.***



The box must be made air tight, so fill any cracks. Then line the inside with heavy layers of paper, making sure to overlap all seams. In short, it must be as airtight as possible. Next, pack in three quarters full, clean, sweet-smelling hay, as tightly as possible. Fine hay is preferred over coarse hay as it packs more tightly.

Make a pillow the size needed to use as an inside cover and pack it with hay. Be sure the pillow is large enough, and is well and evenly stuffed, about five to six inches thick. Hollow out nests in the hay to accommodate the size pot that will be used, so it will fit snugly up to the top.

There are advantages and disadvantages to the hay box that should be considered before you decide to make one. The hay box allows for a meal to be cooked with almost no effort. The saving of fuel can't be overlooked, and, because the food is "cooked" in a sealed atmosphere, the flavor and nutrition are greatly enhanced. The hay box makes a convenient place to hold bread dough for warm, draft-free rising. As nothing ever burns in the hay box, it will do no harm to leave things in a little longer. Don't be afraid they'll get overdone, for they won't.

There are some disadvantages to the hay box that should be mentioned. Food will take, generally, three to four times longer to cook. No absolute rule can be given for cooking times since there are so many differences in the construction of boxes, insulation, pots used, etc. One must experiment to find what works best in each separate case.

You can't expect anything crisp from the hay box, but a few minutes in a conventional oven will crisp a lot of foods. Care must be taken to not open the kettle too soon or lift the kettle out of the hay box, as the cooking process will cease. A little too long is better than not long enough.

Earthen or iron pots are best used in the hay box. They retain heat better. Tight fitting lids are vital. The hay will need to be replaced every few months or sooner if it should become wet or soiled. The important thing is to keep everything sweet and clean smelling. Leaving the lid open occasionally to air out the box is a good idea.

Even with the best of insulation, some warping of the lid can be expected in time. A heavy weight placed on top when the hay box is in use will help. A decorative cushion placed on top will hide any such imperfections and give you an additional seat.

Be careful not to use too much water in cooking as you are not allowing for evaporation in hay box cookery. It is important to have all food boiling rapidly before placing in the hay box. Pot roasts and chickens should be browned and cooked about 20 minutes before placing in the hay box. Older chickens will, of course, take longer. A general guide to begin with is to allow soups and stews six to eight hours in the hay box, after a good start on the stove. Most vegetables will take two to three hours with potatoes taking a little longer. These are only guides. Every hay box cooking situation is different.

I saw my first hay box approximately seven years ago when we moved onto our homestead at the foot of the Wyoming Rockies. We were cleaning out the old blacksmith shop when we found it, discarded and well beyond repair, yet standing as mute testimony to the resourcefulness of our ancestors. Few people today have ever heard of a hay box and most who have consider it to be gone the way of the horse and buggy. Will the hay box ever become commonplace again? Perhaps not, but when we go to turn on our electric stoves and nothing happens, a lot of us will be reaching for hammers. □

TAKING STOCK: THE FARMSTEAD HARVEST ACCOUNTING

In this first Farmstead Harvest Accounting we offer space and some mental triggers to make your reckoning of your garden's harvest not only congratulatory but instructive. We wish you a plentiful harvest season.

Seed varieties to order again in '81

1980 AWARDS:
BEST NEW CROPS:

SUCCESSES IN 1980:

BEST REGULAR CROPS:

GET THE BUGS OUT:

BEST NEW TECHNIQUE:

1980 SOIL IMPACT:

What was put into the soil this season?

SOILS I HAVE KNOWN

OUCH IT

Dis. - Africa & NEA
Planting By Moonlight Vol II

FAILURES IN 1980

PLANT MORE:

DREAMING ON ~ GARDEN PLAN '81

If you planted the next garden right now, what would it be like?

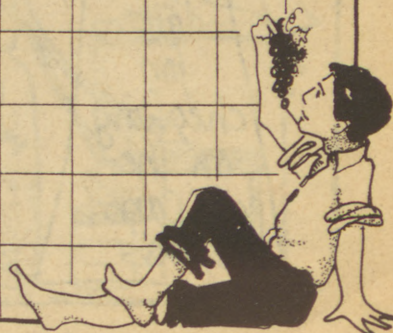
PLANT LESS:

1001 KOHLRABIS

BEST BETS FOR A BETTER BOUNTY:

All the 'If only I had's' go here.

110'
100'
90'
80'
60'
50'
40'
30'
20'
10'

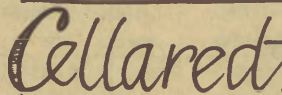




Canned:

1. Remove old jars before storing new ones; put old in front of new on shelves.
2. Remove metal rings from self-seal jars.
3. Shelf jars that are clean and dry to avoid mold.
4. Check jars occasionally for bubbles or discolorations in food.
5. Store canned goods at 65°F or cooler.
6. Use earliest canned goods first.

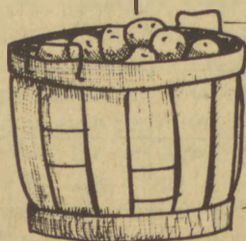
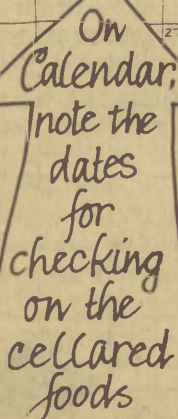
A drawing of a jar with a label that reads "Caponata" and "8/12/19". The jar has a textured surface and a lid. The label is rectangular with a border. Above the label, there is a small date "11/11".



QUANTITY

ITEM

QUANTITY



Frozen:

OLD FOODS

NEW FOODS

0°F to 5°F

RULES OF FREEZER STORAGE:

1. Store like foods together.
2. Move soon-to-be-used foods to top of freezer.
3. Wrap foods in vapor-type wraps or plastic containers.
4. Use frozen foods well within storage life time.

BEANS

CORN

BRUSSELS

BROCCOLI

PEAS

BERRIES

CHICKEN

KEEP DETAILED INVENTORY OF EACH FOOD STORAGE AREA. A PEG BOARD, SOME PAPER CLIPS OR PAPER PINS WILL DO.

Dried:

Condition dried foods
for several days,
in bulk. Inspect.
Then seal in tight
container and
store in
cool, dark, dry
place.



ACCOUNTING for the HARVEST

Although the bottom line in gardening involves much more than its dollar value, knowing that value can help you to plan your next garden. This sheet may help you begin to account for your harvest.

EXPENDITURES:

SOIL MANAGEMENT (additives, conditioners, fertilizers) =

EQUIPMENT (gardening & processing):

SEED + PLANTS

PEST + DISEASE CONTROLS:

HARVEST:

[illegible]

Storing Your Harvest



Underground

by Lynn Ann Ascrizzi

One perfectly simple way to store your home grown root crops is to leave them right where they grew--in the earth. It's so easy you may feel as if you're shirking some weighty and consummating task of harvest. Just leave them there? It works.

After the first frost or two, but before the ground begins to freeze, cover the rows well with a thick hay mulch to protect the vegetables from winter cold. Remember to leave some sort of marker so you can easily find them again.

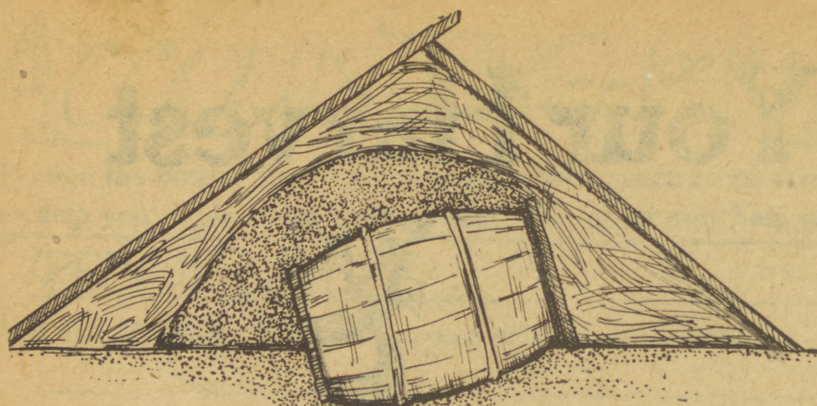
This system works best in areas where not much snow cover is expected, for all sense of convenience will be lost if you find yourself shoveling through deep drifts to get down to dinner. One trick that helps, however, is to spread black plastic sheets over the mulch. This not only further protects the crop but makes it easier to sweep off the snow.

A possible drawback to leaving root crops where they grow, is that you may have to compete with hungry mice and field rats who would be happy to vary a stark winter menu with plump carrots or mellow rutabagas. Nonetheless, the fact that

gardeners continue to store crops in this way over winter, indicates that either the critters aren't getting the best of them, or the expediency of the method more than makes up for a few nibbled-upon or plundered vegetables.

Another simple method for areas where winter soil stays about 52 degrees Fahrenheit, is the soil pit. Make sure the area you choose to dig in has adequate drainage. A sloping spot is good.

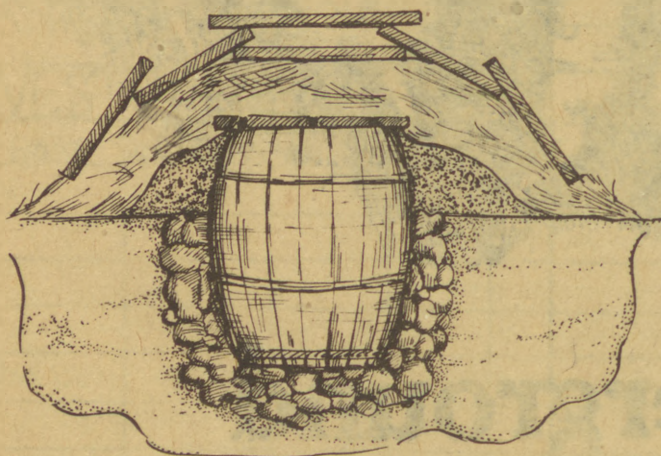
First dig a hole about 3 feet wide five or six feet long and two feet deep. You might start neighbors wondering just what it is you're about to bury in a



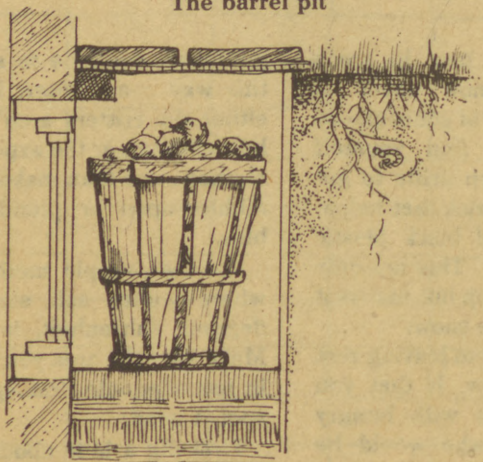
The barrel pit



The earth mound



The barrel pit



Window well storage

pit of such dimensions, but if you're the sort who doesn't worry about such things, just keep digging and keep them guessing.

Then set a sturdily constructed box in the pit. The sides should be lined with quarter-inch hardware cloth to keep out mice and other rodent relatives. The lid should be of solid construction and closed tightly. When you are ready to store your crop, put a layer of clean sand (washed) on the pit bottom and carefully put in your first layer of root vegetables. You don't want to bruise and bang them. Cover the food with another layer of sand, and layer by layer, fill the pit.

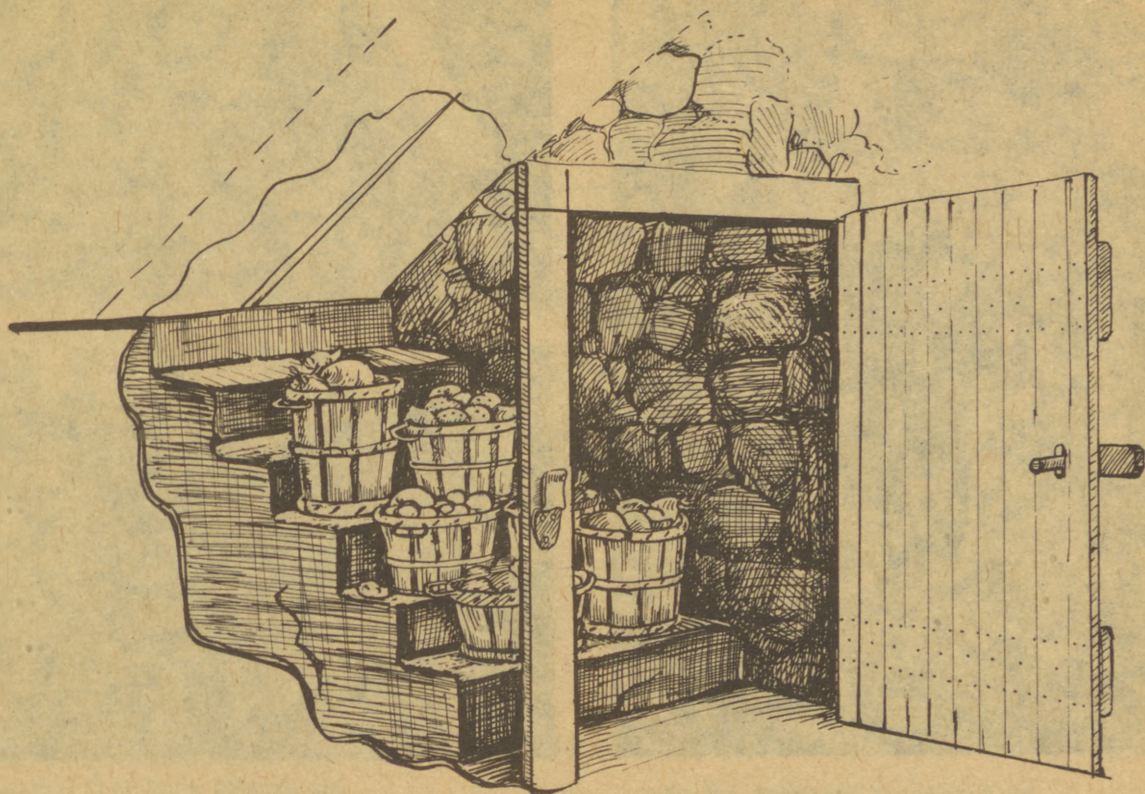
Put bales of hay over the cover for insulation, and cover the bales with a plastic tarp to keep off moisture and snow.

The conical earth bank or mound is another way to store garden produce. Find a well-drained spot of ground and level off about four to six feet. Dig two six inch trenches on either side. Cover the earth floor with dry fallen leaves or good hay about four inches to six inches deep. Now layer in your vegetables or fruit, but don't mix fruits with root crops. If you do place several kinds of root crops together, you can separate them with mulch.

When the whole mound is about 30 inches high, cover it with more clean and dry mulch, and then with six to ten inches of soil. As it gets colder, you can add to the protective layer. Again, this arrangement is best suited for winters which are on the mild side, with no great extremes in temperatures, as when the thermometer dips lower than 20 below zero.

Colder Climate Storage

Watertight wooden barrels or ten gallon garbage cans make excellent storage bins when buried. When using garbage cans, line the bottom with straw or hay (clean), brush off the loose dirt from the vegetables, and if the skins are dry, sprinkle them with a little water as you place them in the can. The contents should be six to eight inches below the can cover. Make sure metal cans are not resting against a sizeable rock, for it will convey frost through the metal. Provide a soft bedding for the barrels to rest on--of hay or straw. With the wood barrel, make a nest of straw for the vegetables to lie on, and fill the barrels from front to back. You can use dry matter such as leaves or hay



Cellar steps leading to the outside can be made into a convenient storage area. Install an inside door to keep out basement warmth.

as packing around the individual fruit or vegetables, as you see fit. Put a tight-fitting cover over the opening. Again, do not mix fruit and vegetables together.

The cellar steps which lead up to the outside cellar entrance in many houses, can be made into a simple storage area. You will need an inside door if you don't have one there already, to keep out the basement heat at the bottom steps. Naturally, the steps get colder and colder as you go up, so you may want to experiment to see which steps work best for various crops. To make sure there is enough humidity, set pans of water on the lowest, or warmest step.

If your house is designed with window wells (by the cellar windows), you can use this space to store food over winter. By opening or closing the cellar window, you can raise or lower the temperature in the well. Furthermore, the boards can be removed if the temper-

ature in the well gets too high. Mulch can be added atop the boards if you expect a more severe winter.

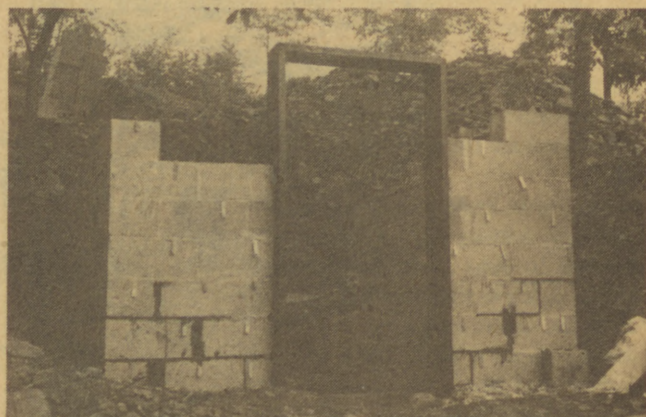
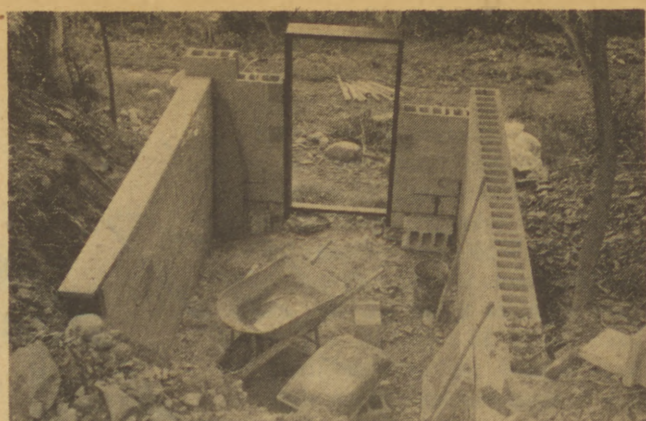
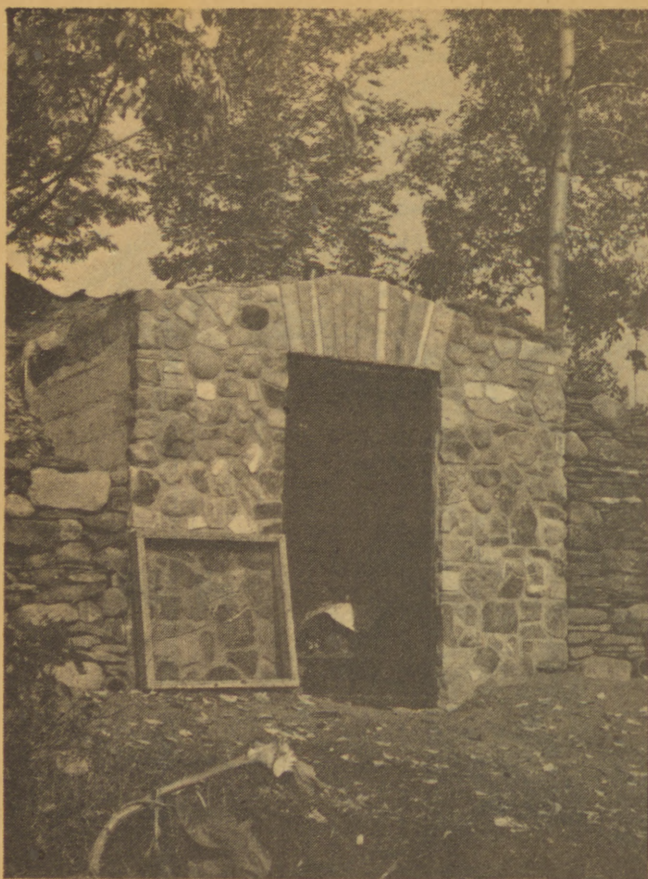
If a large amount of vegetables is to be stored each year, the cost of a more permanent root cellar is justified. One convenient way to provide for this is to construct a storage room right in your house cellar by partitioning off a part of the basement which includes one or two windows. The spot should have good drainage, adequate ventilation, be accessible and have some means of controlling temperature and humidity. A northeast or northwest corner of the basement is best, and should be away from furnace, chimney or heating pipes. At least one wall should have outside exposure. The other walls can be constructed of wood and should be insulated to keep out the cellar's warmth. Lower basement temperatures will require less insulation.

The partitions should be made parallel to the walls, and the frame must be plumb in order to make the

room airtight. The walls to close off the corner can be built with a two by four-inch framework, with sheathing on both sides and three inch insulation batts between the studding. You can frame the door on one wall with two by two-inch studs faced on each side with quarter-inch plywood. Fill the center with insulation. Make sure your door is snug and has a latch to hold it firmly closed.

The ideal temperature in the storage area is 35 to 40 degrees Fahrenheit and can be regulated by opening and closing window vents. The windows should be covered by some kind of opaque material because light must be kept away from vegetables and fruits. It's a good idea to build bins that can be moved outside in summer for a thorough scrubbing and sun bath.

There are innumerable variations on this theme of cold storage; hopefully, you will be able to adapt one of these time-tested ways to suit your garden size and situation. □



Moot's Root Cellar

by Edmund Northrup Moot

Organic gardeners have been considering every means possible to help cut down their family food bill in periods of drastic inflation. Those who like to add proper preservation of root crops to their diet plans have turned attention to the root cellar because it maintains the water content, the texture and much of the nutrition of the fleshy root crops.

The Bilby family of New York State built their own root cellar close to their garden, and partly on its account they have thrived on a steep, rocky hillside where white beans had refused to grow.

When young Charles Bilby and his wife bought a few acres along a hill road, the entire community anticipated their failure to reclaim the old farmstead that had been taken back by nature for more than two thirds of a century. But the community underestimated the Bilby's willingness to work.

Photos by the author. Illustration by Lynn Ann Ascrizzi.

As part of their reclamation of the hillside farmstead, they staked out a strip of land near the highway, but perhaps ten feet above it as a garden. They laid out their garden 30 feet wide and about 200 feet long parallel to the highway up on a steep bank. Their first year was not a huge success. They had "garden sass" during that summer, but little surplus was grown for putting away. But over the years, the Bilby's tilled in mulches of leaves and chopped, chipped and composted items into that garden to build the soil atop an unforgiving shale ledge.

The marvels of these organic gardeners would amaze many old-time gardeners. Ample canning, freezing and putting down was accomplished. But the entire family, all of whom love carrots, kept thinking of a root cellar. Finally, they combined in one summer's efforts to erect a handsome, efficient root cellar in a hillside bank adjacent to their garden.

Bilby's son helped his father to lay the concrete blocks after the whole family helped to excavate the area. Drainage was easy--a

few lengths of orangeburg pipe were pieced together to complete a network for draining water away from the root cellar atop the shale ledge and under the concrete base. The base, which was laid before the curved roof was put on, is eight inches thick.

Only on the south side is the root cellar openly exposed to the elements. And that side is faced with field stone gleaned from the hillside around the home. Two very well-placed shoulder shields on the right and left of the southern face, support the structure.

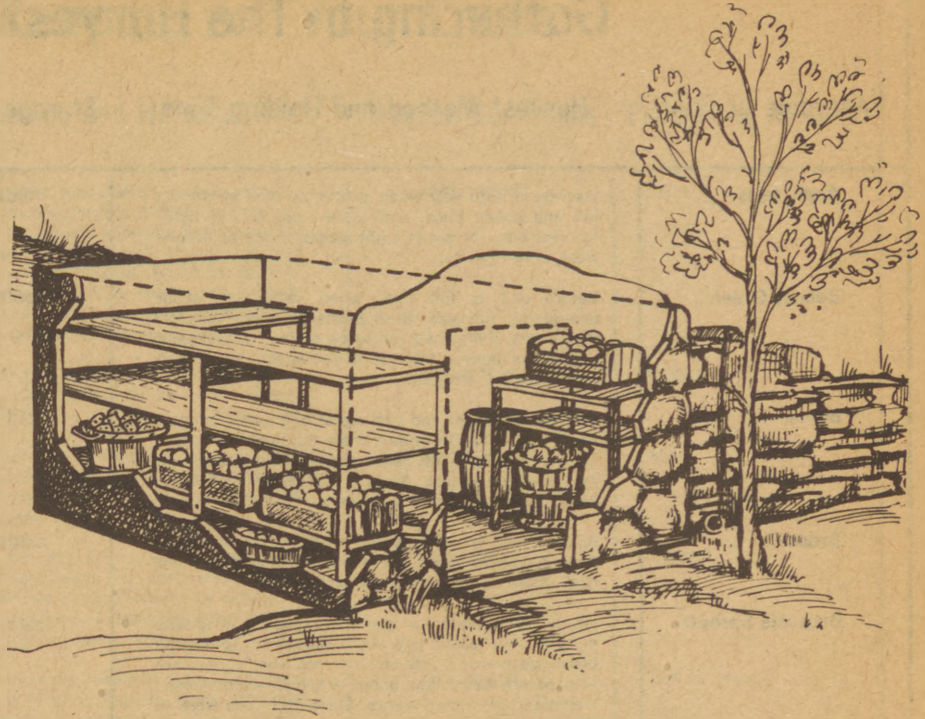
Shielded vents placed in the concrete roof under the protective earth covering, maintain an even temperature inside the root cellar. No moisture collects inside. A temperature of 40 or just above is maintained year round in the cellar. The cellar has never gone below freezing in 15 years, though it did get to 34 degrees once when the temperature outside was 25 degrees below zero. Celery stored in boxes of leaves keeps as green as if it had just been harvested.

Two strong storage shelves in the cellar are removable before fall crops are placed inside. The entire cellar

can then be cleaned and sanitized. Each shelf is three feet wide and 14 feet long, with three main shelves. The top is for loose knit bag storage, especially for carrots. Bushel baskets are stored in the next shelf down. Half bushel baskets fill the third row down and gardening crates are set on pallets on the floor.

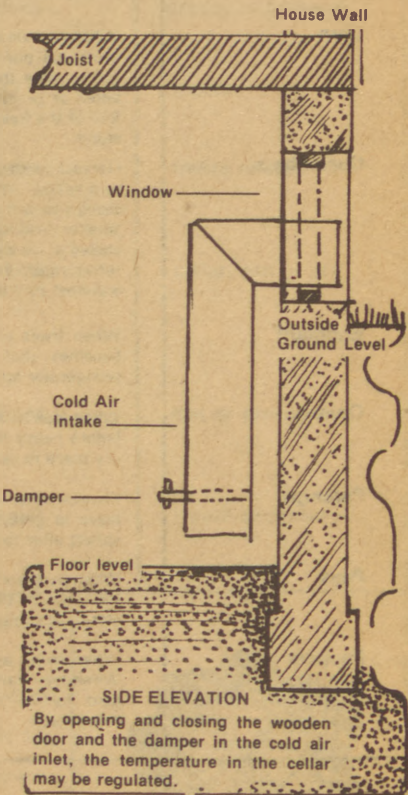
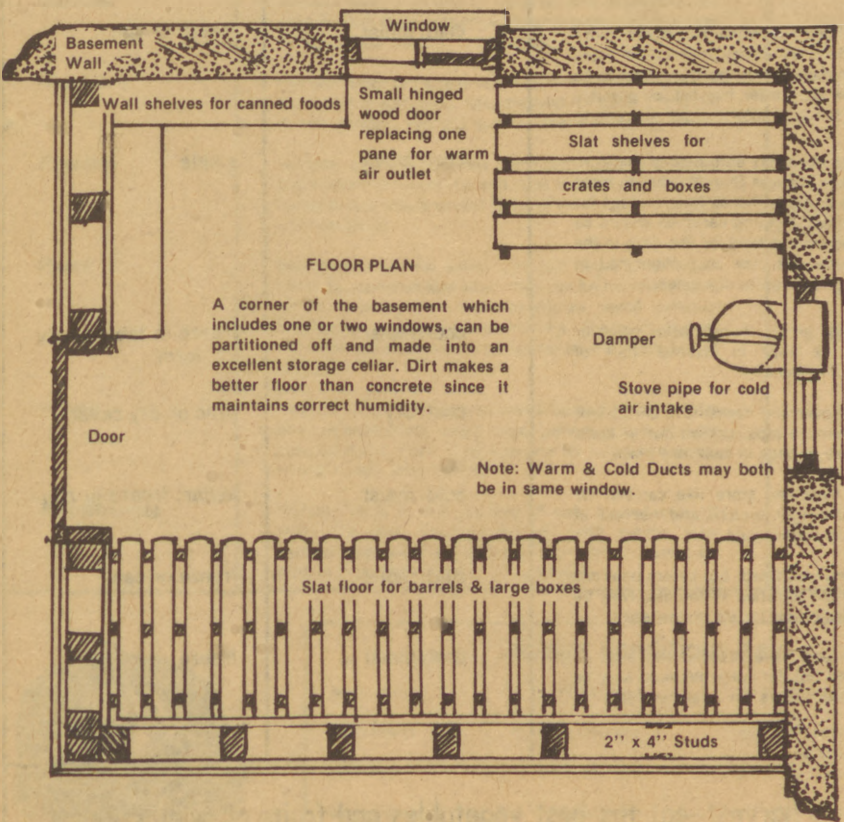
The key to the Bilby's root cellar is the banking of the cellar into a hillside so that steady underground temperatures moderate the temperatures in the cellar. Charles Bilby put insulated doors on the root cellar, one opening out and one opening in, to insure a tight seal.

The Bilby's have become so fond of fresh-tasting root crops, that they have one more preservation step between root cellar and table. The house cellar has a cooling chamber in one corner which has an outside vent to maintain the fleshiness of all their crops up to the moment of cooking. Baskets can be brought from the root cellar to the house cellar and held there while the fresh roots are consumed. Since their root cellar helps the Bilby's extend their fresh food season, they have become the envy of the doubting community. □



Inside the Bilby's handsome root cellar, there's plenty of space for crates and bushel baskets.

Build a Basement Root Cellar



Gathering In The Harvest:

Vegetable or Fruit	Harvest Method and Holding Time	Storage Conditions	Processing Methods
Asparagus	Harvest in third year when spears are over six inches tall and pencil thick, and while head is still tight. Harvest only for six to eight weeks. Store up to one week in refrigerator.	cold / moist	freeze
Beans, Green	Before pod is full size, when seeds are about one-quarter full size. Bush beans yield one harvest. Pole beans, if snapped just below stem-end, will yield continuous harvest. Store up to one week in perforated plastic bag in refrigerator.	cool / moist	can or freeze
Beets	Harvest for greens and beetlets at one inch diameter. Main crop at two to three inches. Spring beets before hot weather. Fall beets before freeze. Wash beets, snip tops to within ½ inch. Store in refrigerator or in cold, damp cellar for up to four months.	cold / moist	can or freeze
Broccoli	Before dark green blossom heads begin to open. Second, smaller florets will follow. Harvest before hard frost. Store up to one week in refrigerator.	cold / moist	freeze
Brussels Sprouts	Harvest from bottom of plant, working up as sprouts mature. Pull leaves just above harvested sprouts to boost size of next higher-up crop. Pick when sprouts are firm, before they yellow, about ¾ to one inch diameter. Harvest prior to hard freeze. Store up to one week in refrigerator.	cold / moist	freeze
Cabbage	Harvest when heads are solid. Store in refrigerator or in cold, damp cellar for up to two months.	cold / moist	cellar or pickle
Carrots	Harvest spring carrots before hot weather. Fall carrots before freeze, unless they are heavily mulched to stay in place through the winter. Pick before they exceed one to one-and-one-half inches in diameter at the top. Wash, trim tops to within ½ inch, store as beets.	cold / moist	cellar, can or freeze
Cauliflower	Tie tops over (blanch) two inch florets to keep them white. (Not necessary for purple heads.) Harvest before freeze, and before florets are discolored or too full, usually about two weeks after blanching. Store in refrigerator up to two weeks.	cold / moist	freeze
Corn	When kernels are all filled out, when milk oozes from a thumbnail puncture. Silks will be dry at this time. Store for no more than two days in refrigerator. Should be eaten or processed as soon after harvest as possible (out of the field, into the pot) before sugar converts to starch.	cold / moist	freeze or can
Cucumbers	Harvest (with piece of stem on) before they begin to turn yellow, when seeds are less than ½ size. In most cases size will be five to eight inches long (except for smaller pickling varieties). Pickling varieties should be cooled in ice water and may be held for two days in the refrigerator. Eating varieties may be refrigerated in warmest part of refrigerator up to one week.	cool / moist	pickle
Eggplant	When fruits are almost grown, before color pales or becomes dull. Can be kept in warmer part of refrigerator for up to one week.	cool / moist	freeze in table-ready form
Onions	When tops have fallen over and necks have shrivelled, before heavy frost. Remove tops, spread out in dark, dry place to cure. Store in bags in cool, dry place.	cool / dry	attic or dry cellar
Parsnips	Harvest after heavy frost and store like carrots. Or leave in ground (under light mulch) and harvest in spring after top growth starts again.	cold / moist	cellar, freeze or can
Peas	When pods are firm and well filled, but before peas are full sized, in the morning to retain sweetness. May be stored in shells in refrigerator for up to one week.	cold / moist	freeze or can
Peppers	When fruits are firm and have reached full size, or When they have turned red, for spicy peppers. May be held for up to three weeks in warmer part of refrigerator.	cool / moist	freeze

Gather the best of the crop at harvest—eat the best vegetables and fruits all winter.

Safe Keeping For Your Crops

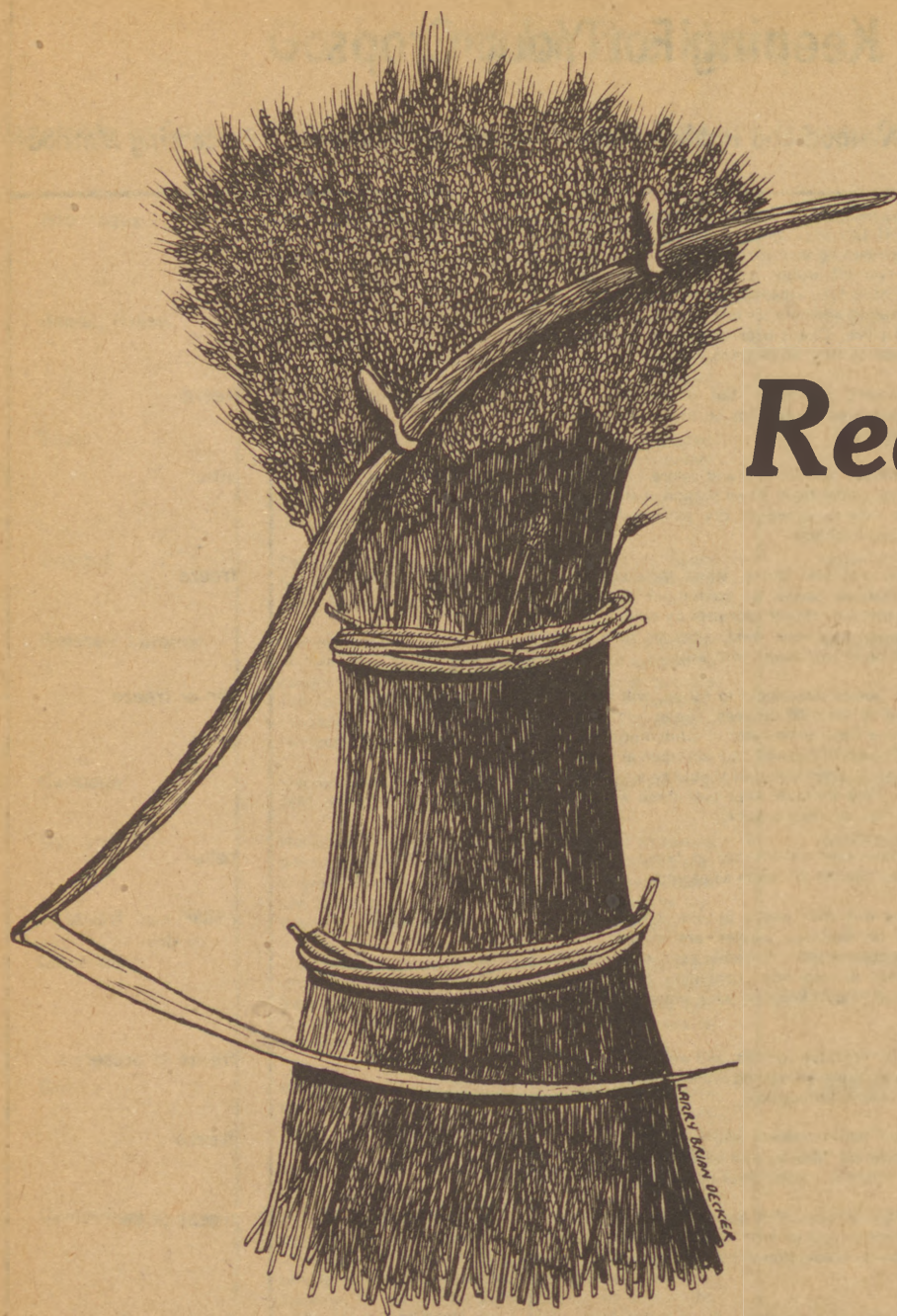
Vegetable or Fruit	Harvest Method and Holding Time	Storage Conditions	Processing Methods
Potatoes	When tubers are desired size or when tops are yellowed and have died off. Leaving in ground past this point will encourage over-ripening and spoilage. Skin on unripe potatoes will rub off easily with fingers. Storage potatoes must have fully ripened. Avoid exposing to light. Wash potatoes and cure for one week in shaded, well-ventilated place. Check over and store in cool, damp, dark place (around 40 degrees is ideal).	cold / moist	cellar
Summer Squash	When fruit is young and tender, but before they are eight inches long. Can be held for up to one week in refrigerator	cold / moist	freeze
Winter Squash & Pumpkins	When well matured, skin is hard and colors are dark and rich. Harvest before frost. Keep portion of stem on fruit. Store on shelves in warm, dry place with air circulation around each one.	warm / dry	attic
Spinach	Harvest leaves, and leaf stems, when they are of desired size. Harvest leaves for continuous supply. Harvest whole plant for slower regrowth by cutting off several inches above ground level. May be held in refrigerator for up to two weeks (will wilt).	cold / moist	freeze
Tomatoes	Ripe tomatoes, before they begin to soften, will keep for up to a week at 45 to 50 degrees. Green tomatoes (harvested before frost when color is whitening) will keep between 55 and 70 degrees and will ripen at 65 to 70 degrees. Mature green tomatoes should be wrapped in newspaper if they are to be kept over three weeks, and should be checked once a week.	cool / moist	can or freeze
Turnips	Can be harvested after light freeze at two to three inches diameter. Handle the same as carrots.	cold / moist	cellar
Apples	Harvest keepers with their stems, at time of ripeness. Green apples or over-ripe apples are subject to disorders and deterioration. Handle very carefully. Keepers will hold in cold / moist conditions for up to eight months. For longest keeping, wrap individually in paper.	cold / moist	cellar, can, freeze or dry
Berries	Harvest when firm and full colored, and when they fall readily from stem. Wash gently and drain. May be kept for up to one week in refrigerator.	cool / moist	freeze or preserve
Melons	Harvest when full size is reached, when rind is hard but stem spot is softening. May be held for up to one week in refrigerator. Process quickly after harvesting.	cool / dry	freeze
Peaches	Harvest when yellow-rosy, firm and full sized. Don't pull fruits from stem--tip and twist fruit off. Can be held for up to two weeks in cool cellar or refrigerator. Handle very carefully.	cool / moist	freeze or can
Pears	Harvest before ripe, when skins just begin to turn pale green to yellowish and when they can be removed fairly easily from the tree. Store as apples, some varieties holding as long as several months. Ripen in humid, room-temperature surroundings for several days before using.	cold / moist	cellar, can or dry
Plums	Harvest when color is rich and bloomed (dusty white) and just before they begin to get generally soft. Handle very carefully. Hold in refrigerator for up to one week. Process soon after harvest.	cold / moist	can or preserve
Strawberries	Harvest early in the morning. Twist, do not pull off stem. To save vitamins--harvest with stems, then destem after washing. Process soon after harvest. Or hold in refrigerator for up to one week.	cool / moist	freeze or preserve



Storage Conditions Key

cold / moist	32 to 40 degrees	90 to 95 percent humidity
cool / moist	45 to 50 degrees	80 to 90 percent humidity
cool / dry	45 to 55 degrees	50 to 60 percent humidity
warm / dry	55 to 60 degrees	60 to 70 percent humidity
warm / moist	55 to 60 degrees	80 to 85 percent humidity





Reap What

great-grandfather could feed his family and livestock off the land, and he had no fancy machines to help.

The scythe is the farmsteader's ideal tool for cutting grain. This is a two-piece instrument with a long curved handle and a blade. There are two types of blade--a long thin one for grain or grass, and a short thick one for heavy weeds. The handle has two adjustable hand grips. To adjust, turn left to loosen. Move the handle to the proper height for you, then turn it right to tighten it in place. These grips should be set so the blade will travel level with the ground and two inches above it when in use.

To use a scythe, take the hand grip nearer the end of the handle in the left hand, the other in the right. Take a short step forward with the left foot and bring the right hand back beside the right leg. Slowly step forward with the right foot, at the same time bringing the right hand forward and across the front.

If everything went right, a strip of grain a foot wide by four feet long will be evenly cut. However, mastery of a scythe is not easy, and most of us must practice. Step, swing right and back, step, swing left to cut. Do this over and over until a rhythm is developed. Once learned, it is one of the more pleasant jobs around the farmstead.

A scythe is sharpened with a special stone which any good hardware store can supply. Stand the end of the handle on the ground, blade up and pointing to the front. Stroke the stone along the blade for its entire length on alternate sides.

by Bill Bateman

Now that you have planted, cared for and prayed over that small plot of grain, how do you harvest it? No use asking the farmer across the road. His combine could not turn around without trampling half of that acre into the ground. The nearest binder is five miles away, and has steel wheels. By the time the owner moved it, cut your grain and went home, you would owe him for a

Bill Bateman writes frequently about tools for Farmstead. He works with stone and the land in Barrie, Ontario. Illustrations by Larry Decker

full day. Much cheaper to buy the grain.

Whether you planted the grain to use as cereal, flour or as a coffee substitute for yourself, or to put a few extra pounds on that hog or steer, the idea was to save money. No use blowing all that thrift on harvesting, and it must be harvested to be of any use.

But don't despair if you cannot rent or hire machinery to do the job. You already have the most perfect machine ever invented--you. Add a few hand tools which you can make or buy, a bit of elbow grease, the knowledge I plan to share with you, and you can do the job. After all, your

You Sow

Once cut the grain needs to be made into sheaves so it is easier to handle. The initial step is to get it into manageable quantities. These are piles which when tied will make into a sheaf about the size of a stove pipe around, and as long as the grain is high. Naturally, all the heads point one way.

Small amounts may be easily handled with a garden rake or a stable fork. Large quantities might better be handled with an easily made wooden rake. Our great-grandfathers worked all their hay and grain with this simple tool.

To make a rake that will last for years, requires the use of only simple tools and material. Two pieces of one by two lumber, one of them two feet long and one six feet long, form the head and the handle. Join in the form of a "T" using a couple of stove bolts. In the head, drill three-eighths-inch holes at four inch intervals. Into these insert six-inch pieces of hardwood dowel, securing with finishing nails. Drill pilot holes to avoid splitting. Wood or twisted wire may be used to brace from the ends of the head to the handle.

Once the grain is in piles of the proper size it can be tied. Most contemporary farmsteaders use baling twine to tie the bundles. Our great-grandfathers were skilled enough to use pieces of straw to tie the bundles, but this craft is often difficult to learn. If you choose to use twine, it may be binder twine bought in a farm supply store by the ball, or the twine saved from last year's bales of straw or hay. Either does an equally good job.

When using twine, pass it under the bundle and bring the end back up on top. Make a half hitch with this end around the long part. Pull on the long part until it draws the bundle tight. Using the long part make a half hitch around the short end, and cut off. This knot will not loosen, and the twine must be cut when the sheaf is to be undone. It is very simple and is called a packing knot. If for some reason you don't understand how it is done, ask your butcher. He uses it all the time to tie roasts.

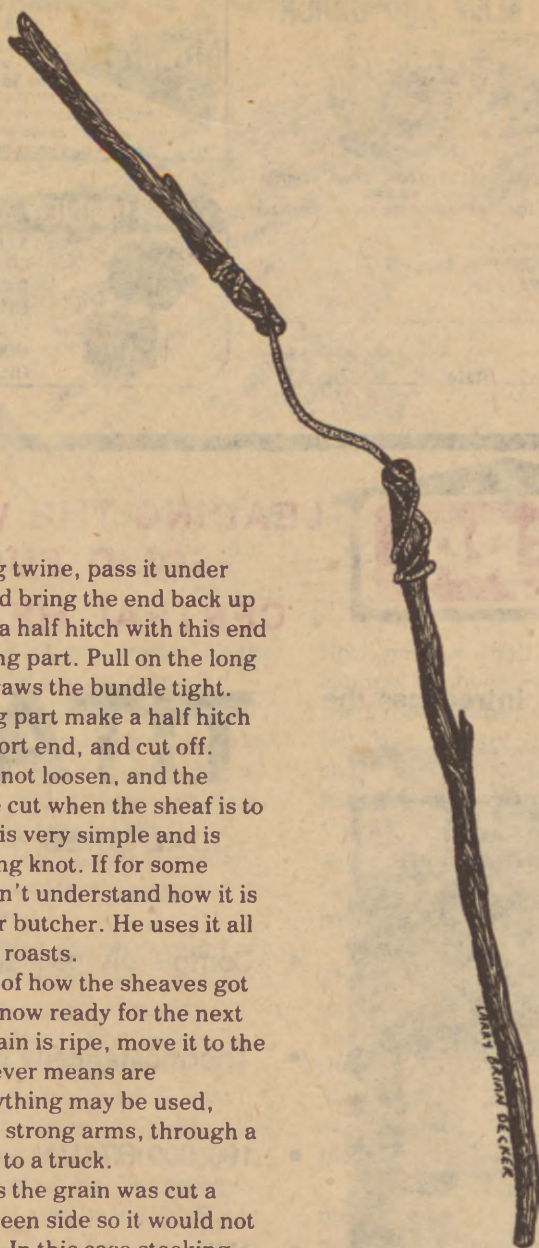
Regardless of how the sheaves got tied, they are now ready for the next step. If the grain is ripe, move it to the barn by whatever means are available. Anything may be used, from your two strong arms, through a wheelbarrow, to a truck.

But perhaps the grain was cut a little on the green side so it would not shell so badly. In this case stooking for a few days will let it ripen in the sheaf. Do not put it in the barn green or it could heat and set the barn afire. Stooking is simply standing up two sheaves so they lean against and support each other. Put two more at one end so they support each other and lean slightly against the first two. Two more at the other end, and there is a simple stook.

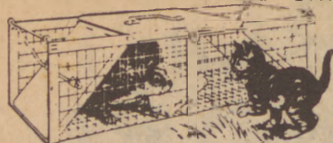
In the event of a storm before the stooked grain makes it to the barn, check the stooks as soon as possible for damage. Any down sheaves should be stood up. If they were soaked thoroughly through, let the outside dry and then lay that side down on the stubble to let the inner sides dry. Do not let the grain stay wet since it will mildew and not be usable.

Now is a good time to tell you about another simple harvest tool that has been in use since biblical times. It is called a flail. Basically it is a hand-made, hand-operated, tool for separating ripened grains, beans, or peas, from the plants on which they grew. This makes it very handy around a small holding.

A very serviceable flail may be made in a couple of hours with available tools and materials. Even if the only time it is used is once a year to shell a few peas for winter use, it will be well worth the making. The wooden parts are a piece of cedar sapling four feet long by one inch diameter for the handle, and a piece of hardwood one inch in diameter by



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two feet long for the beater. Fasten the two pieces together with a leather thong. The only maintenance is a bit of neatsfoot oil on the thong once a year to keep it limber.

To use a flail, spread the material to be threshed on a clean floor in the barn or garage. If this is not possible or practical, spread a canvas tarp on level ground. Grasp the handle of the flail and swing it behind, overhead, and bring the short piece down horizontally on the grain. Repeat until all the grain has been separated from the stalks. Next the straw and chaff must be removed, leaving only the grain. The larger pieces may be removed with a fork, shaking each forkful to remove all grain. Now comes the removal of the chaff, or small pieces of waste. Those of you who have access to a fanning mill have it made. However, most of us must resort to the time honoured art of winnowing.

Very simply put, winnowing means dropping the grain and chaff from a high point, or tossing it into the air, while a stiff breeze is blowing. The chaff, being quite light, is blown away while the heavier grain falls onto a tarp below. My favorite method of winnowing is to place a tarp on the ground under an upstairs door in the barn. Since the flailing has already been done on this upper floor the material is close by, thus saving time and effort.

Making sure the wind is blowing across the doorway, I gently dribble the grain and chaff off the corner of a scoop shovel. With any luck at all the ten foot drop gives the wind time to blow away all the chaff. Learn to judge how fast or slow to dribble in order to take best advantage of wind speed.

Ripe beans or peas may be handled in the same way as grain, and stored dry for winter use. They are the basics for many a mouth-watering, stick-to-the-ribs, cold weather meal.

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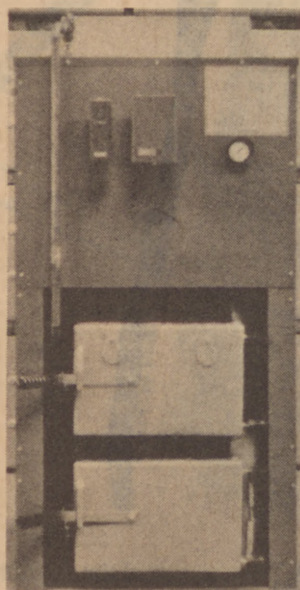


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Perennial Cooking Herbs

by Madeleine H. Siegler

Perennials are the solid core on which we build our herb gardens. Each spring we round out the form with the addition of useful annuals, but it is the faithful old standbys that sleep blissfully through any sort of winter and come up smiling in the spring, that gladden the herb gardener's heart.

Among the dozens of perennial herbs in my garden are a half dozen important culinary herbs. Our food would be flat indeed without chives and other useful alliums--lovage, sage, winter savory, tarragon and thyme in many varieties. Salad burnet, French sorrel, Good King Henry and the many mints are other useful culinaries, but we will save those for another time.

My dictionary defines a perennial plant as "one with roots that will live two years or more." Here we have to accept the hard fact of life that while some plants may be listed as perennial, they may not last for more than two or three years, especially in cold northern climates. It has been my experience that the perennial herbs that die back to the ground in the fall and have deep roots, such as lovage, tarragon, chives and other alliums, are longer lived than the bushy herbs that tend to stay partially green all winter, such as thyme, winter savory and sage. Younger plants of this last group survive winter better than older more woody specimens.

This past winter with no snow cover and sharply shifting temperatures was a hard one for perennial herbs. With spring came the sure emergence of lush spears of chives and Egyptian onions, the purple sheath of unfolding green leaves of lovage, and the narrow, lighter green leaves on emerging shoots of French tarragon. Old sage plants stood gray and sere, both the English thyme and lemon thymes were only bundles of wiry sticks; older plants of winter savory were totally dead back to the ground.

Madeleine H. Siegler raises herbs on her herb farm and lives and writes in Readfield, Maine.

Herb illustrations by Pamela Carroll.



Chives

All this winter kill occurred in all the gardens, nor did it seem to matter whether the beds had been mulched or left bare. But summer is no time for mourning past losses, and surely we will never see such a winter again for a long time. It is true that the perennials I lost were only the older plants of each variety; the younger ones all survived.

Chives [*Allium schoenoprasum*] are probably the best known and surely the most often neglected perennial culinary herb. If you inherited a clump when you bought the farm, it may be overgrown with witchgrass and perhaps never gets your attention except when it puts forth its purple blossoms in early June. The oniony flavored spears may be too spindly to be worth picking.

If you enjoy the refreshing combination of chives in cottage cheese or in cream cheese, or any of the many other uses for this herb, why not revive your tired clump? Chives are heavy feeders and one of the few herbs which are only at their best if given a good annual feeding. Thicker spears and more of them will be your reward for this small effort.

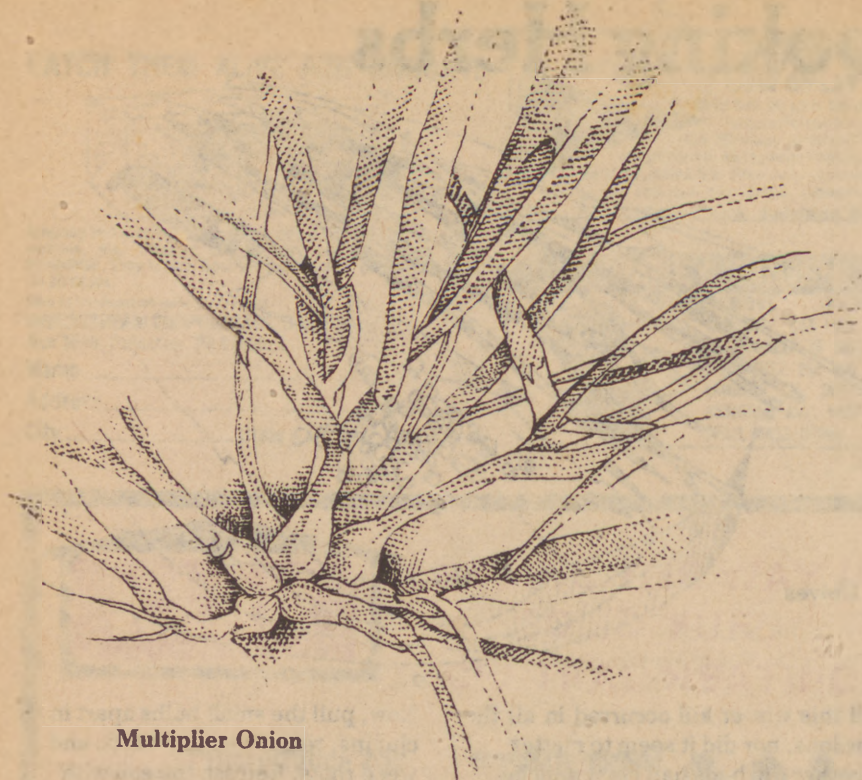
Spring would be the best time to clean out and renew the chives, but if you didn't get to it in the spring, any time of year will do. Have some fertilizer at hand. Old cow manure and bone meal will do nicely. Dig deeply and remove the entire clump from the ground. If you are performing this operation when the top growth is tall and scraggly, cut it all back to six inches before digging.

Now, pull the small bulbs apart in clumps, remove all the weeds and weed roots. Refresh the soil with fertilizer and replant about half of the clusters of bulbs. Make some new friends by giving away the surplus. You will find new growth on the sheared pieces within days, and in the future that patch of chives will not be something to ignore.

Chives are easy to start from seed. The first year growth will be small and grass-like and not ready for harvest. Since so many people have those overgrown clumps such as we just divided, it is rarely necessary to start with seed. If blossoms remain on plants they will scatter seed freely.

Those purple-pink flowers dry nicely if picked when only half open and hung in bunches. Fresh flowers are a culinary delight. They have a mild onion flavor and are fun to scatter on top of salads or sliced tomatoes. Take just one flower and pull the small florets apart.

Pound for pound, dried chives are one of the highest priced items in the markets, so aren't you glad you rescued yours? Harvest chives as soon as they reach full growth by cutting to within six inches of the ground. Dry them by snipping finely with shears onto a cookie sheet and putting into an oven heated to 200 degrees and then turned off. After half an hour on stored heat, remove them, reheat the oven and again turn off, toss the chives and return to the oven. By the end of the second drying period, they should be crispy dry and may be stored in a covered container



Multiplier Onion

for use all year. Yours will have far more flavor and aroma than the chives you buy in the market.

Old growth on chives tends to get limp and yellow. If you neglected to harvest the first growth, simply cut back and discard the tired tops and enjoy fresh new growth in a matter of days.

It is necessary to allow chives a dormant period, so if you would like fresh chives in the house in the winter, pot a clump in the fall, and leave outside where it can freeze but still be accessible when the snow is deep. After Christmas is a good time to bring the frozen pot inside. Let it thaw, and within twenty four hours, green shoots will emerge.

Another member of the allium family worth knowing is garlic chives or Chinese chives [*A. tuberosum*]. Equally hardy and growing from tiny bulbs as do all the alliums, the flat strap leaves of garlic chives taste like--you guessed it, garlic. Not overwhelming, but subtle. Very nice to add to salads or dips.

Young plants resemble their cousin the chives. By their third year the garlic chive leaves are flat, slightly thick, and slightly more than ¼ inch wide. The leaves will grow to ten or twelve inches and may be snipped as needed. I have not tried to dry this one, but see no reason why they would not dry using the same method as for chives.

Garlic chives flower in late summer with a large showy white cluster which is very fragrant. The fresh flowers do not seem to dry well, but the seed pods add interest to dried arrangements. If the seeds are allowed to remain, they will self-sow freely.

The Comical Multiplier Onion

Another perennial herb of the onion family with great merit, is *A. cepa viviparum*. It is called Egyptian onion or top multiplier. There will always be an onion at the cook's disposal when this onion is in the garden. The bulb, which is deeply rooted, is less than two inches in diameter but large enough to use as a slicing onion. The leaves are hollow stalks which in early spring can serve as green onion tops, so useful in cooking.

By early June, the plants have each developed one or two shoots with sheaths at their tips. These are the fruiting tips from which will emerge the quite comical part of this multiplier onion. No flower emerges, instead, a small bunch of onions appear at the end of the three foot stalk. They are marble size, require no peeling and are very useful in salads or for pickling. Picked at this stage, they may be planted to increase your supply of plants. This

isn't necessary, because if the onion clusters are left alone they will put forth more stalks and more tiny onions. By this time the onion patch resembles a scene from fantasia as the tall stalks of onions wave in the breeze. The weight of all this production causes the stems to arch until they touch the ground where the new onions promptly nestle down and root themselves. Multiply? Quicker than rabbits.

I maintain a row of Egyptian onions at the far end of the vegetable garden from which I can dig small onions for slicing, pick tiny onions for salads, and green tops for Oriental cooking. A friend who makes gallons of bread and butter pickles each year uses her top multipliers for this purpose, thus cutting the cost of the pickles considerably. The ultimate growth of the plant makes it too large for the small herb garden, although I keep one in mine only to observe its antics at close hand.

French tarragon [*Artemisia dracunculus*] is without doubt the most highly prized of the perennial cooking herbs. Within the past decade it also has become one of the most misrepresented in seed catalogs and among many greenhouse growers. True tarragon with its biting sharp taste, its affinity for fish and fowl cookery, its long association with good herb vinegar, is a sterile plant. It does not set viable seed.

Many major seed companies insist on listing tarragon seed. What they offer is an inferior variety of the specie, *A. redowski*, or Russian tarragon. This is quite unlike the true tarragon both in flavor and appearance. The demand for herb seedlings has caused the greenhouse growers to increase their supply of herb plants, and they are offering tarragon along with sage, savory and majoram. They have no intention of fraud, but just as the herb specialist may not know the vagaries of petunia and tomato culture, how should the greenhouse operator know that if sage is sage, tarragon is not always tarragon? Consequently, many beginners at herb growing have found lush pots labelled "tarragon," and grown plants that failed their expectations of tarragon. Fie on seed companies who do not qualify their descriptions by saying of the *A. redowski*, "this is not true tarragon."

All French tarragon plants are propagated by root division or stem cuttings, and root divisions are the best. Start with the largest root division you can find, and give it a place of honor in the garden. It wants full sun, good drainage, and no competition from other plant roots. Soil enriched with good compost or a light application of commercial fertilizer will produce the best plants. Tarragon roots will grow thick and go deep, so prepare the ground as though you were planting a shrub. In two or three years time you will have a planting of tarragon of which you can be proud.

Harvesting can begin the first year as soon as the plants are twelve inches. A second harvest may be taken in the fall. This is one perennial herb not harmed by being cut to the ground in the fall.

I have dried tarragon by the time honored method of bunching and hanging, and found the results to be good. Some growers insist that much flavor is lost this way, and prefer to snip fresh tarragon leaves into an ice cube tray of water. This is frozen and the resulting tarragon cubes are placed in a bag in the freezer to add fresh piquancy to seafood and sauces.

You will notice there is no characteristic aroma in fresh tarragon; it is only present in the dry product. The flavor of the fresh leaf is luscious. Munch one and notice the warm, slightly licorice tang, and also the slight numbing sensation it causes. This is nothing to cause alarm, only one of the attributes of true tarragon.

Since much of the tarragon available in the market is imported from countries engaged in political upheaval, it behooves a good cook to grow a supply of this important herb.

Sage [*Salvia officinalis*] is a perennial favorite, popular with cooks and tea drinkers. Easy from seed, the fat round seeds germinate in 14 days. The first true leaves are easily recognized by their characteristic pebbly texture and aroma. The plant becomes woody in its second year, and is a shrub of 18 inches in its third year. While sage is a true perennial, it is not as long-lived as tarragon. Older plants are very woody and prone to winter kill. Top growth on all sages may look very dead in April. Do not be hasty in removing them. New growth may be apparent by May, and you can prune back the dead tops and rejoice.



French Tarragon

Dark blue flower spikes, one of the handsomest of the herb flowers, appear in July. With a large planting of sage, it is possible to leave one plant for its flowers and procure your ample harvest from the others. The first harvest may be leafy stems only six inches long, while later cuttings will be twice that length. Remember when harvesting to take no more than two-thirds of the growth, leaving the rest to renew the plant.

It seems to be an oft-repeated rule for sage to send it into winter with "a full head of hair." In other words, it is not wise to take all the leaves on the theory that if you don't take them the frost will. The plant needs those leaves to help it get through the winter.

Sage has many uses in the kitchen beyond poultry seasoning. Try a bit rubbed on pan fried liver. We find it changes the strong flavor into something delectable. Sprinkle sage on oven fried chicken. Try it on oven-browned potatoes, and remember it makes a fine cup of tea, either plain or combined with mint. Use your sage and recall the old adage, "if a man eat sage he will live forever."

Love That Lovage

Lovage [*Levisticum officinalis*] is one perennial herb you must grow for yourself if you would know its virtues. It is never seen in the markets. Widely known and appreciated abroad, lovage as a culinary is a

stranger to this country. The leaves resemble celery and have a strong celery taste when fresh. Dried lovage retains its celery taste but takes on a much richer aroma and flavor with overtones of yeast.

This long-lived perennial will be one of the first to emerge in the spring. By mid-April, the dark purple sheaths are visible. They unfurl into bright green divided leaves. The plant grows quickly, and by June may be two feet tall. A mature plant will send up several stalks from one root, which is large and fleshy. Growth will continue until the plant reaches six feet, but most of the remainder will be flowering stalks.

The best harvest is made in June. When the taller stalks begin to flower the lower leaves will yellow. If you have lovage and did not harvest early, look for new green growth at the base of the plant in early fall and take that.

I dry lovage as I do parsley and chives, using the 200 degree oven. The results are good green bits of leaves that have many uses. We add dry lovage to all soups and stews, to spaghetti sauce and chili con carne, even to fish chowder. Fresh lovage leaves, with their strong celery flavor, are at home in potato salad or any green salad.

Lovage has a very large fleshy root which will generate more shoots than your space may allow. A mature plant may be dug in early spring and the root sliced into pieces. Replant one or two pieces in its original home

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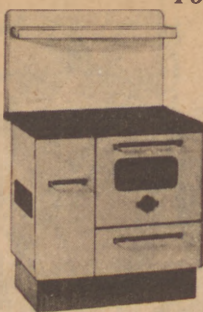


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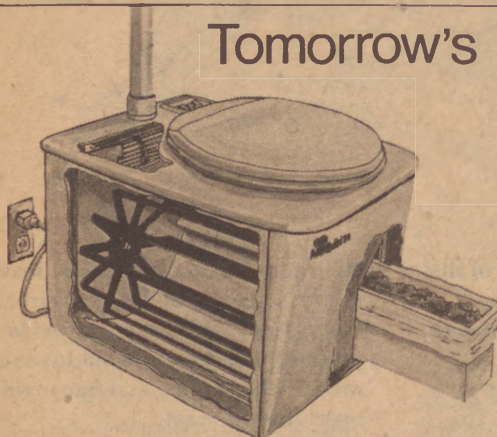


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Thyme, [*Thymus vulgaris*] is a familiar herb to all cooks. It is one we all reach for when making pea soup, and seems to be the overwhelming flavor in that New England alien known as "Manhattan clam chowder." Herb and spice racks in the stores offer but one thyme; in the herb garden there can be dozens.

Thymus vulgaris is a springy little bush that will grow to about twelve inches. It has wiry branches and small rounded leaves usually red on the underside. This is more noticeable on young plants. The plant is considered to be perennial here, but my own experience has been that it is one of the first to succumb during a difficult winter. The plants should be properly mulched after the ground has frozen, and the mulch must not be removed until April's bitter wind stops blowing.

When searching out your thyme plants or seed for the garden, you may be overwhelmed by the varieties offered. Seed catalogs may list English, French or German thyme. They are all varieties of *Thymus vulgaris*, all equally good, differing slightly in leaf structure and flavor. Herb plant catalogs may list these plus lemon thyme and dozens of different creeping thymes. The lemon thyme is a very desirable cooking variety, while all but one of the creepers are designated for landscaping purposes.

Lemon thyme [*T. Vulgaris citriodorus*] is well worth locating and growing. It is a logical choice in cooking any kind of fish, since it tastes of both lemon and thyme. Actually, I use it in most of the recipes calling for thyme. We like that extra zing of the lemon. There are two varieties: the plain green-leaved and the golden leaved. They appear to be equally well-flavored and more important, equally hardy. To my knowledge, there is no seed available for the lemon thymes.

Just one more thyme on the list of culinaries is caraway thyme [*T. herba barona*]. It is said that its Latin name came from its original cooking use, seasoning a whole baron of beef. I have never roasted a baron of beef, but use caraway thyme in all beef cookery. It is a very attractive creeping variety with arching stems that may reach six inches. It may be

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used as a creeper among rocks or as an edging plant in the herb garden. Wherever you place it, you will enjoy its heavy fragrance of caraway and attractive purple blossoms. It is very hardy, and spreads quickly.

Patience is necessary to grow thymes from seed. The seed is small and so are the seedlings. However, a good crop can be gotten in one season. A full grown plant of any upright thyme may be increased by layering the outside branches. Lay them flat and cover with soil; new roots will form on the stems and then the stem may be cut from the mother plant and the new plant relocated. With creeping thymes, nothing is necessary except providing a gritty surface and bare ground for the plant to creep onto. Its branches easily root to make new plants or to lie undisturbed.

Winter savory [*Satureya montana*] is one of the handsomest cooking herbs. A mature plant may be twelve inches tall and has a graceful fountain of wiry branches. The leaves are quite long and narrow and very glossy. They have the same strong aroma of summer savory and a slightly stronger flavor. In late summer, numerous tiny white flowers appear.

Even though I grow quantities of summer savory to harvest for cooking purposes, I would not be without the perennial variety for its quite different and very attractive appearance. It is equally useful in cooking and is a good choice for herb gardeners who prefer as many perennials as possible.

Savory is the herb we discussed here before as having an affinity for all sorts of beans, and this winter hardy variety is equally good, though a bit less should be used as it is stronger flavored. Because it is such an attractive plant, it is a good choice for a rock garden.

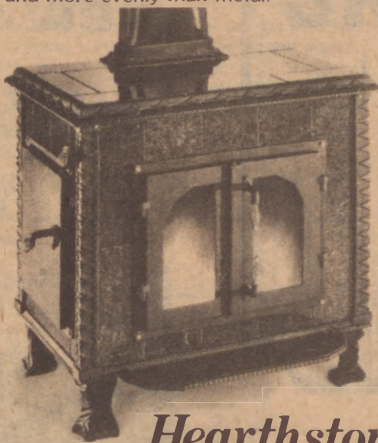
Harvest both the thyme and winter savory before the flowers appear for best flavor. Both these herbs have small leaves and will have short branches even when fully grown. While they may be bunched and hung for drying, I find it is easier to use a screen elevated over a flat surface. In a warm well-ventilated room, the leaves will be crispy dry in ten days.

Another convenient way to dry a small amount of small leafed herbs is to lay them on a cookie sheet and place on top of the refrigerator where warm air is always escaping from the condenser unit. ☐

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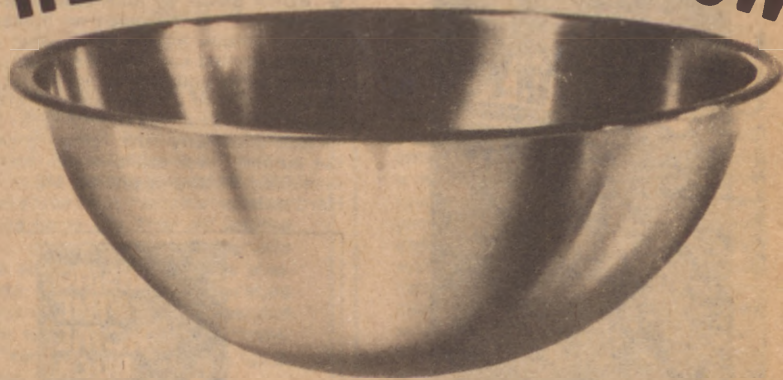
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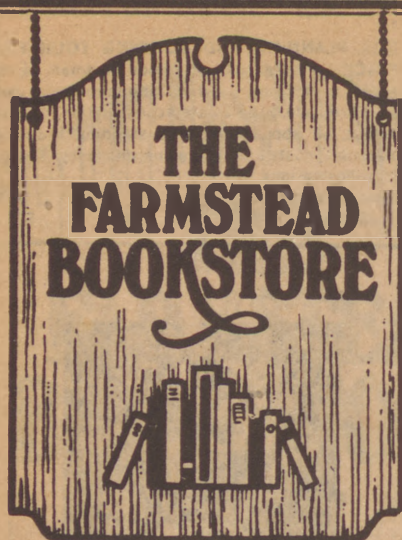
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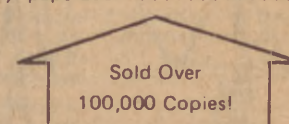
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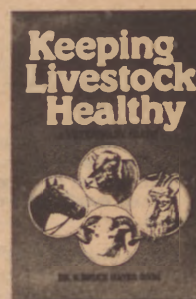
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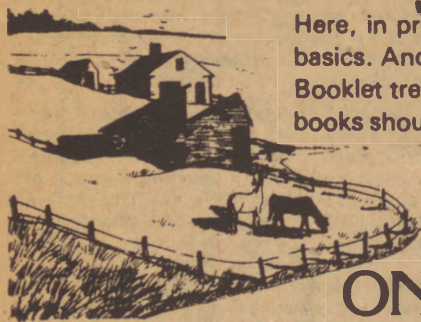
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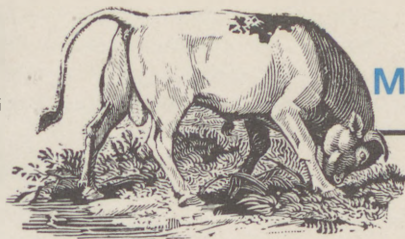
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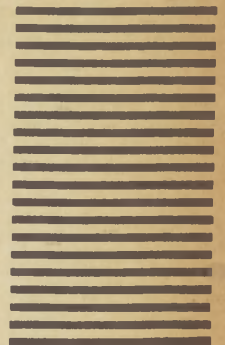
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If You Decide to Buy

by Rose M. Hoover

Deciding to keep a family cow should be considered a major decision. Not all people can handle it. The constant chores and the smells turn some people off, while others revel in it. And having a family cow can be a long term investment. Unlike the cows in a commercial dairy, the family cow can be given extra attention, and she is not being pushed constantly to her limits to produce many calves and abundant milk. We had one Guernsey cow in our family for 33 years, another Jersey for 25 years, and her daughter, a Holstein/Jersey cross, for 17 years.

The best way to help you decide whether or not to own a cow, is to find a friendly farmer (your county farm agent can recommend a few) and ask if you can tag along morning and night for chores in the barn for one week. Please leave the kids at home, however. Since you will be taking up the farmer's time and probably getting in his way a lot, offer to help free of charge. Tell him or her you would like to watch the first day to see what and how things are done. Then gradually work yourself into the simpler chores. Remember to be there morning and night everyday, since that is the tight schedule your own cow will demand of you.

It would be best if you could choose a small farmer, as the set-up will be more like your own and less automated than the larger farmer. He will certainly have a milking machine and a barn cleaner which you may not have at first, but most of the rest of the work will be manual. This will also show you the value of having a milking machine if at all possible, and it's not impossible for even just a cow or two.

Rose M. Hoover raises and cares for her cows in Dallas, Pennsylvania.

Illustrations by Gene Matras.

I have had as many as forty-two head of cows at one time, but now I am only milking two or three cows and raising dairy herd replacements for other farmers. I prefer using a milker if only because of the cleanliness accomplished. There is no way for you to keep out the falling body dandruff and hairs when hand milking in a bucket.

Used milking machines are easily bought at farm dispersals, and age doesn't seem to matter too much. Stainless steel lasts forever, and the rubber parts are readily available. The milker I am using everyday is about thirty years old and still working well.

Yet, bucket milking was how I started, due to no electricity, and a lot of you will also start this way. A stainless steel bucket and strainer are your best buy as it will last a lifetime, withstanding the meanest cow kick or any acid cleaner you may use. Most other metals and plastic will react with the milk, and there will be a milkstone build-up on the utensils, which only an acid cleaner will remove. Agate ware is dangerous to use since it will chip when bumped or kicked. For some reason, I've found that milk will cling more to plastic or galvanized buckets. I have been using my present stainless steel buckets for 17 years, and they still look as new as the day I bought them.

If you survive the week of chores at the farm and find you enjoyed it, then it's time to start deciding what you intend to get from your cow. Do you want a cow for low-fat, high solids milk in abundance and for cheese making, or do you want the richer high-fat milk and pounds of butter gracing your table? Are you planning to raise cows for your own meat supply?

The answers to these questions should tell you the breed of cow to look for. Holsteins and Brown Swiss are high producers, heavy eaters and have the low fat milk good for cheese.



a Cow

They will generally test about three to four percent butterfat. The richest milk comes from the smaller breeds, Jerseys and Guernseys. They eat less, produce less, but more than make up for it by having a rich, yellow, buttery milk. Some will have cream on the top of the milk so thick after setting that you can actually cut it with a knife. This is your good butter cow, testing about six or seven percent butterfat and sometimes even higher. Ayrshires fall somewhere in between, while Angus, Hereford and Charolais are raised mainly for meat and not milk, most having only enough milk to feed their offspring.

On the other hand, I have had considerable success with the crosses--Holsteins bred with either of the above three beef breeds or with the little Jersey. The Holstein and Jersey cross gives a good volume of milk usually testing about 5.5 percent. It is recommended that you breed a Holstein cow with a Jersey bull rather than the other way around, since the Jersey's small size can cause calving problems due to the size of the calf. Also if your Holstein is rather small for the breed, she can benefit by a Jersey breeding and having a small calf.

When you crossbreed the Holsteins with the beef breeds, you will always end up with a calf just like the sire but quite often it will also turn out to be a reasonable milker, enough for use as a family cow but with the large beefy body. I have had some very good Holstein/Angus cross milkers, but it usually takes them a year longer to get going.

All the Charolais cows I raised were very aggressive animals except for a Holstein/Charolais cross, but even her offspring were very unruly. They seem better adapted to open range raising. Some heifers were downright mean even though they had the same care as the rest of the animals and were housed in the same pasture and barn. They didn't seem to like people



but wanted total freedom to be rather independent.

Don't Be Fooled By Good Looks

An expert cowman and showman will tell you about the perfect cow and about confirmation and so on but I have been around cows for forty years and have seen hundreds of animals come and go. I have seen all sorts of rules fail when it comes to a good milk cow productionwise. You may someday walk into a farmer's barn and see one ole' scrunched up, misshapen cow the poor owner probably hides down the back end of the barn, wondering why he's keeping her, only to hear him say that she's the best darn cow he's ever had, although he sure wished she looked a little nicer. Looks don't always make the cow.

Right now in my own barn there's a fifteen year old Holstein/Jersey cross that has a humped up back, a pendulous udder, a nose so pointed she's often called 'the anteater' and when she walks out the barn, she don't walk--she sashays out in the darndest sort of wiggle. But she's one of the best. She is a voracious eater but is always skinny--so thin in fact, we call her "Twiggy." When she comes fresh, I have to empty the milker twice or she would overflow the can, and she tests at 5.5 percent butterfat.

But for all of nature's mistakes, Twiggy has one redeeming quality--a special silky, loose skin, fine-haired, wrinkled about the neck and jowels, and so loose from the meat that you can easily lift it up from the muscle beneath. This is the greatest factor that I have found common to all good cows. A fine skin makes a fine milker. Coarse hair, heavy-skinned cows are just that--coarse animals. A lot of animals are somewhere in between, but that silken skin cow you'll find is one of the best and a real lady in temperament.

A Jersey, in my opinion, seems to make the ideal family cow. They act more concerned with people. Holsteins, on the other hand, are more independent and more concerned with eating and making milk. I like a cow I can enjoy and fuss over once in a while. It's the Jersey that will follow you on a walk around the farm and

even her large expressive eyes seem intent on all you do. One Jersey I own named Heidi, loves to accompany me on walks through the woods and fields with my dogs. She runs as free as the dogs, running ahead a little, then returning. When I change direction, only a word or two will bring her following in my footsteps.

Last Fall when doing chores a little early one day, I discovered Vickie, another Jersey, wasn't in the pasture. As I was looking for a hole in the fence, our new neighbor came driving by and stopped to talk. It was then I found out that Vickie had been sneaking away from the rest of the cows, visiting the neighbor's house daily and having a ball with his children fussing over her. At first they petted and played with her in the pasture, but she soon saw where they came from, and one day the Mrs. opened her back door to find Vickie, the Jersey, curled up on the porch stoop, waiting for the children to come out and play.

Whether or not a cow has horns doesn't really make any difference, especially if you buy a mild mannered cow and if you have only the one animal. If you should get more than one animal, they soon decide who is boss and seldom battle to the death. Only once in all the time I've been around cows have I seen two milk cows try to kill each other. I finally had to sell one. Horns on a cow can be their best protection against marauding dogs. Besides, I have never found a painless way to remove them, young or old, and some of the caustics used can be very dangerous to their eyes.

What To Look For

Good sound feet are very important. Foot rot is common in places where the animals have to stand in water or uncleaned stables. It is very easily detected by the stinking odor and sometimes a swelling between the toes or above the hooves.

A good udder is of utmost importance. To me, shape is not as important as length. If a cow's udder hangs too low, she is always kicking it as she walks and stepping on it as she lays down and gets up. Some will tell you that it should be square hung, but I have had a lot of good cows with pendulous udders. No cow should be





chased on a run for that's when the damage is done to a pendulous udder as it flip-flops from side to side.

Check the cow's udder for hard quarters. (There's four quarters, each teat to a quarter.) There's a difference as to what a hard quarter is. It should be checked after milking since it can feel hard with let down milk. Also a cow within a few days of freshening will have a very hard udder, especially if she is being grained heavily. When the udder is empty, it should be soft and a little spongy, more so in the square hung udder than the pendulous. Some cows with pendulous udders will milk out so completely, the udder will feel like empty, folded skin, which it is. Nor is the size of the udder important, as the cow does not store her milk in the udder, but up in the body and releases it into the udder as you milk her. Some cows will start to release their milk as soon as they hear you enter the barn. A cow that is upset or in heat can easily withhold almost all her milk from the udder until she settles down.

Sometimes you may find a cow comes fresh and milks only on three quarters with one quarter dry. We call this a "blind" quarter, and it can

be caused by several things. If heifers are pastured together, one heifer nursing constantly on another heifer can bring the unbred animal into milk prematurely. This most always damages that quarter permanently, either by being blind or by giving a much lesser amount of milk than the rest. Sometimes a cow will be born with a blind quarter. There's no way to know for certain until the cow freshens and milks. If you don't find any infection in the quarter and the udder feels soft and small, it should never be a bother to you or the cow. She will compensate for the off quarter by giving more milk in one of the others.

Some farmers dislike three quartered cows, as it gives an uneven look to the udder and lowers the resale value. Personally, I have seen these cows to be just as good as any other cow, and your cost in buying her should be much lower. In fact, my Jersey, Vickie, has been a three quartered cow ever since she started to milk. There has never been a drop of milk in one hind quarter and never a problem with it. I simply fold the one milker inflation cup over and let the machine milk the other three.

A bad mastitis infection, even though cured, can be the cause of a blind quarter. You can detect this by the feeling of denseness caused by scar tissue. It is best to stay away from buying an animal that has had acute mastitis, as it can flare up again if you don't know what you are doing, and ruin a cow very quickly.

The teats are of great concern when you plan to hand milk. A milking machine can handle all sizes except those of monstrous proportions. If the teats are too short, you may have to finger strip to get the milk. To do this, you must slide the teat between the thumb and forefinger, applying pressure as you slide down to draw out the milk. The best length is about three inches or more so you can grip it with the full hand, squeezing the milk out in large streams. Then you can finish up by finger stripping to get the last drops of milk. The larger the opening of the teat, the larger the stream of milk and the easier the cow will be to milk. On the other hand, a teat can be too large so that you are pinching. Inevitably, the cow will kick to get you to stop hurting her. And speaking of kicking—one trick to avoid a hoof in your lap, is to touch a teat on the other side away from you. If the

fingers are icy cold or the washcloth too hot, startling the animal into a swift kick--she will always kick on the side being touched.

Be Kind and Considerate

I prefer to buy a dry cow, one that is due to freshen in a month or six weeks. This gives her a chance to become acquainted with her new home and with our family. Never buy a cow and turn her directly into the pasture, if you ever hope to see her again. One of my neighbors bought six cows which he let loose into his pasture. He was days traveling the countryside, trying to catch them, and finally ended up having to shoot the last one to get it. I always keep a new cow tied in the barn at least a week. This accomplishes two things. She grows accustomed to her surroundings, knowing that food and care are there. Secondly, she takes on the smell of my barn and animals, so that when she is left out with the rest of the cows, they seldom notice her. A cow knows a strange cow by the new smell, and often this brings on a battle.

Buying a cow just after freshening is risky, especially if you don't get the calf with the cow. The loss of her baby, a new home and owner, different feeds and feeding schedules, all add up to a great deal of stress and trauma. You can end up with a sick cow or at the least, a cow dropping sharply in her milk production for the first year. Once a cow drops on production, it is impossible to bring her back producing the same amount of milk that lactation. Holsteins do seem to adjust easier to change than do Jerseys or Guernseys; these cows seem to be the emotional cows. They attach themselves to their surroundings and owners much stronger than the Holsteins or beef cows. Jerseys especially tend to worry and fuss, so it's worth the time to do all you can to make the new cow feel comfortable and wanted.

As I've said, keep her in the barn and bed her down extra heavy at first. One trick I've learned is to give her a "security blanket" as soon as she arrives. She may be chilled from the truck ride, or may be suffering from a bad case of nerves. An old blanket or quilt thrown over her back gives her a nice warm, comfortable feeling. Remember, this is probably the first time she has ever been moved from a place she called home.

If you attend any sales, keep your eyes on the lookout for an old horse blanket selling cheap. There are cow blankets, but I've seldom seen them sold at farm sales. Most farmers are pinching pennies, and an old quilt or overcoat works just as well. People with a horse or two for the kids usually splurge on a blanket; then it's up for sale when the kids tire of the horses. Pony blankets even work well on the smaller breeds like Jerseys.

Another way to calm and welcome the new animal is to brush her down. It will soothe her and give her a chance to get to know you as you move slowly around her. Speak to her in a soft smooth voice, calling her by name. If she has no name, then give her one. Most farmers name their cows, and the cows do know and respond to names. Animals, like humans, need an identity.

Touch your animals often, especially young stock. I have seen some good cows that feared the touch of a human even though they had never been misused in any way. Being left to themselves in a pasture until they freshened, they were terribly upset when a person tried to milk them for the first time. The more you pet and handle your animal, the less fear they have. They are less likely to kick when it comes time to produce milk. Touching develops a rapport and trust with an animal.

A handful of dried crushed alfalfa leaves on a new cow's feed will help her body to overcome the stress factor. If you buy a cow at an auction, chances are she will be inoculated for shipping fever, but I prefer not to use it on my cows since I detest use of drugs unless absolutely necessary. I think it's better to buy a cow direct from a farmer, since this allows you to choose a nice day for delivery of the animal. Also, the farmer can give you much information on the animal that would be lacking at a sale. Most farmers raise more animals than they need, and cull the lower producers as they need room in the barn. He or she may expect all the cows to be milking at least 50 to 70 pounds of milk a day, while you can be real satisfied with only 40 pounds.

Never haul a cow in an open truck. At least have the sides and front of the truck box closed in as high as the cow is and tie her head low so that she isn't getting the full force of air into her face and lungs. Cover her tightly with a blanket or quilt. Tie it

securely front and back and around the stomach, and bed the floor of the truck well with ashes or some other non-skid material so she won't slip and fall. Sawdust is too slippery on a metal floor. If you don't have anything on hand, you can buy a small bag of non-skid calcite at the feed store, then throw it on the garden when you clean the truck out. Calcite is made of ground coarse limestone. I use it regularly on the barn floor to prevent the cows slipping on the concrete. Put a layer of hay on top to keep the dust from blowing up in her face.

Do not overfeed your cow when you first get her. Her digestive system is already upset by stress and nerves, and the feed and hay you use may be different. She may be used to eating a diet mainly of corn silage or haylage. Generally, it takes the bacteria in a cow's stomach several days to two weeks to change to accommodate the different food coming into the paunch. Let the cow set her own pace in eating, feeding her small amounts at one time. She may eat very little the first day. Even different water will turn her away. Check with the seller, if possible, to see how many pounds of grain she was consuming and the brand he was buying. Feed the same amount or slightly less. Hay can be fed free choice, as the cows won't ever overeat on hay the way they will on grain or silage. If you don't have a drinking cup, keep a large clean bucket of water tied down where she can reach it. Be sure your bucket is washed and well rinsed, as most cows are fussy drinkers and will refuse to drink if they detect some sort of odor coming from a bucket used for other things.

If you can find it, try to buy a bale of pure alfalfa hay. It is extremely rich and high in nutrients and will help to counteract the effects of stress. But beware not to overfeed. A bale of hay is made up of eight to ten blocks, and one block morning and night, along with other hay and grain, is plenty. If her system is not used to it, too much can cause diarrhea or mastitis. Used sparingly, however, alfalfa hay is strong medicine, a good rejuvenator and tonic.

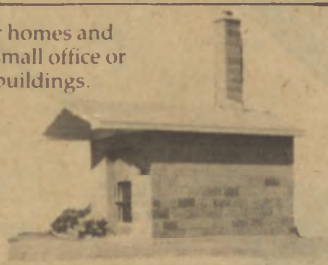
Finally, I have a word of warning for the would-be cow owners. If you love animals and you decide to buy that first cow, she will soon win your heart. Soon, she will become part of the family, and by the time you realize it--it will be too late! □

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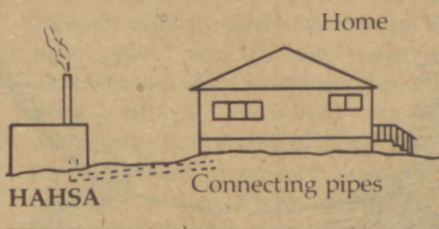
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Grow Your Own



Oriental Vegetables

by Louis V. Wilcox, Jr.

Oriental cooking is an art developed and refined over thousands of years. Its subtlety, variation and health-promoting qualities are a far cry from modern fast foods such as T.V. dinners and the take-out hamburger drowned in ketchup. In this Eastern culinary style a rich number of vegetables are used, many of which are cultivars very different from what we are used to in this country. Others, such as Chinese cabbage (Michihli), are var-

ieties we have adopted and grow now quite commonly.

There are a number of plants used in oriental cooking that we cannot grow in the northern states, the more obvious ones being loquats, ginkgo nuts, litchis, bamboo shoots and water chestnuts. However, we can make many additions to our vegetable patch specifically to enhance our own adapted version of oriental meals. Many of these more exotic but easily grown vegetables are prepared in a manner that simulates the texture of various meats and fowl.

Here then, is a list of vegetables you might consider growing in your own gardens:

Bamboo shoots:

Bamboos are in the grass or Gramineae family. Their grace, en-

durance and utility have caused them to be woven into the very fabric of the Oriental mind and spirit. This plant with its slender leaves and evergreen quality has been the recurring subject of painting and poetry for centuries. Furthermore, shoots of many bamboos are used for food, although some varieties have a bitter taste. The species most edible are in the genera *Bambusa* and *Phyllostachys*. Despite the fact that bamboo is generally considered a plant more suited for a warmer clime, the sweet tasting *Phyllostachys aureosulcata*, which grows upright and straight with a delicate foliage, has been known to survive cold snaps to minus 15 degrees Fahrenheit. Although some or all of the leaves may not survive over winter in colder areas, the stems will stay green and new leaves will appear in the spring. Even if the stems are killed to the ground, thick

Dr. Louis V. Wilcox, Jr. is a regular contributor to *Farmstead*, and his most recent article was "All About Sweet Corn," in the Summer 1980 issue. He is the chairman of Environmental Science at Unity College, Unity, Maine. Oriental vegetable drawings by Carol Varin.



Mung Bean Sprouts

rhizomes will usually endure and produce new stems and leaves.

To get a tender edible shoot, mound the soil above a growing stem as soon as it appears above the surface. When the new shoot again pokes through the mound, you can harvest it, but take care not to injure the rhizome. You can do this by carefully removing the soil and cutting the shoot where it joins the root stock. If you take too many shoots, however, you can injure the plant which needs them for its own nourishment.

Slit the shoot's tough outer sheath and peel this away to reveal the marrow. This white and tender edible inside can be diced or boiled and prepared according to your favorite recipe.

Chinese Cabbage:

This vegetable goes by the scientific name of *Brassica pekinensis*. It is one of the cool weather vegetables. Furthermore, it responds to day-length and will bolt or flower if planted too early. It is best to start Chinese cabbage around the first of July. You can plant it directly in the garden; in fact, it will do best if you plant it in this way. I have transplanted it a few times and succeeded, but I never did as well as when I planted it directly. It should be sown in a rich soil that will have a continuous level of moisture.

Once the seeds have germinated and the seedlings are up, you should thin the plants so they stand about 18

inches apart. I have grown them as close as 12 inches, and I merely succeeded in having smaller plants. I ran out of space that year. The reason for the wide spacing, is that Chinese cabbage has a large, wide-spreading root system.

There are a number of varieties of Chinese cabbage available. The Michihli is used a great deal, as is the Chihli. Some prefer the Wong Bok which is shorter in stature. It is really a matter of preference as to which variety you use. You may find that the outer leaves of the heads get a bit chewed on as the season progresses. You can usually control these insect problems with rotenone.

Most likely, the heads of Chinese cabbage will be ready for harvest in September. You do not have to harvest them all at that time, but can keep picking as you need them, up until frost. At the time of frost, I pack leaves around them and they keep well this way until we get a hard freeze. At that time, you have to bring them all in the house. In the meantime, you'll have a good supply of Chinese cabbage right through the fall. They keep best when you pull them, roots and all, and store them in a cool moist place.

Japanese Cucumbers:

Cucumbers are used in quite a number of oriental dishes. The one thing to remember when growing cucumbers is that they like a rich soil. I usually put a good supply of either cow or horse manure underneath the spot I plant them, a constant supply of moisture. They also need a lot of sunshine. Do not grow cucumbers where they will be shaded during any part of the day, and do not plant them in a spot where they are liable to dry out. They should be in an area where you can get ample water to them.

Most of the cucumbers that are grown for oriental dishes are good only for fresh eating. Do not attempt to can them. But for fresh eating, they're terrific. I usually grow the Kyoto. It produces fruit up to three feet long, and they have a delicious mild flavor. They are not as strong as the standard American cucumbers. And, they are a lot juicier and just about as crisp. We find that we can store them in the refrigerator for about four to five days after picking.



Chinese Cabbage

You can grow this kind of cucumber either on the ground or on a trellis. You'll find that if you grow them on the ground, they have a tendency to curl, to grow in the form of a "C" or "O." Growing them on a trellis will decrease this tendency.

Oriental Eggplant

In an earlier article, I described how to grow eggplants. You can use the same methods with this oriental variety, but the fruit that you get is much more spicy, and the inside of the fruit much more meaty. The fruit is white at first and turns yellow as it matures. Stir-fry the oriental eggplant alone, or mix it with other vegetables.



China Long Cucumbers



Mustard Greens

Ginger Root:

This is one of the ingredients in Chinese cooking that gives it a distinctive flavor. But, do not confuse this with that of the dried ginger you can buy in the grocery store. The ginger root in Chinese cooking is used fresh. It can be left in the cooking process for a brief period or it can be grated into food or soup. Fresh ginger has a much more delicate and pungent flavor than dried.

Ginger's scientific name is *Zingiber officinale*, and is a native of Asia. The ginger root used for cooking is a tuberous rhizome. It grows best in fertile soil in warm temperatures, and in partial shade. It is not hardy enough to survive in the northern United States, but it can be grown in the greenhouse or on a window sill. In either case, you should give it a rest over the winter, much as you would tuberous begonias.

If you want to give it a try at home, plant the ginger root or rhizome about

four to five inches deep and firmly pack soil over it. It should be watered about once a week. Water it heavily, but do not leave it standing in water. When the shoots appear, you know that it is ready to take your first sample. Dig down and break off a piece of the rhizome. Cover the plant again and it will keep growing until you're ready to break off your next piece. You can store your pieces of root or rhizome by first scraping off the skin. Then store it in the refrigerator in a plastic bag or in a jar of sherry. It will usually store for about three to four weeks.

Lotus Root:

Nelumbo nucifera is native to both Asia and North America. Both the seed and the root (actually a rhizome), are eaten. It is hardy in the northern part of this country as long as the rootstocks do not get frozen. You propagate this plant by dividing the rhizome. If you start from seed, you will find that the seed are hard to germinate. They usually need to have the seed coats scarified.

If you wish to try lotus root and have a pond of your own, grow it there--assuming that the rootstock will not freeze in winter.

Mustard Greens:

Brassica juncea is a different variety than that for growing hot mustard seed. Americans have adopted this plant and it is grown quite commonly in the southern states. Mustard greens can be grown indoors or outdoors. The small young leaves make a good addition to salads, and

the larger leaves can be cooked just as you would spinach. Or, you can use your favorite oriental recipe. They will grow in a seedflat on the windowsill if you want salad greens, or you can grow them outdoors. Follow the same cultural practices that you would for other members of the crucifers, such as cabbage or broccoli. With mustard greens, however, you can grow the plants closer together than you would with cabbage or broccoli.

Chinese Parsley:

Also called cilantro, this parsley goes by the scientific name *Coriandrum sativum*. This is not to be confused with what is normally used as parsley in America. They are two different species.

Chinese parsley is as easy to grow as the common parsley we use. In the northern part of the United States, it should be sown in the spring. It will do well on a wide range of soils, but as with most vegetable plants, it will do best on a rich loam soil that has a good supply of moisture.

Snow Peas:

I highly recommend Dwarf Gray Sugar Peas as a prolific variety and you can make plantings early in the spring, and again around July 1st to the 15th for a fall crop. Snow peas freeze extremely well, so do put away a supply for the winter. There is only one problem with freezing: we find that frozen snow peas do not stir fry as well as those that are fresh. It's better to gently and quickly steam them, and then add to the dish.

Ice Radish:

Radishes are very easy to grow and germinate quickly. The only real problem is the root maggot, which can be avoided to some extent by rotation or the construction of a wire screen over the plants starting at seeding time.

The radish used in the Orient is not what we use as a table radish. The Oriental radish (Daikon) is what is called the winter type of radish. This crop produces a much larger root and takes longer to grow. The roots will sometimes reach as much as 18 inches in length. You can plant these by seed in the spring or anytime up to about July 15th in the northern states. I frequently plant a crop about July 15th, and then I harvest them all



Oriental Eggplant



through the fall until the ground actually freezes. Frost will do them no harm, but even a light freeze will get to them. So, when there is increased danger of a freeze, pack some leaves or hay around them and they will be protected until you get really hard freezes.

Scallions:

You can use almost any of the scallion or bunching type onions in Oriental cooking. I described earlier how to culture onions, and the same cultural practices apply here. Thompson & Morgan has come out with a new bunching onion, called Ishikuro. This species has a longer white bunch of leaves than most, and it has the advantage of allowing harvest over long periods of time, so that you will not have to make repeated plantings.

Chinese Chive or Gow Choy:

The species name is *Allium tuberosum*. You grow it exactly as you would in general onion culture. I should point out that this is a different species than what is normally used in America. The American variety has a purple flower; the Chinese chive has white.

Winter Melon:

Cucumis melo can be grown in the northern states in the manner used for common squashes and melons. You should realize, however, that

winter melon is a long season crop requiring a reasonably warm summer. So, if you get a cool summer, you may not get a very good crop.

Soybeans:

Glycine max is mentioned here because tofu or bean curd cakes are made out of soybeans. Soybeans take from three to five months to mature, hence you do not see a lot of them grown in the northern tier. If you make some adjustments for the weather, however, and pick your variety wisely, you can sometimes get a good crop. They cannot tolerate frost, so you have to avoid frost on both ends of the growing season. Soybeans do best in a well-drained, fertile soil that has been well-limed. Soybeans grow slowly, so it is very important that you keep the weeds down.

Tofu is made by grinding the beans to a fine paste in a food chopper. Keep adding water as you grind. You may add as much as three times as much water as beans. Boil this mixture for an hour and strain through cheesecloth. Allow the soy milk to sour. Place in a warm place in a shallow container such as a glass baking dish until thickened. Cut the curd into pieces, cover with water, and bring just to a boil. Strain the water off and squeeze the curds dry before putting in cold water for storage. Then you can squeeze the curds in a piece of cheesecloth.

I mentioned at the beginning of this article that half the fun in growing Oriental vegetables is the cooking of them. They provide a delicious diversity, not to mention nutrition, in your diet. Here are some suggestions of books to read if you are ready to launch into Oriental cooking:

Rhoda Yee. *Dim Sum*. Taylor and Ng., San Francisco. 1977.

Japanese Foods. Hui Manaolana Foundations, Inc., Honolulu. 1959.

The Cooking of China. Emily Hahn. Time-Life Books, New York. 1968.

The Complete Asian Cookbook. Charmaine Solomon. McGraw-Hill, New York. 1976.

Oriental Recipes. The Veleda Club, Portland, Oregon. 1974.



Chinese Chives



Wild Rice

*It grows best in shallow water of ponds
and is an important source of food and shelter
for fish and water fowl.*

by Beatrice H. Comas

One might reasonably suppose that there would be very little interest in or demand for wild rice, surely one of the world's most expensive foods which sells for about \$1.00 an ounce! If you have ever eaten

Beatrice Comas writes tastefully for Farmstead on subjects culinary. She lives in Portland, Maine.

Ink drawing by Lynn Ann Ascrizzi.

this delicious grain, which is not really rice at all, you may have become addicted to its nutty, smokey taste.

Another reason for our burgeoning awareness is probably the number of cooking classes popping up in even the smaller towns of America; food demonstrations on TV; a proliferation of cookbooks (second only to the Bible on best seller lists); and a new spirit of culinary adventure. The fact that

more gourmet specialties are now available in supermarkets may also be a contributing factor.

The price of a package of wild rice may not seem so exorbitant when you realize the difficulty and uncertainty surrounding the crop, which in some cases is still harvested by the primitive methods used by Indian tribes for whom it was once a chief food. They gathered the seeds by pulling the grain heads over their canoes and

flailing them with paddles. The seeds were then sun-dried, or parched over a low fire to crack the hulls, then the grain was threshed by trampling, and later winnowed. The harvest was traditionally followed by a Thanksgiving Festival. In some states the white man is still prohibited from harvesting rice for sale to protect the Indian's right to this food.

In the wilds, yields are usually good one year out of four and provide a regular income of only about \$2,000 for the harvester.

Commercial growers may invest thousands of dollars developing paddies, but the failure rate is still high due to fungus, insects, weeds, disease and weather. Permits to grow it may take years to get. Yields average only 150 pounds an acre as against 3,000 pounds an acre for regular rice. Even with modern cultivation and high prices the wild rice grower does not get rich.

Wild rice grows best in shallow water along the margins of ponds and is an important source of food and shelter for fish and water fowl. This hardy annual with reedy stems and lance-like leaves is easily recognizable because it ranges in height from four to ten feet. It is mostly grown in Minnesota, Wisconsin, Michigan, California, parts of the South, southern Canada and Maine, where in some areas it is quite abundant.

Kenneth O. Allen, Jr., a freelance writer and Maine outdoorsman wrote that he has found wild rice in Merrymeeting Bay. He says that timing the harvest is very important. The month is September, but the proper ripeness lasts only a few days. Harvested too early, the green rice will not shuck out. Too late, most of the rice will shatter during the shucking and be lost.

He gathers and dries it much as the Indians did. "Once the rice is home, spread it out and dry thoroughly. Place in a shallow pan in a low oven, and parch the grains. Shake the pan occasionally so there is even parching. During the procedure, a careful eye is necessary so the hard-earned fruit does not burn."

If you pound or rub it vigorously through your hands, the husk will come free, and can be winnowed out. To do this, choose a suitable spot and place a cloth in front of an electric fan and slowly pour the rice past the forced air. As the rice drops, the light

husk is blown away. Repeat this procedure two or three times until the rice is clean. Then wash the rice once in cold water to remove its overly smokey flavor.

For all of you who have to buy your wild rice, do not be discouraged by the price. A little goes a long way and it also combines very well with regular brown or white rice...two or three tablespoons of the wild to a cup of the domestic.

Gift catalogues, particularly around Christmas time, feature packets of wild rice. In one, "No. 1 Canadian Long Grain Indian Harvest" was offered at \$ 12.95 a pound. Another more economical catalog item is wild Pecan Rice which is naturally grown in a small area of South Louisiana's Acadian country. It has the savory flavor of roasted pecans and is suitable for curries, poultry and game.

Wild rice has a texture and consistency that stand up well to game and it is often served with duck, venison or pheasant.

The following recipes may convince you that wild rice is well worth the extra expense and that it tastes as good with something as humble as tuna or as exotic as Duck l'Orange.

BROWN AND WILD RICE

2 cups chicken broth
 1/2 cup wild rice, rinsed
 2 tablespoons butter
 2 green onions with tops, thinly sliced
 1/2 cup long grain brown rice
 Salt and pepper

Heat broth in medium-sized saucepan over medium-high heat to boiling. Add wild rice, butter and green onions. Heat to boiling. Reduce heat. Simmer, covered, 10 minutes. Stir in brown rice. Simmer until rices are tender, 25 to 30 minutes. Season to taste with salt and pepper. Serves four.

WILD DUCK WITH ORANGES

Clean ducks thoroughly. Soak in salted water for one hour. Drain. Salt and pepper inside and out liberally. Arrange in coverable baking pan. Quarter several oranges and chop or slice several onions. Place onions around and orange slices over each duck. Cover. Bake at 350 degrees till fork tender, about one hour. Split

ducks in half. Serve with oranges, onions and wild rice. One half duck serves one.

WILD RICE AND GRAPE STUFFING

1/4 cup butter or margarine
 2 medium onions, diced
 1/2 cup diced celery
 1 cup seedless green grapes, halved
 1/4 cup medium sherry
 2 cups cooked wild rice

In medium skillet over medium heat, in hot butter or margarine, cook onions and celery until tender, about five minutes. Stir in remaining ingredients. Makes about 3 1/2 cups stuffing, enough for one four to five pound bird.

SHRIMP AND WILD RICE

3/4 cup thinly sliced onion
 6 tablespoons sliced green pepper
 6 tablespoons mushrooms, thin sliced
 6 tablespoons butter or margarine
 1 tablespoon Worcestershire sauce
 Few drops Tabasco sauce (optional)
 3 cups cooked wild rice or mixed wild and white rice
 1 1/2 pounds cooked shrimp
 3 cups thin cream sauce, made with chicken broth

Saute onion, green pepper and mushrooms in butter or margarine until soft. Add seasonings, rice, shrimp, and cream sauce. Place in buttered casserole. Bake at 300 degrees until heated through. May be heated in chafing dish, if desired. Serves six.

WILD RICE AND TUNA

1 cup wild rice
 3 tablespoons butter or margarine
 3 tablespoons flour
 1 1/2 cups milk
 1 1-pound can or 2 7 1/2-ounce cans tuna
 1/2 green pepper, chopped
 1 small can mushrooms
 Salt and pepper to taste
 Buttered crumbs

Boil wild rice for 20 minutes in salted water. Make white sauce with butter, flour and milk. Mix sauce, tuna, green pepper, mushrooms, salt and pepper. Place rice and sauce mixture in alternate layers in buttered dish. Cover with crumbs. Bake in a 350 degree oven for 30 to 45 minutes. Serves four. □

Heirloom Beans

The Wanigan collection represents

1,016 old-fashioned bean varieties

by John E. Withee

In private plots scattered all over this country, gardeners are growing and harvesting more varieties of beans than ever before in history. A rough check of the current seed catalogs shows that nearly 200 varieties are offered, and presumably, each is sold in profitable amounts.

There are, however, many millions of gardeners. Many of them are descendants of farmers, whose lives once depended upon home grown food crops. One of those important crops was beans, which are unique when compared to crops like corn or tomatoes. Thrashed bean seeds have color, size and shape differences, plus cooking qualities, which are immediately apparent. It is obvious that these "differences" would have been checked out by sowing them the next season. Improved varieties would be perpetuated, especially on family farms or in districts, and when passed on to the children and neighbors, these became heirloom beans. Hundreds of these non-commercial varieties now are in the Wanigan collection.

Being one of these "natural born," farm-oriented, bean inoculated types, I set out some twelve years ago, to locate a couple of these remembered old-time beans in the state of Maine. That initial search was successful in locating Jacob's Cattle and an old-time Yellow Eye (the one with the solid "eye"). More letters and visits

uncovered other heirlooms, and the search became an obsession. This collection now has a consecutively

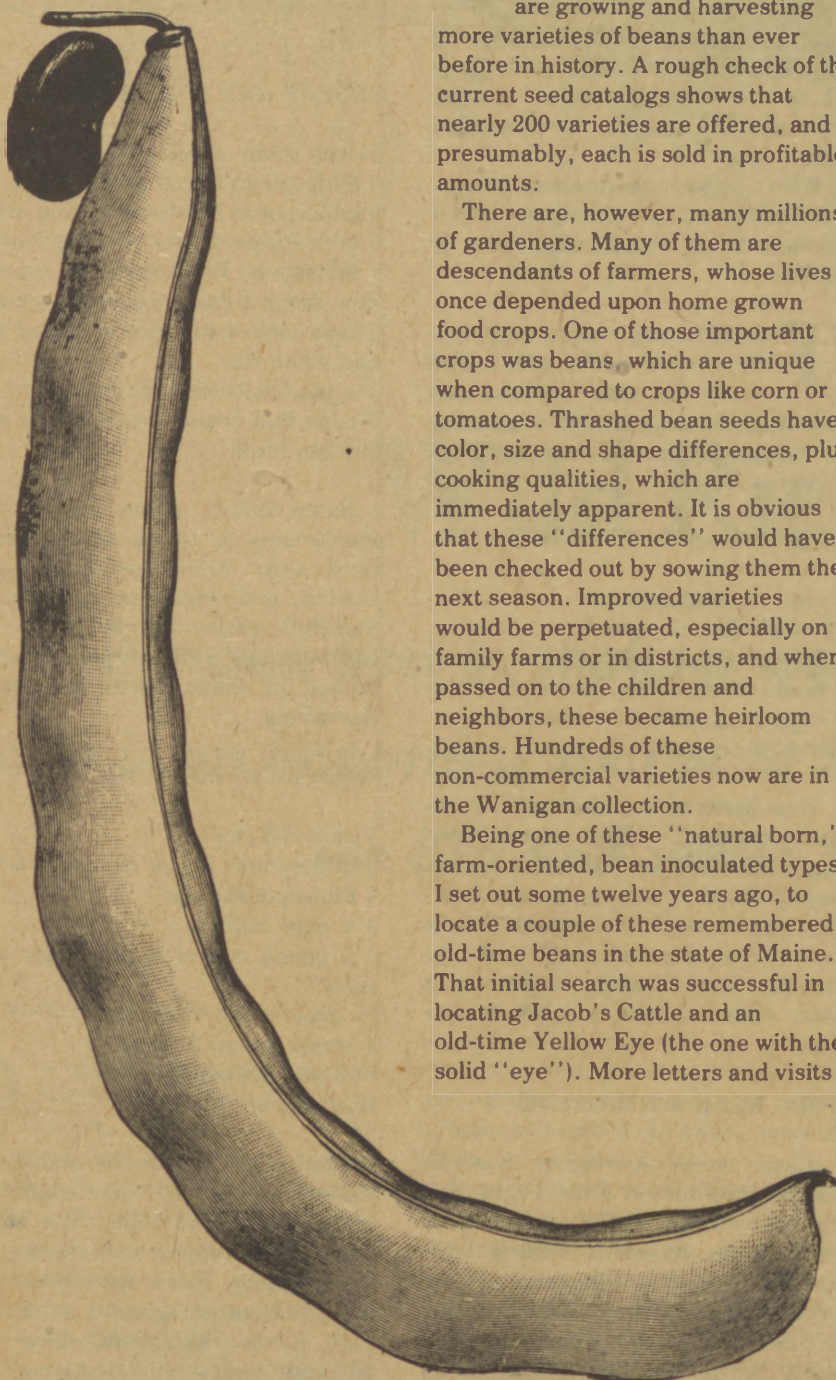
Much credit for attracting these beans must be given to garden writers in newspapers and magazines. I can just imagine their thoughts--"Why collect beans? Who would want to do numbered list of 1,016 varieties of the American species *Phaseolus*. Except for those which may be commercial varieties with private names, all of these beans are "endangered" in the sense that they are not in the hands of a professional or government group.

It should be pointed out that many heirloom beans have, at one time, been listed in seed catalogs. As in any business, the poor selling items are dropped and NEW ones are promoted. Bean varieties which have been removed from sale often remain favorites for some growers, and become heirlooms. For example, I grew Bountiful, a flat podded green "string" bean for the market, in 1931-32. It was out of catalogs for years, and only now has reappeared.

Many varieties which had been dropped by seedhouses years ago have surfaced only in the Wanigan collection. The surprise is that requests for some of these "lost" beans have come from major seed companies! Dutch Caseknife, a pole bean, was a leading variety in the 1850's. China Red Eye, Yellow Cranberry, Red Cranberry, Mohawk and Valentine, were commercial sorts in the early 1800's and are now valued in the Wanigan list.

Other rare finds are those, as mentioned earlier, which evolved spontaneously, as outcrosses, perhaps, in private plots.

John E. Withee is the author of *Growing and Cooking Beans* [see *Farmstead Reviewer*] and operates Wanigan Associates in Lynnfield, Massachusetts.



that?" Equally important are the generous gardeners who have contributed their family treasures. My bean collector interest is naturally heightened with each mail that has a fat envelope or small box. It may contain Maine Sunset or Painted Lady, or Greasy Grits. A thank you letter and an offer to exchange goes to each donor. A variety name is agreed upon and the history and uses of the bean are recorded. All letters are filed, and correspondence is lagging, but the search goes on. Every grower is encouraged to exchange and collect.

Early on, it was a fun hobby to plan and grow a plot with perhaps 30 to 40 bean varieties. Now, with the domino effect in full run among millions of gardeners, the hobby has become more of a chore. Even retrospective farm kids dislike chores! Hand-in-hand with the collecting of beans is the need to preserve them, which involves re-growing, for germination drops in four or five years. This year, for example, there will be around 200 kinds of beans in the preservation plot, but not many of each. There will be a few in there for increase, but the major supply used in exchange comes from the equally dedicated Wanigan growers all over the country.

It must be made clear that I am not alone in having strong interest in heirloom beans. Large private collections are maintained in several states, and Wanigan has an active exchange with them. Of course, government agricultural stations carry large numbers, but these are research, not public, collections.

In handling, growing and corresponding with others, a great deal of bean savvy has been picked up. For example, certain types are "corn field" beans which are not too vigorous in climbing, so are suitable for double cropping in corn. Some pole beans will produce pods over a long season as the plants climb. Others will climb to height, then set pods practically simultaneously. Certain ones of the bush beans are sturdy plants, but many are top heavy and frequently topple causing pod rot.

There are no "hardy" beans, in the sense of resistance to frost or wintering over. The Fava bean of Europe is cool hardy. The Perry Marrow bean has survived two degrees of frost. Beans sprout and

grow best at temperatures over 65 degrees. They will barely grow at 51 degrees, and will survive down to 33 degrees. Many beans do not like too much heat and will abort blossoms at 86 degrees or over. Limas are more heat resistant. Bean seed needs no stratification, or cold resting period, and will sprout at the instant of maturity if moisture is present, even in pods on the bush! Slow, natural drying in the pods produces the best quality seeds. Beans grown in a soil pH of 6.5 will produce twice the crop of those grown at 4.9 pH.

Collecting, maintaining and learning about the native *Phaseolus* heirloom beans has taken on a fresh, new interest in recent years. I now recognize that these seeds have great value to plant breeders because of their genetic make-up. This is a "gene bank," in which are stored many bean characteristics, such as disease resistance, hardiness, pod quality and plant type, which should, for posterity's sake, be kept available to insure the survival and improvement of the species.

In the present-day commercial monoculture of beans, a latent disease, combined with a lack of specific resistance, can either wipe out a crop or seriously reduce production. To counter this threat, breeders must constantly screen "new" or heirloom varieties to locate resistant strains. For this and many other reasons, these home grown, segregated, in-bred, tough heirloom beans have importance. A "plant protection" bill, now in the U.S. Congress for hearings, has focused the deep concern of many that restrictive laws may, in fact, wipe out this natural, age-old system of free exchange of seeds.

My grow-out tests here have shown up so many differences in growth patterns that it makes me wish I were a bean expert. Those experts who have visited, point out such features as ozone resistance, cluster pod set, internodal space, stem color, straight pods, indeterminate/determinate, glabrous pods and blossom drop. In my experience, all beans grow well in decent conditions, are good to eat in several stages of growth, have taste and texture individuality, and when sufficient nomenclature is developed, will enable the bean to join wine in snob appeal! I remain in awe at the complexity contained in the world of beans. ☐

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The Farmstead Reviewer



GATHER YE WILD THINGS. By Susan Tyler Hitchcock. Harper & Row, New York. 1980. \$10.95 hardcover.

by Lynn Ann Ascrizzi

The astonishing popularity of Euell Gibbon's *Stalking the Wild Asparagus* made it apparent that many folks were ready and willing to change their opinions about what a weed was. Hopefully, an ever-growing minority is paying more attention than ever before, to these Cinderellas of the soil—finding beneficent plantain in a back lot, nutritious nettle in a rubbish heap, velvet-clad mullein pushing through cracks in asphalt, and vitamin-rich lamb's quarters growing green and spire-shaped in a manure pile.

Unfortunately, it may be that more was commonly understood and respected about herbs and wild plants in the Middle Ages than the great majority take time these days to consider or value. And, there still exists a kind of witch hunt attitude in the modern use of deadly herbicides to ruthlessly and indiscriminately eradicate so-called "weeds."

For this reason, I am glad that Susan Hitchcock in her new book *Gather Ye Wild Things*, makes the following, disturbing statement:

"I stopped into the hardware store the other day and browsed through the herbicides, just out of curiosity.

Here's a partial list, copied from two cans on the shelf, of plants guaranteed dead, thanks to the contents therein: birch, blackberry, box elder, brambles, chickweed, chicory, clover, dandelion, dock, elderberry, honeysuckle, heal-all, henbit, knotweed, lamb's quarters, mallow, mustard, oxalis, pigweed, plantain, purslane, sassafras, sheep sorrel, sumac, wild carrot, wild garlic, wild grape, wild onion, wild plum, wild radish, wild rose, wood sorrel, yarrow. The list reads like the contents of this book."

Although Susan's book is yet another in a burgeoning line of publications on plant lore and foraging, what she describes above makes it clear to me that an awakening interest and reverence for wild plants has scarcely penetrated the public conscience.

Of course, not all herb remedies will do what folk lore says they'll do; nonetheless, on the other side of the picture, the abuse of herbicides is casting an alarming shadow with world-wide dimensions. Furthermore, as a recent news release from the North Carolina Department of Agriculture warns--there are even unscrupulous souls the department calls 'herbicide hookers'--fast-talking salespeople who push their unsafe and unreliable poisons onto unsuspecting farmers.

Gather Ye Wild Things is then, a much-needed addition to those books which seek to mend our broken kinship with nature.



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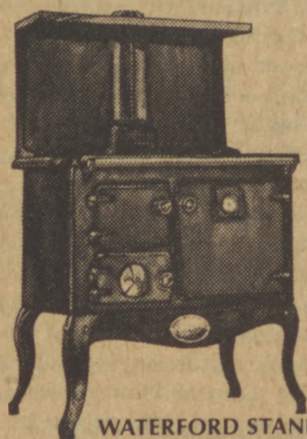
WELD. Beautiful wooded lots abutting Mt. Blue State Park. 47 acres and 41 acres, with 800 to 900 feet frontage on Keyes Brook and frontage on year round back road. Quiet setting, firewood, southern exposure, one parcel has small pond, power available. Lovely homesite or campsite. #2038 and #2040. \$14,900 each.

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We do find some of the expected edibles as wild asparagus and sorrel; yet, the author covers other, more unusual areas as well. There's a delightful discussion on using small pressed blooms (violets and periwinkles, etc.), to ornament eggs in celebration of spring's awakening and Eastertide. She also suggests using the redbud's cheery spring blossoms in a salad or to brighten white desserts like custard or rice pudding.

The work is handsomely printed on creamy, off-white (almost edible-looking), quality paper, enhanced throughout by the stately dance of Gail B.

McIntosh's fine and careful drawings. Although I have found the information to be quite reliable and most original, the author takes care to state the book is not intended as a field guide. Instead, I feel her work is primarily designed to lend the right spirit to our foraging and help personalize our wanderings.

By the end of the book, we have walked through Susan's gardens, chatted a bit, been introduced briefly to a friend named Erbin ("who is to sunflower potatoes what Johnny Appleseed was to apples,"), sipped some of her pleasant teas, and

without much strain on our part, gleaned a tremendous amount of very practical information concerning plant wildings.



GROWING AND COOKING BEANS.
By John E. Withee. Yankee, Inc. 144 pg. \$7.95 softcover.

by Ron LaConte

I recall reading a few years ago an article in *Yankee* magazine written by a fellow from Massachusetts who was devoting a good bit of his time and energy to the care and preservation of old-time varieties of beans. In addition to a little historical background and a good dose of advice on how to raise beans, there is a substantial collection of bean recipes—one of which (the author's personal favorite) I tried and found delicious.

I thought at the time that it was an excellent article, and apparently the folks at *Yankee* did also, for they've had the author expand it into a small book. Fortunately, both the author and the subject were worthy of the increased attention, and what was a fine little article has grown into a fine little book.

As the title suggests, the book is a two-parter. The first half is devoted to an examination of all aspects of growing the genus *Phaseolus*: soil preparation, planting, cultivation, disease and pest control, harvesting and storage. The second half is a bean cookbook, a wide ranging collection of recipes, many of them contributed by subscribers to *The Wanigan*, Mr. Withee's newsletter for bean lovers.

It's a good idea—growing and cooking in one volume—and one that *Yankee* apparently intends to exploit. They describe the book as the first volume in a new series. If the rest are as well done as this one, it should be a very successful venture.

Mr. Withee obviously loves his subject. He not only knows his

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beans--he enjoys them. Yet he skillfully avoids letting his fervor (and his knowledge) lead him into preaching to the faithful. Too often specialized books of this sort leave the reader feeling as if he has been eavesdropping on a private conversation. But Mr. Withee's style is uniformly open and engaging.

In fact, if the book has a weakness, it is that the "growing" section is a bit too basic. Much of it is written to be understood by a person who has never gardened before and some of the elementary advice (e.g. working organic matter into the soil to improve its texture) seems strangely out of place among the more technical material (e.g. a fourteen page chart describing 183 different varieties of beans). Occasionally the reader feels a little like the late Louis Armstrong who, when asked to define jazz replied "Lady, if you got to ask that question, you ain't never gonna know." Still, it's a minor flaw--and far better to err on the side of thoroughness than leave something important unsaid.

My only quibble with the "cooking" section is with the Vermont Extension Service who for some reason chose to include oregano in their "Pasta e Fagiolo" recipe. Not in my neighborhood!

Quibbles aside, it's an excellent little book. It covers the subject thoroughly yet interestingly and leaves the reader with very few questions. It's a worthwhile addition to any gardener's library.

And if you follow Mr. Withee's advice, you may never have to lament with poet Guy Wetmore Carryl:

The Moral is that gardeners pine
Whene'er no pods adorn the vine.
Of all sad words experience gleans
The saddest are: "It might have
beans."



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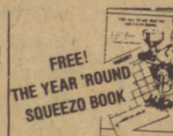
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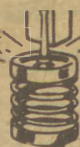
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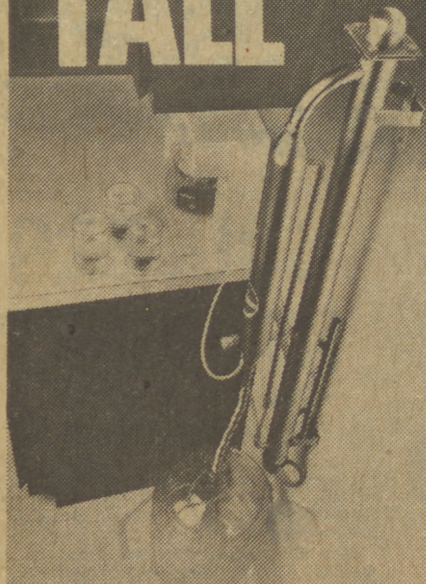
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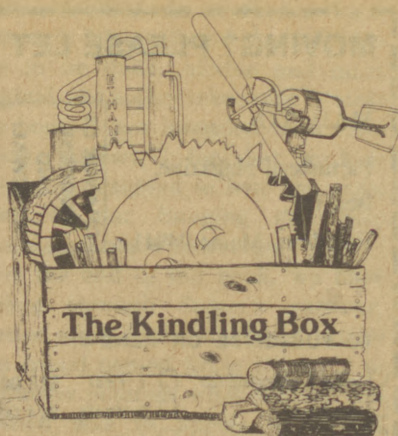
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charity begins in Brazil

American auto manufacturers continually find it difficult to meet stringent pollution and high mileage goals for cars within acceptable price ranges. For Americans, that is.

In 1977 Brazil took an impressive political and technological lead in the field of energy independence by allotting \$400 million to develop grain alcohol from sugar cane and cassava. Their goal was to produce all their own liquid fuel by 1995. The process may not take that long. Brazil has already begun to pump alcohol into cars that have been designed to run on almost pure alcohol. The alcohol costs \$1 per gallon--less than half the cost of gasoline in Brazil. Alcohol is also non-polluting.

As a result, Brazilians will be about 20 percent free of oil imports by 1985. Many government vehicles and taxi cabs have been alcohol-powered for over a year. Thousands of orders for engine conversions and for alcohol cars have been placed with dealers.

What does all this have to do with American auto manufacturers? The alcohol-powered cars being driven in Brazil are produced by five corporations: VW, FIAT, Ford, General Motors, and Chrysler, at a modest cost of \$3,000 and up.

a tale of uranium tailings

To find a uranium mine was once synonymous with finding a pot of gold at the end of the rainbow--in this case it turned out to be a pot full of trouble. The uranium milling process, at 21 sites in the western United States, produces one to five pounds of "clean" uranium from a ton of mined uranium ore. The remainder of the crushed ore, retaining 85 percent of its radioactivity, is stored in holding

ponds or piles, large enough, notes the US Geological Survey to bury Washington, D.C. under a 19-foot covering by the year 2000.

Uranium tailings have several impacts on the environment: they can leach into ground water and aquifers, erode into the soil, diffuse into the air and blow as dust onto plants, animals and people. Radium, the pollutant in these tailings, is a carcinogen and a toxin. Everybody from the EPA and the Nuclear Regulatory Commission to the Department of Energy and the Public Health Service is involved in seeking solutions to the storage and disposal of uranium tailings. An Environmental Impact Statement will be issued in the fall and accountability regulations are being designed to make uranium mill operators responsible for tailing disposal.

Luke Danielson of the National Wildlife Federation notes that "we've got techniques which offer hope in the short term, but are totally unconvincing over the long term", which in this case is hundreds of thousands of years.

--Wildlife Digest

milk from hyacinths

Water hyacinths are currently being widely studied as a wastewater treatment crop. Without requiring energy they remove excesses of nutrients like phosphorus and nitrogen from domestic wastewater. Current studies looking into possible uses of hyacinths harvested from treatment ponds have found several potential markets for this new energy crop: Hyacinths can be digested to produce methane, though this requires some input of energy. Composted hyacinths are a high quality soil additive/fertilizer. Most dramatically, hyacinth crops, when solar dried and pressed, can be fed at about 20 percent of ration to dairy animals. The pellets, containing 20 percent crude protein and numerous nutrients and minerals, can be produced at a cost of about \$20 to \$30 per ton.

biggest solar reactor

Russell Peterson, President of the National Audubon Society, observes that at the end of the petroleum era we are facing an exciting opportunity

to live both well and in harmony with nature. Solar energy is one of the keys to this optimism. In Peterson's view, "the only safe nuclear reactor is the sun. It is properly sited, leaving all its wastes in space and sending us enormous quantities of energy free. Each year, the U.S. receives 80,000 quadrillion BTUs (quads) of energy from the sun—over 1,000 times what we receive from all other sources combined."

--Environment

make a marsh

Aquatic systems such as bogs, marshes, ponds and tidal flats have an enormous ecological flexibility that makes them suitable for incorporation into wastewater management and treatment processes. A marsh or bog consumes up to 88 percent less energy than an activated sludge processing plant and can accomplish the same task. Though they are land-intensive, aquatic processing units (APUs) are energy conserving and cheaper than conventional wastewater facilities.

Using this information and hoping to establish a refuge for migratory birds, staff biologists with the Mountain View Sanitation District in California have created a marsh. Located on land that was once a tidal flatland, next to a freeway in an industrial area, Mountain View Marsh Enhancement Project provides nesting and feeding areas that sustain as many as 200 birds in winter. It is a recreational and ecological study center as well as an APU and refuge.

The Mountain View APU costs only \$20,000 per year to operate and, at a set-up cost of \$150,000, saved the taxpayers \$2.4 million over the conventional treatment alternative.

--Compost Science/Land Utilization

subsidizing nuclear

Due to the difficulties it has had dealing with past and potential cut backs in the oil supply, the federal government has adopted an energy policy that places a premium on any and all proposals that enable a rapid replacement of oil. Nuclear power generation of electricity was seen as one satisfactory technological fix until the accident at Three Mile Island and subsequent exposes of the nuclear

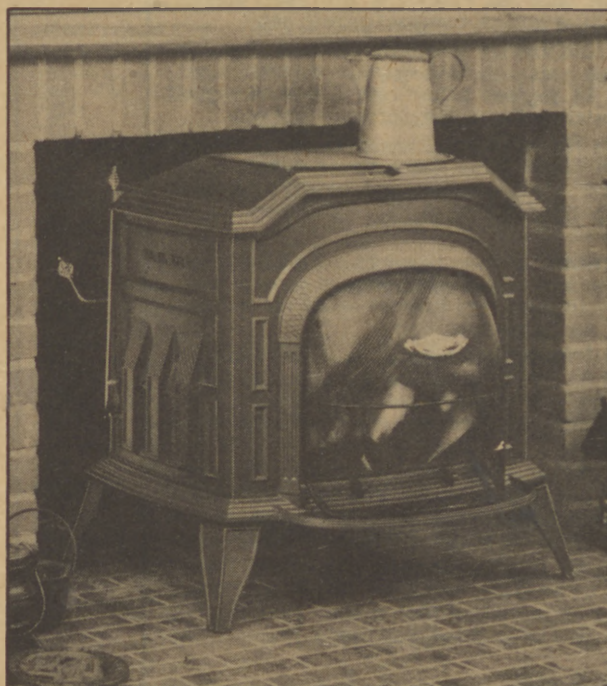
industry's failings by the Nuclear Regulatory Commission showed nuclear energy to be potentially more hazardous than expected. Still it appears that the top priority of oil replacement as soon as possible may prevent Washington from packing off the nuclear industry as quickly as some Americans would like.

In fact, the nuclear and electric industries are presently working with the current administration on two bills that would bail out the beleaguered nuclear utilities. The Powerplant Petroleum Displacement Act of 1980 would provide an authorization of \$6

billion to convert existing oil-fired plants to coal or another alternative fuel and an additional authorization of \$6 billion to allow direct cash grants to electric utilities that agree to build new nuclear or coal-fired capacity that would displace oil. The Nuclear Waste Policy Act would help to eliminate any nuclear industry responsibility for the safe if costly disposal of radioactive waste. The Union of Concerned Scientists is educating against both of these legislations.

--Nucleus

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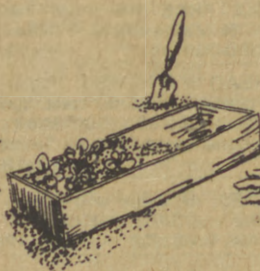
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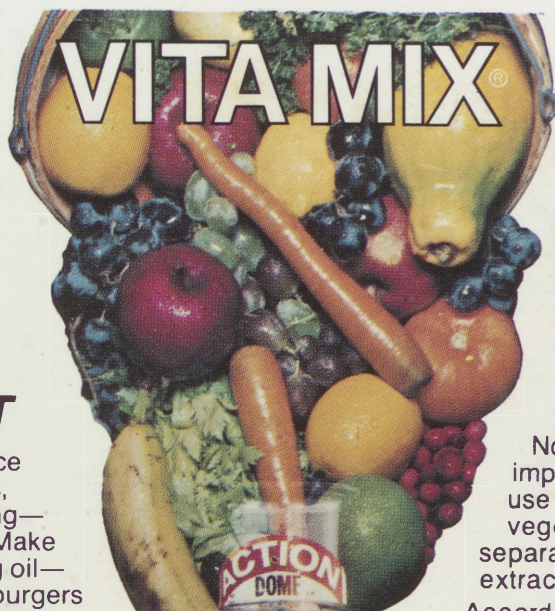
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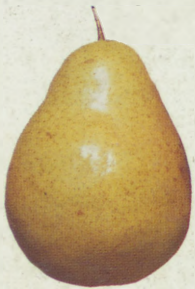
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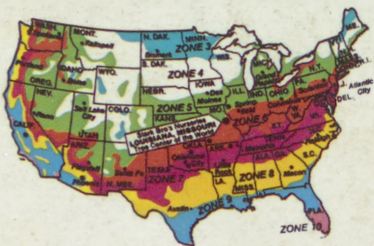
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