

CDC 00200
Number 19

SUMMER 1978

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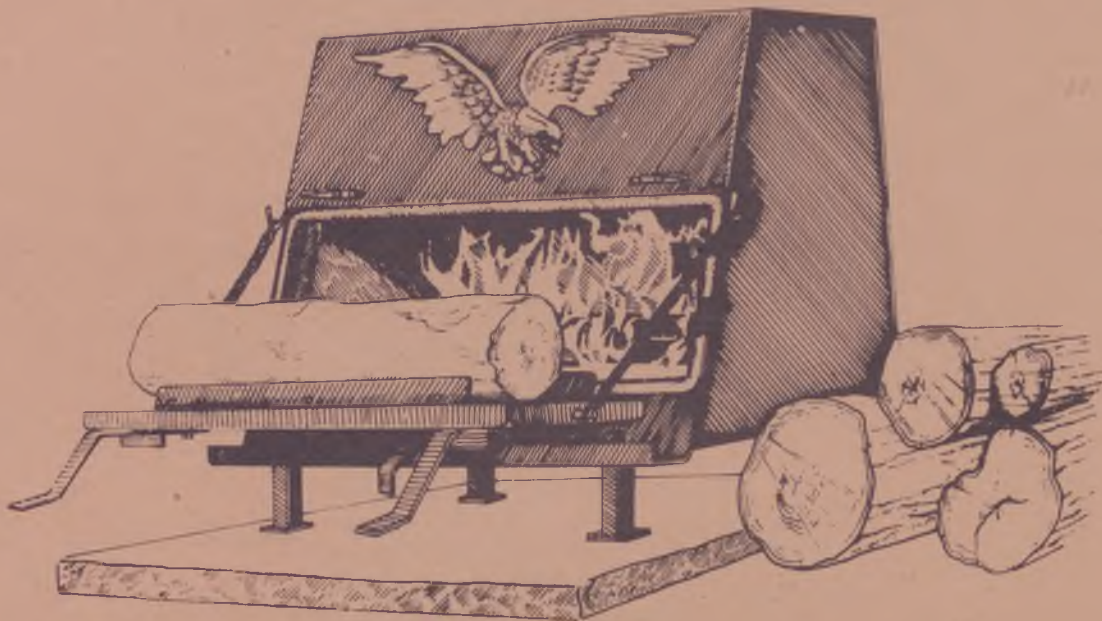
FARMSTEAD MAGAZINE

Home Gardening & Small Farming



The Truth About Growing Salad Greens
Plowing with a Draft Horse, Part III
How to Raise Goats & Rabbits
Garden Insects & Their Natural Enemies
Foraging for Ginseng & Chanterelles
How to Build Your Own Shelter
Eating Sea Moss, Squash Blossoms & Mussels

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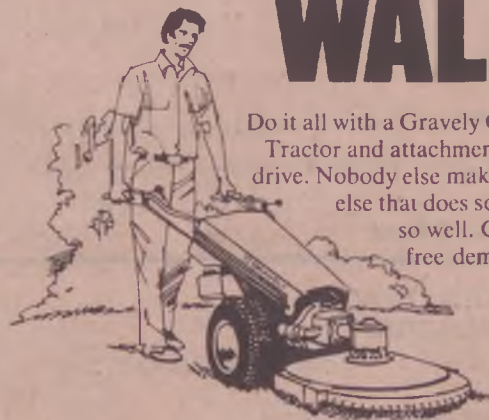
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FARMSTEAD

Table of Contents

Volume 5, Number 3

Summer 1978

4	Letters	
9	Ask Farmstead	
12	Cabin Steps	Dennis King
14	Wise and Useful Farm & Garden Guide	
20	Plowing with a Draft Horse, Part III:	
	Haymaking	Paul Birdsall
26	Chanterelles	Walter Litten
31	How Does Your Garden Grow?	Mark Goodman
33	Raising Rabbits	M. June Hall
36	The Truth About Salad Greens	Louis Wilcox
42	MOFGA on the Move	Ellie Thurston
46	Getting Your Goat	Suzy Rossel
48	Insect Pests & Their	
	Natural Enemies	Catharine Osgood Foster
52	Ginseng the Inscrutable	Susan Tyler Hitchcock
56	Father's Tea Pail	Elsie Boyd
58	A Hand's-On Building Experience	Judith Edwards
62	Mussel in on Good Eating	Paul Fleisher
64	Sea Moss	Barbara Prud'hommeaux
65	George Call, Blind Farmer of Troy, Maine	David Moin
68	Plant Something Old...And Something New	Clarice Moon
70	Weeds to Encourage	Susan Schnur
72	My Natural Cooler	Bill Homstedder
75	Our Spring-Fed Reservoir	Ruth Alford
76	Too Much Zucchini?	Lucretia Douglas
78	Squash Blossom Soup	Mary Seibert
90	The Farmstead Reviewer	
92	Feedbag	

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POSTMASTER: PLEASE SEND CHANGE OF ADDRESS FORM 3579 TO FARMSTEAD MAGAZINE, BOX 111, FREEDOM, MAINE 04941

Letters

Dear FARMSTEAD:

I am hoping some of your readers who are senior citizens, can tell me where I can get information regarding what was known as cider bees—or actually small yeast cells that everyone seemed to have years ago, that they used to put in jars and feed or put in molasses or sugar and warm water. The little cells would grow, break off, and make other little cells when they were put in a warm, sunny place. Can someone tell me how they originated? They are actually yeast cells, but where did they come from or where could you obtain them now?

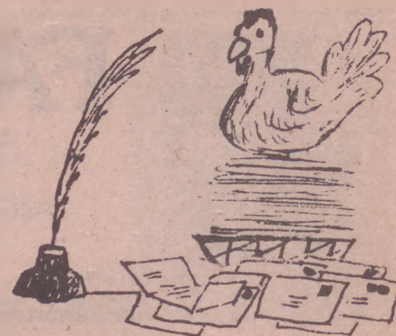
All inquiries have resulted in people sending me beer seed or some sort of mold—which these were not. As practically all the older rural folks had a jar or two working in the summer, maybe someone of your readers can tell me how to start them.

Marie O'Brien
Watson Hill Road
Limerick, Maine

Dear FARMSTEAD:

It is interesting that we received a gift subscription to your magazine from our best friends who spent some time with us here in Maine, but are now living in Massachusetts. They are working towards greater self-sufficiency on their rented lot and your magazine has helped them more than any others. We always considered *Farmstead* an excellent publication when we got our hands on one from friends, or at the newsstand. We never subscribed because there was a seemingly endless number of newly emerging and more established publications always arriving at our address. We finally have been guided by our friends to single yours out as the best over them all.

Some articles we've either missed or would like to see, are: Working with a team of oxen; making tools and implements from the available trees and saplings on the farm; anything to do with herbs and mushrooms; more, not less, on homebirth; and, so as to avoid the same rutted mess we had this spring, how to inexpensively maintain



a country lane to keep it passable for automobiles through the spring thaw.

Dave Kamila
Terry Yale
Sunshine Farm
Litchfield, Maine

Dear FARMSTEAD:

Yours is a most informative and enjoyable magazine, because it maintains a simplicity, a down-to-earthness, an independence, and the reality of the hardships and joys of a small farm life.

The small farm of 32 acres that I was raised on included draft horses, cows, sheep, goats, chickens, ducks, geese, turkeys, guinea fowl, pigs, and English shepherd dogs; a multi-acre garden, plus an acre of dahlias, gladiolus, and various flowers; grapevines and fruit trees; elderberry, blackberry, raspberry, and strawberry patches with rhubarb and asparagus thrown in; an interminable number of stones, and 12 children.

Could you print articles on small farm flower gardens and repairing old beam and tenon barns?

Douglas Baldwin
(Circa 1937, and
the youngest)
P.O. Box 786
Corinth, New York

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We need your help to assure prompt delivery of magazines. As we have grown, changes of addresses have caused one of the biggest service problems to our circulation operation. If you plan to move, please use this form to notify us at least six weeks in advance. Also, please attach the mailing label from the front cover when writing about service or change of address. Thank you.

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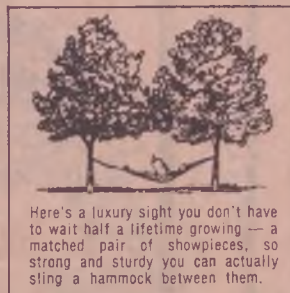
Yes, here is a dream come true . . . everything you've ever hoped for or wished for in a tree. Here is a miracle of nature that hoists itself higher than even the most treasured weeping willow . . . that reaches out wider than even the most graceful English maple . . . that lifts its symmetrical branches over your grounds and gardens with a splendor, and beauty that few trees can match!

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Dear FARMSTEAD:

I would like to compliment you on the fine article written by Dr. Meader on the Reliance peach in your Early Summer issue. My own experience with a single Reliance peach tree planted in the spring of 1973 produced seven huge, good-tasting fruit in the autumn of 1975. In the years 1974 and 1976 it produced the blossoms in the spring, yet no peaches. The year 1977 produced a bumper crop of blossoms and a bumper crop of peaches.

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I would like to make four suggestions to anyone contemplating planting this tree in the State of Maine and other states with a similar climate. First, plant the tree in a setting providing protection from Maine's northeast winter winds and cold (south side of a house, barn, or hedge of protective trees). Secondly, in a bumper crop year, be sure to thin the peaches when they are small and prop the branches that are heavily laden with fruit. Such a prop can be made by cutting a limb of a tree with a crotch in it and placing it under the branch. This should save you the grief of branches breaking under the weight of the fruit. (I lost two branches off my tree by not doing this in 1977.) Third, be sure to prune the peach tree severely after it has become established. Peaches are produced on branches in its second year of growth. Without pruning, peaches will produce farther out on the tree each year and weaken the tree with its added limb weight. Finally, insulation of the trunk of the tree with some form of tree wrapping and/or leaf mulch will provide further protection against Maine's harsh winter cold. If the mulch is used,

be sure to wrap the outside of the tree with a wire mesh to protect against possible mice and rabbit damage.

The yellow peaches with a red blush proved to be quite a novelty at the 1977 Windsor Fair Agricultural exhibits. It took a blue ribbon, being the first time such a fruit was exhibited. While the tree has suffered little or no winter damage to date, the bumper crop in the Summer of 1977 caused heavy damage to the tree. I cut the two broken branches off the tree as soon as the fruit ripened and pruned back the remainder of the tree severely, early this spring. With a little luck, my Reliance Peach tree will produce the beautiful pink blossoms this spring, followed by the huge softball size fruits this fall.

James Greenlaw
Augusta, Maine

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My Feet Were Killing Me...Until I Discovered the Miracle of Hamburg!

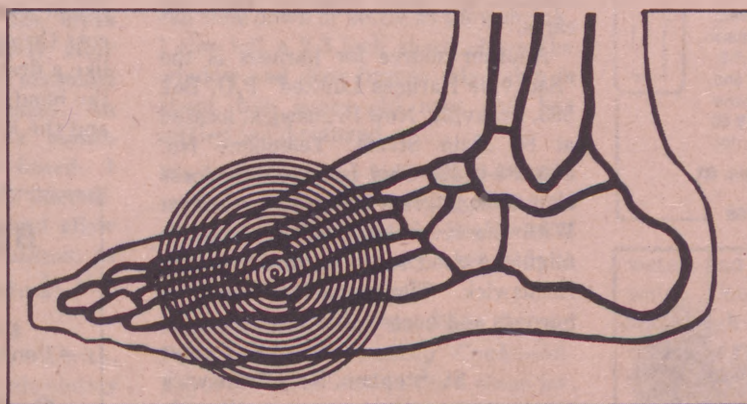
It was the European trip I had always dreamed about. I had the time and money to go where I wanted — see what I wanted. But I soon learned that money and time don't mean much when your feet hurt too much to walk. After a few days of sightseeing my feet were killing me.

Oh, I tried to keep going. In Paris I limped through Notre Dame and along the Champs-Élysées. And I went up in the Eiffel Tower although I can't honestly say I remember the view. My feet were so tired and sore my whole body ached. While everybody else

was having a great time, I was in my hotel room. I didn't even feel like sitting in a sidewalk cafe.

The whole trip was like that until I got to Hamburg, Germany. There, by accident, I happened to hear about an exciting breakthrough for anyone who suffers from sore, aching feet and legs.

This wonderful invention was a custom-made foot support called Flexible Featherspring. When I got a pair and slipped them into my shoes my pain disappeared almost instantly. The



and why they can work for you. These supports are like nothing you've ever seen before. They are custom fitted and made for your feet alone! Unlike conventional devices, they actually imitate the youthful elastic support that Nature originally intended your feet to have.

Whatever your problem — corns, calluses, pain in the balls of your feet, burning nerve ends, painful ankles, old injuries, backaches or just generally sore, aching feet. Flexible

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Today thousands of Americans including those who have retired — many with foot problems far more severe than mine — have experienced this blessed relief for themselves.

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WHAT PEOPLE SAY ABOUT THE MIRACLE:

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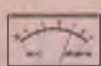
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Dear FARMSTEAD:

In response to Mrs. Wilmarth Wells letter in the Spring issue—she is looking for buggy wheels and two-wheel horse carts. We sent her a proof page from the Cumberland General Store, Crossville, Tenn. They should have wheels and do have the two-wheel carts...trap, slat, phaeton and jog carts.

Another source for harness is the "Sackville Harness Limited" P.O. Box 593, Sackville, New Brunswick, located at 88 Main Street. Telephone No. 506-536-0642. This is an old harness shop doing a great business nowadays. With the favorable exchange rate, it might be good to do business in New Brunswick. They sell full sets of harness and horse collars.

B.F. Tanner

St. Stephen, New Brunswick

Canada

Dear FARMSTEAD:

This letter is not a criticism, just an observation in response to John Vivian's article "Secrets for Starting Seeds" (Spring, 1978).

The point is certainly well made about those handy-dandy seed starter "kits" and I wholeheartedly agree that they are quite useless. I should like to point out that not only should we shun petroleum-based products, which are near and dear to every consumer's heart, but what about those little fiber containers? Wood fiber mostly! Our own Maine forests! Has anyone even glimpsed some of our northern timber acreage lately?

About *two thousand* cords of wood a day to feed *one* pulp and paper mill. Down with fancy packaging. What is wrong with a reusable container, even for eggs and milk? Why doesn't anyone sell in bulk? Easy—no profit for who? We could always resort to cans for starting seedlings...

Which reminds me of our recycling experience when we needed newspapers for our wood stove and tried to snatch a bundle from our ecology-minded town dump. We were reprimanded by the sanitation engineer and told not to take anymore because the paper was worth \$.50 a ton.

I hope they put it toward some diesel fuel for their earth movers.

Petrol for recycling wood products.

Petrol for harvesting wood products.

A vicious circle, I'd dare say.

Pat Aishton

Digging

Digging a drain trench through this tough Maine earth — granite, roots, hardpan & ledge, like searching in darkness for a lost 10 years.

Though the backhoe, bright as the sun, cuts through it like a dream through time the hands remember failure, and the heart.

By Sylvester Pollet

BEES FOR SALE

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ASK FARMSTEAD

I intend to build a log cabin almost immediately. However, I've been told that it is imperative that the trees should be barked immediately after cutting, and the logs must be seasoned for two years for best results. An absolute minimum is a six month seasoning period, so I've heard. I would like to erect the cabin immediately after felling the trees and allow for shrinkage by the use of oakum, as suggested in your fall issue. Is this possible?

Seasoned logs are easiest to work with, but I don't believe they are absolutely necessary. Green logs will settle as they shrink if you let them. The thing I did to allow for settling was to spike the logs to the window and door frames through vertical slots in those frames. The frames were 2 x 6 lumber, and I used a small chainsaw to make about a 3 x 1/2 inch vertical slot where each log

was to attach to the frame. By putting the spike at the top of the slot, the logs can slide down or settle as they shrink. I also left a 2-3 inch space above the window and door frames. My cabin is about five years old now and has settled as I'd planned.

We have searched for several months to find a recipe for making your own corned beef. We have the beef brisket and need to know exactly what to do to it to make it be corned".

Here's a recipe from the *Farm Journal Freezing and Canning Cookbook*. Layer the meat with salt in a stone jar, using eight pounds of salt per 100 pounds of meat. Leave overnight. In the morning, make a brine as follows, for each 100 pounds of meat: 4 lbs. sugar, 2 oz. baking soda, 4 oz. saltpeter, (you can leave out the saltpeter if you don't want to use nitrate). Dissolve in 1 gallon warm

water and then add 3 gallons cold water. Pour the brine over the meat and weigh down the meat to keep it completely covered with brine. Keep the meat in a cool place (under 45°F) for 28 to 40 days. Keep close watch of the brine for spoilage. If it starts to appear rosey or stringy, remove the meat and wash it, then repack it as originally, but use less salt (only about 6 pounds). The meat can be kept in the brine after cured until use or smoked or canned.



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How does one remove or otherwise eliminate ferns from the pasture?

Ferns can be quite a problem in newly cleared, rough pastures. They are unpalatable to most livestock and some are even poisonous if eaten by livestock. Since the area is unplowable, I'd suggest mowing the ferns. Mow them off as soon as they are well up in the spring and each time they come up thereafter. Most plants that are not readily grazed or browsed by livestock have not developed resistance to grazing and are often easily killed out by mowing.

I have priced spinning wheels [new and old] and can't seem to find a good one for under \$100. So I want to make my own. Is there any way you could publish some plans for building your own spinning wheel?

We recommend the book *Anyone Can Build a Spinning Wheel*, by W.C.

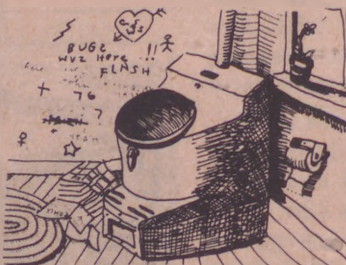


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FEEDS

Lawrence, Mass. 01842



A Boon to the Family Farmer



By Dennis King

Family Farm Bill

The Family Farm and Development Act was introduced in February into the U.S. House of Representatives by Representatives George E. Brown, Jr., and Richard Nolan. If passed, this bill should be a real boon to the family and small farmer in this country. I was sent an outline of this bill by a Washington group called Farm Politics", made up of people at various levels, both inside and outside government, interested in influencing farm policies on a national level. I'll briefly outline the bill and if you agree with me this bill looks like an important step in turning around our national farm and rural policies, write your congressman in support of it.

The bill contains a variety of new and amended programs dealing with farm prices, conservation, taxes, loans, research and education. It seeks to change the direction of federal priorities in agriculture to strengthen the family farmer, assist growing small farmers, improve the impact of farming on the environment, and improve the economy of small, rural communities. As we all know, this is about the opposite of what federal farm policy has aimed at for the past 30 years and more.

Loans and Price Supports

This part of the bill would raise the loan rate under the commodity loan program, in return for establishing conservation practices on the farm. Farmers could receive 90 percent parity loan payments only if they follow conservation practices established by a Soil Conservation Service plan for each farm. A grain export board would be established to review and approve all export sales of grain. There would also be a Consumer Price Review Board established that would have oversight authority over food price increases.

Tax-Structure Amendments

Amendments to the tax codes would be made to change the method of accounting for large farmers and persons with large off-farm incomes. This would cut down on tax-loss farming, which has been encouraged by cash accounting methods, but still allows small family farmers to obtain the full benefit of cash accounting.

Family Farm Preservation

A new program of buying and selling farmland by local government units would be established. Federal grants will allow local governments to buy farmland at market price and sell it back to new, small, or limited resource family farmers who need land. No family farmer could acquire land above a 640-acre maximum farm size under the program.

Ownership and Operating Loans

Ownership loans with a low interest rate (five percent) would be established in which the annual payments would be reduced for the first 10 years of the loan. Operating loans at three percent interest would be given to small farmers who cannot otherwise obtain loans. FMHA would also be authorized to give loans for installing and operating appropriate technology on farms.

Farm Marketing

The authority of the Farm Cooperative Service would be broadened to assist in development of small marketing cooperatives for small producers. School lunch programs would be amended to require schools to spend two cents per lunch on buying local fresh farm products, emphasizing products of small farms. A Federal-State Directing Marketing Program would be established whereby states would submit a plan for setting up a statewide direct marketing program and if approved, would be funded 75/25, federal/state. Nonprofit organizations would be made eligible to receive grants for direct marketing projects (along with government organizations).

Family Farm Development

A Family Farm Development Service will be established within USDA to focus needed attention on family farmers. It would coordinate and evaluate activities within the USDA concerning family farmers, and develop a long-term plan to re-direct agricultural policy toward an energy-efficient, environmentally-protective, economically-sound family farm agricultural system.

Research

Grants would be given to organizations and government agencies to conduct research aimed at the development and maintenance of small family farms. Research would analyze the reason for the decline in farm numbers and determine ways to reduce the trend. Projects to develop energy-efficient low-cost environmentally-sound farm technology would be funded. Other research areas would include: soil and water quality, food quality, composting cover cropping, biological and integrated pest control.

Education, Training and Demonstration

The Small Farm Extension Program will be increased with paraprofessionals (mostly small farmers themselves) available to assist with various aspects of farm management. Demonstration and Training Centers would be established in each state to help train new and small farmers in environmentally sound, economical farm management methods. These centers could be set up by agencies, groups, or individuals, and would be funded after having a proposal approved by the Family Farm Development Service. Other training programs would include, one trained agent in each state to assist farmers in installing and operating appropriate technology, a program to instruct farmers in biological and integrated pest control, and a USDA sponsored apprenticeship program.

As you can see, this is a comprehensive bill and one bill certainly isn't going to turn around a century of agricultural policy and politics. We have to start someplace though, and there seem to be more and more people at all levels of government who are interested in making a start. Let them hear from you. ☐

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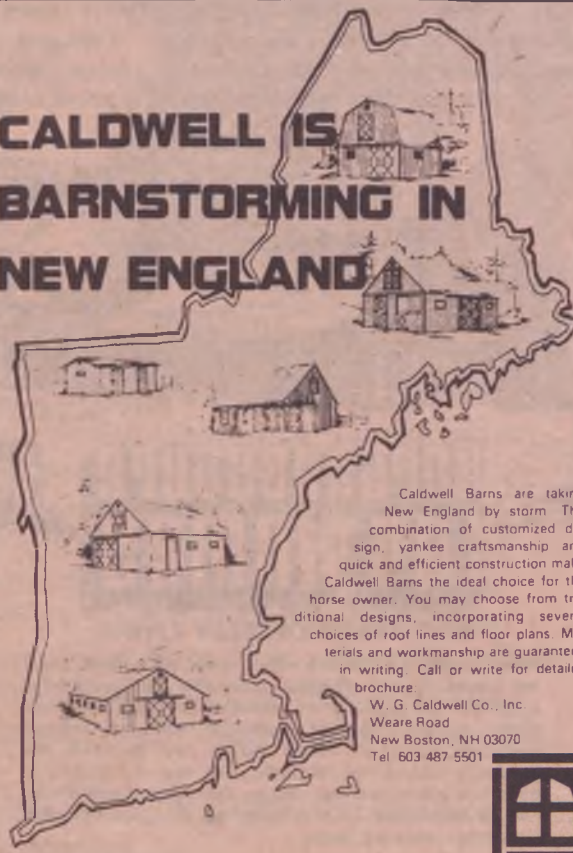
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The Wise and Useful Farm and Garden Guide



July

July offers little leisure to the farmer who must be "making hay while the sun shines." The hay and grain fields remind him that he must push on his harvest, while the buckwheat and turnip patches are still to be manured, plowed, and sown. These will afford sufficient employment during fair weather, and the work-shop, barn, stables, and manure cellars or sheds should be provided with work for rainy days. Care will be needful during this very hot weather, not to overheat the system, and

moderation and temperance are requisite in eating and drinking. Farmers, and particularly farmers' boys, are accustomed to bathe frequently at this season. They should not go from the hayfields and plunge into a cool stream while enervated by hard work, and dripping with perspiration. Morning is the best time for bathing.

Butter and Cheese making are the heavy labors of indoor work.

Cabbages—The late crop may still be planted, among early potatoes, peas, or other crops ready to harvest.

Haying is the most important work of July, but with a good mowing machine on smooth ground, a boy and team of horses can perform the heaviest labor, and do it at the proper time, neither too early nor too late, or when wet with dews and rains. Use the hay caps when necessary, and do not burn the hay up with a hot sun.

Hoeing will be a secondary operation this month, but the cultivator or horse-hoe should be run through the corn in the morning while the dew is on the grass and grain.

Potatoes—Early crops will be ready for harvesting and marketing during the month and the ground may now be appropriated to late cabbages or turnips.

Sheep are apt to be worried, and killed even, by dogs at this season. A few small bells placed upon the necks of several of the flock will usually help protect them. Give salt each week.



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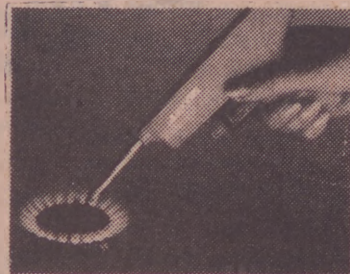
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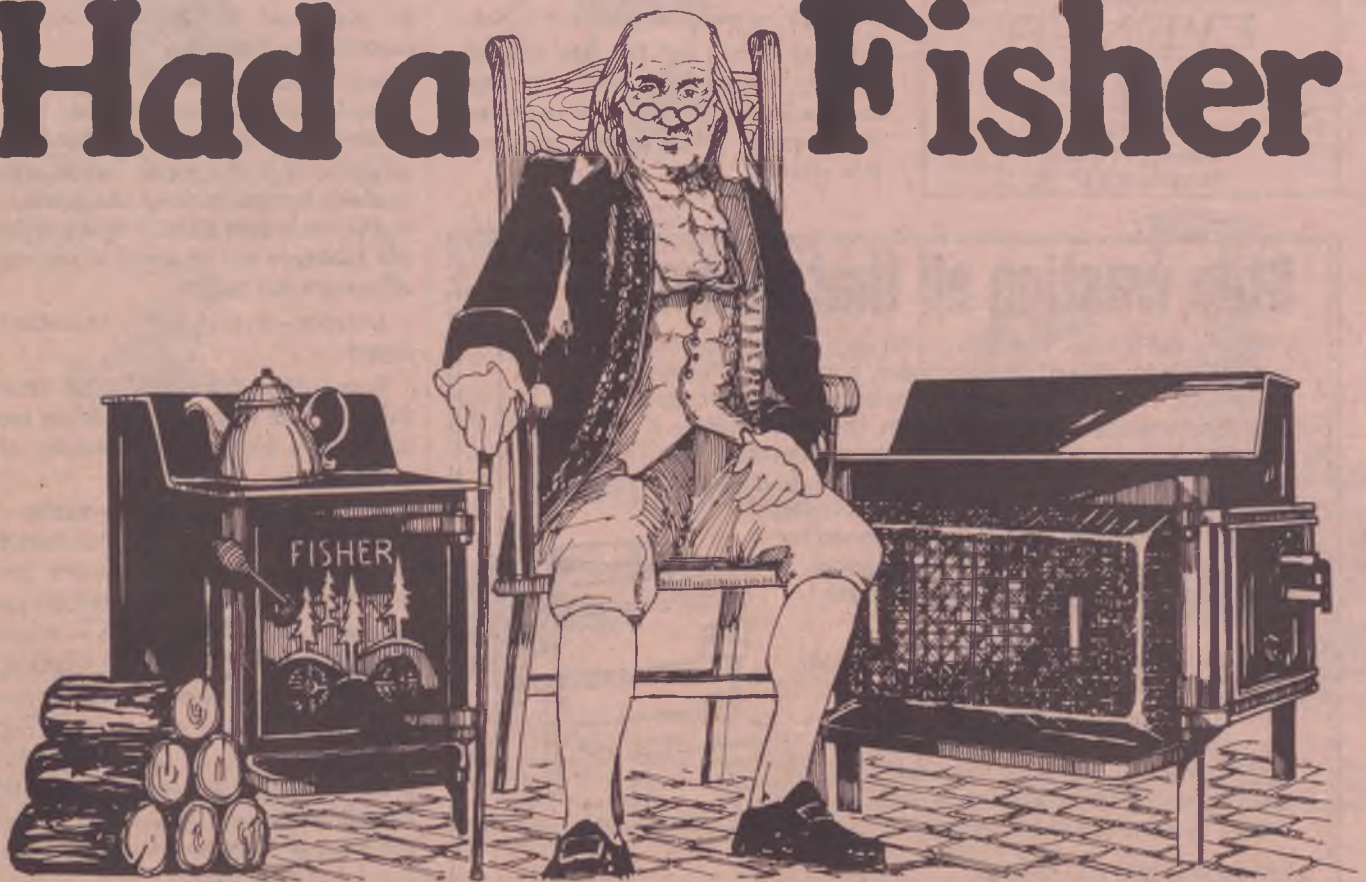
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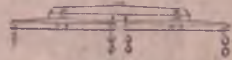
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Some of the early crops are ready for use or for market, and after clearing the ground, giving a coat of manure and a deep spading or plowing, it is all ready for a second planting.

Asparagus should be cut no longer. Give it an opportunity to develop itself and acquire strength for another year, but allow no weeds to grow in the bed.

Celery—Plant out the late crop in recently prepared trenches, watering and shading with a board shelving over them, unless set in cloudy weather. Hoe often.

Cucumbers and Gherkins may still be planted for pickles. Keep former plantings well-hoed.

Herbs are mostly in flower and should be cut for drying or distilling. Gather them in the early stages of bloom, dry in the shade and rub off the flower, putting in cans or bottles, so as to keep from the air. Rose leaves may be preserved in like manner, or immediately distilled.

Insects may require looking after. Make friends of birds and toads. The spotted squash bug is especially troublesome at this season unless kept in check by handpicking. An application of salt to land about to be set out to late cabbages will be useful in keeping off insects and worms.

Lettuce—Plant for a constant supply.

Peas— Those sown will be little troubled with weevil, and it is not too late to sow for a good succession of green peas.

Preserving Fruits and Vegetables— Now, while the table is abundantly provided with these, remember the dearth of the winter season and put up a good supply of fruits.

Raspberries are now in the height of bearing and require daily picking.

Strawberries are now pushing out their runners in all directions. We prefer clipping and confining them to hill culture, except where new plants are wanted. Keep well-hoed, unless a mulch has been used.

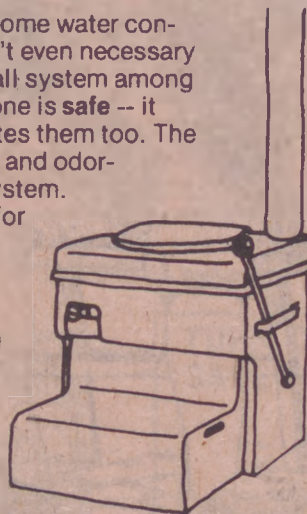
Transplant vegetables of all kinds with care at this season. The hot dry weather renders them less liable to live. Water the seed bed thoroughly before taking up plants, and set out in the evening or during dull weather, shading from the sun a day or two.

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August

The Wise and Useful Farm and Garden Guide

August is a hot month, and is usually considered the most unhealthy season of the year, but with moderation and temperance in all things, the hardworking farmer has little to fear.

The heaviest labors of the hay and harvest field are now over and a little relaxation may be enjoyed, although there is still enough to employ one's time in clearing up waste land, getting out stones, stumps, and roots, draining wet places, building permanent fence, getting out swamp muck, etc. and especially in preparing the ground for Winter grains.

Cattle—See that the pasturage is sufficient. If the grass is short, have recourse to the early soiling crops of millet, corn and sugar cane, especially for milch cows. In providing a male for the cows and heifers, bear in mind it costs no more to raise a grade of Devon, Durham, Ayrshire, or Alderney, than the most common highway stock.

Cisterns and Wells—Now is a good time to dig these, since water reached during this month will usually be permanent. If the barn is not already provided with water, build a large cistern without delay. It will pay.

Draining—The usual dry weather of this month affords a good opportunity to drain wet lands. There is generally a little leisure time now which can profitably be devoted to this purpose. Use tile, stones, or wood in blind drains rather than leave open ditches.

Grain and Granaries—Thresh early and watch the market and speculators at the same time, not omitting to "take the papers". Cleanse granaries and put a little tar in the crevices, the offensive odor of which is frequently a preventive of the attack of weevils and other insects in the bins. See that everything is mice and rat proof.



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Hay—Cut salt marsh and sedge, so that it may be removed without being flooded with water. Stack upon high ground, or cart it to barns and hovels.

Indoor—Ventilate the rooms freely, especially in the morning, during hot weather. By opening the chamber or garret windows, and leaving the doors open, an upward draft will almost always be created. Keep rooms and cellars clean and sweet, and allow no accumulation of filth or drain deposit about the premises, as August is a month in which every precautionary measure to preserve the health should be observed. Wage war against the tribes of insects which are frequently troublesome at this season. Scalding water used freely about the haunts of roaches and ants will usually rout them.

Manures—Collect all the material possible and keep up the manufactories to furnish a good supply which will soon be needed for Winter wheat and rye.

Oats have generally done very well this season, and the remaining crops are now ready for the harvest. Secure

with as little injury to the straw as possible.

Poultry—Those which are necessarily shut up during the day should be let out about sundown when they will rarely stop to scratch much. They seldom do well unless allowed some liberty.

Weeds—Make into compost, or feed to swine instead of raising for seed, particularly about the manure heap. Canada Thistles may be mainly destroyed by cutting them a few inches from the ground when in bloom.

If raising vegetables and fruits for the market, the gardener will now be able to send away blackberries, peaches, plums, cabbages, cauliflowers, potatoes, beets, carrots, onions, green corn, cucumbers, peas, beans, turnips, kohlrabi, etc., so that no day need pass without having something for sale. The soil from which these crops are taken should not be allowed to spend even the remainder of the season in idleness while there is an increasing demand for almost every cultivated vegetable production.

Asparagus bed, which should not be given up to seeds now that its season of usefulness is over. Keep it as clean as heretofore for the future benefit of the bed. Gather and clean out seed which may be sown now or saved til Spring.

Beets—Thin those sown last month. Early ones are ready for use. Pull from the thickest parts of the bed.

Cucumbers, melons, squashes, etc.—Head back those running too much to vines. Pick cucumbers for pickles. Shingles or straw placed under the finest melons will assist them in ripening and keep away worms.

Herbs—Complete gathering.

Rhubarb—A moderate quantity may still be pulled which if taken from near the center of the Linnaeus and some other improved varieties, will be quite tender for a month yet.

Seeds—Carefully collect all that are now ripening and dry and clean for another year. Label them, and note the year of raising upon each package.

Tomatoes—Tie to trellises or frames. Brush laid upon the ground answers a tolerable purpose for them to run upon. If growing rankly they will bear a moderate pinching in. □

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The author drives his haywagon.

Plowing With A Draft Horse, Part III

Haymaking

By Paul Birdsall

When we think of the farm in summertime, chances are that haying is the first thing that comes to mind.

But whether the mental picture is of shiny tractors and hay bailers leaving neat rows of bales in the field, or of horses pulling a wagon on which hay is carefully stacked, it probably depends on how old you are and what type of haying you first became familiar with.

Certainly there are advantages to putting up hay in bales, in spite of the fact that the equipment involved is

much more expensive than the equipment for putting it up loose. Baling equipment is easier to handle, easier to feed out, requires less space to store, and is easier to handle for resale. However, in our opinion, these advantages apply more to the large operation than to the smaller farm, and this is why hay on our farm is put up loose, in the old-fashioned way, with horses and the equipment that goes with them. There are positive advantages to putting hay in loose; the quality of loose hay is better and loose hay

is less likely to become musty than when in the bale.

The small farm is ill-equipped to support expensive machinery, and horse haying equipment is less expensive than that required for baling. While secondhand baling machinery might be had for far less, a large dairy operation might have an inventory of haying equipment worth over \$20,000. The value of our horse-drawn machinery does not exceed \$1,000 or \$1,200 at most. Coupled with the low initial cost of the simpler haying equipment is the advantage of easier maintenance. From what we hear of hay balers, they are not only expensive, but also cantankerous and hard to keep running. (I might add that all our items of horse equipment may be towed behind a small tractor and will serve to keep costs low on a smaller tractor-powered farm, but don't pull them too fast.) Another option to keep your equipment costs low is to swap labor or make some arrangement to have a neighbor bale your hay for you. There is also the option of sharing equipment, but since time available for haying is sometimes limited by the weather, especially in Maine, this would seem to be a less practical arrangement.)

Each summer, we put up around 30 loads of loose hay, each weighing somewhere near a ton, in order to feed three work horses and a flock of 10 or 12 sheep (not including lambs). Since we are not in the business of selling hay, have adequate loft space for storage, and wish to keep our haying equipment consistent with the inexpensive horse machinery in use elsewhere on the farm and woodlot, the choice was simple: "Put it in loose." However, haying the old-fashioned way still involves considerable choice of method, ranging from handwork to almost complete mechanization. Perhaps it would be well at this point to list the various methods and the equipment option each entails for purposes of comparison.

Loose Hay		Baled Hay
Simpler	More mechanized	
Mow: by hand with scythe	Horse-drawn mower	pto tractor-mounted mower or mower conditioner
Rake: by hand with fork or bull rake	horse dump rake horse side delivery rake	side delivery or pinwheel rake for tractor
Ted: (fluff for drying) by hand with fork or rake	horse "kicker" or side delivery type tedder	various, including pto "gyro" type
Pickup: by hand, with fork, onto wagon	hay loader on wagon or truck	baler with kicker to load cart behind
Into Mow: by hand with hayfork	with hayfork on horse-powered block and tackle	with powered conveyor

Some think that because we use horses and not a tractor, we are not mechanized. To be sure, we started with a simpler approach involving a mixture of hand labor and horse power, but as our hay requirements increased and our familiarity with horse-powered haying technology improved, we have tended to use more mechanical means for this purpose. The first year or so we relied on horses to pull the mowing machine, the dump rake, and the hay wagon. All else was done by hand with hayforks. The amount of hay involved was probably no more than a third of what we now handle. The fact that the means used now are more mechanical does not mean that simpler haying methods are not suitable to the smaller farm and homestead. The choice is up to you, depending on how much hay must be handled, how much time there is to do this, and how labor-intensive you wish to be. Every stage of our hay production is now mechanized, at least theoretically. We can now handle more hay and handle it faster than by hand methods, and while we cannot match the speed of a fully mechanized baler operation, we have more flexibility in making hay and in getting it off the field. There are cases in which horses can get on a field too wet to support a tractor, and similarly, horse-powered machinery can harvest hay on slopes too steep for tractors to negotiate.

At this point we should take a look at the various types of horse equipment available, and how they work. The first machine is the mower. These come designed either for single or team use. Double horse machines cut a wider swathe (five to six feet) than the single horse variety, whose cutter bar may measure two-and-a-half to three feet in length. Which you use will depend on whether you are a one or two horse operation. I have the impression that single horse machines go a little harder, but perhaps that's just because we've had better double machines to work with.

Over time, each person seems to develop a preference for the particular make of mower he happens to have, so perhaps my preference for McCormick Deering mowers is really prejudice. But they can be made to cut very well, and are well-balanced and not overly heavy for the work they are designed for. I would think that any of the late model mowers, in good condition and made by one of the well-known manufacturers such as John Deere, will do a good job. We have three McCormick Deering "Big Six" mowers, one for mowing hay, one for mowing rocky blueberry ground and for backup, and one for spare parts. This is a very fine running machine, with which we have mowed heavy, lodged hay in the order of three tons to the acre without much difficulty. Parts are currently available to rebuild the cutting portion of both McCormick and John Deere models, because the same parts are still used on their tractor model mowers. This means that you can still buy knives, sections, fingers, and ledger plates for these mowers. Our best mower has a new knife and all new fingers, an investment at the time of perhaps \$55 or \$60 which was well worthwhile.

The knife to which the cutting sections are riveted, is ground-driven through gears and the pitman rod, so that it moves back and forth through slots in the fingers. Each finger has a ledger plate with sharp serrated edges upon which a knife section slides. It is the movement of the sharp edges of the sections against the ledger edges that

produces the cutting action. Not only should section and ledger edges be sharp, but the clips which bear on the knife sections should also hold them snugly against the ledgers, and these may have to be hammered down to promote good cutting action. Particularly desirable are the late model McCormick models #7 and #9 in which the drive gearing runs in an oil bath, thus making the machine cut and pull more easily. *

There is a saying that the way to try the heart of a horse is on the mowing machine, but we haven't found mowing especially taxing for horses, although it must be admitted that we are not mowing more than an acre or two of heavy hay at a time. We do, however, mow a five or six acre piece of light hay in a working day, including the three mile walk to and from the field. You should be able to mow an acre an hour with a team. If you are going to mow a lot of heavy

sprung back, then the machine will not cut properly.

One thing the horse-drawn mower cannot do is to crimp the hay for quick drying the way a tractor-drawn mower conditioner does. I suppose if there is such a thing as a self-powered mower conditioner (rather than tractor pto-operated) horses and a hitch cart could pull it around. Already noted has been the Amish refinement of mounting a small motor on a mower to drive the knife. This has an advantage of making the knife speed independent of speed over the ground, and makes for easier cutting, especially in heavy lodged forage crops. I would assume, also, that this would permit the use of a standard seven foot cutter bar used on many tractors, instead of the standard six foot bar for a double horse machine. (As it is, we have to buy the regular seven foot knife from the International dealer and whack off one foot with a hacksaw.)



Paul Birdsall drives a double horse mowing machine.

hay during the season, and wish to lighten the load on the team, it should be possible to mount a small air-cooled motor to drive the pitman rod (and knife), as some of the Amish do.

In time, availability of these machines will be a problem. Perhaps it already is in some areas. However, we had little difficulty finding the three machines now on the farm. One was in a barn on the place and the others were purchased for \$35 and \$75 respectively within 35 miles of here. These machines are mostly cast iron and, except for the cutting components, do not suffer from sitting out. The main things to look for on a mower are signs of welding, which would indicate a previous accident, and whether the outer end of the cutter bar lines up slightly ahead of the inner end. If the bar tip has been

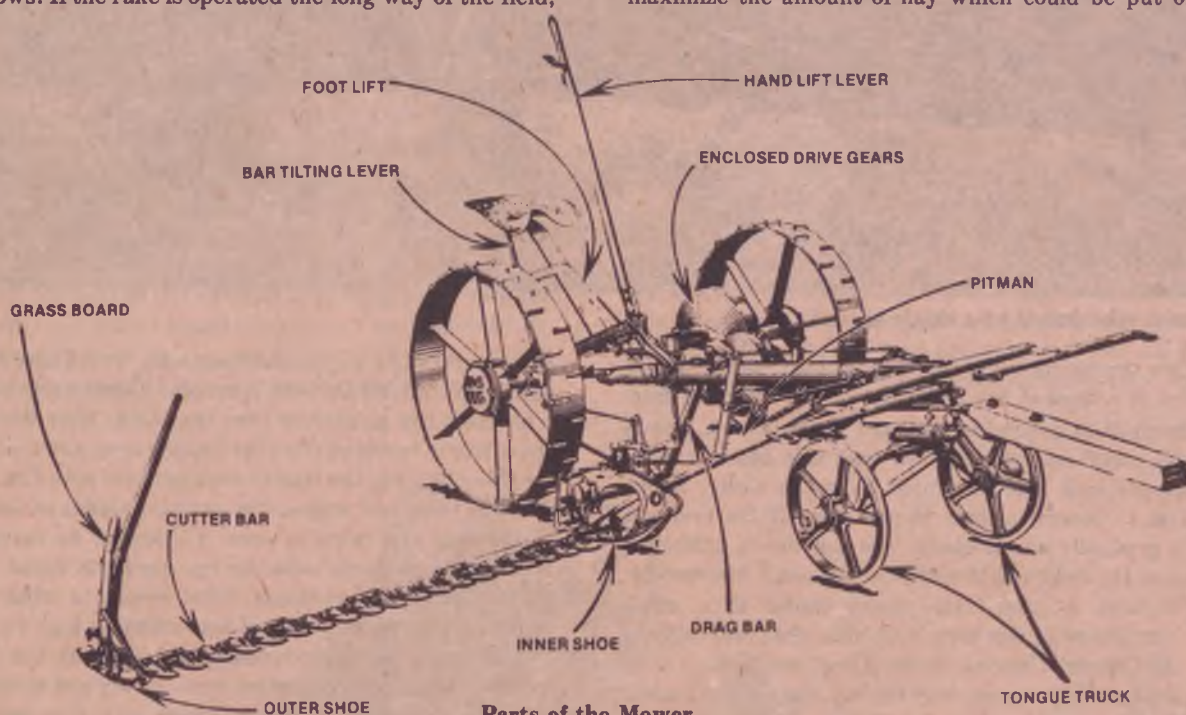
Once the hay is down, steps must be taken to cure the hay sufficiently for pickup and storage in the barn mow. This involves two steps which we shall consider together, tedding, or fluffing, the hay to dry it, and raking the hay into windrows for pickup mechanically. Raking also helps in the hay-curing process, and some machinery is made which can both ted and rake, so it is difficult to discuss the two functions separately. What you do will depend somewhat on how heavy the hay is and how much time there seems to be to get it in before bad weather threatens. With small amounts of hay to be harvested largely by hand methods, the hay may be raked into windrows with a dump rake, and if wet weather threatens, a hayfork may be used to put the hay up in cocks or steep piles to shed the moisture. We have brought some

second-cut hay through a heavy downpour this way, then spread it out to finish curing. Its quality was unimpaired when we put it in the barn. Hand methods, too, would indicate rolling the windrows over by hand to finish curing. In fact, we have turned unraked hay by hand when use of a tedder did not seem to be enough to get curing done in time to save the hay. Curing thin hay from runout fields is a lot easier and does not take as long, but then you are getting a lot less hay, and the quality of the hay is low. The health and well-being of your animals will reflect the quality of your hay, whether from runout, or from reseeded, regularly maintained fields.

The dump rake, which is generally used where hay is taken in by hand, is two wheeled and generally pulled by one horse, although there are larger ones for team uses. It catches the hay ahead of a row of curved teeth which the operator raises periodically by means of a foot trip to release the bunched hay. If care is taken, the hay on each pass may be released so that the bunches line up to form windrows. If the rake is operated the long way of the field,

windrowing the hay for pickup, this type of rake may be used to roll the windrow to speed up drying. Also, some of the older side delivery rakes were designed with an extra reverse gear so that the reel could be run backwards to ted or fluff up the hay. The only other horse-drawn machine I am familiar with which is for tedding is a single horse machine with lethal-looking forks mounted on arms that run on an eccentric axle so they rotate violently to pick up the hay and kick it out behind. This is not my favorite machine, as with heavy hay it is not particularly effective, and the flailing motion of the rotating forks behind my back leads to an uncomfortable feeling as to what might happen if any of the forks broke loose.

When the hay is reasonably cured and ready for storage it needs to be loaded on a wagon and taken to the barn. We started off by forking the hay onto a single horse wagon in the time-honored way, with one person in the wagon distributing the forkfuls carefully so as to bind the load and maximize the amount of hay which could be put on. We



Parts of the Mower

the windrows will tend to be across the field, at right angles to the direction of travel.

These windrows are generally bulky and well-adapted to hand-forking the hay onto a wagon or truck, but they are ill-suited for mechanical pickup, either by hay loader or baler, because it's so hard to make these windrows regular. Despite my best efforts on the dump rake, a friend with a baler for whom I was raking had several uncomplimentary remarks to make about my snake-like and irregular efforts to windrow.

If hay is to be picked up mechanically, it is best to use a machine that leaves even windrows running the long way of the field, parallel to the direction of travel, and suitable for pickup either by hay loader or baler. The old team-drawn side delivery rake is suitable for this purpose, as are some of the later ground-driven tractor rakes, like the pinwheel model, which may be pulled by a team behind a hitch cart. In addition to

have loaded a small wagon with hay to the point where the horse could barely pull the load up a grade.

For some time during the period we loaded hay by hand, I had been dimly aware of an occasional strange looking machine, something like an inclined plane on wheels, sitting out in a hay field. My wife Mollie doesn't like to ride with me because she says my head swivels back and forth, constantly on the lookout for abandoned farm machinery. Suddenly it came to me that this was a machine designed to pick up hay, carry it up an inclined chute, and push it over the back of the wagon or vehicle to which it was hitched. This is the hay loader, and it is far and away my favorite piece of farm equipment, probably because it was such a pleasant surprise to find that there was a machine other than a baler which would do this work. Don't assume, however, that no handwork is involved; distributing the hay as it comes over the back, and building a proper load, using a hayfork, requires some strength and agility. I have



Dump rake pulled by a single horse.

seen two strong men call for help as they were rapidly engulfed in a mass of hay when the driver went too fast. This machine is ground-driven, and consists of a pickup reel with metal fingers like those on a side delivery rake, and several long arms mounted over the chute, which rotate on an eccentric shaft to pick hay off the reel and work it gradually up the chute. The machine is unhitched and left in the field and two crews may use it alternately.

We have a good, late model loader (like other machinery of this sort, it is, alas, obsolete) called a McCormick Deering "Green Crop" model R. As the name implies, this was not only for hay, but also to handle green crops such as beans and field peas. It is in use from the beginning of haying season (hopefully in June) until late fall. We have even picked up mulch hay from a light snow cover in November and have used it to pick up oat straw. Such machines may occasionally be found abandoned in fields, and can generally be rebuilt, especially if they are later models with few wooden parts. We have a second, junk machine, same make and model, for spare parts. This is certainly a machine which should be kept under cover, although you will probably have to tip it over frontwards to get it in a barn. One note of caution: be very careful towing these machines over the road, as they are very cranky. We had one accident which damaged the loader because of its tendency to gyrate behind the towing vehicle.

I have a confession to make about the loader. We have generally used it behind our one-ton truck, instead of using it to lead a wagon, partly because of lack of time, and partly because the horse barn where the bulk of the hay goes does

not accomodate a wagon and team very well. However, we plan to use the loader with horse and wagon more because it is easier and pleasanter than the truck. With the truck, the driver is removed from the loading area, and it's harder for those building the load to communicate with him, while with the horse and wagon, the teamster stands on the front of the load and helps to pack it down as he drives the horses. At the same time, he can vary the speed of the team to suit the conditions. What comes to mind is one beautiful day last fall; when I was standing high on a load and at the same time handling the lines, as the horses eased along and the second cut came slowly and steadily up over the back of the wagon. Times like this you don't forget.

Now, assuming that the wagon or truck is groaning under its towering load of hay, how are we to get it into the barn mow? Of course the first option, and the one we used for a couple of years, was to take hayfork in hand and vigorously heave forkfuls up into the mow where someone else distributed and tramped the hay. Now we use a different hayfork; one which is a harpoon-like device which may be forced into the hay load and locked with two hand levers to which are attached a release line. The fork is on a block and tackle arrangement, with the bitter end of the line led through a block down onto the barn floor and out the door where a horse (or tractor or pickup) may be hitched on. On command, the horse moves away from the barn, and the load, sometimes several hundred pounds of hay, is drawn slowly upward to the point where the fork, with its load, is drawn in over the mow. At this point, the person on the load pulls the line connected to the locking

levers in the fork, and the load is released, cascading down into the mow where it must be distributed and stamped down. Then the fork is pulled back down to the load with the release cord and the whole process is repeated until the load is all in the mow. An occasional handful of salt, broadcast over the accumulating hay, will serve to draw out any remaining moisture and improve the quality of the hay. Getting hay in this way is still a hot, exhausting process, but the horse is doing a lot more work than you are, and you are getting a lot more done than with hand methods. The forkfuls a horse may pull up into the mow are impressive; so impressive in fact, that I have seen the load hang up before reaching the mow and slowly pull the horse backward as it sags back down onto the load. The harpoon-like hayfork is excellent for heavy, coarse hay like timothy; in fact, we have to deliberately limit the loads in order to avoid damaging the fork, as it tends to pick up too much if you are not careful. For finer, shorter-stemmed hay such as that which goes into the sheep barn, we use a similar device but with curved prongs which grip the hay, also on block and tackle, and also with a pull-operated release mechanism.

Driving the horse on the hayfork is a pleasant job for someone who may not regularly drive the horses, and my wife, Mollie, says she looks forward to handling the lines while the horse pulls load after load into the mow. (Also it means she doesn't have to be in the hot mow moving the hay around.)

Well, if this is your first time or two haying, before you go out to try some of the methods mentioned here, here are a few do's and don't's based on our own sometimes-bitter experience. First, make certain that all the haying equipment you may conceivably need is ready to go at least

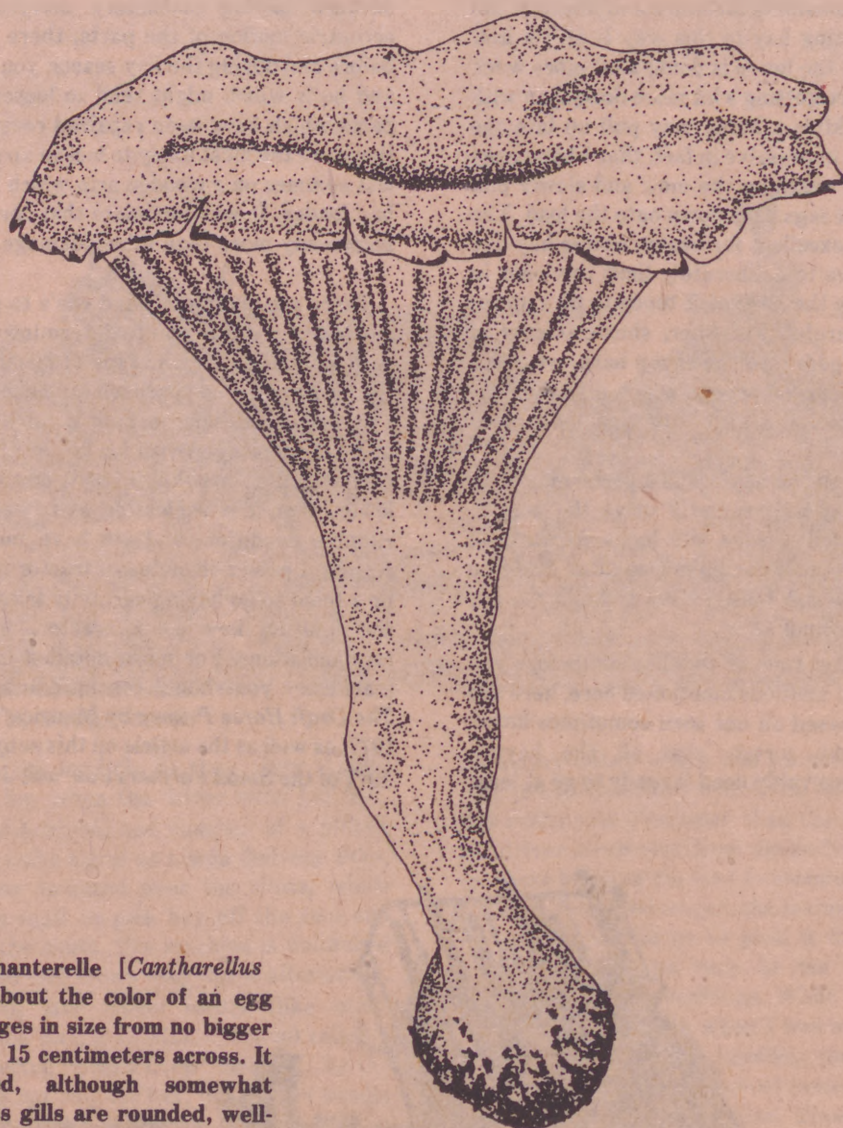
a week or two ahead of the earliest date you plan to hay (Make a list after last year's haying of all the repairs to be made before next year.) The weather will have no pity if you lose an opportunity to get your hay in before an extended wet period, or if you get caught with hay on the ground and machinery to pick it up is not ready. Second, because haying machinery involves either rotary or eccentric motion of the parts, there is vibration, so both before and during the hay season you should check all nuts and bolts which might tend to loosen. Especially suspect parts which have been repaired recently and rebolted, as these are the most likely to loosen up in use. This happened last summer on a wooden arm which I had replaced on the hay loader. It was fortunate that the problem was caught before any more than minor damage was done.

There are many pro's and con's to putting up hay loose, and it will be up to you to determine whether an approach such as ours suits your type of farming. Even if you bale, the horse-powered approach can be used, as the Amish pull a self-powered baler behind a hitch or forecart. Haying may take us longer with horse-powered machinery, but in compensation, we know that our machinery costs are lower, that it is easier for us to keep our equipment in running condition, and we have more control over our source of power than does a tractor operation. Harnessing up a team to go haying certainly takes longer than turning the ignition key on a tractor, but there are other compensations. For more detailed information on haying machinery you should consult the appropriate section of *The Draft Horse Primer* by Maurice Telleen, Rodale Press 1977, as well as the article on this subject in Vol. III, Spring 1977 of the *Small Farmers Journal*, Junction City, Oregon.



The hay loader in operation.

Chanterelles



The True Chanterelle [*Cantharellus cibarius*] is about the color of an egg yolk, and ranges in size from no bigger than a pea to 15 centimeters across. It is flat-topped, although somewhat lumpy, and its gills are rounded, well-separated, and about the same color as the rest of it.

By Walter Litten

There exists a mushroom of which somebody named Trattinik wrote, "Not only this same fungus never did any one harm, but might even restore the dead."

This remark is quoted in a 1900 book by Captain Charles McIlvaine, *One*

Thousand American Fungi. Eighty years ago, Captain McIlvaine had quite a network operating for him of "tasters and undertasters, both male and female" reporting on gastronomic and gastrointestinal experiences with wild fungi. People don't seem to be writing books any more the way Captain McIlvaine wrote: "For 20 years my

little friends—the toadstools—have been my constant companions. They have interested me, delighted me, fed me, and I have found much pleasure in making the public acquainted with their habits, structure, lusciousness and food value."

Please note from that passage that the word "toadstool" does not impute

noxious character to a fungus. Therefore please refrain in the future from asking, "How do you tell the difference between a mushroom and a toadstool?" That question lacks meaning, as you will see.

Trattinik's life-restoring fungus is not a rare one, as you might think. Indeed, it is one of the more common midsummer to early autumn toadstools in Maine and of temperate-zone woods around the globe. It is known in France by one of over 50 common names, depending on where you or your grandmother grew up; in English, as "chanterelle"; in German, as "Pfifferling"; and by 150 other local names across continental Europe. To shut out the babel, one uses the scientific name *Cantharellus cibarius*, as one must resort to scientific names for all the many thousands of fungi that have failed to be celebrated with common names.

McIlvaine celebrates the chanterelle thus: "The writer first made its acquaintance when among the West Virginia mountains in 1881. The golden patches of single and clustered *cibarius*, fragrant as ripened apricots, tufting the short grass or mossy ground under beeches, oaks and like-growing trees, through which the sunlight filtered generously, were so tempting, that he determined there must be luxury, even in death, from such toadstools."

Other writers of mushroom books proclaim the edibility of chanterelles in less lyrical terms, assuming you are untroubled by dietary idiosyncracies. Unlike them, I feel no urge to tempt you to eat wild mushrooms. In fact, I'd feel more secure if I could believe that nobody reading this article is going to swallow anything that would not have been swallowed without the article. Furthermore, I confess that though I have been fascinated by wild mushrooms for quite a few years now and occasionally eat some, my personal palate appreciates coconut custard pie more. I must also admit that countless generations of mankind have delighted in *Cantharellus cibarius* without ill effect. There is, however, good reason to believe that unmarked and forgotten along this long, long trail of lip-smacking satisfaction lies many a case of acute distress by folks who thought they were eating what I call *C. cibarius* but which actually consisted wholly or

in part (even small part, like one out of 100 caps) of something else.

Far greater than your chance of being poisoned by anything from the junk food section of your supermarket is your chance of being poisoned by identifying chanterelles just from the descriptions and illustrations given here or in any other literature. Words and pictures are good enough for handling the subject on an intellectual plane but not for risking a bout of retching and other miseries.

The only way to learn to identify chanterelles with the degree of assurance necessary for ingestion is to happen to be in the woods, cold sober, in the company of a person who can pronounce *Cantharellus cibarius* on the first try and does so while filling your extended palms with chanterelles of various shapes, sizes, colors, and ages that you suddenly see all around on the forest floor. If 10 years should elapse before you encounter your next patch of them, you will know them then, even if you haven't read one word on mushrooms in the intervening decade. How do you know that that small, hairy animal over there with the pointed ears and short nose is a dog and that one over here is a cat, without having looked up "dog" or "cat" in the dictionary? How do you know, without having memorized the kind of detailed description requested by the Missing Persons Bureau, that one person with ordinary facial features and build and unpredictable dress is your closest buddy while another person with rather similar physical characteristics and dressed just like your friend is an utter stranger? Take courage. While there are altogether too many different species of toadstools that look more or less alike in a season of abundance, that number is nothing compared with the number of ordinary human beings you have learned to tell apart with that wonderful instrument you carry between your ears.

A fresh chanterelle is about the color of an egg yolk and about as variable. (When actually scrambled with eggs, which is not a bad thing to do with it, its color on the plate will have turned a dark coppery.) A good flush of chanterelles can run in size from a nubbin no bigger than a pea to a superbly developed supergiant 15 centimeters across. The fully developed shape suggests a flat-topped top but a bit

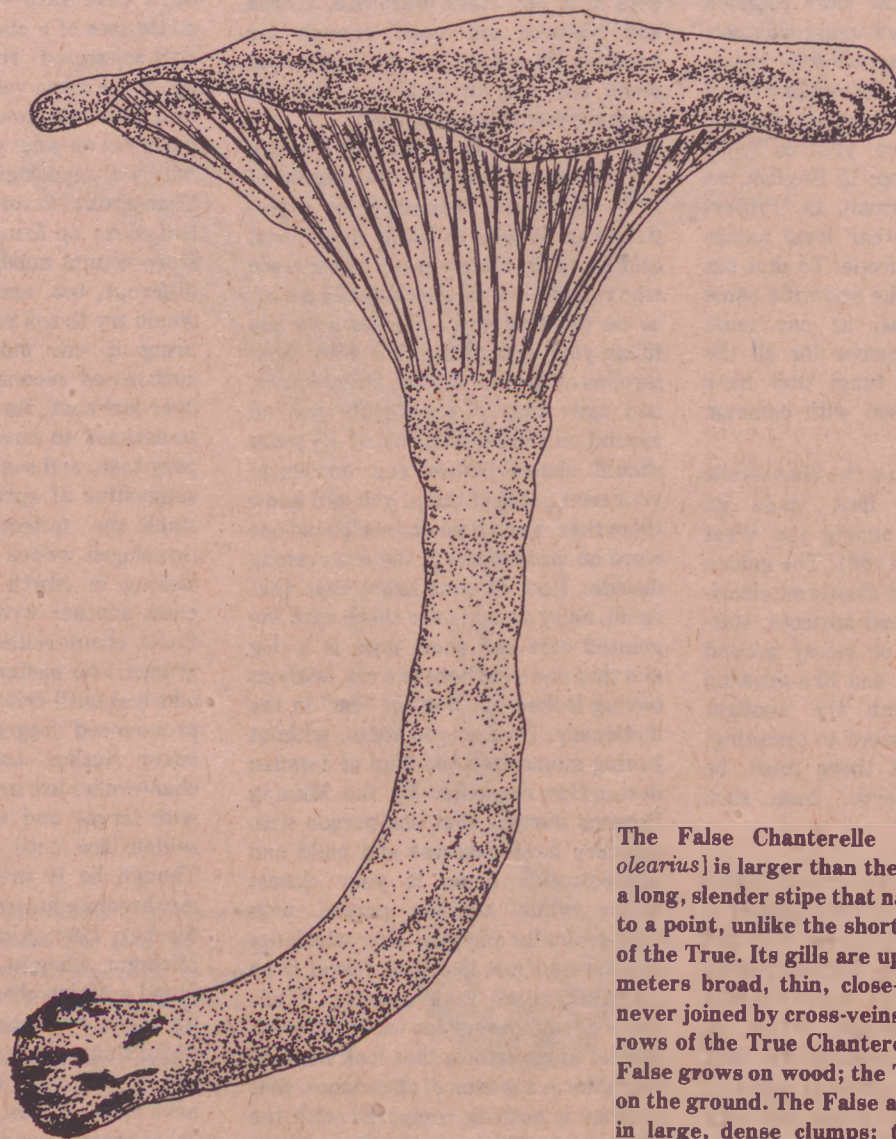
lumpy, irregular, less graceful, more variable than some other species of similar color and dissimilar effect on health. By contrast to the gills of the American commercial mushroom—those thin, closely packed radial leaves of tissue on the bottom of the cap that gradually darken from pale pink to dark chocolate—the corresponding structures of a chanterelle are merely well-separated rounded furrows of about the same yellow color of the rest of it that run down from the top and peter out on what you can call the stem but we mycologists call the stipe. Chanterelle texture is firm throughout and cooks up firmer and meatier than store-bought mushrooms. The taste is different, too, and if I were a poet I would try to tell you how different. To bring it out most enjoyably some authorities recommend slow cooking over low heat. Raw chanterelle is said sometimes to have a somewhat peppery taste and sometimes a fruity odor suggestive of apricots. I have yet to smell the apricot odor myself. One mycologist writes that it is sometimes lacking in North American chanterelles; another writes that while West Coast chanterelles do have faint fragrance, the eastern version is nearly odorless until dried, whereupon a very pronounced fragrance develops. The latter author asserts that eastern chanterelles are nearly always infested with larvae and western chanterelles seldom are until well past maturity. Though he is the dean of American mushroom scholarship and my eminent teacher, Prof. Alexander H. Smith of Michigan, I beg to differ. Rarely have I found a Maine chanterelle tunnelled in its prime by larvae. But as for those awful slugs, the summer of 1977 was a sad one for chanterelle-picking in my neck of the woods. Beauties extensively excavated and left covered with their shining dried slime! Some nibbled down to within half an inch of the ground. Most probably consumed in the night at pea size.

Does that bode ill for future chanterelle hunting? Does it mean that if you do find some this year you should leave them be and give them a chance to rebuild the population? Are you already a chanterelle hunter before reading this and resentful that such articles stimulate hunting and endanger the species? Nonsense!

The chanterelle is not a plant, as is the radish or the Furbish lousewort. Toadstools are fruit bodies, not whole organisms. The organism itself remains underground. It may be as old as some of the older

dioxide and sunlight directly and therefore cannot be admitted to the plant kingdom. It cannot mechanically wrap its exterior around its energy sources as can an amoeba or an active participant in Little League and is

individual organism by fire, flood, prolonged drought, other organisms, or geological change, arrangements for reproduction must be made. To go into the remarkably complex details of sex life among the fungi would get us too



The False Chanterelle [*Omphalotus olearius*] is larger than the True. It has a long, slender stipe that narrows down to a point, unlike the short, stubby one of the True. Its gills are up to six millimeters broad, thin, close-packed, and never joined by cross-veins like the furrows of the True Chanterelle are. The False grows on wood; the True, always on the ground. The False always comes in large, dense clumps; the True, in well-scattered singles and clumps of two or three.

trees in the woods, maybe older. It has the form of a very thin network of threads too small to see because they're only one cell wide. It may or may not maintain a symbiotic relationship with some of those trees, whereby it makes contact with their ultimate rootlets for an exchange of nutrients. It cannot live and build itself from carbon

therefore barred from the animal kingdom. Those energy-yielding nutrients have to be pulled in, molecule by molecule, right through the organism's intact cell walls. That, in the opinion of some, qualifies it for the separate and equal Kingdom of Fungi. For its kind to persist through the ages despite the certain eventual destruction of the

far off the subject of finding, identifying, and enjoying chanterelles. Suffice it to say that from the organism's point of view, rather than the slug's or the gastronome's, the chanterelle is merely a holding fixture for getting its spores out in the open and dispersed safely far away from the parent. When conditions of moisture, temperature, and

goodness knows what else have fallen into just the right pattern, the organism quickly starts constructing chanterelles out of threads of cells densely packed instead of thinly spread out like the rest of itself. When you or a squirrel come along and pluck a chanterelle, it sets loose on the winds of the world thousands of chanterelle spores as you carry it away and wave it around preparatory to consumption. If it had somehow remained unconsumed, it would just have been shooting those spores out into the air until it dried up or rotted away after a week or two. If you plucked it and didn't get around to cooking it before it spoiled in your refrigerator, it would be efficiently shedding spores as you carry your garbage to the compost pile. Be assured, then, that you are not standing in nature's way but falling in with her scheme, whatever happens or does not happen between you and the chanterelle. To tell what happens to those spores would be another complex irrelevancy. It just seems that for the millions of years past and future the earth remains neither overrun with chanterelles nor bereft of them.

So it is with all the many other species of fungal organisms that lie tangled together beneath the surface of the forest litter and, frequently (or rarely, as their specific requirements for fruiting dictate), raise their flag in the form of toadstools, without which their existence and identity remain secret. Whether their respective toadstools are yummy in the tummy, horrid, or neither, whether good for you or bad for you, seems miles remote from their own biological needs and surely, purely incidental. But not without interest.

Identifying every toadstool spotted on a good day's outing is not easy. Be suspicious of anybody who pretends to do so. Don't fall for blurbs promoting mushroom field guides with the implication that they are as effective in identification as bird books or other such manuals. Such a manual for mushrooms will be a long, long time in coming. When Professor Smith goes through your basket of individually wrapped collections after a morning in the woods, it is not at all unusual for him to toss one aside without the least trace of excitement, saying merely, "That one has no name." And that's precisely what he means. If at least you find that exciting, and study your

collection very closely, and scour the woods until you find it again and again, and study those collections very closely, and dig out a lot of old books and recent papers in numerous libraries, and get permission to compare various collections of dried mushrooms in various mycological herbariums for microscopic anatomical features with your collections, and write up your findings in proper academic style complete with a description in Latin and an editor of a recognized journal accepts it for publication, then from that point on it will have a name consisting of two Latin words that Julius Caesar would not have recognized and which must always be written in italics, followed by your own surname in roman.

Few are that interested. Your average American voter has no time for details. "Just tell me if it's a mushroom or a toadstool."

"What do you mean by 'toadstool'?"

"Look, friend, I asked you a simple question. Is it edible or poisonous?"

"Nobody knows for sure."

"Can't they analyze it?"

"Who is 'they'?"

"The people who are supposed to take care of such things, stupid."

Well, sir, you see it's like this. Some poisonous mushrooms have been studied very intensively by extremely capable chemists who have come up with some answers about the poisonous compounds they contain, but contain in widely variable concentrations that are hard to predict, so that one collection of the same species is hardly poisonous at all while others are deadly indeed. Even about those well-studied species, all the chemical arguments have not yet been settled. A vastly greater number of other species have been reported poisonous at one time or another, but it is not known what is in them that makes them poisonous under some conditions to some people and so it is not known what to analyze for. Furthermore, many, if not most, of these reports are unreliable as to the species involved, because very few first-class mycological taxonomists sit around emergency rooms of hospitals waiting for mushroom victims to be brought in. Given enough funding, however, such arrangements might be worked out and many chemists put to work investigating all suspected mushrooms. This would be a rather costly

undertaking that scarcely deserves priority over public health problems of wider impact than the protection of damn fools like yourself who can satisfy their curiosity about nature only through their gastrointestinal tracts.

Now let us consider what might be mistaken for a chanterelle for lack of experience. There is the False Chanterelle, an unscientific name which neatly illustrates the purpose of scientific names when two wise old mushroom collectors, both trained in childhood by their respective grandmothers, stand side by side holding two totally different toadstools and each proclaiming, "Mine is the true False Chanterelle." Both have every right to their opinions. Let us scrutinize both toadstools carefully, comparing them with the true chanterelle.

To avoid confusion let us call one of the False Chanterelles *Omphalotus olearius* (DC. ex Fr.) Sing., because that's what you have to call it if you really want to do your best to avoid confusion. However, if you call it Jack-O-Lantern Fungus, as some people's grandmothers do, you have a clue to an interesting distinction from *C. cibarius*. On a dark night you lay the true and the False side by side and turn out all lights. You spend the 10 minutes while your eyes are dark-adapting in stopping up all chinks of stray light. Then you look for your true chanterelle, which you can't see but which you might be able to smell if they are right about that alleged apricot fragrance. But the False Chanterelle you can see, because it is glowing with bioluminescence, unless lifelessly dry. "Its radiance by night surpasses its splendor by day," writes the exciting Captain McIlvaine, adding, "Eaten in quantity it acts upon some persons as an emetic. I have several times eaten of it without other than pleasurable sensations, but persons partaking of the same cooking have been sickened." He claims he once read a newspaper by the light of a mess of *O. olearius* that had been three days on the way to him. A friend of mine whom I trust more than I trust the Captain did once photograph *O. olearius* by its own light, but it took many hours of exposure on Kodachrome film. According to one of the most eminent of French mycologists, you don't have to wait for night to distinguish *O. olearius* from *C. cibarius*. A drop of household ammonia leaves a green spot on the former but not on the latter. At

least it does in France. (Don't extend this to a belief that you can distinguish any good toadstool from any bad toadstool with a drop of ammonia. Such a belief could kill you as dead as can faith in the good old reliable test for poison toadstools with a silver spoon or coin.)

Actually, once you've seen a basketful of nice, fresh *C. cibarius* and a basketful of nice, fresh *O. olearius*, you would hardly need any tests to tell them apart. Exceptional specimens aside, the False runs larger than the true. It has a long, slender stipe that narrows down to a point instead of a short, stubby one like the true's. Its gills are up to six millimeters broad, thin, close-packed and never joined by cross-veins, as the mere furrows of the true chanterelle often are. If you have made the find yourself, you can be even surer. While neither ever appears very far from trees, the False actually grows on wood, the true always on the ground, often in grass or moss, as on a certain mossy bank 50 meters from where I am typing these words, exactly on the line where the woods end and the sea takes over. Towards the Mediterranean, olive wood is the favorite wood of *O. olearius*, as suggested by that name, but it gets along very nicely on stumps and buried roots of oak and occasionally other hardwoods where olive trees are scarce, as on the Maine coast. Unlike *C. cibarius*, which appears in well-scattered singles and clumps of two or three, *O. olearius* always comes in large, dense clumps, except on those occasions when it presents itself as a single to a neophyte toadstool-picker who has not yet learned that all exceptions cannot be covered in books and articles. *C. cibarius* likewise

thrives in the company of oaks as second-best to its favorite habitat under conifers.

The False Chanterelle that that other gentleman is still patiently holding for our inspection, though miles away chemically from the true chanterelle, is perhaps slightly more likely to be confused with it because it runs to about the same size, general shape, and habit of scattering its fruit bodies over humus among conifer logs in advanced decay. *Hygrophoropsis aurantiaca* (Wulfen ex Fr.) Maire, as a sophisticate would call it, differs noticeably from *C. cibarius* and resembles the larger False Chanterelle in its very definite, if narrow, gills instead of furrows. The color tends toward orange but is quite unstable, fading out in places to white, or darkening markedly in age. Henri Romagnesi, the French authority, says it is perfectly edible and therefore no danger if consumed in error. McIlvaine would of course agree, but later authors writing in more safety-conscious times tend not to. In all likelihood you would survive and face up to your hospital bill.

We turn now from the two False Chanterelles to the Scaly Chanterelle, *Gomphus floccosus* (Schw.) Sing. My mentor Smith, a man I know personally to prefer to take his mushrooms intellectually rather than orally, says of this one (publicly): "Edible for some people and not for others. Although I am sensitive to it, it is one of the most delicious fungi I have ever eaten." He reports large fruitings of it in Nova Scotia. It has large, rough scales on top, but these can get washed down by rain into the hollow center, and the orange color can fade out to yellow like the true chanterelle, and

there you are with good potential for a bad night, unless you happened to notice that the folds on the underside are anything but regular furrows and persist all the way down without any definite stipe. Otherwise, if your dear ones should grow alarmed and haul you off to the hospital, it is most improbable that anyone there will know as much about toadstools as you know already. Greater danger may confront you there if they should look up certain older medical literature on the treatment of toadstool poisoning.

Strangely enough, the possibility exists of picking something chanterelle-like with vaguer furrows or even none at all, that with little dissent is considered just as good to eat as the esteemed *Cantharellus cibarius* Fries. For this one, contrary to what I have been telling you, two scientific names are in current academic use, but I know of only one common one, the Gill-less Chanterelle. It is said to prefer southern hardwoods for company, with an extension around the Gulf of St. Lawrence. Perhaps I shouldn't even mention this, but there are other chanterelles waiting for you in the woods that may be indistinguishable gastronomically or toxicologically from *C. cibarius* though they look quite different when fresh enough to eat. One of them is dead white and the other cinnabar red. Sorry about that.

Walter Litten of Ellsworth, Maine, is both knowledgeable about, and fascinated by, wild mushrooms, and occasionally eats Chanterelles, although he prefers coconut custard pie. He cautions readers not to ingest any wild mushroom based only on information obtained from this article. The illustrations were done by William Townsend.

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How Does Your Garden Grow?

By Mark Goodman

Few people will argue that the primary purpose of a vegetable garden is to have healthy produce. However, there is another aspect of vegetable gardening—appearance. To have a garden that is not only yielding abundantly but is beautiful too, adds dimension.

True, the aesthetics are secondary, since a weedy, fruitful patch is preferable to neat, colorful rows with skimpy vegetables. But in some special cases—market gardens, “pick-your-own” gardens, or frequently visited gardens like the one at Camp Med-o-lark here in

Washington, Maine—a “show” garden assumes greater importance. Here it is to our advantage to have as good-looking a garden as possible without sacrificing quality or too much space. Therefore, we try to include varieties that contribute to a good harvest and also are attractive.

Since flowers are generally the most colorful elements in a garden, and since they are not usually edible, how much space should be given to them? This depends on how much space you want to spare, but first, let's look at the benefits of flowers. In an organic garden, flowers are used to repel harmful insects. Much literature is available on this topic, so I won't elaborate. Flowers draw bees which help insure pollination of vegetable plants. Flowers are also used for natural dyes and for bouquets for the home. And in rare

Mark Goodman has his garden in Washington, Maine.

cases, such as with nasturtiums, the leaves and flowers are edible.

Even the most utilitarian gardener can find (or make) room for these splashes of color. If you use the intensive or raised bed methods, there is usually space in borders or between beds to plant a row of, say, dwarf marigolds or nasturtiums.

Here at Med-o-lark, we prefer to plant flowers in rows rather than use a here-and-there approach. The front edge of our 90' x 40' garden is bordered with a mixture of jewel-like nasturtiums and ruby lettuce. The main aisle has a one-foot row of yellow and orange marigolds, while the east border has smaller (six-inch) French marigolds. The colorful border defines boundaries in a pleasant, clear manner, reducing careless tromping by numerous visitors.

Throughout the garden are flower rows planted next to vegetables as companion plants, to deter harmful bugs. The bright eye-opening orange calendulas are more than just dazzlers. Similarly, the subtle pink and violet cosmos are functional as well as beautiful.

A confession—I like to plant zinnias and portulacas in the garden for no other reason than I enjoy looking at them. There's always room for a little beauty.

Herbs, too, contribute to the show garden. Aside from our separate herb garden, we intersperse purple basil, variegated (yellow and green) mint, and dill among the vegetables. All these herbs (along with most others) have insect repellent qualities and add a distinct look to the garden. Chives, particularly when flowering, are another useful showy herb. We also have comfrey plants, with their purplish bell-like flowers and wide leaves that attract bees (and comments) galore.

Now for the vegetables themselves. Anyone who gardens is already aware of the special beauty of vegetable flowers—squash, potato, bean, pea, etc., and the stately grace of asparagus plants. There are some vegetables, however, that we grow especially for their combination of looks and yield.

Our number one showpiece is scarlet runner beans. They grow on poles on one side of our center aisle. Their striking red flowers are an eye-catcher, not only to visitors but to bees, and on quiet sunny mornings and afternoons, to hummingbirds. The beans are crisp and tasty and can be used as snap beans up to eight to 10 inches. After that, they'll grow 14 to 16 inches and make fine shell beans. In

between the runner bean poles, we plant purple-pod beans which also have purple flowers. These bush beans don't grow as large as the scarlets, but turn a dark purple when mature and are delicious and decorative in salads (they'll turn green when cooked).

The ruby (red) lettuce in our front border and the bronze-tip leaf lettuce in the main garden are not only decorative but are slower to turn bitter than some other leaf lettuces. We get more red leaf variety from rhubarb, chard, and beet greens. One green vegetable that stands out to visitors is kale, because of its crinkly, silver-green leaf.

A standard item in our show garden is the "giant" Japanese radish (Fredonia Seed Co.). Although the root itself is not that large compared to other white radishes, it produces a bushy array of light-blue flowers (a rare color in many gardens) and edible seed pods that are great in salads (when small), soups, casseroles, and stews.

Along the back row we plant sunflowers and mustard greens. The mustard will grow fast and flower early to provide a yellow and green border until the sunflowers add their size and color.

There are many other vegetables that will enhance the appearance of your vegetable garden—particularly Egyptian onions, ornamental gourds, and squashes such as trompeta, luffa, and cucuzzi. Fredonia Seeds (Fredonia, N.Y.) has a selection of large, climbing, and unique vegetables for a change of pace.

Pole bean teepees, pole bean canopies (right down the center aisle!), and trellises (for squash, tomatoes, cukes, melons, peas, etc.) will also add a visual flair, as will imaginative scarecrows (or birdfeeders). We stacked a pyramid of hay bales, dug out the top-most bale, filled it with compost, and planted winter squash (or pumpkin) seeds to show off the beautiful yellow flowers as they billow down the steps. This is our "Stairway to Heaven".

Mulching and cultivating will, of course, spruce up any garden. We use hay mulch which provides a gold-brown background for the other colors.

So you see, there are many ways to dress up the vegetable garden without taking food off your table. I'll always have a warm spot in my heart for the funky patch out back (especially when I'm too tired to weed). But if you have the time and energy and you want to enjoy just sitting and looking (and eating), try a show garden. □

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Raising

Rabbits



By M. June Hall

How did I get started raising rabbits? I happened to pick up an old issue of *Countryside* magazine, edited by Jerry Balanger, and was reading about others who were raising them for fun, food and profit. I had always been one to picture rabbits as cute, cuddly little creatures who multiplied rapidly and made darling little

pets, but that was about all. I was wrong in two areas of my thinking.

Rabbits do not always multiply as fast as people think, and there is much more use for them than just as pets. The more I read, the more interested I became in raising them and having some meat for my table. I had figured on selling them to a commercial rabbit breeder and hopefully to make

money by doing that, but soon found out that I had to find and keep my own market. More about that later. First of all I chose an unused building that was just collecting clutter and cleaned it out. Then I bought some rabbit cages from Favorite Manufacturing Co. of Pennsylvania, and bought some wire and made some of my own hutches. The hutches I prefer are 30" x 18" for the breeding does. I have six hutches that are 24" x 24", used as holding pens for the fryers and the ones I am going to sell or keep for breeders. The hutches have pans under them so I can keep all the manure for the garden. As rabbit manure is one of the best fertilizers you can put on your ground, I didn't want to waste any of that because I garden organically and need all of the natural fertilizers I can get my hands on.

After getting my rabbitry building ready, the next thing was to get some rabbits. I had already written to several rabbit breeders and made arrangements with a man in Mechanic Falls to buy two New Zealand White Does and one New Zealand white buck. I would recommend that any breeder who has any ideas of raising rabbits start with good stock. Your offspring will only be as good as their sires. I was fortunate to get good rabbits and was anxious to get started. Let me mention at this point that I had read a lot of articles, and talked with different people who were also raising rabbits. I didn't totally start in the dark, but what I didn't know would have filled more books than what I did know. And while the books and articles are helpful, I doubt that the rabbits have read them because each rabbit is different! I was anxious to get my rabbits bred and was waiting for the arrival of lots of little bunnies so I could begin selling them right away!

I was in for a surprise. I had thought that rabbits were always in heat. That is not true. There may be some rabbit breeders who would disagree with that statement, but I know from experience that it isn't so. Rabbits have a heat cycle like most other animals, and while it is true you can get them to breed quite easily in the spring and summer try it in the fall and winter! Rabbits have a 16-day heat cycle and if you are lucky, you can get them bred. Sometimes a rabbit will just huddle in the corner of the buck's hutch and growl at him each time he approaches her. Let me mention here too, be sure to always put the doe in the buck's hutch and as soon as he has serviced her, take her out. Do not leave them together! This is a good way to have a good buck get castrated, for a doe will tear him to pieces in just a matter of minutes if left together. I know there are people who do leave them together, but they are taking a awful chance. If the doe is in heat, she will squat down in the hutch and put her tail up over her back, the buck will mount the doe immediately and fall off to his side as soon as the job is completed. It will all happen in a matter of minutes.

After the doe has been bred, put her back in her hutch and leave the rest up to her. In an average of 28-32 days the doe will kindle. Be sure that she has a nest box put in a couple of days before she is due to kindle. I usually put shavings and some hay in the nest box so the doe can arrange them to suit herself. She will usually pull some fur to go along with what you have put in. When the bunnies are born they do not have any hair and can freeze to death in just a matter of minutes if the doe has them on the wire or hasn't pulled any fur. Usually if the doe has them on the wire, or pulls no fur, there is a reason for her

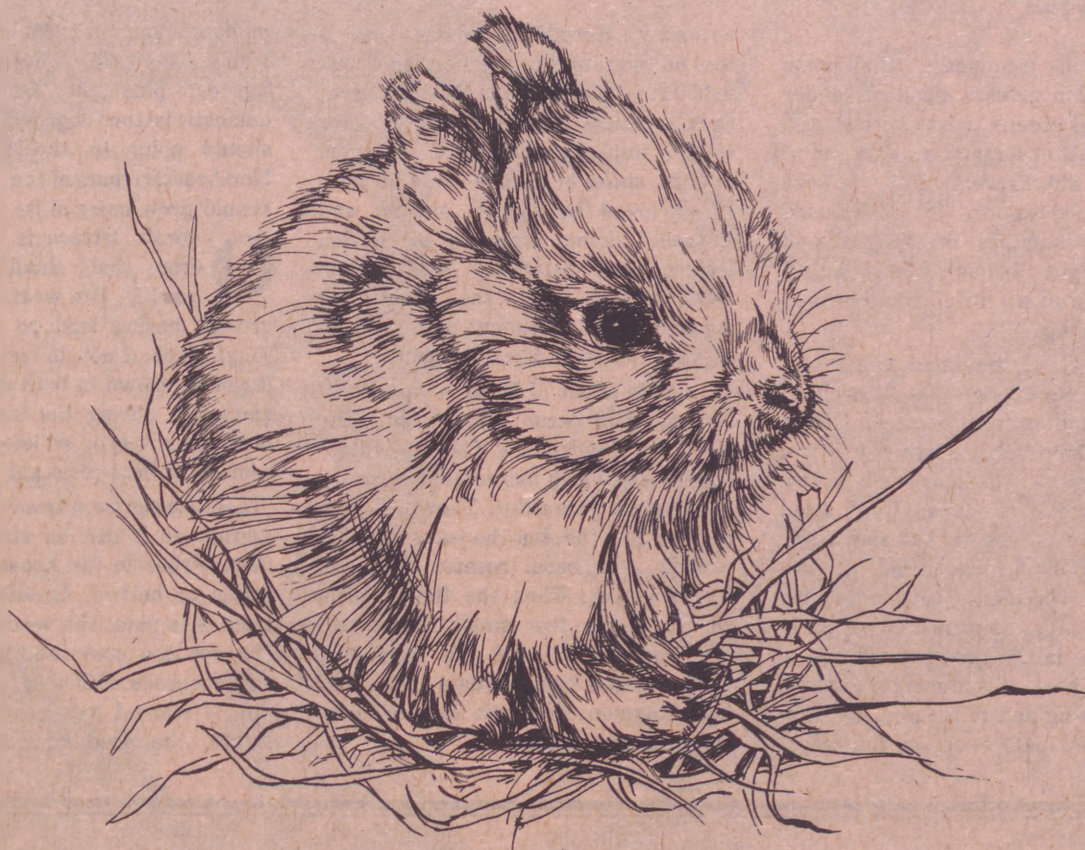
doing so. Maybe something disturbed her about the time she is getting ready to kindle, or she has no milk. If a rat or a cat, or dog is present in the rabbitry, she may have them on the wire. If that happens wait about three days then breed her back. If she has no milk, unless you have another doe that is about to kindle on the same day and has proven from experience that she has lots of milk and is able to care for extras, cull the doe that has no milk, as she will never be any good as far as a producer goes. With the price of feed the way it is, you cannot afford to keep a rabbit that doesn't prove up. As soon as the doe has kindled and has gotten out of the nest box to eat, check the litter to be sure that they are okay. If there are any dead ones remove them and then put the nest box back where it was and leave the doe alone because she will resent having her family touched, even by her owner. I always make sure that a nursing doe has plenty to eat, and I also give her warm water to help her. Make sure that all rabbits have a salt lick in their hutches at all times. Rabbits need salt just like other animals do and if deprived of this, it can be a contributing factor in causing them to eat their young. I feed my rabbits Coarse 16 which is a dairy ration. Why? Because Coarse 16 is high in protein, and quite a bit cheaper than rabbit pellets. Also I have found that there isn't so much waste, because there isn't so much dust in the feed as there is in pellets. If there is too much dust in the feed, rabbits can develop the snuffles, which are very hard to get rid of once they get started. My rabbits have done very well on Coarse 16 and it doesn't seem to take as much to get them up to butchering size. The little bunnies should stay with their mother until they are about two months old and then it is time to cull them out, by picking the ones you want to butcher, the ones you want to keep for replacement breeders, and the ones you want to sell for breeding stock and for pets.

There is quite a bit of work involved if you want to succeed at keeping rabbits. Rabbits need to be kept clean. In the wintertime it is hard to keep the rabbitry clean, but it is just as important then as it is in the summer. Urine and manure will freeze to the hutches and collect if the pans are not cleaned. I clean my pans out everyday. I have to thaw them by using boiling water and then washing them clean. I find that using newspaper to line the pans also helps. It will decompose and go right back into the soil with the manure, so there is no need to worry about that.

I also give my rabbits plenty of warm water to drink when it gets cold. Don't worry about the cold, as rabbits have plenty of warm fur and can stand it a lot colder than they can the heat and humidity of summer. I have seen it down to -10 in the rabbitry itself, and it never seems to bother them.

When the time comes to butcher, I hold off feeding them for 24 hours so there is less feed in the stomach or bowels. I do give them all they want to drink, and this serves mentioning here also. Always look for a rabbit that will drink plenty of water, for this is a sign that the meat will be much better. Rabbit meat has a lot of moisture in it, and is much better if the rabbit will drink hardily from the time they start drinking to the time they are butchered.

There is no easy way to butcher. That is never pleasant, but if you are raising rabbits for table meat that is the only way you are going to get them onto the table. I admit that I



had a hard time killing my first rabbit, but if you know how, it will help. There are many books on the market that will give you some help, but like me, you will have to work out the system that works best for you. I hit the rabbit behind the ears with a blunt object—a good thick stick works best. Make sure you hit the rabbit with a hard, swift blow. Then remove the head immediately and let the rabbit bleed out. I remove the head with a pair of pruning snips and then hang the rabbit on a gambrel hook to let it bleed. I then proceed to remove the front feet, at the joint. You can find this by bending the front foot and cutting it off right at that point. Don't cut any higher—there is good meat on the front leg and you don't want to waste it. I then cut off the tail right at the rump. Then take a sharp skinning knife and slit the skin down the inside of both hind legs until you come to the vent area. Be careful here. You don't want to rupture the bladder or the bowel tract, and you will if you jab your knife too hard and don't know what you are cutting.

After you have the two hind legs skinned, you can pull the fur off the rabbit just like a glove. After you do one or two rabbits you will find a method that works best for you and you will find that you can do it quite fast. Rabbits are much easier to do than chickens. After the skin is off, you have to take the insides out. This sounds awful, but after you get the hang of it, it comes quite easily. I cut around the anal area very carefully and then pull the insides down toward the chest cavity. Be careful that you don't puncture the stomach or any of the insides. I usually cut the bladder off and remove that separately so that it won't get punctured. After you have the insides out, cut off the liver, and take out the heart. Some people will find these very tasty, and even if you don't like them,

they make an excellent treat for a cat or dog after they are cooked. Now you can cut up the rabbit. I do this by cutting off the hind legs just at the place where they join onto the body of the rabbit. I also cut off the tail at this point. Put the pieces of meat into the pan of cold water so that any fur that has gotten onto the meat will soak off. Do not let the meat soak longer than 15 minutes, as rabbit meat has a tendency to soak up water. Cut the back joint off right at the two front legs. There will be a piece right around the neck area that is waste; throw this away with the insides. You should have seven pieces of rabbit meat in all. After this has cooled and been thoroughly washed you will notice that the meat is white. Unlike chicken, there is no dark meat on the rabbit. Any recipe that can be used for chicken will work for rabbit. I cook rabbit meat about 40 minutes at 400° if I am baking it. Be careful you don't overcook it, or it will dry out on you.

I think that with a little practice and a lot of patience, you will find that rabbit meat is delicious, easy to raise, easy to butcher, and most of all, easy to eat! Rabbit meat is low in fat and calories, which makes it good for people who are on special diets and trying to lose weight. You will make mistakes the same as we all do in raising them. There will be times of discouragement. But when you eat that first rabbit you have raised yourself, you will find like I did, that it was well worth every minute of work and effort. And when you see how well your garden grows from the manure, and see the wonderful produce you get, you will be like the rest of us homesteaders who are raising rabbits—you will be hooked for life! □

M. June Hall raises rabbits in Bryant Pond, Maine.

All too frequently, the home garden gives a flood of tender salad greens in late spring, and then the heat of summer puts an end to this bountiful harvest. But you can have a good supply of fresh salad vegetables starting in August and running right through the fall. All that's required is a little know-how and some planning.

Generally, all the salad vegetables require a moist soil that is rich in nitrogen and organic matter. (It's a general rule in horticulture that if you have nitrogen in the soil, you'll have a lot of vegetative tops, i.e., salad greens.) Salad vegetables should be grown rapidly, since rapid growth results in succulent, tender leaves; thus, they must be grown either early and/or late in the growing season, to avoid the heat of summertime which causes bolting and bitterness. Because of this, they make excellent fall crops.

antiquity. Herodotus relates that it was on the tables of the Persian Kings in 550 B.C. Martial gave the lettuces of the Cappadocia type the term *viles*, (or cheap), implying abundance. Chaucer, in 1340, spoke of lettuce when he said, "Well loved be garlic, onions, and lettuce." Some 16 sorts of garden lettuce were listed by McMahon in 1806, and in 1885, the New York Agricultural Experiment Station listed 87 varieties with 585 synonyms.

Lettuce is one of 50 to 90 species of *lactuca* that occur widely over the Northern Hemisphere. They all contain a milky sap which increases in quantity as the plant gets older. They can grow to three feet tall, but the leaves usually remain as a basal rosette until the plants flower. Then the flower stalk shoots up; a few small leaves are produced on it, and the remaining leaves at the base become tough and old. Common, domestic lettuce is no longer found in the wild.

million pounds in 1965, and 2.2 million pounds in 1975. These importation figures, plus the fact that most domestic lettuce is grown in California, should point to the fact that the Northeastern part of the United States should grow more of its own lettuce.

Overall, lettuce is a cool-season crop that should be grown quickly. Hot weather and a long growth period lead to a bitter and tough plant, if not, in fact, bolting. But it can be grown in both spring and fall and even during the summer if one uses the cos type of lettuce, which is somewhat heat-resistant.

Lettuce can be started directly in the garden or it can be started in seed flats, either in the house or in a cold frame or hotbed. In either case, the trick is to plant the seeds so that they are not too crowded. Crowding the seeds causes difficulty in transplanting. If started indoors or in the cold frame, the seed can be planted in

The Truth About Salad Greens

Everybody has his or her favorite salad recipe, so I won't attempt to go through all the salad vegetables here, but I will discuss fresh vegetables that can be used in fall salads. They fall into two groups, 1) those that are planted in the spring (onions, carrots, celery, chives, and tomatoes) and 2) those that are planted in the summer (lettuce, Chinese cabbage, spinach, endive, watercress).

Lettuce

Lettuce is mainly thought of as a spring crop. It is common knowledge that lettuce bolts and turns bitter in the summer, though there are some varieties that do fairly well in the heat of summer. But lettuce can be grown as a fall crop too, and can be grown indoors year-round.

Lettuce, (*Lactuca sativa* L.), a native of Europe and the Orient, has great

Louis Wilcox is the Chairman, Center of Environmental Science, Unity College, Maine. Photos by Thomas Shetterly.

Lettuce basically falls into three groups. There are the *cos* or *romaine* lettuces, which have upright, oblong leaves up to one foot long and with wide midribs; *curled* lettuces, which have a non-heading loose rosette of fringed leaves; *head* or *cabbage* lettuces have a dense rosette of leaves that form a head. There are innumerable varieties and even more names, but all varieties of lettuce can be classified into these three groups.

Lettuce is a large crop in the United States, and Americans consume so much that we even import it. The acreage planted to lettuce has not changed that much from 1949 to 1975 — 207,000 to 233,160 acres, but the yield has gone from 132 Cwt. (13,200 lbs.) per acre to 230 Cwt. (23,000 lbs.) per acre. This increase in yield is partially a product of some breeding, but is mostly due to the increased use of fertilizers and other cultural practices. The United States imported 3.6 million pounds of lettuce in 1960, 2.4

vermiculite, perlite, soil, or milled sphagnum. The seed should be planted only about an eighth of an inch deep, and should be thoroughly watered. Lettuce is one of those crops that must be kept moist at all times. When the seedlings are about one inch tall, they should be moved to individual containers. In so doing, it is important that you cause as little damage as possible to the root system. When the seedlings are about two to three inches tall, or when the weather is right, you can transplant them to the garden.

If you are planting directly in the garden, one of the best ways is to make a quarter-inch deep furrow and place a few seeds every six inches. Later, you can then transplant them right within the same row so that they are about two to three inches apart. As the plants get larger, you thin again until the plants are six inches apart. And do eat the thinnings!

Lettuce prefers a soil that is between pH 6 and 7. So, in most New England



Cos or Romaine lettuce.

soils, you will have to lime the soil to achieve a good crop. Lettuce does very well on the muck soils that are used for celery and onions. The lesson in that knowledge is that the addition of organic material to garden soil will help greatly, for it increases the moisture-holding capacity of the soil. Good lettuce production requires a high nitrogen content in the soil. Nitrogen stimulates leaf production. Soils that are low in nitrogen, but high in phosphorus and potassium will stimulate the growth of reproductive parts, such as flowers.

Again, one of the most important practices in growing lettuce is to keep the soil moist—both during germination and during the growing period. This may mean that you will have to water it as it grows. The little time spent doing this will be worthwhile for the lettuce will be of much better quality.

Practices for the fall crop differ little from those in spring. Start seedlings about the first of August and plant some seeds every 10 days to two weeks after that up until about the middle of September, depending upon your loca-

tion. Most lettuce varieties take about 75 days to maturity, but remember that lettuce can be eaten well before full maturity and is just as tasty. Lettuce, despite all outward appearances, will survive some of the early frosts quite well, even though you may have to discard some of the outer leaves. My wife and I have even harvested lettuce in November, thrown a few outer leaves on the compost heap, and had a delicious salad.

Since you are planting in what can frequently be the dry time of the year, it is best if you mulch the soil once the plants are up. The mulch will retain moisture and keep the soil cool. Lettuce is a shallow-rooted plant, and requires this form of protection as much in the fall as it did in the spring.

Diseases are not much of a problem in either the spring or the fall because most varieties have been bred to be disease-resistant. You may, however, run into some problems with either aphids or slugs. Aphids can usually be controlled with rotenone, or the plant can be washed before eating, to remove all the aphids. As for slugs, you

will create the ideal environment for them when you mulch. That doesn't mean that you should stop mulching. On the contrary, keep mulching, but take some other steps to slow down the slugs. Shallow dishes of beer are good for stopping them. They are attracted to the beer, crawl in the dishes, and drown.

What about varieties of lettuce to grow in the fall? If you have varieties that you like for spring growing, grow them in the fall too. Many have their personal preferences, but I would suggest that it is best to grow several varieties of lettuce for the diversity that it brings to salads, and for assurance that you will harvest some lettuce (if you have failures with some varieties).

Here are some of the varieties that you can select from:

Iceberg: this is a true head lettuce which is grown in only a few parts of the country because of the cool conditions that are required. If you want a head lettuce, it would be best to grow the variety *Ithaca*, described below.

Buttercrunch: one of the so-called butterhead lettuces that is a standard in the home garden. Buttercrunch takes about 64 days to mature and produces a loose head of leaves.

Bibb: is also one of the butterhead lettuces and takes about 58 days to mature. It has small, rounded leaves and is used interchangeably with Buttercrunch. But, Bibb bolts very easily with summer heat and thus Buttercrunch is a better bet since it does not bolt so easily.

There is also a summer Bibb variety which does much better in the summer heat.

Ithaca: This heading variety takes about 72 days to mature and was developed at Cornell University. If you like Iceberg lettuce, you will like Ithaca, and it should be used in place of Iceberg in the home garden.

Salad Bowl: This is one of the loose-leaf varieties. It matures in about 48 days, and is probably the best loose-leaf variety for the home garden because it stays in prime condition throughout the growing season.

Ruby: another loose-leaf variety that is used for its color! It should be picked when it is young for it does not

maintain a prime condition for a long time like Salad Bowl.

Oakleaf: yet another loose-leaf lettuce that takes about 45 days to mature. It also adds variety to a salad, but it is not as succulent as Buttercrunch. It is easy to grow, and slow to bolt.

Black-Seeded Simpson: An old favorite for its loose leaves, it takes about 45 days to maturity. It grows rapidly, can be harvested well before maturity, and stands well in the garden;—that is, it does not become so tough and bitter with time.

Parris Island: this is one of the cos or romaine lettuces that takes 76 days to maturity. It is somewhat heat-resistant and thus is grown where there will be a problem with heat. The hearts of Parris Island blanch white and you harvest a tender, erect type of head that has green leaves on the outside and white ones inside. The head is not unlike that of Chinese Cabbage, but the flavor is like that of lettuce.

Chinese Cabbage

Chinese cabbage (*Brassica Rapa Pekinensis* Group) was introduced to the United States in 1837. It was recorded in Chinese agricultural records as early as the fifth century. It

is in the Cruciferae family and thus is related to cabbage, broccoli, cauliflower, and Brussels sprouts. Chinese cabbage is not one of the leading salad vegetables in the United States, but it is widely cultivated in the Orient where it is called pe-tsai.

There are also some closely-related biennial cabbages that do not produce the typical head of Chinese cabbage—they produce a very loose head of leaves. Pak-choi, which is included in the *B. Rapa* *Peninensis* Group, and false pak-choi, *B. parachinensis*, are examples of the loose head type. These, like the heading Chinese cabbage, are natives of eastern Asia.

Chinese cabbage does best on a rich, deep soil. Goodly quantities of nitrogen and phosphorus should be added since Chinese cabbage, like all of its relatives, is a heavy feeder. Adding manure for the nitrogen will also give the soil good moisture-holding capacity, which is important. Chinese cabbage needs a moist soil throughout its growth period.

It is best to start Chinese cabbage inside or in a cold frame, and transplant the seedlings to individual containers before moving them to the



Buttercrunch lettuce

garden. This assures them a good start. But this does not mean that you cannot seed directly in the garden. In either case, you should plant the seedlings or thin them so that the plants are about 18 inches apart. You should plant sometime between late June and middle July and it is an ideal fall crop as well. If you plant in the spring, the long days of summer trigger the plants to flower and you end up with few, if any, leaves.

Chinese cabbage should be mulched rather heavily for two reasons—assuming that you can control the slugs, which are encouraged by mulching. First, the mulch keeps the soil moist and cool, and second, if you keep building up the mulch, you can pull it up around the plants when the frosts come and they will survive it very nicely. I have harvested perfectly good Chinese cabbage when the ground was just about frozen. It is not as rugged as broccoli, but it is quite resistant to all the early frosts in the fall.

Chinese cabbage is attacked by about the same diseases and pests as cabbage itself. The root maggot can be thwarted by placing squares of tar paper around the base of the plant when transplanting. In fact, this is one good reason for using transplants rather than seeding directly in the garden. Aphids can be controlled with rotenone, as can cabbage worms. Chinese cabbage, like cabbage, is susceptible to club root, and one of the best controls for this disease is to rotate your crop so that you do not plant any member of the cabbage family in the same spot anymore than every seven years.

All varieties of Chinese cabbage take 75 to 80 days to mature, but this is no problem since the plant is reasonably resistant to frost. Here are a few varieties to look at:

Michihli: takes 80 days to mature and is one of the most popular varieties. The heads can get to be 18 inches tall, and remain in prime condition for a long time.

Nagaoka No. 2: this is a Japanese hybrid that matures in 65 days. It is not quite as large as Michihli, but equally as good. There are other varieties of Chinese cabbage, as well as varieties of the loose headed types, which are frequently called Bok Choy. Whichever variety you grow, remember that Chinese cabbage is just as



Red Cabbage is delicious cooked or raw.

good raw in a salad, as it is cooked in Chinese dishes.

Spinach

Spinach is like Chinese cabbage in one respect: you cannot grow it in the summer. The days are too long and it goes all to flower. Aside from the fact that both are also delicious in salads, the similarity ends there. Spinach, *Spinacia oleracea* L., a member of the Chenopodiaceae, was first introduced to Europe via Spain. Its origin is unknown beyond that. There is some difference of opinion as to when it first showed up in Europe, but it appears that it was around 1351. The date that spinach landed in America is not certain, but by 1806, there were at least three varieties grown in America.

Since then, it has spread throughout the world.

Spinach should be grown in soil that is moist, with a high organic and nitrogen content. The pH should be close to neutral. All of these factors contribute to the rapid growth which is needed to yield crisp, tender leaves.

Spinach is seeded directly in the garden. You can plant it in single rows 12 inches apart, subsequently thinning so that the plants are three inches apart. The advantage of this method is that you will have few problems with weeds. And, you must weed spinach, for it does not do well with a lot of weedy competition.



Spinach

Spinach can be harvested by cutting the whole top of the plant off. Or, if you are a purist like my wife, you can go along and pick one leaf off at a time. The latter method is better if you have the time. Pulling the outside leaves off encourages the center ones to grow and you may get two or more harvests off the same plant. With the cutting method, you are unlikely to get more than one harvest, since you will no doubt cut the center leaves.

As for varieties to grow, there are several. One substitute for spinach that is frequently used is New Zealand spinach (*Tetragonia expansa*) because it will grow in the heat of the summer. Here are a few of the true spinach varieties that are good.

America: this variety matures in 50 days, gives a good yield, and is slow to bolt. It has thick, dark green leaves and is good for the home garden.

Melody: matures in 42 days and is a heavy yielder with good disease resistance. The leaves are moderately savoyed and have a deep green color.

Winter Bloomsdale: matures in 45 days and is tolerant of both heat and cold. It will frequently winter over if given just a bit of mulch for protection. But its

leaves are not as savoyed as the other varieties.

Endive

Endive is in the same family as lettuce, the Compositae. It is native to a number of places, depending on who you believe. It is reported to be of East Indian origin, from Nepal, and from Sicily. At any rate, it was used early by the Egyptians, and Greeks as a salad and as a potherb. It was first cultivated in England in 1548, and though the date of its first introduction into the United States is unknown, it was used quite widely by 1806.

There are two distinct types of endive: endive which has slender leaves with curly or wavy edges, and escarole, which has broad flat leaves. Cultural practices are the same for both. The soil should be rich and moist, with a pH of 5.8 to 7.0. The seed can be sowed directly in the garden or can be started inside and transplanted. If you plant directly in the garden, sow the seed about a quarter-inch deep, placing three or four seeds in a group and spacing each group about 12 inches apart. Once the seeds are up, thin to the best plant of each group. If you start the plants

inside, transplant about 12 inches apart. The seed should be started in mid-summer, two-and-a-half to three months before the first frost. Like most leafy vegetables, endive has shallow roots and thus, you must be cautious when cultivating that you do not cut them. Mulching will help here not only to control the weeds, but also to keep the soil moist.

Endive must be blanched before it is ready to eat. This is a process of excluding light so that the leaves turn white. This is accomplished by pulling the outer leaves up together so that they completely cover the inside of the plant. These outer leaves can be tied at the top with string or a rubber band. The process of blanching takes about two to three weeks. You can blanch endive at any stage of growth; but, always blanch before you eat it, or it will be tough.

Some varieties to try are *Green Curled* and *Salad King*. If you prefer the broad leaved escarole, you should try *Florida Deep Heart* or *Full Heart Bavarian*.

Watercress

Watercress, *Nasturtium officinale*, is in the Cruciferae family just like Chinese cabbage. It is native to the north temperate regions, but its exact origin is not known. Culture of watercress is a rather simple matter. It does best in wet places, and you can grow it in ditches, pools, low spots, or on stream margins. You can start it from cuttings or from seeds. One of the best ways is to start with seed. Germinate them in pots by planting about one-eighth of an inch deep—and keep them moist. Once the plants are up and established in the pot, place the pot in shallow water, preferably in a stream. The pot should either be sunken in the mud at the bottom of the stream or tethered in some fashion so that it will not wash away. Make sure that the plant tops are above water. Then stand back and watch. You do not have to weed, you do not have to mulch, you do not have to fertilize. And what's more, once the plants are established in your

favorite wet spot, they will come back year after year. Normally, you only have to plant it once.

Watercress produces hollow stems with small dark green leaves. When harvesting, simply cut the stems off. The stems and leaves add a refreshing, tart flavor to salads—not too tart, but refreshing. It's used by many as a replacement for lettuce in sandwiches, and there are even some who simply make a watercress sandwich. If you've ever noticed the price of watercress in the grocery store, you may wonder why more people do not grow it, since it is so easy.

There is also a garden cress [*Lepidium sativum*] on the market which can be grown in the regular part of your garden. This should be planted in mid to late July as it will go to seed if the plants are full-grown from a spring planting. Watercress, on the other hand, can be planted in the early summer or late spring.



Celery

Other Fall Salad Vegetables

From time to time, other vegetables have been described in *Farmstead* that can be used for fall salad greens; for example, beets and Swiss chard. They are closely related and can be grown in a similar fashion. Plant seed directly in the garden between mid and late July. They do best on a moist soil with a good organic content. The beet greens can be grown closer together than you would normally grow beets for roots.

Collards are frequently thought of as a Southern dish, but they can be grown in most parts of the country and make a tasty addition to salads. Collards are frequently called the tree cabbage because at maturity, the stems have elongated to two to four feet with cabbage-like heads at the top. Collards taste similar to cabbage, but the taste is richer. And, they are more resistant to heat and cold than cabbage.

Collards are cultivated much like cabbages and are susceptible to the same diseases. Plant in late spring for a harvest throughout the summer and fall.

Celery (*Aphim graveolens* var. *dulce*) makes a tasty addition to fall salads. It must be started indoors in the spring because it takes about four months to grow. It is a muck soil crop, that is, you need a soil that is moist and rich in organic matter. The crop must stay moist throughout the growing season. Like endive, celery should be blanched. You can blanch celery by simply hilling the soil up around the plants about three to four weeks before harvest, or by planting a paper bag over each plant with just the leaves sticking out the top of the bag.

Radishes (*Raphanus sativus*) make a colorful addition to the fall salad. They take less than 30 days from seed to maturity, so they are a crop that you can plant frequently. The spring globular radishes such as *Cherry Belle*, can be planted in the late summer for fall harvest, just as well as they can be in the spring. You can also plant the long-rooted white or icicle varieties in August for fall harvest. If you want radishes for your salads all winter long, try the *Round Black Spanish* variety. Radishes are susceptible to attack by the root maggot, and you can avoid this problem by placing or building a screen cage over the seeds after they are planted, so that the adult root maggot cannot get to the radish to lay its eggs.

□



Rob Johnston, of Albion, Maine, is the President of MOFGA.

MOFGA on the Move

By Ellie Thurston

An organization has blossomed in the state of Maine. As one of its 1700 members said recently, "We're now being accepted as a force to be contended with."

This "force", the Maine Organic Farmers and Gardeners Association (MOFGA), is a statewide organization which promotes organic farming and gardening, and supports the needs of the small farmer. Now in its seventh year, MOFGA has grown up a lot since the early days of Sunday afternoon kitchen table discussions of soil amendments and insect pests.

The association has developed enough clout, anyway, to be influential in the passage of state legislation favorable to the small organic farmer. Representatives of MOFGA have spoken at state hearings, communicated the small farmer's needs to the right people at the Statehouse, and, seen the passage of the Direct Marketing Act, the Food and Farmland Study Commission, and the Farmland and Open Space Bill.

MOFGA has a comfortable relationship with the Department of Agriculture. State Commissioner of Agriculture Joseph Williams said, "In this day and age, when some old concepts such as being self-sufficient and conserving resources are an obvious need, the Maine Organic Farmers and Gardeners Association is in step with the times, and in the position of being a positive force."

To its members, MOFGA offers such benefits as cooperative purchase of fertilizers at lower prices, assistance in direct marketing of farm goods, a farm apprenticeship program, certification of farms as organic, meetings, conferences, workshops, and more.

A wide cross section of Maine rural folk belong to MOFGA. If you attend one of their local chapter meetings in any of the 24 county groups, you'll meet the young banker-turned-farmer from New Jersey; the long-time family farmer who grew his food organically before it was even fashionable; the conservative middle-aged couple with a large backyard garden.

"I went to the Lower Knox County chapter meeting one night," recalled MOFGA executive director Chaitanya York. "I looked around and there were people in their 50's, and people in their 20's, there were people with really short hair and people with really long hair, just a whole spectrum of people, not any one type. And they were all sitting there sharing common experiences of rural living. It was so beautiful I had tears in my eyes."

MOFGA was founded six years ago by a small group of farmers interested in exchanging ideas, asking questions and learning more about organic farming.

"Back then there was a trend towards getting something like MOFGA started," said Cliff Parsons, an organic farmer from Mechanics Falls. "I'd been growing organically for 25 years and others were too, but just weren't publicizing it. We thought a group like that would be of some benefit to us."

Parsons, along with James Luthy, farmer and professor at Bates, Charles Gould, an Extension Agent, Abbie Page, later to become director of the State Energy Office, Ken Horn, farmer and teacher, and Prof. and Mrs. David Page, are credited with being the founders of MOFGA. They held several preliminary meetings, followed by the official founding meeting at the University of Maine at Augusta, in 1972. Ken Horn of Plymouth became the first president of the Maine Organic Foods Association, as it was then called.

Local chapters were formed in the counties and people began to join. By the time of the first annual meeting, by-laws were being reviewed and the Association became incorporated.

Director York recalls, "When the Association was first formed, we had about three or four county chapters. We found that it grew by leaps and bounds. We just kept adding chapters. In the winter of '75, it seemed like we added a chapter about every month, for about five or six months.

James Luthy, a doctor of chemistry, became the second president, followed by Mort Mather, author and organic farmer; Chaitanya York, at the time the owner of a tree and landscaping business; Chuck Vaughan, organic farmer and worker for Mid-Coast Agricultural Resource Center, and most lately, Rob Johnston, Jr. owner of Johnny's Selected Seeds.

By 1976, the Association had grown to a point where a paid staff was needed. This decision was reached at the Annual Meeting, and York was voted executive director. He, Tym Nason, editor of the newspaper, and two clerical workers, became the only paid staff. Funds were sought—and received—from various grants, which sufficed for about a year. Since then, fund-raising events have been held almost continuously.

At MOFGA headquarters in Hallowell, York sits at a desk buried in paperwork that looks like it might take a year, working overtime, to catch up with. But he can handle it. York has earned a reputation as a human dynamo-workaholic; the 60-to-80-hour-a-week kind, who thrives on his work and exudes energy and spirit.

"If you could follow Chaitanya around for a week," said MOFGA Education Committee Chairman Jay Robbins,

"you'd be amazed at the number of places he goes, the number of people he sees—people at the University of Maine, at the Extension Service, the Conservation Districts, the Statehouse, the whole agricultural complex; he makes sure that they're aware of a lot of the concerns of small farmers."

Between overseeing the Association's different divisions, planning fund-raising events, being involved in legislative business, and a hundred other things, it's no wonder that York works overtime for MOFGA.

"I've never done anything in my life that's given me as much satisfaction as the job that I have right now," he admitted.

MOFGA is held together by a small group of hard-core dedicated-workers, including secretary Debbie Zeserman and bookkeeper Tinnel Sisco.

Remarked York, "I know that Tinnel, for instance often works five days a week and gets paid for three. She's willing to do that because what she's doing is something that she feels is important. Debbie works overtime. Tym Nason works overtime."

There are others, in charge of the different divisions of MOFGA, who must receive compensation for their hard work in personal gratification—because they certainly don't in cash. Positions are all volunteer. The Divisions at MOFGA are the Legislative Study Committee, co-directed by Laura Evans of Burkettsville and David Kennedy of Belfast; Research, headed by Dr. Frank Eggert of Verona; Publications, by Genie Dailey of Coopers Mills; Education and Assistance, Jay Robbins of Richmond; Public Relations, Michael Haskell of Bowdoinham; and Certification, Peg Dietrich of Houlton. The Vice President of MOFGA is Karl Smith of Appleton; Vice President of Farming Division, Michael Schaaf of Freeport; Vice President of Group Purchase Division, Kate Parker of Waldoboro; Secretary, Barbara Eggert of Verona; Treasurer and Finance, Allen Powell of Athens.

In addition, there are 24 Chapter Directors who are in charge of their county's meetings and projects, which take a fair amount of volunteer time.

In fact, it is impossible, in one article, to do justice to the amount of volunteer work given to MOFGA by officers, members and friends.

What will it do for me if I join MOFGA?" a friend asked recently. "I pay the \$7 annual membership fee, what do I get out of it?"

One thing would be a discount on fish emulsion, liquid seaweed and rock phosphate. A group purchase, in the name of the organization, lowers the price considerably for each buyer.

Another MOFGA benefit is a subscription, often at half the retail price to *Maine Organic Farmers and Gardeners*, a 50¢ bi-monthly tabloid loaded with agricultural information and updates on MOFGA activities. Tym Nason is the editor.

"I have a prejudiced point of view," said York, "but I believe it's the best paper on the subject East of the Mississippi, and there's not a paper that could contend with it."

The latest issue, for example, contains articles on spruce budworm, intensive lamb production, biological control, aerial herbicide spraying, broody hens, and the necessity of credit in farming.

If you are an organic farmer and want to make it official for the sake of your consumers, MOFGA membership entitles you to organic certification. Peggy Dietrich, head of the certification committee, said they're now working on a second, "B" certification for farmers who are switching over from chemical to organic farming. The committee's goal for the next year is to better educate the public, i.e., consumers and food co-ops, as to the significance of being certified.

Another reason to join MOFGA is for the apprenticeship program. (See *Farmstead*, Spring, 1978.) Farmers who desire a farm apprentice can contact Don and Joan Lipfert.

One ostensible benefit of being a MOFGA member is being able to attend the local monthly pot-luck dinner meetings held in each county, in order to see films, hear speakers, or engage in various farming discussions. However, of the 24 chapters in the state, some are not so active as others. In one county, for example, not one member showed up for a particular meeting this past winter. Another chapter is temporarily defunct, until the members show enough interest to make a comeback.

But some chapters make up for the slowness of others. Bob Mowdy of the Bradford Chapter said, "I've thought our chapter was the best thing in the state and the most active, since the day it was organized. We proved it this year, I think, when we took our food co-op, which we were running for ourselves, and wrote CETA grants for four positions, and ran the food co-op so we could get it places where the dinner crowd eats. We then turned around and incorporated that food co-op this year as a nonprofit, charitable organization with a list of goals about this long. I have an excited group that's working hard."

York said, "The chapters vary in their effectiveness; vary year by year. Sometimes there are people who have got the time to take responsibility as directors, and sometimes not. Often, when you've got a person in the chapter who'll take a lot of responsibility or be on a planning group that chapter really works well. If a chapter director doesn't have the time, then it doesn't work so well."

Help in marketing your produce is another reason to join MOFGA.

"MOFGA's Division of Production and Marketing spent the winter of 1977 setting up meetings between farmers and camps, schools, and other institutions that wanted special organic vegetables," reported former Division Vice President Tony Bok, at MOFGA's annual meeting in January. "I met with and wrote to various groups and individuals to help them set up farmer's markets. As usual, the Division was a clearing house to set individual farmers up with buyers and vice versa."

The Marketing Division will continue to set up meetings between farmers and schools, camps, and co-ops; will provide marketing experts and consultants for the local chapters, and plans to compile a "Buyer's Guide to Organic Produce," in which organic farmers in Maine will be listed.

The above are some of the benefits a person will reap by joining MOFGA; in addition, the Association does things which affect all of us, members or not, "We have a good relationship with Commissioner Williams (State Commissioner of Agriculture)," said York. "I think he's a beauty, and in my opinion, he's probably the best Commissioner of Agriculture we have had in recent times. We also have a good relationship with a number of legislators interested in promoting and supporting agriculture and the best interests of Maine in general. The State Department of Agriculture has been incredibly supportive and helpful. There are a number of things we can cooperate on, one being legislation."

MOFGA representatives, along with other interest groups, have attended hearings on three bills and spoken in favor of them. The three, Direct Marketing, Food and Farmland Study Commission, and the Farmland and Open Space Bill, all passed the Legislature, albeit, the first two without funding.

The first bill, Direct Marketing Act, written by MOFGA representatives, U Maine law students, Northeast Carry, Sam Ely Trust, FEDCO, and others, is essentially to provide assistance to farmers in developing direct marketing.

The second, the Food and Farmland Study Commission is a year-long study, conducted by 21 people appointed by the Governor, who will research direct marketing and recommend methods for increasing its effectiveness; and will study the conversion of farmland to other uses and recommend programs to protect agricultural lands from urban encroachment. The Commission will also compile information on prime agricultural land, review efforts to protect agricultural land in other states and Canada, develop recommendations toward greater state self-sufficiency in the production of food, use of indigenous fertilizers and soil improving material; and, in addition, study existing state and federal programs and policies on conversion from chemical to organic farming methods.

MOFGA's David Vail and Chaitanya York were appointed to the Study Commission.

"It's my privilege to have been chosen to sit on this task force," said York.

The Farmland and Open Space Law states that 100 percent land tax valuation shall be based on the *current* use of the farmland and will not reflect the land's potential for development, nor "the value attributable to road or shore frontage."

MOFGA's David Kennedy and Chaitanya York worked with Commissioner Williams, Rep. Dick Spencer, and others, to re-word a special section of the bill before it was passed.

MOFGA keeps on top of what's before the Legislature.

It also keeps in close touch with the University of Maine, the Extension Service, the Maine Energy Forum, The Task Force for Food Policy for the Northeast, Midcoast Agricultural Resource Center, and other like-minded groups.

"It's really only recently that MOFGA's role has been effective in the Legislature," said Jay Robbins, "acting as an intermediary between the membership and the

Department of Agriculture. One of the reasons it was not happening as much before as it will be now is that MOFGA did not have a track record of credibility. But now people know it represents a couple thousand people in the state."

Research and Education are important areas of MOFGA's scope. The Research Committee has formulated the projects of researching integrated pest management for vegetable crops, and studying biological and equipment technologies of successful small organic farms in Northern New England, both of which are being considered for federal funding.

MOFGA is dedicated to the education of anyone who seeks information from them. A person with a problem or question can call MOFGA headquarters and quickly and informally be put in touch with another member who can help, or be given an answer from the office's resource file, library, or reference list.

The organization holds many conferences, classes, workshops, and fairs, which are stimulating and educational, and offer people an opportunity to come into contact with agricultural experts, films, and demonstrations.

Spring Growth '77, Taste of Maine, Maine Farm Days, workshops at the Agricultural Trade Fair, and the Common Ground Country Fair, are a few examples that took place in the last year.

Some of these serve a double purpose: they are educational, and they help raise money for the organization.

Money has been a thorn in the group's side. It costs money to do all that MOFGA does, and they've had to scramble to get enough of it.

A few members feel that since York and two clerical workers became salaried, much time has been spent dreaming up money-making projects to support these salaries. They wonder if MOFGA would still work if changed back to a completely voluntary organization as it was in the beginning. Others feel that MOFGA could never be as effective on a volunteer basis, and that the paid staff is well worth their salaries in ultimate results.

As of January 1, 1978, Allen Powell, the treasurer reported that cash on hand amounted to \$2,038.57 (reported up to \$3,000.00 in the March/April edition of *MOF&G*.) This is enough to run the Association for approximately one more month.

"We are dealing with a financial situation in MOFGA which I would not as yet call a crisis, and hopefully won't get to be one," said York. "We're planning new fund-raising strategies to get us through the short-term period between now and September, when we trust the Common Ground Country Fair will provide us with some revenue."

Last year, the 1977 Common Ground Country Fair was a financial godsend. The fair, three days of demonstrations, films, displays, and speakers, was very well-attended and grossed over \$26,000, which netted them around \$7,000. They are already planning the 1978 Common Ground Country Fair, scheduled for Sept. 22, 23, and 24, and presumably, are hoping for an even greater net income the second time around.



Marketing organically grown produce

MOFGA is young and still growing, but it has proven itself worthwhile and effective. York believes the Association works because of the phenomenal commitment of the officers, committee people, and numerous volunteers; and because MOFGA doesn't come on strong with a heavy, self-righteous approach.

"We don't seem to get into self-righteous polarizations," he said. "What happens a lot in the world is that you have somebody who takes a position over here...which is called **CHEMICAL AGRICULTURE**. And that immediately re-creates another position over here, called **ORGANIC AGRICULTURE**. These two opposing points of view get self-righteous and their views get more and more solid, and the opposing force's views get more and more solid. What's nice about our group and the so-called agricultural establishment is that we can *communicate*, cooperate, and find a common ground, where we can work in the best interests of the small farmer, in an agriculture that works for Maine."

□

Getting Your Goat

By Suzy Rossel

I just can't handle it anymore," my neighbor was saying, his face weary and tense. "I've given my goats the best but they walk all over me. They get through the fence at least twice a day and they've girdled my best apple tree. I've reached the limit—tomorrow they go to the auction." Here was a man who loved goats, as many people do, but he had been driven to the breaking point. I understand completely, for I'd been through the same thing. When you're trying to have a working relationship with an animal, and it won't cooperate, it can be a very frustrating state of affairs.

I've run into quite a few people who keep goats and say, "Oh, I never keep Daisy tied up or penned in. She's like a pet, just runs around and does her own thing." This can work out very well if you have no vegetable garden, no flower beds or ornamentals, no fruit trees, nor any close-by neighbors who do. For added safety you should live away from a road. (Even if you swear Daisy only crosses to munch on that thick patch of wild raspberries when no cars are in sight, accidents do happen and drivers aren't usually prepared for crossing livestock.)

But most of us who want to keep productive farm animals also like to raise vegetables and fruit trees, and it's asking too much of a roaming goat to resist the temptation of your luscious-looking cabbage patch. I tried giving two of my goats a short period of "free play" every evening before milking time, while I was going in and out anyway and could keep an eye on them. They were really good for a couple of weeks, sticking to an area around the barn where no destruction was possible. Then one day I turned my back for just a minute too long, and they headed right for the front of the house—established as forbidden territory—and pruned back my peony and geraniums severely. The temptation had been too great, and I really could blame only myself.

Having raised goats for a few years, I must offer this advice to anyone considering the endeavor: decide first how you will confine the animals when they're out to pasture, and make sure you can afford it. Properly confined, your goats will be reasonably happy and so will you. If they never have the opportunity to plague you with such antics as knocking over the lumber pile and pulling clothes off the line, they won't miss it. And you won't be constantly battling, making yourself frustrated and miserable.

Different goats have different temperaments, just as people do. Kids, of course, are generally more rowdy, which is part of the reason they're so lovable. They don't cause much damage when they're little, and it seems like

such harmless fun to let them use the farm equipment to practice their jumping. But as they get bigger it's not so cute, and can be downright obnoxious when things get overturned and broken! Happily, goats do settle down considerably as they get older and are bred; they certainly aren't likely to jump as high once their udders are weighed down with milk. But why let the kids get bad habits you'll only have to break later?

When you're shopping for goats, temperament is an important point to consider. It's helpful to know the parentage of the goats in question for many reasons, and temperament is one. Such qualities as noisiness and aggressive tendencies do run in families. Do the kids you're selecting come from a line of extremely vocal goats? Goats can range from being very quiet to screaming and bellowing constantly; it's nice to find a happy medium. Some will be stubborn, obnoxious and more persistent in trying to break fences, while others are more mellow and seem eager to please. This can make a great difference in how you get along. You can still do well buying an animal whose background you know nothing about, but you must be sure you can recognize physical characteristics and be confident that you can cope with any personality problems should they arise.

Once you've established that you want to keep your goats properly confined, the next question arises—what method to use? If you don't want your goats breaking out twice a day as my friend's did, you must offer something better than a slipshod, rickety structure that merely serves as a challenge.

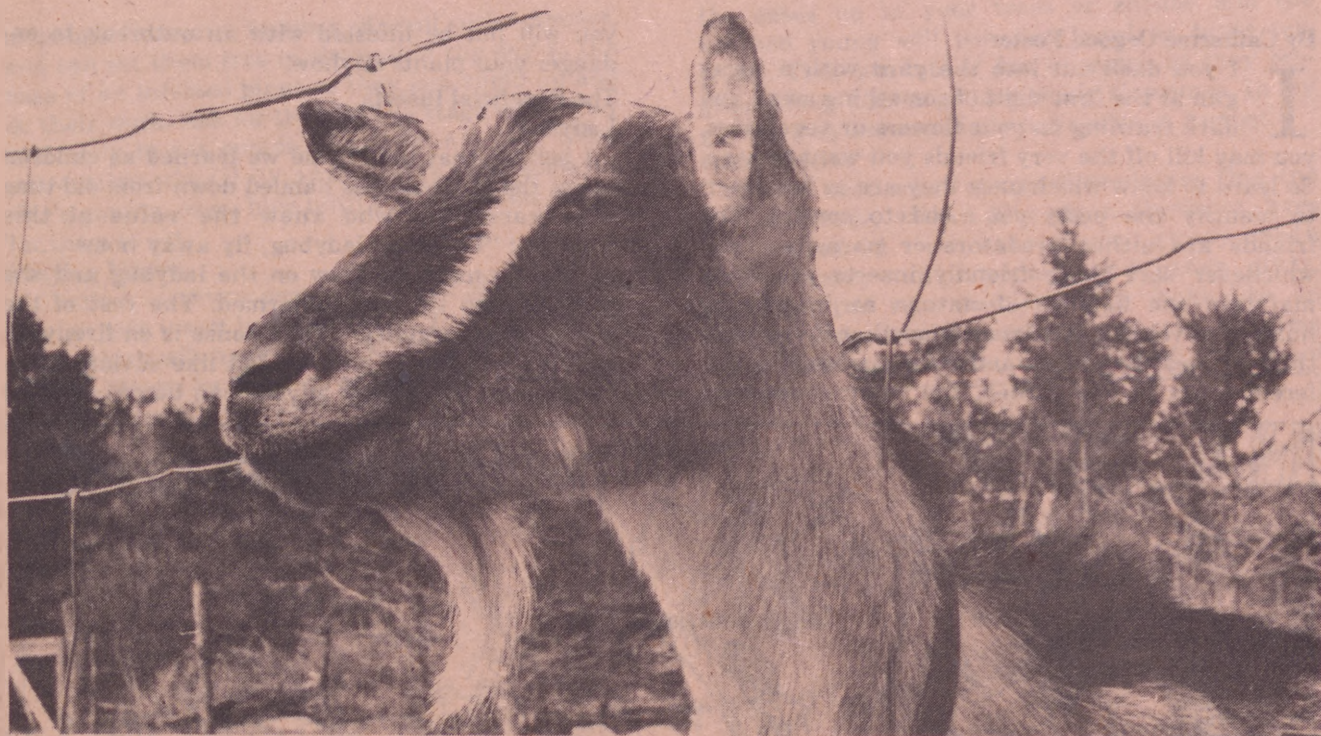
Ideally, a four to five foot high fence of two inch by four inch woven wire is the answer. If you're planning to keep several goats and you know you'll be sticking with it, this kind of fence will pay off. It is costly, no doubt about it; many find it prohibitively so. But if you decide to take the plunge, you'll have made an important improvement on your farm.

If you have a choice between the type that is spot-welded where the wires meet, or the type with little bits of wire wrapped around every juncture, the latter will prove stronger. Avoid chain-link style fence mesh, as this is easy to crawl under or climb over. Whatever type you decide on, be sure to attach the fencing on the goat side of the posts. If you fasten it on the outside, the fasteners may become undone as the goats worry the fence rubbing and scratching themselves. Run the mesh around the posts at the corners for added strength.

If you have access to free slab wood at a sawmill, don't mind the work involved and aren't too concerned with appearance, a picket-type fence could be built that would keep anything in.

Electric fencing seems to work for some goats and not for others. A strong charge is very important, as we found out; when we tried using a weak charger our goats just

Suzy Rossel lives in Troy, Maine.



didn't respond to the shock produced. Several strands of wire are needed. You won't be able to string the lowest wire too low, as it would short out on the grass, so kids will be able to crawl underneath. This type of fence works best for full-grown goats.

Right here is a good place to comment on barbed wire. I would not recommend this at all, as it is really a hazard. It's too easy for an animal to get badly torn up, and torn teats especially are no fun to deal with.

Some people will not consider tethering, while others never use any other method of confinement. If accompanied by some measure of intelligence, I think tethering can work out well. There are always stories of goats getting tangled on their ropes and strangling to death, and I know of many close calls. It does happen! It's just plain stupid to tie any animal where there is anything in reach to tangle on; I would only consider tethering in a clear, grassy area. Use a swivel on the end of the stake, and another on the goat's end of the rope or chain to prevent twisting. Goats can exhibit amazing strength, as we found out many times, so make sure that stake is well-driven into the ground. Fifteen feet of leeway is a good amount to allow; constantly moving the stake will not be necessary.

Make sure, if you're tethering several goats, that they're far enough apart so as not to get tangled together. If you have a large, clear area this method can work out well for your animals. It would be wise to invest in enough fencing for an exercise pen where they can get together, run around and play.

Tethering involves, in the long run, more attention on your part than fencing does. You'll have to move the stakes every day and there will be times when the sun is too strong to leave your animals exposed in an open area. A good fence, that your goats won't bother trying to get out of, will mean less overall work once the initial job of erecting it is done. Your animals will be happier, too.

Why are some goats a pleasure to milk while others put up such a fuss that you begin to dread doing chores? I think it's important to establish right away a good attitude towards milking. A milking stand makes the whole affair a lot more pleasant. My husband built one out of scrap lumber, following the standard plans that seem to be printed in every goat book. A couple of weeks before my does were ready to kid for their first time, I began feeding them while they stood on the stand. They loved to hop up and soon became accustomed to slipping their heads in the stanchion to gobble their grain. When they kidded and milking time arrived, getting them to cooperate was no problem, and there never was a kicked-over bucket of milk. It's important that you genuinely enjoy milking and convey that attitude to your goats.

Your goats must learn, too, that hoof-trimming, grooming and hair-clipping, worming and other routine management practices are all part of their lives. You should establish a grooming routine, and be firm about completing any operation you begin. No goat I've ever met has wanted to stand still while having its hooves trimmed. You might tie yours on a short rope in the barn for this, and firmly take hold of the foot. You can be kind and gentle, and still show who's boss. Don't let an uncooperative goat get away with half a trimming job or without its worming medicine. If you let your goats walk all over you, they'll get in the habit, and every hoof-trimming session will be a dreadful experience.

These ways of dealing with goats are useful with any farm animal, and can go a long way towards making your relationship a satisfying one. A happy animal is a pleasure to see, but that happiness does not have to be at the expense of yours. Your goats can be content and cooperative, and if you can maintain that, you won't be likely to find yourself reluctantly shipping them to the auction and returning to store-bought milk. □

By Catharine Osgood Foster

If you dash out into the yard with a spray gun at the first sight of something small and dark crawling on your flowers or vegetables, you may kill off the very friends you want to keep. So learn to know which ones they are as you learn to identify the pests you need to control. The friends are either predators or parasites, and whichever sort those friendly insects are, they maintain the balance of nature as interfering humans never can. Also remember that if you have thriving, healthy plants, and grow a mixture of different kinds in one garden, the chances are that

you will not be infested with an outbreak to endanger your plants anyhow.

The Beneficial Insects

Ladybug

I believe that the rhyme we learned as children about the ladybug was handed down from old-time wise gardeners who knew the value of this creature: "Ladybug, ladybug, fly away home . . ." At this moment we blew on the ladybug and she took off into the air, unharmed. The rest of the words added urgency: "Your house is on fire; your children will burn," and we felt like saviors when we chanted them. Now anyone can buy a gallon of



ladybugs from any number of mail order houses, and can set them free in the cool of the day at the base of an infested plant so they can climb up and do their work. Ask for them at the stage when they are ready to eat aphids. If you do not take these precautions, they'll fly away and inhabit someone else's garden, or go hide until the right time comes for them to eat.

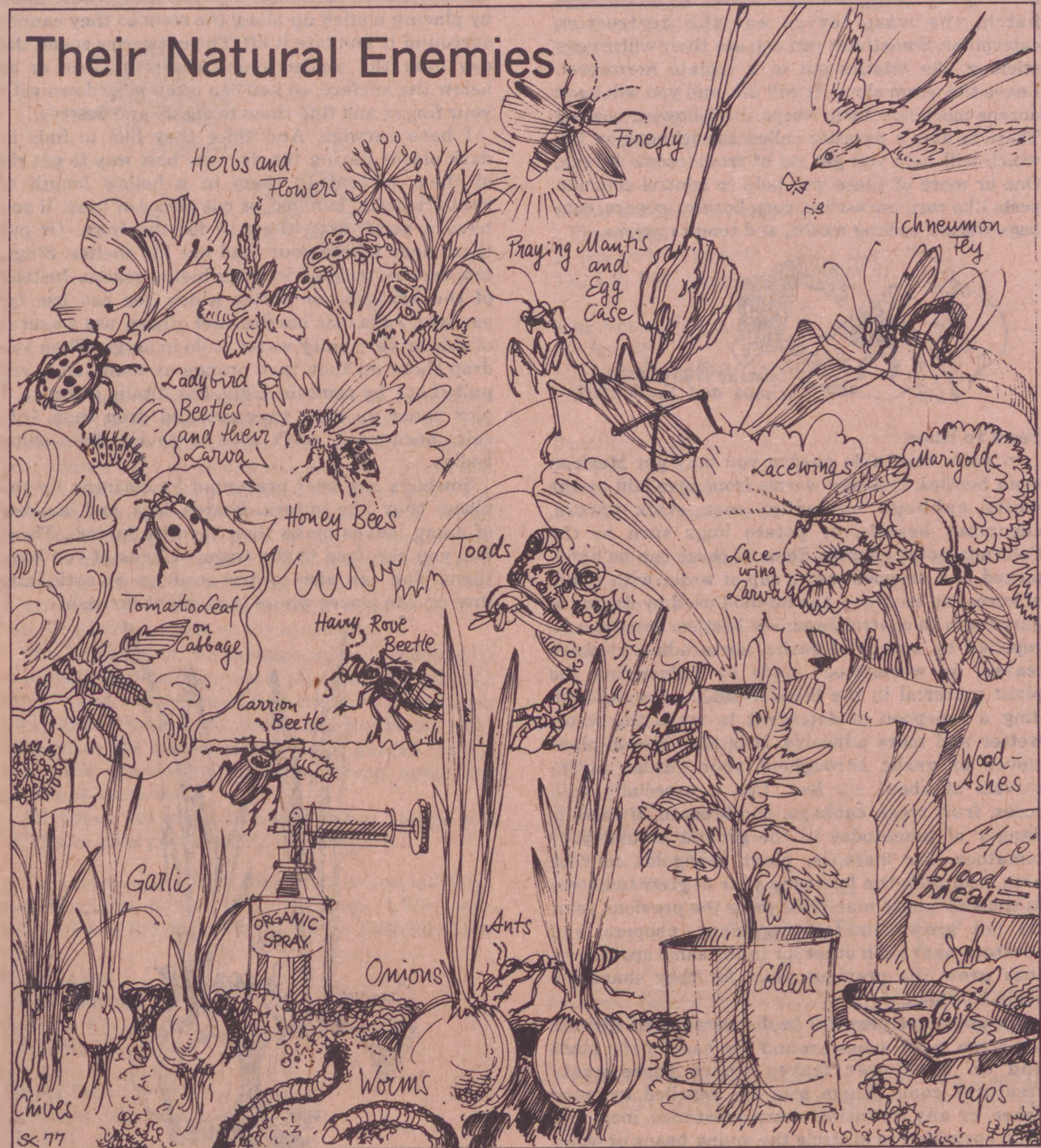
Praying Mantis

Another voracious pest-eater is the praying mantis, but this insect is not so fussy. You can buy egg cases which will hatch out in your garden. Three to six are plenty for the average home garden. Hang

the cases up in your trees or shrubs and the hatched young will use your yard as home territory. They are lots of fun to watch as they progress along a stem getting ready to pounce. In my garden they are especially noticeable in August.

Good Beetles

Several beetles are also good predators. One, the ground beetle, with a blue-green shininess, lives underground and eats many gypsy moth caterpillars, cankerworms, and other pests. Another, the rove beetle, which looks like an earwig without the hind-pincers, will consume many cabbage maggots, mites, and the larvae of



other harmful beetles such as the bark beetle. Do not destroy their orange eggs if you come upon them. Fireflies eat only when they are larvae, and they are very useful in any garden infested by snails. Their relatives, the soldier beetles, sometimes seen on flowers, have a large black spot on the thorax. Be good to them, too. And be good to the delicate lacewings. They eat pests, too, like aphids. You can buy aphid-eating lacewings, also.

Wasps

The tiny trichogramma wasp can be bought as well. This useful little creature will parasitize the caterpillars and destructive worms you want to get rid of by laying eggs on their bodies. When the eggs hatch, the wasp larvae eat the destructive caterpillar. Sometimes you can see their white eggs sticking like bristles out of a tomato hornworm. Leave the worm alone. It will die, and you will have dozens more new little wasps the following season. There is also a parasite called the ichneumon fly, which will help you get rid of troublesome larvae. One or more of these will help to control common pests like corn earworms, corn borers, loopers, cabbage worms, codling moths, and tomato worms.



*Colorado Potato Beetle,
Larva and Egg Clusters*

Pests To Know

In your vegetable garden you may get Mexican bean beetles, cabbage worms from eggs laid by the white cabbage butterfly, corn stalk borers, cucumber beetles, or potato bugs such as the Colorado potato beetle. Some of these can be hand-picked and dropped into a cup of water with a film of kerosene on top — the method used by dozens of gardeners to control Japanese beetles. Some can be repelled by sprays of garlic, horseradish, rhubarb leaves, or wormwood, made by pulverizing the plant material in the blender with water, and adding a teaspoon of detergent to make the water wetter and more adhesive. It is also wise to plant cloves of garlic throughout your garden at intervals of about six feet. Use it especially with roses, fruit trees, cabbage, and broccoli. If there is danger of nematodes in the ground around your tomatoes, for instance, plant marigolds in that area, and plan the following year to grow tomatoes in the soil where marigolds grew the previous year. Do not grow tomatoes, eggplant, peppers, and potatoes near each other, or in the same spot where they grew the previous year, for they share the same troubles.

Cucumber beetles will be discouraged by sprinkling some wood ashes around the base of the plant and on the lower leaves where these nasty creatures come. Slugs also are repelled by wood ashes, or any irritating sharp substance, including sand sprinkled to encircle the young beans or other



Snail

plants they want to attack. The trick of enticing them with beer is best played if you use a sharp-edged sardine can as a container, sunk to the brim in the earth. The saucer so often recommended is too easy for them to slither out of.

Cutworms can be discouraged with tarpaper or other stiff collars around the stems of your young transplants or seedlings. You can also thwart them by placing a stick up along the stem so they cannot surround it and bite it off. The cutworms spend the day near the tender young plants an inch or so below the surface, so you can often poke down with your finger and find them to dig up and destroy.

I hate earwigs. And since they like to hide in dark places during the day, the best way to get rid of them is to trap them in a hollow length of rhubarb stalk, bamboo, or cut pieces of hose. If you have a pond, drop them in for the frogs. Or put them near where your toad has his shelter. Slugs, too, can be trapped in their hiding places. Instead of the kerosene on water which you can use for earwigs, Japanese beetles, and others, use a saucer of salt or very salty water to do in slugs. When you drop them in, they turn orange as their juices are pulled out by osmosis. Ugly, but totally effective. I pick them up with tweezers and drop them into salt, because I don't like to touch their slimy bodies.

Sowbugs are best prevented by cleaning up the places they like to lurk. Boards, logs, and bunches of damp leaves make their favorite haunts. These too, you can feed to the frogs, or hens, if you have them. You can also control sowbugs by sprinkling lime on the places where they might flourish.



Troublesome pests that pass through the moth stage can be attracted to lights. The so-called black lights or near ultra-violet light bulbs are customarily used. Tomato hornworm moths are easily killed this way, or any other night-flying moths. Watch for your insect friends, however, and give up the lights if they are not doing the job of attracting and killing your pests.

Scale insects, the white blobs that come on the stems of such plants as bittersweet, euonymus, and others are favorites of ladybugs, but you can also use a dormant oil emulsion spray in the spring to control them.



Root maggots and wire worms can be caught by root vegetables which you plant especially as trap plants. Turnips will attract wire worms; radishes will attract both those and root maggots. Plant the trap plants alternately between the plant you want to protect. A waste of a few radishes is well worth the protection you can give to your cabbages this way. A trap plant for harlequin bugs is mustard. And I have used dill as a trap plant for the tomato hornworm; it is very easy to see this worm on dill, but very hard to see it on tomato leaves.

The butterfly of the cabbage worm is repelled by a tomato leaf laid on each plant of the cabbage family; and I have found that the woodchucks keep away from the tomato plants and the beans right up next to the tomato plants in our garden. Tansy, bee balm, wormwood, and the strong mints are pest-repellents, too.

All these are ways to avoid poison sprays and still have good pest controls in your yard.

The following is a list of sources for wasps, ladybugs and beneficial beetles. LB=Ladybugs LW=Lacewings PM=Praying Mantis TR=Trichogramma wasps.

Bio-Control
10180 Ladybird Drive
Auburn, CA 95603
LB, PM, TR

Burpee Seed Company
(catalogue sales)
LB, PM



Lakeland Nurseries
Hanover, PA 17331
LB, PM

Orcon
5132 Venice Blvd
Los Angeles, CA 90019
LB, PM

World Garden Products
2 First Street
E. Norwalk, CT 06855
TR, LB, PM, (possibly LW)

King Entomological Labs
PO Box 69
Limerick, PA 19468
PM

Beneficial Insects
PO Box 154
Banta, CA 95304
LW, TR, (fly parasites)

Trik-O (trade name: wasps their only product)
Gothard, Inc.
P.O. Box 370
Canutillo, TX 79835
(TR)

Vitova Insectary, Inc.
PO Box 95
Oak View, CA 93022
(TR, LW)

Bo-Biotrol, Inc.
54 So. Bear Creek Drive
Merced, CA 95340
LW, fly parasites



Catharine Osgood Foster lives in Bennington, Vermont.
Karl Stuecklen, of Arlington, Vermont, did the illustrations.

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Ginseng

the Inscrutable



By Susan Tyler Hitchcock

Lightning struck down, so the story goes, and planted ginseng, mingling sky-fire and deep waters in the earth. Emperors of China coveted the magical plant over centuries. Wealthy Oriental warlords wore the root around their necks: an amulet of long life and power.

A European missionary learned of ginseng's healing powers when he lived among the Chinese in the early 1700's. Another missionary, reading his report, began to

*Susan Tyler Hitchcock lives in Covesville, Virginia.
Illustration by G.B. McIntosh.*

search the New World for the plant. And indeed in 1716 Father Lafitau found native American ginseng, closely related to the Asiatic variety, near today's Montreal.

Iroquois Indians helped Lafitau find his ginseng. They knew it as one of hundreds of potent herbs thriving in their forests. Indian names for ginseng, like the Chinese phrase from which our word derives, meant "human root". To the native American and the Oriental, the occasional resemblance between a ginseng root and the human form signalled special powers: heavenly order implanted in the dust of the earth.

European mercenaries soon found out about ginseng. They hired Indians to gather the plunder, paying them 25¢ per pound, then receiving \$5 per pound on the Oriental market. Within a few years, thousands of pounds of ginseng were being transported to Shanghai each year.

Since then, the ginseng market has had its ups and downs. In 1752, business slowed down when a major shipment of roots, picked too early and cured too fast, was rejected on the Chinese market. But by the mid-nineteenth century, ginseng had regained itself as a lively commodity. In 1878 alone, 421,395 pounds were exported, valued at almost half a million dollars. Currently, one New York wholesaler lists native American ginseng at a price approaching \$200 per pound.

The root of long life and power made some people very rich along the way. Its magic turned to money, however, the ginseng began its retreat deeper into the woods, away from the humans who were devouring it. Scarcity continues to raise the price ever higher, inspiring ever more extravagant myths. The Chinese legend depicting ginseng climbing out of the ground and ascending into starry heavens seems a portent. Ginseng is disappearing from the earth.

Wild Asiatic ginseng (*Panax schinseng*) once thrived throughout the mountainous regions of northern China, Korea, and southeastern Russia; it may have grown in the Himalayas too. The Asiatic native is said to be near extinct in the wild today, although more Oriental ginseng is cultivated each year.

The North American variety is threatened as well. Ironically, more Americans than ever before are encountering ginseng these days — meeting it not in the wild, but in Chinatown tea rooms and hip head shops. Then more Americans take off into the woods in search of this newfound native, stripping the forests indiscriminately of our meager supply. Only public ignorance of the plant has saved it so far; only education and respect can save it for the future.

To save the ginseng, we begin by learning its cycles of life. The root is a tough, white, gnarled and fleshy carrot, stretching two to four inches underground when mature. Tendrils branch out from the central root, complicating its design and occasionally suggesting arms and legs.

From this perennial root arises a single stem, unfurling in early spring to a mature height of a foot or two. Compounds of five leaves each, joined starlike at a center, stretch out on leaf-stalks from that stem.

In late spring ginseng bursts into flower: a delicate globe of blossoms, white — almost green. By late summer berries take shape, and in autumn red fruits fall. The leaves turn yellow earlier than others in the woods; the stalk dies and ginseng retreats underground for another winter.

This yearly cycle repeats itself, in shady forest seclusion, over many years. Knowing the growing cycle of ginseng is just as important as knowing its habitat, for the careful ginseng hunter must know when to look for ginseng as well as where. The potency of the plant rises and falls with the seasons. You want to gather ginseng root when its nutrients have sunk underground; you want to gather it,

that is, as the berries fall and leaves wither, early to mid-fall.

Some seasoned ginseng hunters will fence in a plant they find, no matter what time of year they find it. A chickenwire fence, two feet high and three feet square, will discourage rabbits and deer from nibbling at the seeds. Instead the seeds will fall and germinate in your forest ginseng patch.

The careful ginseng hunter also learns how to judge the maturity of a plant. Before the fifth year, ginseng roots are immature and should be left to grow longer in the earth. Meager foliage, with fewer than three leaf-stalks or compounds of three leaves only, often indicates a plant too young to pick. Taller, more fully foliated plants, especially those plentiful in seeds, will offer mature roots.

As you dig out the root, you can investigate the plant's age more precisely. Each fall, the ginseng sets a bud for next year's growth. Successive buds leave a spiralling pattern of scars on the section joining stem with knobby root. By counting these bud scars, you can discover the exact age of the ginseng you are uprooting. Be sure that it is at least five, even eight years old before disturbing it.

Separate the root from its leaf-stalk immediately, so no signal of alarm from disturbed leaves reaches the root. Bring the leaves home separate from the root: they make a delicate herb tea. The unearthed root should be washed as quickly and gently as possible. Scrub it with a soft brush under running water. Set it to dry in the sun or in a dry, warm room.

The root will blanch and shrink as it dries; it will lose weight and size with its water. Koreans often steam roots in a complex process to create the translucent red Imperial ginseng; Sioux Indians also followed a secret process which left the white roots iridescent. But simple air-drying over several weeks will cure the ginseng root adequately, for long and safe keeping.

Long ago, ceremonies ritualized the special care of ginseng. Ancient hunters observed a spirit dwelling in the root, believing that it eluded all but the pure in heart. Cherokee Indians always passed by three ginseng plants before they gathered the fourth one they found. The Chinese ginseng hunter, once he found a plant, graced the spot with an altar and uttered thanks for such a gift. Each ritual reflected the sacredness of a single root discovered.

Today we praise the magic of ginseng, but we must not forget our part in preserving its magic. We need to recreate age-old ceremonies surrounding the plant, to keep it sacred. Perhaps, as our modern version of these respectful rituals, we should always replant some part of the ginseng we pick. Seeds, found red and ready to fall, can be tucked an inch into the soil. Auxiliary rootlets, often shooting off the main root of an elderly plant, can also be buried. The seed will take eighteen months to germinate, eight years to make a full-grown plant. The rootlet will make a full-grown plant more quickly. Either way, you will have repaid the forest in kind.

You may even decide to replant, rather than uproot, the wild ginseng you find. Both wild and cultivated roots can be tended in a garden plot, provided you replicate ginseng's home environment. Find a shady, cool spot away



Ginseng

from commotion and work rich humus and hardwood leaf mold into the soil. Mulch with leaves, grass, and hay; keep the bed moist. See the list of books and seed sources below for more information on cultivating ginseng. If we all grew ginseng, we could ease the forest's burden and replenish our natural supply.

In the meantime, we must learn to be frugal in our use of ginseng. A single root can last all winter long.

Once a day, chew a piece the size of a split pea. Remember the Tibetan monks who bite into a grain of rice one hundred times. Feel the root dissolve and disintegrate into vital juices.

Or brew a cup of ginseng tea. Slice about $\frac{1}{4}$ teaspoon of your ginseng root into a cup of boiling water. Cover and let simmer 10-12 minutes. Pour this infusion over dried ginseng leaves, if you wish, and let it steep three to five minutes more. The Chinese prepare ginseng tea in silver dishes only, believing that more common metals sap the ginseng's powers.

Drink in that bitter, earthen taste; try to feel the effects this root has on you, quite apart from what history has made of it. Ginseng is subtle but sure. Steady, small doses over a long period of time will affect you most noticeably. Chew a bit when you are tired, at the end of a hectic day. Chew a bit when you see a hectic day ahead. Ginseng will keep you clear-headed for the next event in your life.

Those who chew ginseng for the first time ask, How can this root, whose effects are so undramatic, really make a difference? For a long time, science scoffed at ginseng, along with many other herbal remedies. The former government of China discouraged its use, but the present Communist regime has re-introduced it into many hospitals. Scientists in Russia, China, and Japan began to take ginseng seriously almost 30 years ago, and in the last 10 years American researchers have joined their efforts. These scientists are discovering, miraculously, that many of the mythic claims for ginseng hold true.

Their experiments have followed two basic patterns. Some have analyzed the chemical composition of ginseng, to discover active ingredients and understand how they affect the human body. Others have observed animals and humans who have ingested ginseng in controlled situations to see what effect the root has on their behavior. Both groups of scientists have made interesting discoveries.

The chemical investigators have found that, besides the many trace vitamins and minerals (vitamins A, B1, B2, C and possibly E, calcium, magnesium, potassium, and others), ginseng contains its own "ginsenosides," active ingredients found exclusively in the plant. In small doses, ginsenosides stimulate the circulatory and nervous systems, but without the harmful side-effects produced by caffeine or amphetamines. Ginsenosides have an "anabolic" effect on body metabolism, helping along the natural breakdown of food into energy. They seem to encourage an even more efficient use of body energy than naturally occurs. Chinese legends claim that ginseng produces a balance of energies; current researchers agree, suggesting that it is an "adaptogen" capable of levelling off many of our internal systems. Ginseng will stimulate the mind and body when things are going smoothly; it will calm the nerves, on the other hand, when stress bears down.

Behavioral observers are coming up with the same results. They have put animals through abnormal stress situations to investigate how ginseng works. Rats subjected to extreme heat and cold survived longer with ginseng added to their food. Mice swam longer and faster when fed ginseng. Deprived of food, rats injected with ginseng showed greater activity, mobility, and curiosity than those without ginseng: this report may specially interest people who choose to fast.

Human subjects have proven ginseng's powers as well. Russian radio operators, given ginseng, felt less fatigue and decoded messages more accurately than usual. Elderly people have enjoyed increased initiative and pleasure in their work, increased stamina, and even increased muscle strength, given steady doses of ginseng.

Summing up years of research, Russian scientist N. Brekhman concluded that "ginseng preparations increase physical and mental efficiency, improve the accuracy of work, contribute to concentration, and prevent over-fatigue. Other experimenters hope to prove ginseng effective in treating heart ailments, circulatory problems, diabetes, recovery after accidents or surgery, and even mental illness. Science is proving ginseng to be the miracle herb promised for centuries in myth.

But science can only go so far. It can name ingredients and observe effects, but it will never thoroughly penetrate into the mystery of ginseng. Science will never explain



A Virginia 'sang' hunter holding foraged roots.

how, amidst centuries of thoughtless exploitation, ginseng endures. Science can only give us more reasons to respect the mystery of ginseng.

Books and articles on ginseng

Euell Gibbons, *Stalking The Healthful Herbs* (Chapter 25. Ginseng: More Precious Than Gold), David McKay Co., 1966. Interesting history and uses.

Richard Heffern, *The Complete Book Of Ginseng*, Celestial Arts, 1976.

A thorough overview of ginseng history, legends, and facts.

Maurice G. Kains, *Ginseng*, Orange Judd Co., 1901. An older book dedicated to encouraging ginseng cultivation.

Andrew C. Kimmens, ed., *Tales Of The Ginseng*, William Morrow & Co., 1975.

Myths, legends, first-hand accounts, and documents from the 14th to the 20th century, all about ginseng.

Richard Lucas, *Nature's Medicines* (Chapter 13: The Intriguing Herb that Hides from Man), Parker Publishing, 1966.

Medical opinions, old and new, concerning ginseng.

Ivan M. Popov and William J. Goldwag, "A Review of the Properties and Clinical Effects of Ginseng," *American Journal of Chinese Medicine*, 1973.

A summary of research over the past thirty years.

Sources for seed and rootlets

More and more seed distributors offer ginseng, both seeds and rootstock. Most will supply the cultivated Oriental variety, less potent than either the wild Asiatic or the wild North American root. F.B. Collins (Viola, Iowa 52350) sends growing instructions along with a price list for ginseng roots and seeds. Some companies promise to purchase the ginseng you nurse to maturity. Check the classifieds in gardening magazines or recent seed catalogs for other ginseng sources. □

Editor's Note: On August 30, 1977, the Endangered Species Scientific Authority (ESSA), following a state-by-state assessment, said it was unable to find enough data to justify continued export of wild American ginseng for the 1977-78 season. ESSA, which has the authority to regulate export of rare plants, has thus banned export of wild ginseng from all states except Michigan. Michigan is the only state which regulates the harvest of ginseng. Ginseng is under consideration by the U.S. Fish and Wildlife Service for inclusion on the endangered plant list, which under the 1973 Endangered Species Act would regulate the export, harvest and critical habitat of the plant. Until this review is completed, we cannot recommend the collection of wild ginseng, at least for sale.

Father's Tea Pail

By Elsie Boyd

The summer I was 11 it was my turn to make my father's tea and deliver it to whatever field he happened to be working in that day.

I knew just how he liked it and always tried to do it exactly right: a large pinch of green tea siftings steeped in a small pan of boiling water, poured carefully into his old half-gallon syrup pail so the grounds would be left behind, and finally enough cold milk added to fill the pail. This resulted in a drink of rather weakly-flavored tea somewhat warmer than lukewarm, and it was what he drank year after year as he went about his farm work.

When or how or why he started drinking this brew I do not know, but he always enjoyed it—even on the hottest summer day—declaring that it “just hit the spot.”

I loved taking the tea to the field because it presented an opportunity for a short (or longer if I could manage it), exciting conversation with my father, all by ourselves.

He usually liked to have his little pail of tea about 10 o'clock, but sometimes I'd get to the field a little early. But he'd always smile and say, “I'm glad to see you. That tea's going to taste good.” Then while the team—fat black Prince and dapple-gray Topsy—rested, he'd lean on the plow handles or we'd sit on the edge of a stone pile or walk to the shade of a wild cherry tree in a corner of the old rail fence and have our little talk, usually resulting in enough ideas to keep me thinking for hours.

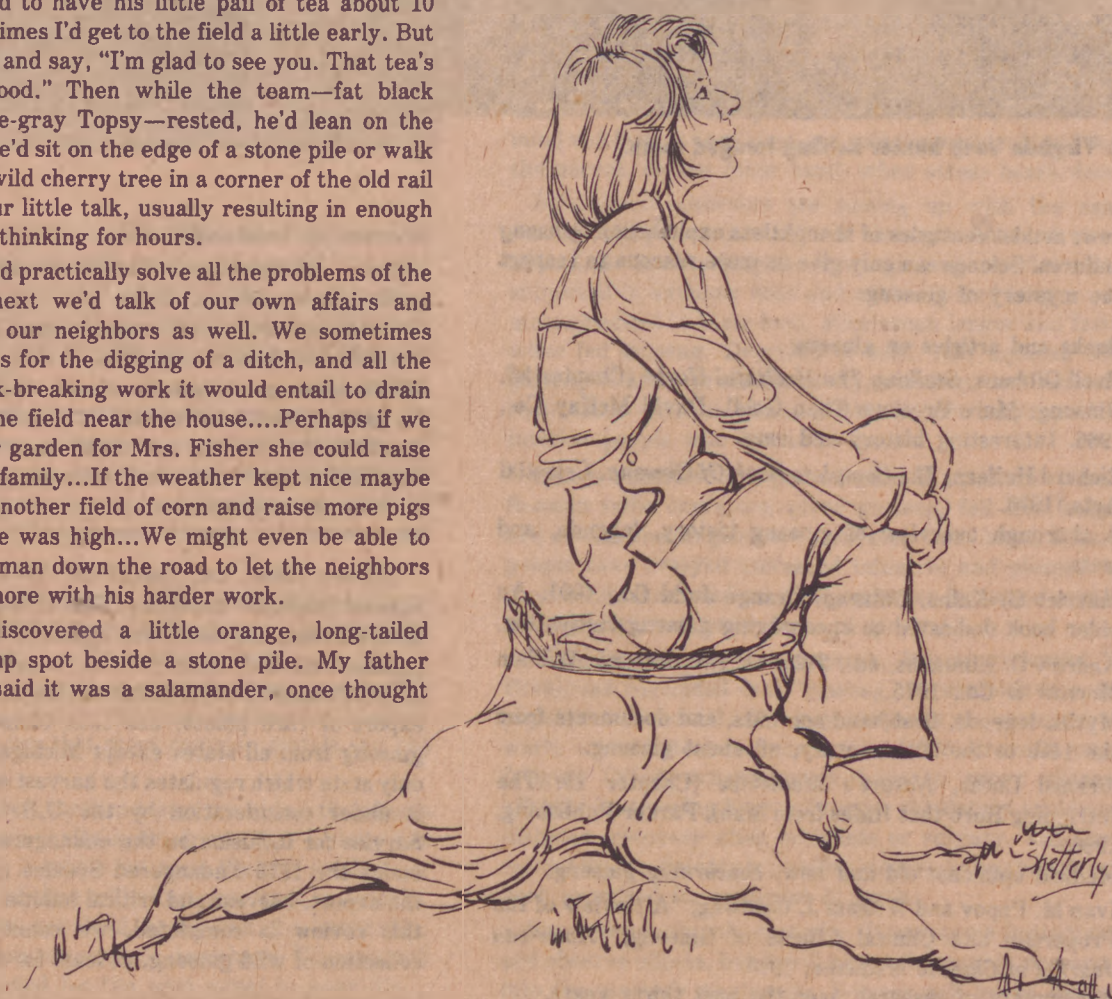
One hot day we'd practically solve all the problems of the world, and the next we'd talk of our own affairs and perhaps those of our neighbors as well. We sometimes discussed his plans for the digging of a ditch, and all the man-hours of back-breaking work it would entail to drain the wet spot in the field near the house....Perhaps if we ploughed a bigger garden for Mrs. Fisher she could raise more food for her family...If the weather kept nice maybe we should put in another field of corn and raise more pigs now that the price was high...We might even be able to coax the poor old man down the road to let the neighbors help him a little more with his harder work.

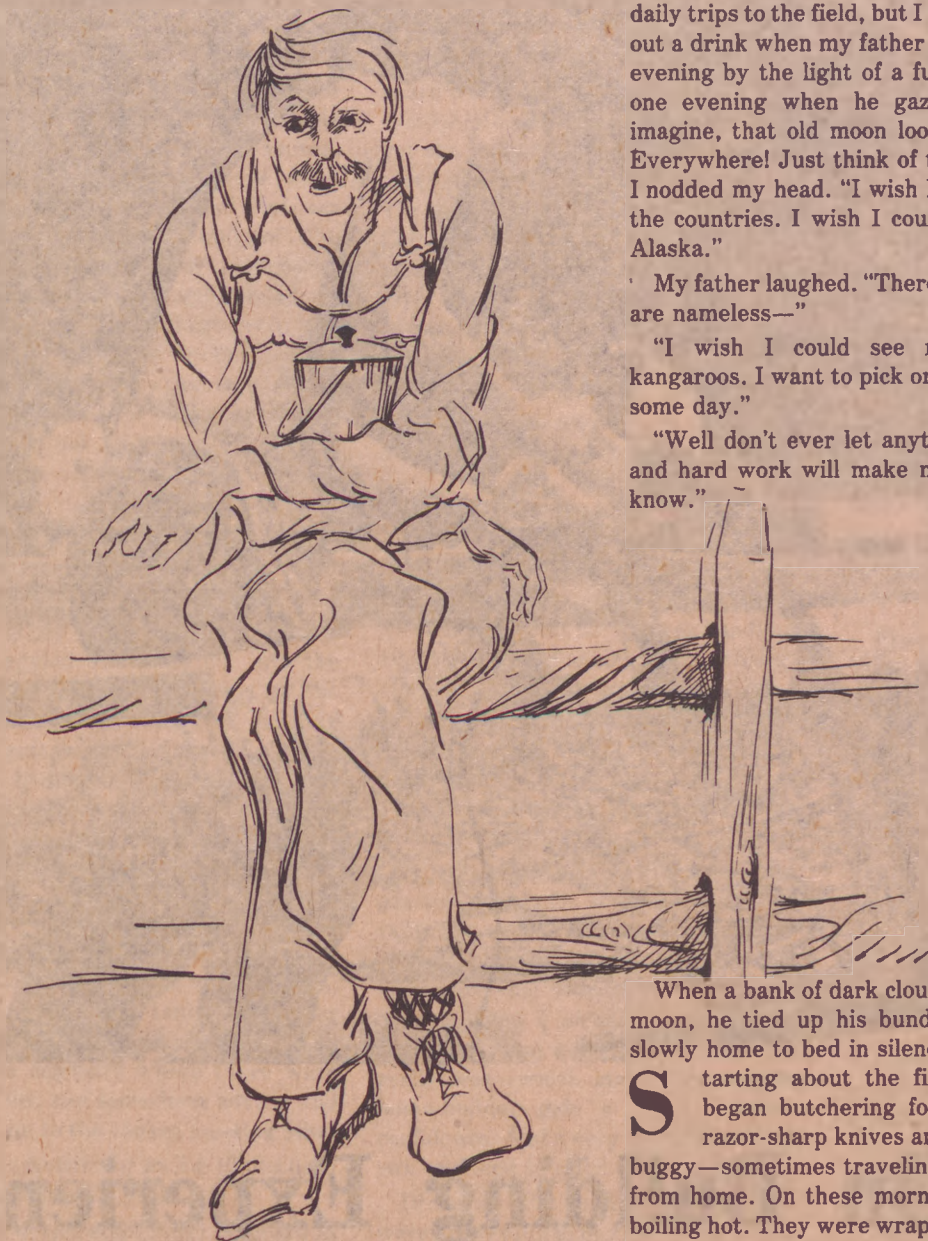
One day we discovered a little orange, long-tailed creature in a damp spot beside a stone pile. My father picked it up and said it was a salamander, once thought

poisonous but actually harmless. He really didn't know as much as he should about salamanders. Why didn't I find out what I could and tell him? Curious, I questioned my mother and looked up the subject in our old unabridged dictionary with the many loose pages. I wrote down what I found out and was somewhat disappointed when I had exhausted the sources of my information.

Some days we talked of the different types of work people did. I thought farming was a fine way to make a living, and my father always agreed with me. We liked to see things grow, and we loved the birds and animals that shared their land with us. In addition to the crops we grew in the fields, there were other intriguing things, such as the teasels, wild cotton, and goldenrod of the fencerows, and the tall grasses and cattails of the marshes—all seemingly putting forth their best efforts just for us.

Once I asked what he thought about teaching school as a job, and he solemnly said he thought it was very worthwhile work. Thus encouraged, I confided that I had decided in fourth grade to be a teacher. He—who had never gone beyond the eighth grade—said he didn't see any reason why I couldn't teach if I wanted to. It would take a little extra thinking and planning, and when I got older we'd work it all out.





On a day now and then after he had taken a satisfying drink of tea he'd seem to be thinking. I'd wait without a sound, knowing the words I loved to hear were about to be uttered: "I remember when—" This was the best time of all! Something had caused him to recall a scene from his early life and I was going to be treated to the story.

Sometimes after he had finished, there would be a question and answer period. ("What did you do with the money you earned helping Mr. Applegate do chores? What did he say when he found out you'd scared away the dogs and put all the sheep back in the pasture? What happened to Wooly when he grew up?) Finally he'd say, "Well I'd better plow or Prince and Topsy will be getting lazy. The corn should be planted this week. Tomorrow we'll all pick stones."

This final statement could have been a chilling one, but not when our father said it. He had a way of making all sorts of farm work, even the drudgery of picking stones, seem almost like play.

When school started in the fall I was deprived of my daily trips to the field, but I sort of made up for it by taking out a drink when my father sometimes husked corn in the evening by the light of a full October moon. I remember one evening when he gazed up at it and said, "Just imagine, that old moon looks down on the whole world. Everywhere! Just think of the things it can see!" I nodded my head. "I wish I could be up there and see all the countries. I wish I could see Siberia and Egypt and Alaska."

My father laughed. "There's a land where the mountains are nameless—"

"I wish I could see reindeer and elephants and kangaroos. I want to pick oranges and olives and coconuts some day."

"Well don't ever let anything discourage you. Wishing and hard work will make most anything come true, you know."

When a bank of dark clouds finally began to obscure the moon, he tied up his bundles of fodder and we walked slowly home to bed in silence.

Starting about the first of November, our father began butchering for the neighbors, carrying his razor-sharp knives and other tools in the horse and buggy—sometimes traveling as much as five or six miles from home. On these mornings I made two pails of tea, boiling hot. They were wrapped in an old woolen shawl and placed in a box under the buggy seat. One pail was left in an outbuilding for forenoon drinks and the other carried to the house for the farmer's wife to reheat for afternoon.

On butchering evenings when we heard the sound of wheels turning into the driveway we all rushed out—hoping to find several pig heads in the box. Since we knew just how delicious our father's head cheese could be, we enthusiastically agreed with him that nothing in this world should be wasted.

Making tea at butchering time was the end of my summer's work. A feeling of sadness came over me as I thought ahead to the coming spring. Marie would be old enough, and it would be her turn to do the tea, and I'd have to stay inside more to help with the housework.

But I soon brightened at the thought that nothing could ever take away my one "tea pail" summer of freedom. One special summer of my father's wisdom! □

Elsie Boyd lives in Stoneboro, Pennsylvania.



Hands-On Building Experience

By Judith Edwards

For three weeks last summer, 32 adults of varying size, age, occupation, and background lived in plumbingless, electricityless, tentified near-euphoria on 300 acres of deep woods in Jackson, Maine.

I was one of those 32 adults, and like the rest of them, I was determined to

Judith Edwards lives in Plainfield, Vermont. Photos by the author and Paul Shetby.

learn how to build my own house with my own hands, muscles, imagination, and principles.

In pursuit of that knowledge, I had enrolled in Shelter Institute's three-week course in house construction.

Shelter Institute (SI) of Bath, Maine, directed by Pat and Patsy Hennin, is the renowned teacher of how to design and build your own beautiful, energy-efficient home—cheap.

In an age when the average national cost for building, not including land, is \$33 per square foot, SI houses are being built for \$6 a square foot if entirely owner-built, or \$14 when help

is hired. A good average cost for a moderate-sized SI house is \$10,000-\$12,000. The Hennins live in a house they built themselves, which will have cost \$6,000 when a bathroom and a third bedroom are added. It's estimated that this house would cost at least \$30,000 in the New England real estate market.

Over half the people who take the SI course have never built anything in their lives. When I first became familiar with SI in 1975, one year after it was founded, there were 40 individually designed, low-cost, owner-built homes up or going up in the Bath area. By May of 1977 when I visited again,

250 houses had been built in Maine alone. One hundred other SI houses were spread around the U.S. By now, nearly 2,000 students have passed through SI's course, so the number of houses built is expected to double within the next year. The SI houses, whether shed roof, which is most common, or peaked or round roof, are astonishingly beautiful—full of the warmth of well-selected, well-placed rough-cut lumber, with lots of windows angled for maximum heat from the winter sun, and full of the imagination and personal integrity that comes from a house designed for an owner's living habits, and not a contractor's pocket-book.

* * *

Now, on this first day, August 7, 1977 we were about to embark on Shelter's first live-in summer course.

We parked our cars on the roadside and straggled down the hill into the woods that would be our home for the next three weeks. Carrying sleeping bags, guitars, children, Coleman stoves, hammers, and one dog, we were confronted by Rob, Chris, and Ben, Shelter staffers who took us off in small groups to choose individual campsites.

Scurrying began in earnest when the realization dawned that it was 5 p.m. and in order to pitch tents, each of us had to build a platform. We hurried to the main campsite where there were tools, nails, and sometimes advice, and back again to the chosen meeting area.

"I have boards for an 8 x 10 platform and my tent is 12 X 14!"

Slight desperation could be heard in voices of people whose prior building

experience consisted of pounding a nail to hang a picture on the wall (with no assurance it would stay up).

Sawing and hammering could be heard with increasing speed as the new camper/students joined together to get the individual platforms built and tents pitched before darkness set in. The sun finished before we did, and Coleman lamps and flashlights accompanied the sound of hurrying feet and rapid hammering.

Spaghetti miraculously appeared, as did fresh spinach salad. Hungry and tired, we sat around and ate, and met the people who would be our "woods-mates" for the next three weeks.

* * *

Though Shelter's winter courses are usually well-attended by single women, for some reason there were only two of us at Jackson. The only problem for me was handling all those well-meaning, but stifling, offers of help. I was totally unschooled in carpentry skills, and the fact of the matter was that it *did* take me twice as long to drive a nail as it would a man of comparable size. (Or anyway, it did at the beginning of the course.)

It is amazing what a little time and practice can do for strength as well as skill. The kidding ("Oh boy, look at that muscle!") stopped after a few days of realization that no reaction was forthcoming when I picked up something heavy, and that quite a bit of strength really was—which made this woman home-builder gain a great deal of confidence. And a very quiet "No thank you" sufficed to quell offers of help.

Directors Pat and Patsy Hennin were always full of intense energy. The very next morning after our late night

building scramble, Pat had to be talked out of beginning the lectures immediately, and he could be heard grumbling for the next three weeks that we'd fallen behind schedule because of that. Even though he'd hurt his back just before coming to Jackson, there was no let up in his work schedule. When he wasn't teaching the 9 to 1 or 2 o'clock lecture class, which was held daily in an army tent in a field near our woods, he was up at the site of the pole pavillion, cutting logs, measuring, building.

The SI course teaches how to build a house that is solid, personally designed, and conservative of energy, using passive solar systems, ecological waste disposal, and superior insulation that calls for comparatively little in energy needs and only what is necessary in terms of building materials.

From the Ground Up, by Charles Wing and John Cole, is the textbook used by SI. And nothing is left out: We learned about choice of site, type of foundation, well-digging, electricity, interior carpentry, solar energy applications...everything we could or could not digest in those three weeks. By the time your house design is down on paper, it is figured out so exactly that you can have all the lumber and fixtures that you need ready at your site on the day you begin to build. That is, if you've done everything right.

We all felt we needed help in sorting out the information we were gathering. During lectures, it seemed to come all in a rush: "This formula is for analyzing a building and its foundation for stability in high winds. Now we'll look at preventing building uplift, overturning, and horizontal sliding."



During class breaks, we played aggressive volleyball to clear our heads for another onslaught of information. At the end of class, we would wander back to camp, eat quickly, and go to work on one of the building sites.

We were building an octagonal pavillion, and two yurts.

On August 23, I noted in my diary, "Today, the newly stripped 18 foot logs span a distance of 36 feet across the octagonal pavillion meeting at the center to be notched into a 22-foot high telephone pole...

"...the two yurts that will serve as libraries are almost finished. One is having shingles pounded onto the strapping between the rafters by Leo and Tom, as Rob supervises cross bracing of the joists that slant toward the roof of the round structure. Nancy is building a door for the other yurt, now fully enclosed. She's figuring out where the hinge should go—her first problem in design. Other students move slowly past us on the path, carrying individual boards for the pavillion from the main campsite..."

After the morning classes, though we were often dazed, the slow realization began to dawn on us that we had understood a lot of what we'd heard. And we began to know that we *were* going to build our own house...

"We teach the students the long-term implications of each step they take," said Pat Hennin. "People are building homes the same today as they did 20 years ago, when it didn't seem to matter, for instance, how large an oil furnace you had. So the conventional housing that is being built today is, in many cases, already obsolete as far as real economic needs go."

Shelter Institute springs directly, almost as a function of his personality, from Pat Hennin, a compact, muscular, 32-year-old lawyer whose family emigrated from France when he was a boy. Pat spent most of his life building with his father, and during summers away from Tufts University and the University of Maine Law School, he supported himself as a builder.

"One summer I cut timber in Idaho," he recalled. "That's where I realized how inefficiently we use building materials. A good 25 percent of what we cut was never hauled out of the woods. Speed was the criterion and the small wood was crushed—and this was



Pat and Patsy Hennin

in a national forest! At SI, we're encouraging home builders to use everything. In America, we can't forever use our resources as if there were no end to them."

Pat and Patsy started the Shelter Institute in 1974, along with Charles Wing, now the co-owner of Cornerstones, Inc., another owner-builder school.

The 60 hour course, now given four times a year in compressed three-week sessions of classes in the morning and apprentice building in the afternoon, was their answer to this necessity for low-cost well-built, personally designed homes.

The Hennins have owned the lovely, wooded, 300 acres of land in Jackson for nine years, camping on it in summer with their family, and skiing on it in winter. The buildings the students are constructing are part of Shelter Institute's future campus.

Thinking back now to that wonderful three-week experience, one thing in particular stood out in my mind. It was the incredible diversity of occupation and background of the people who attended.

For example, Elden, a slight, very quiet man, was the driver of an "18 wheeler" from Ohio, and the father of six children. He, his 21-year-old daughter Nancy, an X-ray technician, and his 14-year-old daughter Beth, saw an article about Shelter in a magazine in a dentist's office and drove all day and night to arrive in Jackson for the course.

John, a six-foot-four, athletically built man, was a writer on a leading Boston newspaper, and a Yale graduate.

Rich, a former IBM executive, came complete with large motorcycle and an all-encompassing beard.



Tom, a slim, gentle man in his late twenties, was a Buckminster Fuller expert who lives on a houseboat in Tennessee.

Another member of "Camp Mellow" (as our eating area came to be known) was Leo, a special education teacher from New Haven, who brought a city person's wit and near adoration of the woods, camping, and mountain climbing with him.

Butch, a cable TV lineman, arrived with a complete bar and built a cocktail area onto his tent platform, offering us all refreshments, even though we kidded him about "roughing it" with a refrigerator.

Jim, a management consultant, and Sharon, a housewife and mother of four teenage children, came all the way from California for the course.

Marilyn and Jim, from Albany, N.Y., were a young couple who arrived complete with matching overalls—a little bit leery of three weeks with tents and outdoor latrines, but determined to learn to build. Jim was an engineer trained by MIT, Marilyn was a second grade teacher.

Paul and Diane arrived with their four pre-school children, including baby Greg who attended class and cooed at all the right things. Paul had

quit his job as a scientific researcher, "because I wanted to live more simply and to spend more time with Diane and the kids. Eventually, I'll have to go back to work, but by then, we'll have a house we've built from the ground up."

Because of the group's strong cohesion of belief and solidarity of purpose, the Jackson experience was much more than a satisfying learning and group experience. It became, for those of us who lived it, a family experience with warmth and caring and sharing with people whose desires and points of view about the directions they wanted their lives to take were very similar. □



Shelter Institute Building Class of 1977

Mussel in on Good Eating

By Paul Fleisher

Several years ago, I was collecting blue mussels at low tide along the rocky shore of Narragansett Bay. I had just about filled my bucket when a fellow beachcomber walked up to me with concern in her eyes.

"You're not going to eat those, are you?"

I answered strongly in the affirmative.

"But they're poisonous!" she exclaimed.

Even after I told her that I ate mussels regularly, and that the only time they might be harmful was during a rare red tide or if they came from polluted waters, she seemed unconvinced. I offered myself as living proof that they were perfectly edible, but she walked away shaking her head in disbelief.

It is difficult to understand why a seafood as delicious as the blue mussel is so ignored and misunderstood. Perhaps it's the result of our Protestant Ethic, which tells us that anything we don't have to work hard to get isn't worth having. Seafood lovers who will sit for hours waiting to catch a fish, or strain their backs digging a bucket of clams, will walk right past a bed of blue mussels, when in 15 minutes they could gather enough of this delicacy to feed a large family.

The Latin name for the common blue mussel, which so abundantly covers the rocks of our North Atlantic coastline, is *Mytilus edulis*, which means, simply, "edible mussel". The name understates the truth, for this bivalved mollusk is easily the equal of its cousins the oyster and the soft-shelled clam.

This delicious seafood grows around the low tide line on rocky coastline, making it possible to gather without even getting your feet wet. These mollusks remain in one place during all of their adult lives, by secreting a group of strong fibrous strands called a byssus or "beard", with which they cling to the rock, or each other. They can also be found clumped together just at or below the low tide line on many northern mud flats.

Gathering mussels couldn't be simpler. Just pick them up. No digging, no waiting for a bite, no wading or netting. Since the byssus has to be removed before cooking, I try to remove as much of it as possible as I gather, saving myself work later.

When collecting mussels, I usually try to get good-sized ones, but avoid the very largest, as they tend to be a little tough. I also prefer mussels growing on rock to those from

the mud flats, as the latter sometimes pick up a hint of flavor from their environment. And, of course, I only gather from waters I know to be clean and safe. Like other bivalves, mussels concentrate whatever undesirable pollutants may be floating in the water when they feed.

South of New England, where the rocky coastline disappears, the blue mussel becomes rare, and, south of Chesapeake Bay, virtually nonexistent. Beachcombers foraging in the salt marshes of the southern Atlantic and Gulf coasts will find instead an abundance of the striated mussel dwelling in the mud among the marsh grasses. The shell of the striated mussel is very similar in shape to that of the blue mussel, but it is mottled brown in color and covered with serrated ridges running along the length of the shell. Unfortunately, the flavor of this poor cousin compares to that of the blue mussel as the flavor of a three-year-old rooster compares to that of a tender young spring chicken. About the only use I can recommend striated mussels for, with reservations, is the mussel spaghetti sauce described later. The rugged New England coast may be harsh, but it does have its advantages.

Unlike clams or oysters, mussels are always cooked before eating. To prepare mussels for cooking, scrub them thoroughly with a stiff brush or some other coarse scouring device like a copper puff. Remove as much of the beard as possible, preferably by pulling it away from the mussel. If this fails, clip the byssus as close as possible to the shell, using a pair of shears. Finally, rinse the mussels under running water. Do not use any mussel whose shell is not tightly shut.

To cook, place the cleaned mussels in a pot with about an inch of water at the bottom. Cover the pot and steam until all the shells have opened. Inside the dark blue shells, the mussels themselves are often a beautiful bright-orange color, although this may range to a dull yellowish-gray. These tasty shellfish are now ready to eat as is, or they can be removed from their shells and used for fried mussels, pigs in blankets, or mussel spaghetti sauce.

Occasionally, along with the mussel, there is one of two added bonuses inside the shell. Some mussels contain small pearls which can be lustrous and perfectly round. Others will house a tiny pea crab as a cohabitant of the shell. These miniature soft-shelled crabs can be eaten whole and are considered a delicacy by gourmets.

Of all the ways to prepare mussels, *moules mariniere* is the simplest and perhaps the most elegant. Clean about two dozen mussels per person, as described above. Instead of steaming them in water, steam in a cup of dry white

Paul Fleisher lives in Highland Springs, Virginia. Illustrations by Jayn Thomas.

wine to which you have added a bay leaf, several cloves of garlic, crushed, $\frac{1}{4}$ cup chopped parsley, and $\frac{1}{4}$ cup finely chopped onion. When the mussels have opened, transfer them in the shell to a deep serving bowl. Pour the liquid from the pot over them, decanting carefully to remove any sediment. Serve immediately with a fresh salad, crusty French bread, and white wine.

In my opinion, *moules mariniere* is the premier method of preparing mussels. However, there are a number of other delicious ways to serve this tasty shellfish. All the following recipes except paella use steamed mussels removed from their shells. After steaming, they should be kept covered in their pot until they are cool enough to handle, so that they don't dry out.

PIGS IN BLANKETS

3 dozen large mussels, steamed and removed from shells
3 dozen thin strips of bacon

Wrap each mussel in a bacon strip. Bake in the oven at 400° until the bacon is light brown. Drain and serve. Makes an excellent hors d'oeuvre.

FRIED MUSSELS

Remove steamed mussels from their shells, and drain on absorbent paper. Dip each mussel in a mixture of two well-beaten eggs and $\frac{1}{4}$ cup milk. Then dredge in a mixture of $\frac{1}{2}$ white flour and $\frac{1}{2}$ corn meal or fine cracker crumbs. Fry in deep fat until golden brown, or pan fry in a skillet, turning once. Drain and serve.

MUSSEL SPAGHETTI SAUCE

2-3 cups whole mussels, steamed and removed from their shells

1 cup mussel liquor
 $\frac{1}{4}$ cup olive oil
3 cloves garlic, pressed through garlic press
2 large onions, chopped coarsely
1 bay leaf
Salt
Oregano
Sage
1 15-oz. can tomato sauce
1 12-oz. can tomato paste

Pour olive oil into a large deep skillet. Gently saute onions and garlic until onions are clear. Add tomato sauce, tomato paste, mussel liquor and seasonings to taste.

Simmer for at least 20 minutes. Just before serving, add mussels, stir, and bring back to temperature. Serve over spaghetti.

And finally, if you feel ambitious and have several hours available for cooking, why not try making the Spanish dish, paella? Invite some friends over, because this is definitely company fare.

PAELLA

2 cups rice
1 frying chicken, cut up
2 large onions, 1 finely chopped and one whole
2 stalks celery
 $\frac{1}{4}$ cup olive oil or butter
2 cloves garlic
1-2 diced sweet pepper, red or green
1 large ripe tomato, finely chopped
Salt
Paprika
Saffron
Chili powder
2 dozen mussels
2 dozen clams, steamers or small quahogs (cherrystones)
1 lb. cooked, deveined shrimp
1 cup ham, thinly sliced

Simmer the chicken back and neck, whole onion, and celery in 5 cups water for 45 minutes. Strain for stock, and add water to make 5 cups.

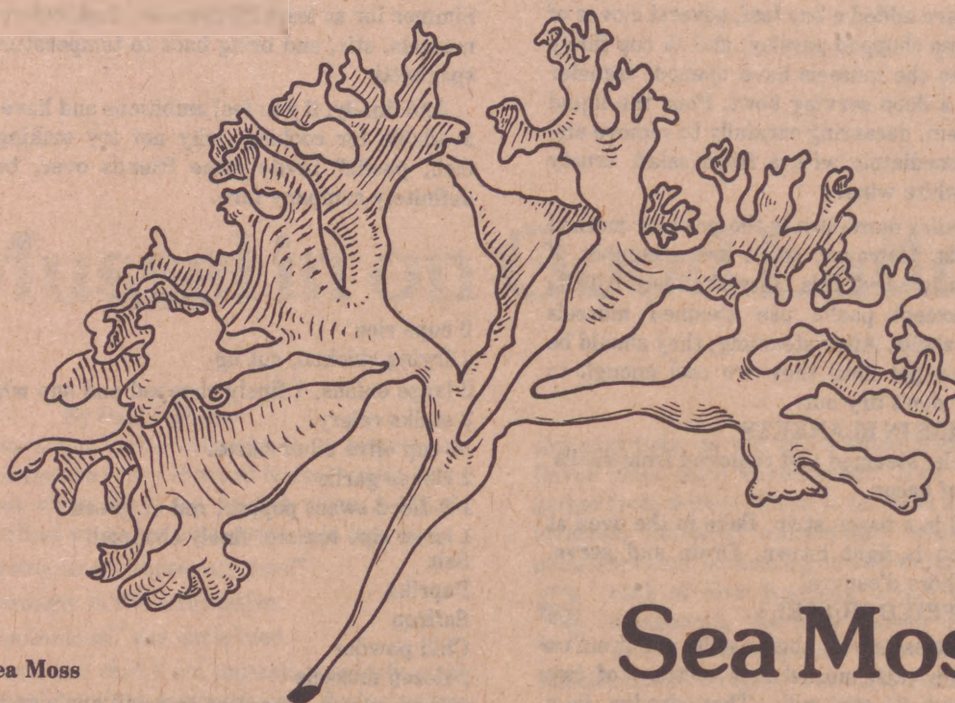
While the stock is simmering, wash the remaining chicken and place in a baking pan. Salt lightly and cover the pan with foil. Bake for $\frac{1}{2}$ hour at 350°. Uncover and bake another 20 minutes.

To the chicken stock, add rice, chopped onion, garlic, diced peppers, chopped tomato, 3 teaspoons salt, oil or butter, and seasonings to taste. Cover, bring to a boil, and cook over low heat for 20 minutes.

Thoroughly scrub clams and mussels.

In a large casserole dish, mix the cooked rice, baked chicken, ham, and shrimp. Arrange the mussels and clams on the top. Cover and bake at 350° for about 15 minutes, or until all the mussels and clams open. Serve immediately.





Frond of Sea Moss

Sea Moss

By Barbara Prud'hommeaux

Just below the low tide mark, there exists a forest, a thick mass of waving, branched plants and animals that live within their shelter. Along our rocky northeastern shores, acres of sea (Irish) moss sway and glisten just below the surface of the bays and inlets.

Walk down to the shore at the times of extra low tides and look for the masses of a reddish-purple, low growing "bush". Pluck a plant from its holdfast and notice the many branched, fanlike fronds. You've found an example of *Chondrus crispus*. Known and gathered since medieval times along the shores of the British Isles, sea moss has been an important supplement to the diet of many peoples.

After an ocean storm, tons of sea moss are torn from the sea bottom and thrown ashore on our beaches. This is the easiest time to gather a supply. Take a pail and walk along the beach picking through the wrack. Besides filling your pail with sea moss, you'll find many other treasures such as shells or feathers and fancifully shaped driftwood.

At home, rinse the moss in cold water and pick out any bits of shells or pebbles. Spread all the moss in a single layer to dry, either in the house or outside in full sunlight. When the moss is completely dry and brittle, pack it into a jar and put it in your pantry.

Sea moss is also gathered commercially. Raked up by the ton, it is spread out to dry and bleach in the sun, bagged and sold to processors who grind it into a fine white powder. That power is used in more products than one could imagine. Everything from clarifying beer to thickening ice cream. Now when you see carrageenan listed on your can of evaporated milk you'll know that it's really sea moss.

Barbara Prud'hommeaux lives in Winter Harbor, Maine. Drawing by Loyal Stimpson.

DOWNEAST SEA MOSS PUDDING

Soak 1/4 cup sea moss in cold water for 5 minutes. Drain the moss and put it in 3 cups of milk in a double-boiler.

Add a dash of salt.

Heat over boiling water for 30 minutes.

Strain out the moss and add whatever flavoring you'd like to the milk. Some suggestions—vanilla or lemon extract, coffee or cocoa.

Pour into a bowl and chill until firm.

Serve with sugar and cream or fruit.

SEA MOSS-MUSSEL SAUCE

Saute a few scallions in olive oil. Add 1/2 cup white wine and 12 scrubbed and debearded mussels. Cover and simmer for 10 minutes or until the mussel shells are open. Remove the shells and add 1 cup of fresh chopped sea moss. Simmer for 15 minutes. The sea moss will thicken the mussel broth and add its own distinctive flavor and texture. Serve over any pasta along with freshly grated parmesan cheese. □



Holdfast of Sea Moss



George Call, Blind Farmer of Troy, Maine

By David Moin

George Call listens to a recorded book on a tape cassette.

The first time I saw George Call, he stood alone by the entrance of the Troy Grange Hall, with a dignified and content look upon his face. Within minutes, two Grangers began asking him questions.

I was told by a Granger that people always ask George questions. At age 70, George has lived most his life in Troy, and is often regarded as the town historian. He has a remarkable memory; almost total recall. Fifty years ago, he worked on the same farm I now work on. He can still accurately describe the lay of the land in detail, and even pinpoint rocks you might stumble over along the dirt road.

I could tell George commanded the respect of these people of the Grange. But I know now they respect him not only for his knowledge of Troy, but also for what he has accomplished as a hardworking and successful farmer. George has been blind since the age of 29.

One day I decided to visit George at his farm. I asked him if his life changed after he became blind.

"Not much," he said. "I always knew one day I'd have my own farm."

David Moin lives in Flushing, New York. Photo by Kent Thurston.

Farming was in his blood. When he was eight, his father died. For the next five years, George lived on his grandfather's farm. He speaks highly of his grandfather.

"He was a good teacher and I received a good education."

George left school after the ninth grade. He became a "jack of all trades".

"I had just about every type of country job there is." He enumerated 20-some odd jobs he worked, from construction to potato picking, from lumbering to driving a milk truck. "I always went where the money was."

I was positive he could name 20 more jobs he had worked, but he always knew one day he would farm.

He considers himself lucky to have had such extensive, practical experience prior to his affliction. I asked him what he was doing just before he became blind.

"I was working on the farm of Lute Rodgers. Rodgers was vacationing in Florida for three months, when suddenly I heard his voice right near me in the barn. 'Don't you speak to commonfolk?' inquired Rodgers. I replied, 'I didn't know it was you, Mr. Rodgers. I couldn't even see you!'"

At that moment, George knew something was seriously wrong. Often, he woke up in the morning to see just one thick fog outside. His wife, Alice, would tell him there was nothing but bright sunshine outside.

George visited specialists in Waterville and Portland, and found out that he was developing tuberculosis of the eyes. Tuberculosis is usually acknowledged as a respiratory ailment, but it can actually affect any bodily organ.

Dr. Holt of Portland became a great inspiration for him.

"While other doctors were telling me not to give up hope, Dr. Holt told me straight out to start practicing getting on without my eyes, either by working in the dark or with my eyes closed."

Three years later, George was totally blind. Then, he made the toughest decision of his life. He decided to lead a normal life.

No longer able to work at the Rodgers farm, George and Alice opened a boarding house, determined to raise money for their farm.

"George was very courageous", said Alice. "He never went into a depression after he went blind. Unlike myself, when I learned I had diabetes, I couldn't speak to anyone for months."

In 1936, when George totally lost his vision, there was little assistance for the handicapped in rural areas. (Seeing Eye dogs were unheard of.) Yet he managed to get the work done.

"Say I'd be milking. I'd keep my head and shoulders against the cow so I could feel the muscles tighten. Then I'd know if she was about to kick or move. And I'd sit on the edge of the stool with my weight forward so I could get up quick." At one time the farm had 12 milk cows.

His farm covers 180 acres. Twenty five acres are cleared. When the farm was most active, George shipped peas, beans, and corn, two acres each. With six children and a wife to feed, he worked hard harvesting and cultivating his fields. Now that his children are all moved out, he and Alice maintain a small garden.

"I can feel the size of the bean and determine whether it should be picked. Or say I'm picking tomatoes. I feel for the softness, and the softer ones I know should be picked.

"When I weed, I feel for the roundness of the weed stem, or you can tell a weed by its smell—pigweeds, witchgrass, they have a distinctive smell. I know the vegetables are in straight rows so I have a good idea of what to pick and what not to."

George does all the repairs and maintenance work for his farm. He demonstrated his hammering technique. After each few blows, he quickly touches the nail with his free hand, thereby judging how to direct his hammer so the nail goes straight in. He hammers as fast as a sighted person.

He maintains all his vehicles, and changes parts and tires. He showed me the four-speed transmission he installed in his jitterbug. Recently, he and his son stripped a Pontiac.

"You have to place your tools and parts exactly where you can find them. Get a good feel for everything. Feel each part and remember where you place it. . . . Most mechanical work is done in awkward positions where light can't get at anyway. Sighted people turn on lights unnecessarily. It's just the 'idea' of light being there that compels them to turn a lamp on. Half the time they can't see what they're doing anyway."

With anything George does, be it mechanics, harvesting, planting, or even just to take in the mail, he creates a mental picture.

He gets around the farm with no problem. If he walks slowly enough, he can detect face level obstacles (including closed barn doors and corners) by "facial perception." As he approaches something at face level, he feels the air pressure created upon his face. Sighted people can do this too, he says.

Cutting wood is also no problem. George uses a tablesaw to cut his cordwood. If he feels the wind of the tablesaw, he knows he better back off a bit.

But George sometimes encounters difficulties.

"Sometimes I'd walk with a heavy load in my right hand and the load would pull me off to the right when I wanted to walk straight. Plenty of times the kids left bicycles or toys on the ground and I'd bump into them." Alice said she never saw such bloody, bruised shins on anyone.

"The worst situation is getting lost in the middle of a large, open field," groaned George. "You hear a sudden vehicle moving at the back of the field. You head towards it thinking it's out front by the road where noises are usually heard. Any distraction can get you headed in the wrong direction. Even stumbling over a rock can turn you around.

"You have to be decisive. You have to ignore the distractions and rely on your instincts. Feel the lay of the land with your feet and listen for the wind breezing through the trees at the edge of the field. Create a mental picture of where you are."

If George gets lost in the woods, he gets his bearings straight by feeling the trees.

"Most trees lean to the northeast and usually the heaviest limbs and moss are on the north side of the tree. Most brooks travel in a southwesterly direction, and if you follow it downstream, chances are it will lead you to civilization."

Years ago, George and his two nephews hunted deer in the woods. His nephews positioned him as he fired the gun. Now he is upset because the state passed a law prohibiting the blind from hunting. George believes this law is discriminatory and unreasonable.

"One year, a rifle team composed entirely of blind members finished second in national competition," he said in opposition to the state law.

He believes that some of the Grange officials discriminate. His position of Treasurer in his subordinate Grange has caused some argumentation. With this appointment, he may be setting new precedent in Grange policy.

But by and large, George has few complaints. "Most people have been very helpful."

He regrets he can't see the faces of his children, but by carefully touching their heads, feeling the contours and features, (a process known as "monitoring") he creates a strong mental picture of what they look like. By monitoring Alice, he realizes she is no longer quite the same, shapely, 118 pounds of when they were married.

With six children and a wife at home, George had plenty of help. He believes a good partner is necessary to overcome a handicap.

"Alice is the best partner any man could have."

With the children gone, Alice no longer needs to can her 1,000 jars of food for the winter. The farm is less active. But as Grange Treasurer, President of the Sebasticook Chapter of the National Federation of the Blind of Maine, farmer, and family man, George is very active.

Together, he and Alice live in the satisfaction of having raised six appreciative children, and providing them with food, shelter, clothing, and warmth.

With pride, Alice stated, "We never knew hard times." As I left the farm, George told me to stop by again sometime. □

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Plant Something Old...

...And Something New

By Clarice Moon

It is a good idea to plant old favorites that you know are good for canning and freezing. But it also adds interest to the garden to plant something new.

Spinach, mustard greens and Swiss chard are old standbys for greens. But just try Tampala, an old Chinese vegetable that produces greens in mid-season when the spinach bolts to seed. It has a better flavor than mustard greens. The leaves are cooked like spinach and have a delicious taste.

Maybe you have an old variety of radish that you have always planted because you had good luck with it. Try some of the early 12-day varieties—The Early Bird or Red Robin or Cherry Belle and the Early White Olive. Plant these as early as the ground can be worked and they will be ready to eat 12 days after the first leaf appears. There's nothing so tasty as the first crisp, fast-grown radish of the season. It takes moisture and cool weather to get the right crispness to a radish.

Early peas are wonderful—whether the smooth or wrinkled variety of seed is planted. But do try some of the Edible-podded, or Sugar Peas. They are prepared much like string beans and the pods can be eaten. As an extra bonus. They are so pretty with their purple blossoms.

It seems everyone has their favorite string beans, wax or green, bush or climbing. The seed companies have developed some new varieties that are drought-resistant, and are good freezing and canning beans. It pays to look the many kinds over, because of the adverse weather conditions we experienced during the last season. I am

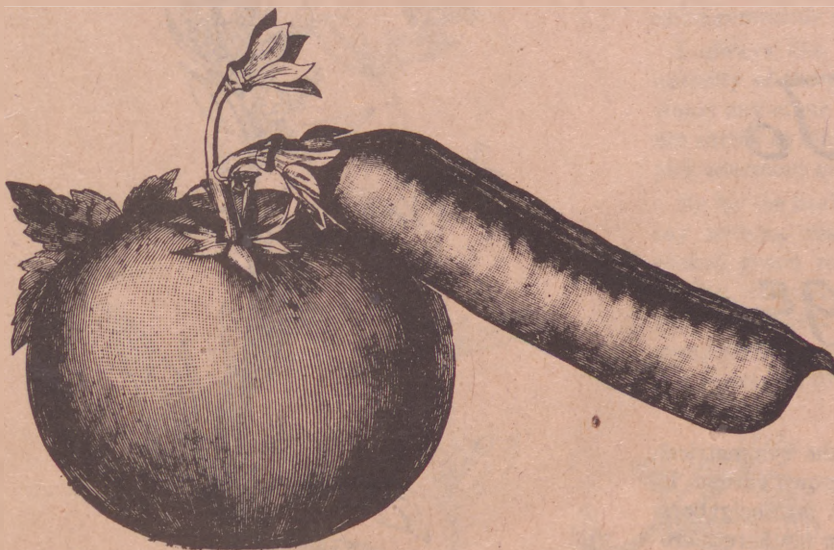
particularly fond of the Royalty purple bean as a good producer of tasty beans. It is not too easily frosted and bears through the season. The purple beans turn green when cooked and I believe have a better flavor than either yellow or green varieties. Kentucky Wonder pole beans are good, old-fashioned beans with lots of meat on them. Or try the yard-long asparagus bean just to add interest to your garden? They are good to eat, too.

Try some seed that will produce the largest varieties, if you have the room. For large pumpkins, Yankee Field; for watermelon, State Fair; for squash, Hubbard; for tomatoes, (tallest) Climbing tomatoes, (or large-sized) Ponderosa; for cabbage, Giant Flat Dutch.

Or try some seed that produces midget-sized vegetables. Small yellow pear tomatoes, or red bush tomatoes, or Tiny Tim...Midget Icebox-sized watermelon...tiny green string beans...Tom Thumb lettuce that grows in heads just large enough for individual servings...Midget sweet corn, with stalks two-and-a-half feet high and ears four inches long...Baby cucumbers four inches long. With these small varieties that do not take up much room, even a small garden can have a lot of variety.

It is interesting to try some vegetables that you have never grown before. Eggplants are interesting to watch grow—the egg is delicious eating, too. Or plant celery, brussels sprouts, peanuts, white burley tobacco, kohlrabi, sweet potatoes, cauliflower, garlic, Chinese cabbage or a few herbs. One or two new varieties tried, and with directions faithfully followed, perhaps you would have such good luck that you would always grow them. I like a good assortment on my kitchen shelves and it is a whole lot cheaper to grow your own.

Clarice Moon lives in Delavan, Wisconsin.



This year I plan to grow some herbs. I'd like to plant chives for salads, dill for pickles, lavender for sachets, horehound for candy, and sage for seasoning. Also some fancy vari-colored Indian corn and gourds would go nicely in a corner of the garden for future charm strings.

Yes, I think gardening can be fun by tucking in some new varieties along with the old. Something else is needed besides a back with a hinge in the middle—just a little imagination can do wonders. ☐



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Weeds To Encourage

By Susan Schnur

One of the pleasures of my life is the symmetrical beauty of my freshly weeded half-grown garden. It therefore excited comment from my neighbors when I started letting weeds go to seed in my heretofore orderly garden.

Several years ago, when I first began to garden, one variety of weed outshone them all in abundance—carpeting the whole garden in June. Inevitably, I missed a few in the weeding process when the rich green of the weed was hidden in the rich green of the peas. That was when I discovered that aphids loved my mysterious weed and left the peas alone when it was available.

From then on I always left one or two of these weeds among my peas, but I still didn't know its name. Enlightenment finally came when I noted its resemblance to a favorite seaside treat, Orach, or wild lamb's-quarters. Sure enough, my aphid trap crop was pigweed, or lamb's-quarters.

The scientific name of the plant is *Chenopodium*, which is often called lamb's-quarters, but locally called pigweed. I will also call it pigweed, despite the ugliness of the name.

Pigweed has more or less arrowhead-shaped leaves arranged on a central stem. Its most distinctive feature is that the leaves have a sort of whitish mealiness on the outside and are unwettable. Once learned, it can easily be recognized.

Being a lover of leafy green vegetables, I harvested my new-found treasure and ate some both raw and steamed. Imagine my delight when I discovered my weeds were more delicious than my spinach.

Nowadays, pigweed and lettuce thinnings make up all my spring salads. I pull up the abundant pigweed by the roots and snip them off with scissors. Later, when they are larger, I use the same harvest procedure, but I steam the greens and serve them as I would spinach.

I have been pleased to learn that pigweed has much more calcium, iron, protein, fiber, vitamin C and vitamin A than does spinach. It also has the advantage in long-daylight latitudes of not bolting as early as spinach.

Of course, its weed-like qualities mean I must handle it differently from the way I handle my other vegetable crops. Between the rows, I till it under (a good green manure), and I harvest it by pulling it up by the roots. But always, I let some plants go to seed in the garden. I wouldn't be without my pigweed.



Pigweed [*Chenopodium album*]



Purslane
[*Portulaca oleracea*]

Since the major source of humus and fertilizer for my island garden had always been seaweed and maple leaves, my weed problem had mostly been the hundreds of maple seedlings which appeared every spring. A second tilling late in the spring had always taken care of them. One fall, however, I had a whole load of manure brought from the mainland, and I spread it on the garden. The next summer, a new weed appeared to plague me.

It did not make its appearance until the end of June, long after my late spring tilling. It grew in thick carpets close to the ground, so it could not be pulled by hand. Hoeing got rid of it wherever I was able to hoe without damaging young vegetables. But the weed was a persistent pest.

One morning as I started balefully at its fat stems, fleshy leaves and tiny yellow flowers, its description struck a chord somewhere in my memory. I headed, as I often do, to

my trusty Euell Gibbons library. Sure enough, the plant with which I was so valiantly battling was purslane, a plant quite commonly eaten in Asia.

I always like to try new foods, so I picked a large quantity of the purslane and steamed it with butter as I would any other green. I was surprised to discover it did not shrink as other greens do, and it was not necessary to pick enormous quantities in order to feed a family of four.

By far the best surprise, however, was the flavor. I can say without reservation that purslane is my favorite cooked green vegetable. Even its slightly mucilaginous quality, instead of detracting from it, enhances it and reduces the need for butter. It has none of the bitterness of many garden greens. Steamed and flavored with butter, it is a vegetable fit for a king.

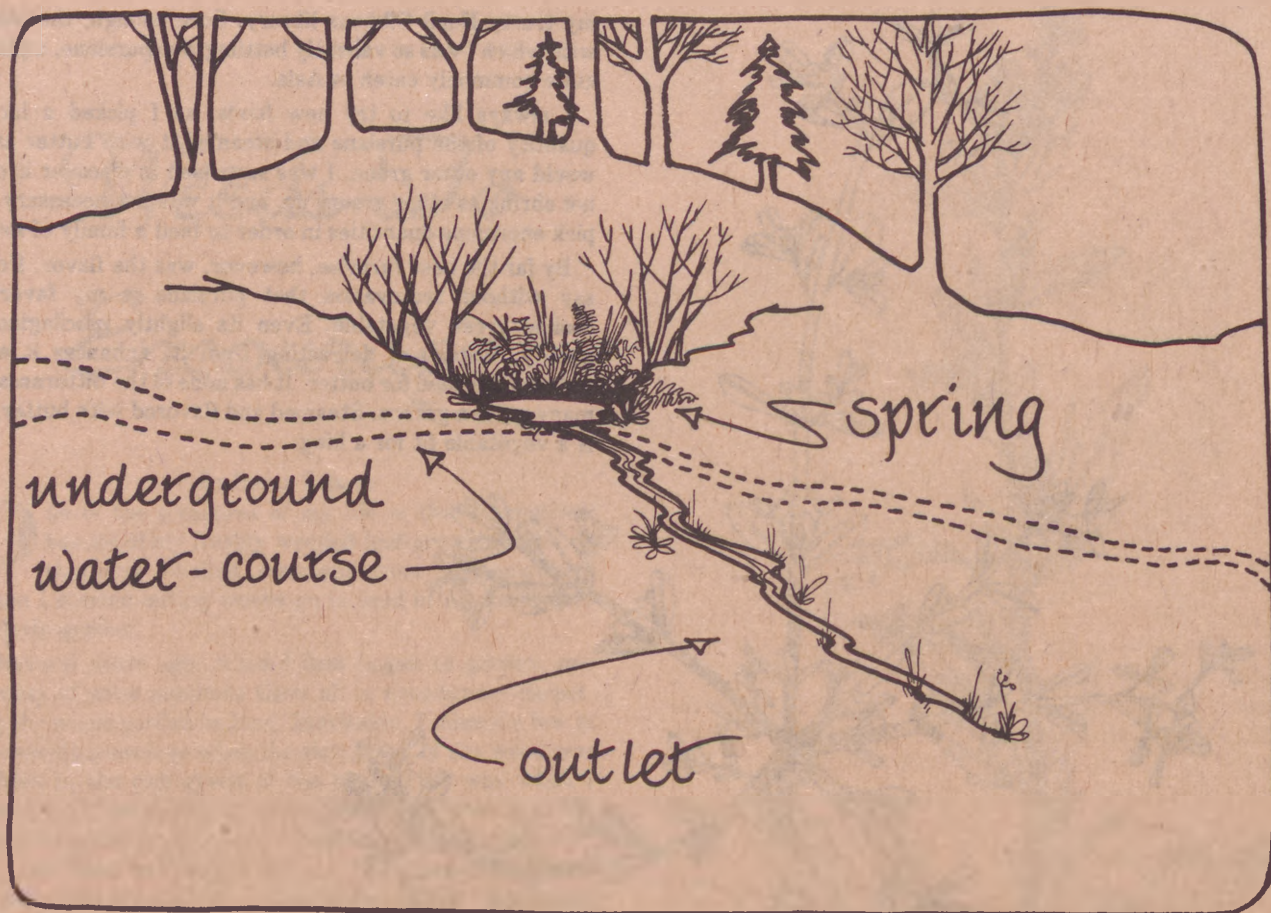
I often serve the very tender tips of purslane raw in salads, but as purslane is the only leafy green vegetable I prefer cooked to raw, I often cook it as I would spinach.

The tiny, almost invisible leaves start blanketing my Maine garden in late June. Most of it I till under, but I try to leave a large patch for family eating as well as the all-important seed production.

About the time I have baby zucchini and kohlrabi and beets, I also have abundant purslane. In my wok, I saute almonds in oil until lightly browned. Then I remove the almonds to drain and stir fry the vegetables, putting the densest ones in first. The purslane goes in last and is cooked until just tender. Then the almonds go back in the wok, and the whole dish is served over brown rice — a one-dish meal which is hard to beat.

Purslane satisfies the hunger in a way unusual in vegetables. I have no way of knowing if it is bulk, starch, fiber, or protein which accounts for its ability to fill the stomach. I have searched all the nutritional charts available to me, but none of them mention purslane. Considering its abundance and its hunger-satisfying ability, it would be a good idea if some group researched it for food value. In the meantime, I'll continue to encourage my former garden pest. □

Susan Schnur gardens in Islesboro, Maine. Illustrations by Laurel Smith.



My Natural Cooler

By Bill Homstedder

Some of us are lucky, some of us are luckier, and some of us are among the luckiest of homesteaders, having a nice cold natural water spring near the cabin!

All three of our northernmost New England states are blessed with good water, particularly the hilly, mountainous high country.

Natural springs are where underground water courses break through the ground's surface of their own accord, or are so close to the surface that they may easily be opened by man—intentionally or accidentally—and lucky indeed is he who has such a spot, or discovers one near his home! It means that he has an abundance of clean, pure, cold, refreshing water all his own,—for free! It is, in such a case, *his*; to drink, to supply his home, water his garden, his livestock and even keep his food cold and wholesome the year around, if he wants to build a cooler box for himself and place it where the spring's overflow can run through the cooler box.

A cooler box is really better than an icebox, for the temperature doesn't fluctuate. Natural springs are a constant temperature, the year round.

Bill Homstedder lives in Bryant Pond, Maine.

Illustrations by Liz Buell.

Most spring temperatures are in the high-40° F range, some as low as 42°F. Others may be a little warmer, but all are well within the range of good keeping for foods. As with ice, humidity runs high.

First, let's look at the spring.

Is it just a natural waterhole into which you can dip up a pailful and its outlet is just a tiny trickle of a brooklet—or—having been used at some previous time, is it deeper and has it been lined inside with stones, a wooden box, a barrel, possibly concrete, or even a tile section?

In any case, if it's been long out of use, it needs cleaning out. Silts and the natural debris of leaves and sticks will soon fill in any open spring, clogging it to some extent.

Clean-out tools are a shovel and a bucket. Dig 'n dip out the mud till you come to the clean sand and gravel of the spring's real bottom. As you near the bottom, the water will flow much faster. Be sure to dig out the overflow ditch for 10 feet or so below the spring to help clear the water faster.

When you reach the sand or gravel and the water clears enough so you can see, you'll notice one place, or maybe the whole bottom, where the water rolls and boils up from below.

One place where I lived years ago had just such a spring. It had once supplied a house, then long gone, and had been



a
stoned-up
spring

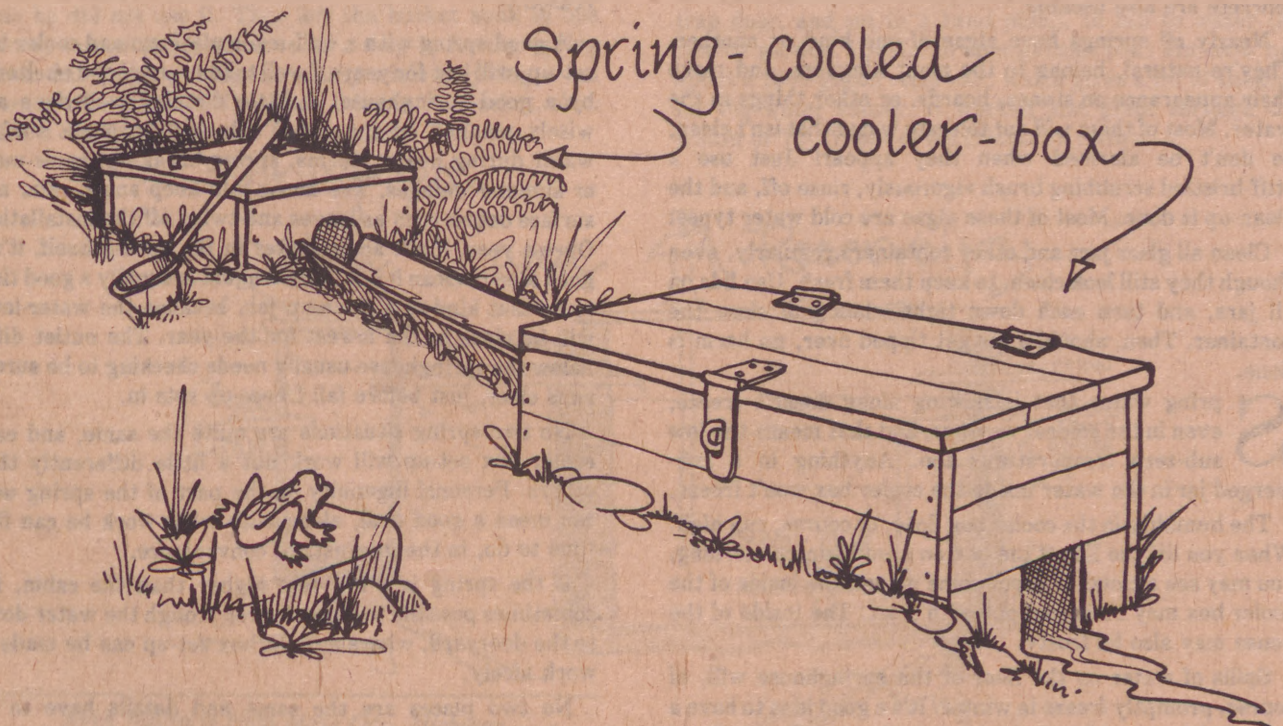
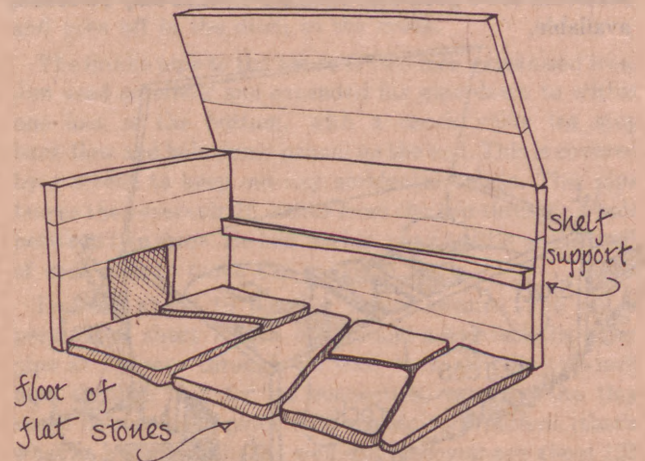
"stoned up" like a water well. Long out of use, it had silted-in to the top, and its overflow barely trickled. Dug out and well-ditched, the overflow became a nice little brooklet.

This one bottomed at about six feet, and there was clean, almost white, sand that rolled and boiled with the flow of water. Such a place used to be called a well spring, as it was over four feet deep. It had been stoned up and the stones were in good condition, still firmly in place, except for a few around the top. Extra cold, this water temperature was just above 42°F.

After cleaning out, I replaced the stones at the top, and built a wooden platform with lift-up door to permit dipping a water pail, while keeping out debris. The house had no cellar, so a place to keep foods good was needed.

I widened the water outlet ditch, and in it installed a cooler box, complete with inlet and outlet, so that the brooklet flowed through the box constantly. I screened both openings to keep out frogs and other would-be visitors.

The box had no bottom, so I paved it with smooth, flat stones. I had dug deep enough to maintain about six inches of water at the inlet end of the box, and eight or 10 inches depth at the outlet end. The shallow end was used for quart-sized glass jars to hold milk, and some kinds of foods. In the deep end I kept an earthenware jar, three gallon size, into which I could put a dish of fresh meat, or other food. Using wooden cleats along the cooler box sides, I fit a board shelf on which to set a dish of margarine, and put other cleats along the sides to keep hold-down sticks for the glass jars, so that they couldn't tip over and spill their contents. All of the containers, set down into the water, had covers, including the earthenware crock. This was heavy enough to stay put without using a hold-down. The top of the cooler box was fitted with a cover and fastener to keep out any animals that might come along.

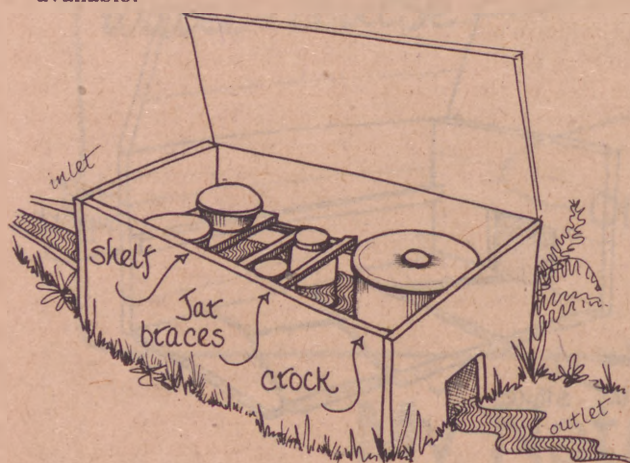


A while later, I built a little house to cover both the spring platform and the cooler box. It had a window and a door that could be locked with a key and padlock.

Every area has at least one human thief, and may have several thieves about—so a house that can be locked is a must, for a thief can easily rip up a cooler box even if it is locked against animals.

The house also is a help in winter, to keep snow off the platform and box. I used my cooler box set-up for 10 years.

Even during a bad drought, the cooler box still worked and the spring held out. A springhouse six feet wide by eight feet or 10 feet long is a good size, and needs to be high enough for the user's height both at the door and inside. It needn't be fancy, but should be sturdy and any usable salvage lumber will do—it can be made of pole logs, or sawmill slabs may be used for boarding the side walls. Materials are a good deal a matter of what may be readily available.



Smooth, flat stones do nicely in the bottom of the cooler box. Pieces of slate are good, if available, or pieces of concrete are also useable.

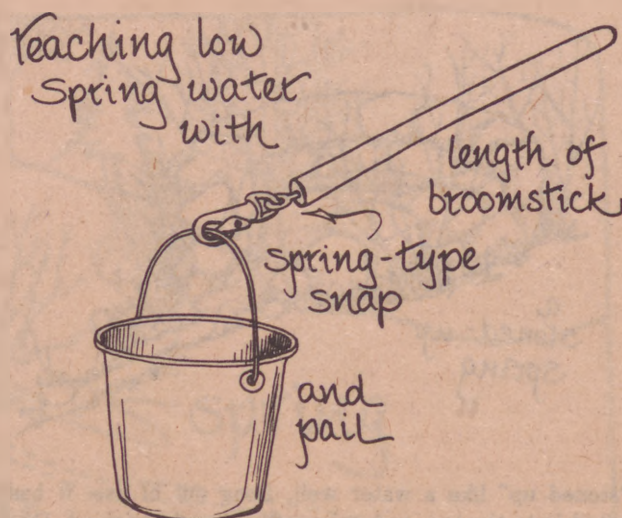
Nearly all springs have algae of one kind or another. They're natural, belong to the plant kingdom, and make their appearance on stones, boards, or other things in the water. Most of them *will not* tolerate water that isn't clean, so don't be alarmed when they appear! Just use a stiff-bristled scrubbing brush vigorously, rinse off, and the clean-up is done. Most of these algae are cold water types.

Clean all glass jars and other containers regularly, even though they still look clean, to keep them fresh. Use lids on all jars, and turn each down tight when you close the container. Then, should a jar get tipped over, no harm is done.

Spring water that is flowing along doesn't freeze, even in the coldest weather, and that means the low sub-zero temperatures too. Anything in a submerged jar in the water inside the cooler box won't freeze.

The humidity in the cooler box does, of course, run high. When you lift the lid off the box on a cold winter morning, you may see a cloud of vapor come up and the inside of the cooler box may be haired out with frost. The inside of the house may also be frosty.

Spills of water on the floor of the springhouse will, of course, promptly freeze in winter. It's a good idea to have a pailful of dry sand handy-by to sprinkle onto the icy floor.



Keep the sandpail covered and outside of the springhouse where humidity is lower. Mineral sand doesn't freeze if kept dry. Avoid using salt or salted sand around the springhouse. It would pollute the water supply. If the water level is quite high in the spring, hand-dipping with a pail is fine. If too low for convenience, a handle saved from a discarded broom can be used. Fasten a spring-type snap to the end of the handle to hold the bail of the pail. Bolt-type snaps will freeze and fail to work. Snaps are stocked by all farmer's stores.

To carry the water through the spring's outlet to the cooler box, a section of four-inch glazed finish terra-cotta tile works fine, or a piece of iron pipe, or you can make a pipe out of four pieces of board of suitable width. Make the inlet opening of your cooler box the size for a neat fit. Be sure to put a piece of screen over the opening on the inside of the box. It'll keep out frogs and other small visitors that might come along. Screen the outlet opening for the same reason.

A good spring with a well-made platform and cooler box set-up, will last for years if well taken care of and sheltered by a good springhouse. A little ditching well done and wisely planned on the uphill side will keep out surface water during heavy storms, spring break-up, snow-melt, or summer deluges. The house will keep snow, rain, and surface debris such as leaves and twigs off the installation. Once a year, if silt accumulates in the spring itself, it's a good idea to clean it out. Late August is usually a good time to do that kind of a clean-up job, because the water-level will be close to the lowest for the year. The outlet ditch below the springhouse usually needs checking to be sure it runs clear, just before fall freeze-up sets in.

No two spring situations are quite the same, and each cooler box set-up will work out a little differently than others. Personal ingenuity on the part of the spring user can mean a good deal, along with what work he can find time to do, in the interests of convenience.

If the spring is a few feet higher than the cabin, it's sometimes possible to pipe, or even trough the water down to the dooryard, where a coolerbox set-up can be made to work nicely.

No two places are the same and details have to be worked out by the person who wants a cooler box set-up. □

Our Spring-Fed Reservoir

By Ruth Alford

When the Griffors family bought a home in Michigan's Upper Peninsula, they got a spring-fed well. Good, cold, clear water, constantly renewed. But, sometimes not renewed fast enough for the needs of their family.

So, against the doubts and negative comments of the local residents (which are usually things to mind, let me tell you) Jim Griffors built a reservoir.

The old well worked like this: A hole had been dug into the original spring and a 30-inch-diameter round tile, 60 inches deep, was set in for a well. Gravel in the bottom filtered the water. A two-inch intake pipe led to the house. Excess water ran off through a one-inch overflow pipe, into a ditch.

What Jim did was build a reservoir next to it. He and his son dug a hole about seven by seven by six feet deep in the red clay soil. It took them less than a day to dig it. As the two men dug deeper, the ground got really soft because of seepage from another spring. Jim set up a pump to keep the water out while they worked, putting the pump intake hose into a bucket sunk at one corner of the excavation. (Remember the bucket — you'll meet it again.)

For forms, Jim drove in 4 x 4-inch fence posts, six or seven feet long, two on each side. He had some old pieces of 2 x 4-foot metal shelving (picked up at an auction for \$2). He slid two of these, long edge down, between the fence posts and the clay bank, to help hold the soil from caving in. On the bottom they poured a concrete slab about six inches thick, which took a quarter of a yard of ready-mixed concrete. (At \$38/yard = \$9.50.) If he had mixed his own, Jim figures it would have taken five bags of sand and one bag of cement. About a half-gallon of liquid Anti-Hydro mixed in would have helped it set up faster, although this time he did not use it. They left the bucket sunk in one corner, cemented in, to serve as a seep-in for the spring which was keeping things so mushy while they dug — an extra source of water. Jim made holes in the bucket, then filled it with small stones for filtration.

Then on the inside he laid tiers of 4 x 8 x 16-inch cement slabs, alternating the slabs of one tier with those of the next above, like bricks. It took seven tiers, of 20 slabs per tier. He had bought a few extra (always a good idea) so it came to 150 slabs at \$.35 = \$52.50.) Jim set the slabs together with mortar (not cement, mortar) of a one-to-one mix of sand and cement. It took two bags of each.

Outside the wall of concrete slabs they filled in with crushed rock to give drainage, and to prevent the clay from pressing directly on the sides of the reservoir. The old shelves were just left in place. A half-inch overflow pipe from the old well comes into the reservoir eight inches from the top. A new overflow one-inch-diameter galvanized iron) leaves the reservoir eight inches from the top and goes off in the ditch to the creek.

The intake pipe to the house is two-inch galvanized iron. Jim used an elbow and extended his pipe down to within one foot of the bottom, with a check valve (to stop back-flow and hole pump prime) on the end. This is covered by a screen to keep out any accidental debris. This pipe leaves the reservoir 16 inches from the top through a hole between two slabs. He had to chip away a little of the ends of each slab to make the openings.

Looking ahead to possible future repairs, Jim set a permanent short length of two-and-a-half-inch-diameter pipe as a sleeve through his wall, then slid the two-inch pipe through that for his connection, caulking the tiny space between the pipes with plastic roof cement (that's what he had around). The well and reservoir are about 125 feet from the house, which is a long haul, but their 1/2 h.p. Meyers shallow well pump sucks it up there with no problem.

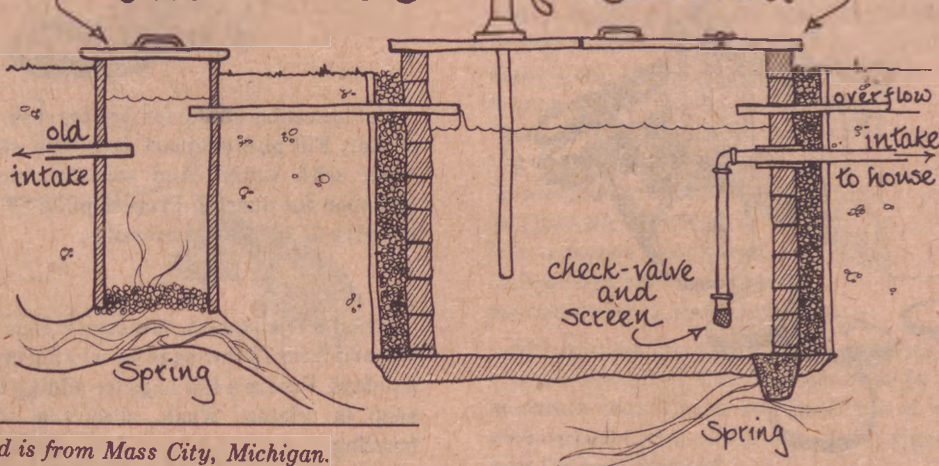
To cap the well off, they built a wooden platform with a trap door, and set in a hand pump, to use to water the nearby garden. (Useful in emergencies too.) Jim now has about a 1000-gallon reservoir, which gives a lot of back-up for the water supply. It worked just great through the winter of '76-'77, one of the coldest on record. □

Spring-fed

Well

and

Reservoir



Ruth Alford is from Mass City, Michigan.

By Lucretia Douglas

Usually by the last of July, we have an overabundance of Zucchini squash. It's amazing the number of things you can do with them. Pick them under a foot in length for the best eating, (picking often encourages more to set on). A few hills will supply the average family with all they can use. Wash, but never peel Zucchini or summer squash; slice off and discard end pieces.

For a quick, delicious summer vegetable, slice tender Zucchini, barely cover with water, a dash of salt and boil gently until tender—about 10 minutes. Drain, add butter, a few tablespoons of cream (or evaporated milk), salt and pepper to taste.

Or slice squash, dip in evaporated milk, roll in a mixture of flour and cornmeal and fry in butter or shortening until golden and tender, turning often.

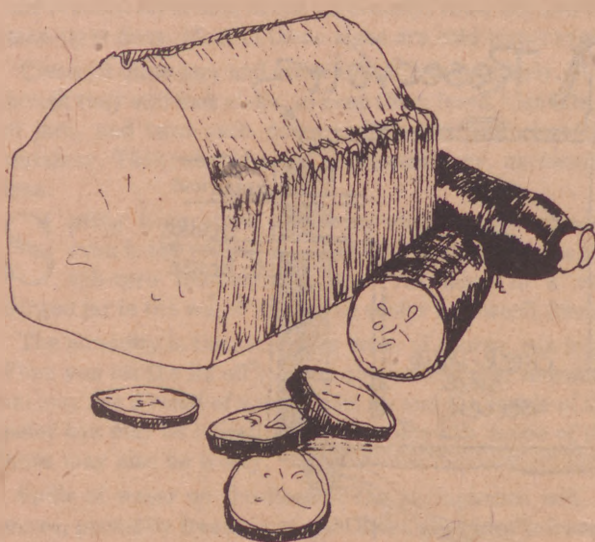
If you have never tried Zucchini bread, you are in for a real treat. Wonderful with cream cheese. Freeze the other loaf if it doesn't disappear—keeps well for snackin' too.

ZUCCHINI BREAD

- 3 eggs
- 1 cup salad oil
- 1 cup light brown sugar
- 1 cup sugar
- 2 cups raw Zucchini (ground fine)
- 2½ cups flour
- ½ cup wheat germ
- 3 teaspoons cinnamon
- 1 teaspoon vanilla
- 1 teaspoon salt
- 1 teaspoon baking soda
- 1 teaspoon baking powder
- 1 cup (chopped fine) walnuts

Beat eggs until light and fluffy. Add sugars, oil, zucchini and vanilla. Mix well. Add dry ingredients; mix, stir in nuts. Pour into 2 large or 3 small (greased and floured) loaf pans. Bake 1 hour at 325° or until test straw comes out clean.

Try this for supper with hamburgers and tossed green salad.



Too Much Zucchini?

BAKED ZUCCHINI

Slice squash, dip in beaten egg, then flour and fry in oil until golden brown. Put a layer of fried squash into enough spaghetti sauce to cover bottom of pan, sprinkle with grated parmesan cheese, then another layer of sauce, squash and top with grated cheese. Use 8 x 13 (approximate size) glass or enamel pan. Bake 25 minutes at 350°. You can use store-bought spaghetti sauce or make your own. Children love it too.



Can zucchini slices for winter use. Use the pressure cooker. Fill pint or quart jars with slices of squash, and cover with water. Add salt (½ teaspoon for pints; 1 teaspoon for quarts). Process pints 25 minutes; quarts 30 minutes at 10 pounds pressure.

Grind a few squash, measure 2 cups to a plastic freezer bag and freeze a few bags for making bread in winter or for holidays. Freeze a few bags for adding to vegetable or beef soup in winter. Wash, slice and cook squash before freezing.



CORN AND ZUCCHINI CASSEROLE

Boil 4 cups sliced squash in salted water until barely tender. Brown 1 lb. hamburger in a little fat, in heavy dutch oven. Beat 3 eggs, add 2 tablespoons flour, $\frac{1}{3}$ cup rich milk, $\frac{1}{2}$ teaspoon salt, $\frac{1}{4}$ teaspoon pepper. Stir cooked squash, 1 small onion chopped fine, 1 can cream-style corn into browned hamburger with egg mixture. Stir all together with 1 cup shredded yellow cheese. Sprinkle a little grated cheese on top and bake in 325° oven about an hour or until set.

Zucchini or summer squash add variety and help thicken and "build up" beef or vegetable soups.

The green type Zucchini is most often used. There is a new golden one that came out last year, or regular yellow summer squash can be substituted for Zucchini in casseroles, baked squash, or boiled or fried recipes, but is not satisfactory for bread, pickles, or relish.



ZUCCHINI PICKLES

- 2 lbs. thinly sliced zucchini
- 2 small onions (sliced thin)

Sprinkle with $\frac{1}{4}$ cup pickling salt. Cover with cold water for about 2 hours. Meanwhile, boil together—
 3 cups vinegar (dilute with $\frac{1}{2}$ cup water)
 2 cups sugar
 1 teaspoon celery salt
 1 teaspoon turmeric
 2 teaspoons mustard seed

Drain squash. Pour hot vinegar over it and let stand for two hours, then bring to boiling point and heat five minutes. Pack into pint jars: process in hot water bath in canner about 15 minutes. Cool. Always use bag salt in canning or pickling.



One of the best relishes I have ever eaten is:

ZUCCHINI RELISH

- 12 cups ground-up zucchini
- 4 cups ground-up onions
- 1 red pepper, ground
- 1 green pepper, ground (sweet peppers)
- 5 tablespoons salt

Mix ground vegetables together with salt and set overnight in enamel kettle. In the morning, rinse with cold water; drain well. Put 2½ cups vinegar (diluted with about $\frac{1}{2}$ cup water to heat.)

Make paste of:

- 6 cups sugar
- $\frac{3}{4}$ tablespoon cornstarch
- 1 tablespoon dry mustard
- $\frac{3}{4}$ teaspoon ground nutmeg
- $\frac{3}{4}$ teaspoon turmeric
- 1 ½ teaspoon celery seed
- $\frac{1}{2}$ teaspoon black pepper
- enough water to form paste

Stir into boiling vinegar until it starts to thicken. Add ground vegetables. Cook and stir often for 30 minutes over moderate heat. Can in sterilized jars at once. Very good with baked beans—even for eating right from jar—The best for frankfurters!

Squash Blossom Soup

By Mary Seibert

One cannot even imagine how many pumpkin and Italian squash blossoms fade away each day during a growing season. It's too bad more people don't realize that these prolific blossoms can be prepared in so many tasty dishes.

In all instances, they must be picked early in the morning, soon after they open. A large basketful should be gathered, as they cook down quite a bit. Cut off green ends, rinse and drain.



Blossom Fritters

1 egg (well beaten)
2 or 3 tablespoons flour
salt, pepper and a little parsley (if desired)
Fat to fry in. Blossoms, washed and dried on towel.
Dip 2 small or 1 large blossom in batter and fry in deep fat until brown on both sides. Drain on paper towels. Serve with meat or with butter and syrup. Makes a nice breakfast dish.

Squash Blossom Soup

Light soup stock (your own or canned)

Prepared blossoms (Italian type are best for this) Bring stock to boil, add blossom petals and boil slowly 20 to 30 minutes.

Pre-cooked Blossoms

A large basket of rinsed blossoms with greens removed. Four cups boiling water, cook 5 minutes.

Pumpkin Blossom Salad

A large basket of pre-cooked blossoms, cooled, with water squeezed out. Chop fine, add salt, pepper, chopped onion, parsley, and French dressing. A chopped hardboiled egg may also be added.

Variation—Mayonnaise with a little lemon juice may be used instead of French dressing.

Pork Chops and Blossoms

Pork chops (amount needed for your family)
Pre-cooked blossoms.

Rub chops with a little garlic, brown on both sides. When done, pour off some of the fat leaving just a small amount in the pan. Pile chops to one side of the pan to make room for drained (not squeezed) blossoms. Add salt and pepper. Let simmer until well-heated.

Pumpkin Blossoms and Cheese

Brown butter, add a little onion (chopped fine) Squeeze water out of cooked blossoms, add blossoms to butter and fry five minutes. Add Italian or American cheese, grated.

Variation—well-beaten eggs added to this recipe with the cheese and cooked as for an omelette, is very good. □



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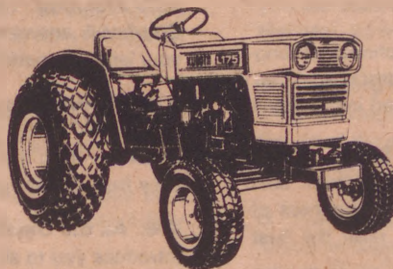
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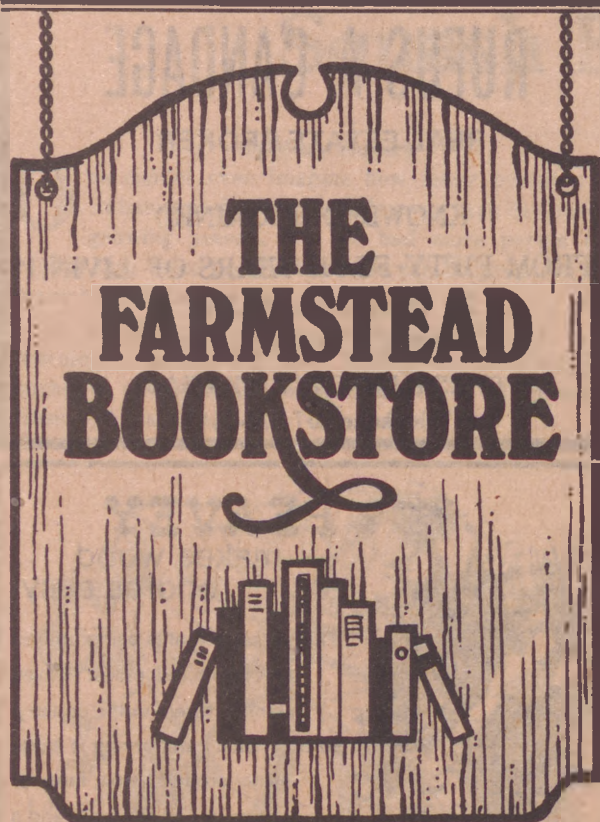
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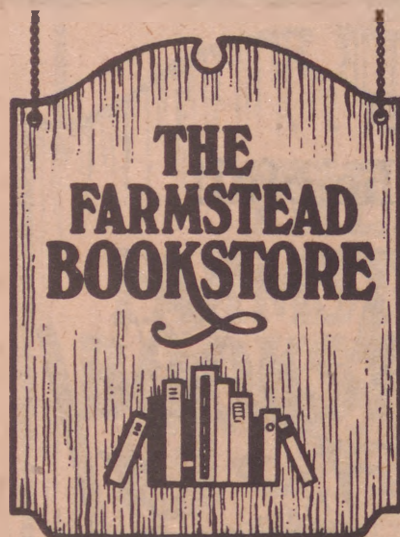


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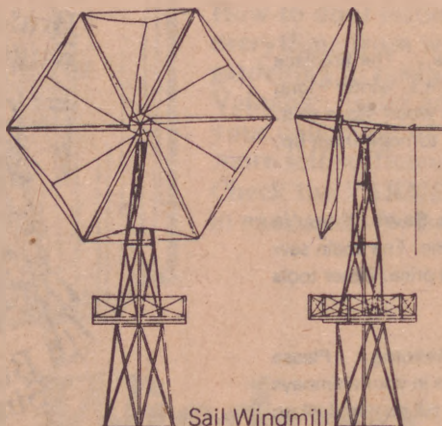
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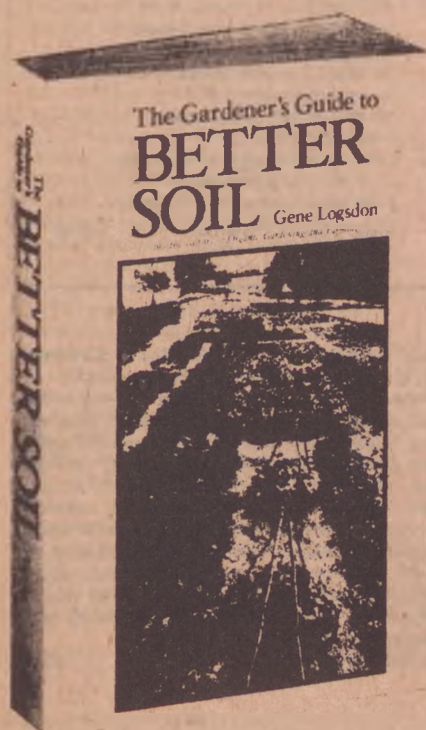
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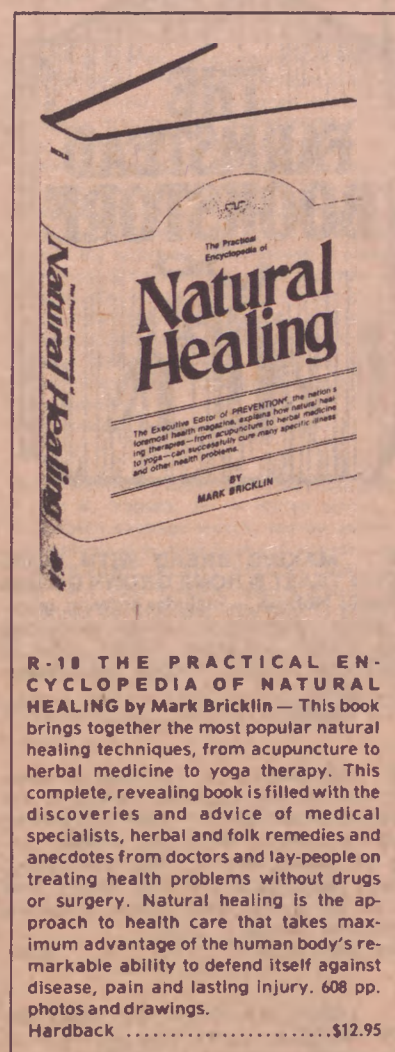
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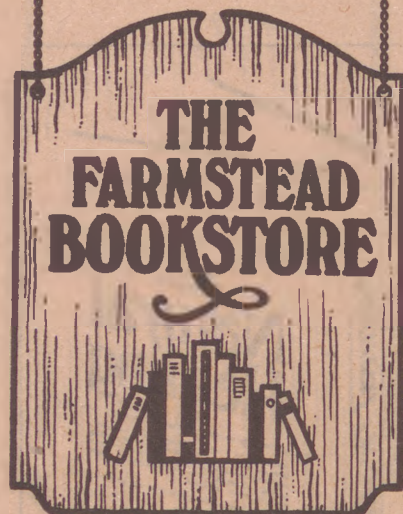
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R-33 GUIDE TO BEES AND MONEY by Ted Hooper — This invaluable aid is not just a how-to about beekeeping, but a vital collection of information on how to work with bees. Author Ted Hooper describes important situations that take place in the hive and offers reasons and responses. It's all here — beekeeping tactics with recommendations on necessary tools, different styles of hives and different races of bees, advice on siting the apiary and a complete outline of the work involved in a year of beekeeping, including maintenance necessary for a healthy harvest. In addition, **GUIDE TO BEES AND MONEY** details the fine points of handling bees, controlling swarms, making increase, rearing queens, and coping with pests and diseases. A final section treats honey plants and the removal, composition, handling, and preparation for sale of honeybee products. 260 pp. with 120 black and white illustrations.
Hardcover \$7.95



THE CANNING, FREEZING, CURING & SMOKING OF MEAT, FISH & GAME

by Wilbur F. Eastman, Jr.

G-47 Step-by-step instructions, methods, materials, costs. Covers beef, veal, lamb, poultry, game and fish. Loaded with old-time recipes for smoked hams and salmon, sausages, bolognas, bacons, venison mincemeat and more. Illustrations. Photos. Charts. 220pp.
Quality paperback \$4.95
Hardback \$8.95

G-40 HOW TO BUILD STONE WALLS by John Vivian — All about sources of stone, equipment needed, laying out a wall, building techniques, drainage, retaining walls, wall maintenance. A practical, "how-to" book for great results! 85pp. Heavily illustrated, photos.
Quality paperback \$2.95

R-34 PEDAL POWER: Edited by James C. McCullagh — **PEDAL POWER** examines the past, present, and future of the bicycle and other pedal and treadle machines. In clear, revealing prose, this unique new book explores the potential for pedal-driven devices in the workshop, kitchen, on the farm, and for transportation. **PEDAL POWER** is a new look at the future of the bicycle in appropriate technology. Around the workshop and homestead, pedal power can be applied to these machines: Wheel grinder, Stone polisher, Buffer drill, Jeweler's lathe, Wood carver, Potter's wheel, Battery charger, Hydraulic log splitter, Cider press, Air pump. 144 pp with 72 photographs, 65 illustrations.
Paperback \$4.95

R-32 WORKING WOOD: A guide for the country carpenter by Nancy and Mike Bubel — **WORKING WOOD** offers an opportunity for the do-it-yourselfer to build anything from a sawhorse to a barn, using readily available secondhand materials. Through easily read text, photographs, and drawings, the Bubels share their rough-hewn brand of carpentry — revealing how to acquire and store building materials, listing the necessary tools, and giving tips on working with the tools and materials needed to solve anyone's building problems. 220 pp with 91 illustrations and 56 photos
Paperback \$3.95
Hardcover \$7.95

YOUR ENERGY-EFFICIENT HOUSE
Building & Remodelling Ideas



by Anthony Adams

G-79 Here is the homeowner's manual to drastically reducing fuel bills by not wasting "bought" energy, and by using FREE energy around you. Learn here the many small inexpensive steps to lock in the warmth, and to take advantage of nature's own heating and cooling systems. Why pay when you can cut fuel costs naturally and permanently?

- Energy-saving checklist for guaranteed savings
 - Working with the sun, wind, climate factors
 - Windbreak plantings
 - Shade plantings
 - Ventilating and insulating to best advantage
- Heavily illustrated. 120pp.
Large, quality paperback \$4.95

G-39 LET IT ROT! The Home Gardener's Guide to Composting by Stu Campbell — The compost heap brings the gardening experience full circle. And it's so beneficial to your soil, and so very easy to do if you know the basics. Stu Campbell has written a thorough, delightful, informative book to benefit all composters. In practical, "how-to" terms covers alternative methods. Illustrated guide to home-made equipment. Extensive composting material list, what to avoid, locations, activators, modern applications. Sure to add an important and satisfying dimension to your gardening! Illustrated. 152pp.
Quality paperback \$3.95





G-95 DESIGNING & BUILDING A SOLAR HOUSE by Donald Watson, AIA — Here is the complete and practical book everyone has been waiting for on solar house construction. This lavishly illustrated book (over 400 illustrations) shows how the architect or the homeowner can design and build a solar-heated home — today. Watson discusses not only the historical "passive" uses of solar heating but also the application of "active" heating systems to modern buildings, including detailed information on the many commercial systems available and the efficiency calculations needed to choose the right system for your site. Climate design, site planning, and combinations of collector/storage/ and distribution systems are all considered, with illustrations of specific houses as solutions to specific problems. Watson's book explains, among others, the following important elements:

- how solar heating works • passive systems: greenhouses, Drumwalls, roof ponds, reflectors, diode panels, Beadwall and other insulation methods • active systems: flat-plate collectors and focusing collectors • water, rock, and phase-changing storage systems • prototype solar houses with air systems, water-trickling systems, and liquid systems • solar-assisted heat pumps, solar-powered air conditioning • solar photovoltaic cells for direct electric conversion • ecodesign principles for different U.S. climates • designing for northern climates • how to choose the best solar system for cost payback • site planning, with a special planning checklist • four ways to reduce solarhouse costs. 288pp.

Paperback\$8.95
Hardcover\$12.95

G-94 TAN YOUR HIDE: Home-Tanning Furs & Leathers by Phyllis Hobson — With a fair amount of time and effort, but almost no expense, you can make furs and leathers unequalled commercially, often using skins that would be wasted. And what tremendous satisfaction in your luxurious finished products. Phyllis Hobson discusses in a fully-illustrated step-by-step format working with skins and tanning furs and skins by nine different methods. She includes producing washable furs such as sheepskins along with methods for butter tanning, shortcut tanning, de-hairing for leathers, making sole leather, curing sheepskins, making buckskins by the Indian and modern methods, and even how to tan snakeskins. 112 pages with 25 illustrations.

Paperback\$4.95

GF-06 HOMEMADE: 101 Things to Make Around the Home, Farm and Garden by Roger Griffith & Ken Braren — This book provides useful information for the person interested in small scale functional building projects for the home, garden or farm. Nearly anyone can make any of the hundreds of items described and illustrated in **HOMEMADE** with the simple home tools they already have. Even if they are an unhandy person! This is a "how-to" book with all of the pitfalls eliminated — no half-finished projects due to lack of tools, materials or clear instructions. And none of these projects involve high costs — actually recycled easy-to-find materials are suggested to keep costs at a minimum. And these aren't projects limited to the "back-to-the-landers." Each project was chosen because of its wide-spread applicability — highly useful items that are easy to make yet unjustifiably expensive when storebought. 160 plus pages with over 150 illustrations.

Paperback\$6.95
Hardcover\$8.95



G-96 GARDEN WAY'S PRACTICAL BEEKEEPING by the Garden Way Staff — This is a book that we know from experience will work in the field, a book that we know from experience is necessary to fill the need for easily grasped, practical know-how in the ever-growing field of beekeeping. 224 pp with 100 illustrations.

Paperback\$5.95



GF-23 WOODSTOVE COOKERY: AT HOME ON THE RANGE by Jane Cooper — If you own a wood cookstove, or are thinking of buying one to conserve fuel or cut costs, you "need" this book. And need is not too strong a word, for here you'll learn the wisdom of cooking on a range — and lots more, too. "A kitchen range may not be for everyone," author Jane Cooper tells you. "It requires more work, time, attention and patience than a 'turn-on' stove. But for those of you who are willing to accept the demands of wood cookstoves, the versatility, delicious meals, warmth and beauty more than compensates." Learn here all about wood cookstoves—buying old or new, installing, increasing heat radiation, blacking, care and cleaning, firing, fuel supply. 204 pages, 6x9, 42 line drawings.

Quality paper\$5.95

GF-07 SUCCESS WITH SMALL FOOD GARDENS: Using Special Intensive Methods by Louise Riotte — This unique vegetable gardening book has been developed for everyone who has little land but would like to grow an abundance of vegetables. This book details the many techniques developed to insure bountiful crops in small spaces. Some techniques discussed: • interplanting • growing fences • tier plots • chatch cropping • hanging gardens • terrace gardens • succession plantings • raised beds • kitchen and herb beds • vertical gardening • pyramids • French intensive beds. Unique to this book is the concept of landscaping, wherein the entire home landscape is planned to accommodate food production attractively and effectively. Fence-row growing, border plantings, multiple-use trees and shrubs, and small decorative vegetable plots can be combined for a stunning landscape, while providing a luscious fresh fruit, vegetable and berry supply. 192 pp. with 70 illustrations.

Paperback\$4.95

R-21 ORGANIC PLANT PROTECTION, Edited by Roger B. Yepsen, Jr. — Wilted squash vines, perforated cabbage leaves, wormy apples — to grow plants is to meet bugs and diseases head on. But **ORGANIC PLANT PROTECTION** can help you turn your garden "battle-ground" into a balanced environment. The book is arranged in two parts: Section One explains how to use the basic strategies of poison-free plant protection; Section Two is a book-length encyclopedia to more than a thousand bugs and diseases. 696 pp. Over 100 color photos and 100 line drawings.

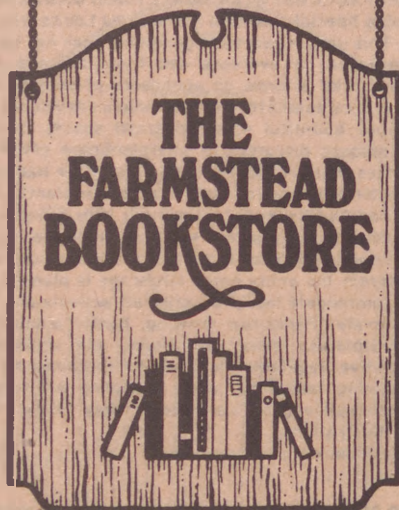
Hardback\$12.95



G-93 BUILD YOUR OWN LOW-COST HOME by Roger Hard — This book offers a viable alternative to expensive home construction; by describing in text and illustrations, the techniques used to build log homes either from "scratch" or using pre-cut log house kits. Over 100 detailed drawings, plus illustrative photographs take you step-by-step through the planning, site selection and preparation stages, the text always carrying parallel directions for kit construction or "from-the-tree" construction. 220 pp with 135 illustrations.

Paperback\$6.95
Hardcover\$10.95





G-29 RAISING RABBITS THE MODERN WAY

by Robert Bennet-- For home and semi-commercial producers. Includes choosing proper breeds, housing, feeders, waterers, feeding and diets, rabbit management, disease prevention, marketing. Excellent "how-to" with diagrams, photographs and plans. 145pp. Quality paperback \$3.95

G-14 SECRETS OF COMPANION PLANTING FOR SUCCESSFUL GARDENING

by L. Riotta-- Companion planting is planting your garden around positive plant relationships. Ask any old-time gardener - IT REALLY WORKS! And Louise Riotta accurately tells everything about this fascinating, useful aspect of good gardening. • Plants that flourish together • Companions for pest and weed control • Soil building companions • Best fruit and berry pollination • Companion herbs. Complete alphabetical listings, charts, illustrations. 224pp. Quality paperback \$4.95



R-17 BUILD IT BETTER YOURSELF — Here's a building projects book especially for homesteaders and gardeners; self-sufficient cusses who do things for themselves. It's a big book with page after page on making practical items, from planting flats to greenhouses, from chicken feeders to small barns. Each project is carefully explained in text, photographs and illustrations. A detailed materials list shows what's necessary for

the project, and step-by-step instructions tell how to fabricate and assemble the item. Projects include: Plant Stands; Potting Benches; Window Greenhouses; Hand and Wheeled Garden Cultivators; Garden Carts; Bird Feeders; Cold Cellars; Smokehouses; Walls; Fences; Bridges; Barns; Beehives and many, many more! 640 pp. over 600 photographs and illustrations. Hardback\$16.95



G-77 BUILD YOUR OWN STONE HOUSE

by Karl & Sue Schwenke-- Using the new slipform method, you can complete your own low-cost stone house in just six months - - - - with no previous masonry experience! The authors will guide you every step of the way from selecting land to building the chimney. Easy-to-follow charts, photos and diagrams provide the kind of accurate, reliable information you'll need to complete your own handsome, durable stone home. 156pp. Quality paperback . . \$4.95 - Hardback. \$8.95

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Of all the methods for preserving food, drying is the simplest and most natural. It is also the least expensive, in energy expended, equipment and in storage space. This guide shows you how to dry vegetables, fruits and herbs—as well as how to dry, cure or brine meats and fish. It includes food preparation, cutting techniques, blanching, storage and many, many recipes for using dried foods. A special section has explicit directions for drying over 40 herbs and spices. Very complete, clear directions—and best of all, no complex, expensive driers needed!

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Cheese-making is not as difficult as you may think and it's the most delicious, natural method of preserving milk yet devised. You can make a wide variety of hard and soft cheeses and butter from cow's or goat's milk. Homemade colby, cheddar, mozzarella, romano, cream and cottage are but a few of the 33 kinds this guide includes. You'll learn all about curds and whey... how "starters" are used... yogurt... sour and sweet cream butters... buttermilk and more. Instructions for making your own cheese form and cheese press are given with ways to freeze and can fresh milk.

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MAKING HOMEMADE SOAPS AND CANDLES

Making soap is one of the few ways a person literally can "produce something out of nothing." Natural materials such as fat, tallow and ashes are usually free for the asking and only a few simple kitchen tools (which you probably already have) are needed. You'll learn how to make your own lyes, how to make potash, and caustic soda too. Everything is carefully explained for making soft soap by cold or boiling processes... hard, perfumed and medicated soaps... molded, rolled or dipped candles... old time rush-lights... even wicks—one of the most authoritative books on the subject today.

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MAKING BREADS WITH HOME-GROWN YEASTS AND HOME-GROUND GRAINS

Why buy tasteless, weightless, low-nutritional store-bought bread when you can make this almost perfect food yourself. You'll be shown how to plant, harvest, and store your own grains (or purchase them if you don't have the land)... how to grow your own everlasting yeasts, sponges and other old-fashioned "risings" (potato, hops, malt, bran, buttermilk and many more)... how to use baking powders correctly. Plus more than 30 unusual recipes using your fresh-ground grains—mixed grain breads, corn breads, whole wheat noodles, potato doughnuts—to vary your menus.

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GF-09

MAKING YOUR OWN WINE, BEER AND SOFT DRINKS

If you've ever tasted fresh birch beer you know nothing in a bottle or a can can compare to it. That's because natural beers and soft drinks have no artificial colors or flavors, no pumped-in carbonation. Here is a guide that stresses the use of all-natural ingredients and old-time recipes. Explicit basic instructions explain how to construct fermentation tanks for very little cost. You get recipes for 34 wines; 12 meads, brandies, and cordials; 9 grain beers; 17 fruited soft drinks, ciders, syrups; 4 fruit vinegars and shrubs; 10 root, bark and spice beers. Refreshing!

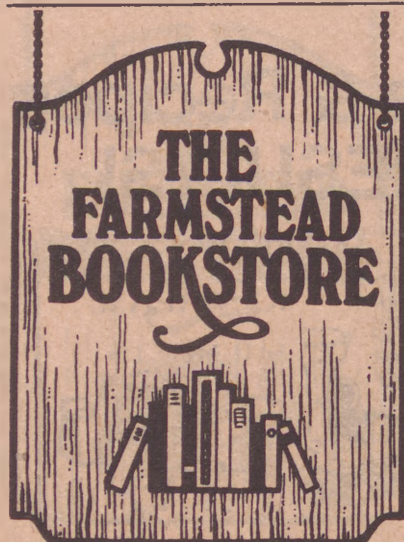
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GF-08

MAKING YOUR OWN ICE CREAM, ICES & SHERBETS

Country-style homemade ice cream topped with garden fresh berries! Discussion of all types of ice cream freezers. Over 100 frozen desserts including 31 ice creams, 16 sherbets, 12 mousses. Flavors galore too, honey, blueberry, peach, applesauce and the creamiest strawberry ever! Bring a little extra summertime fun and flavor into your home with this one!

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R-15 SMALL-SCALE GRAIN RAISING by Gene Logsdon — For every gardener and homesteader who wants to increase both the quantity and quality of his homegrown food supply by growing and using whole grains. Individual chapters are devoted to corn, wheat, sorghum, oats, soybeans, rye and barley, buckwheat and millet, rice and their many varieties. Also included is a section on uncommon grains — wild rice, triticale, safflowers, and legumes. 320 pp. with illustrations.
Paperback\$4.95
Hardback\$8.95



R-16 THE DRAFT HORSE PRIMER by Maurice Telleen — For people who want to learn the fundamentals of using work horses on the farm. This book clearly illustrates the economy of using draft horses and explains the basics: how to buy a draft horse; how to feed and care for the animals; how to find and repair horsedrawn machinery; how to harness and hitch a team; and how to breed them. 272 pp. with illustrations and photos.
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RAISING MILK GOATS THE MODERN WAY

by Jerry Belanger

G-43 Complete, up-to-date coverage by the leading authority. Illustrated chapters on selection, housing, fencing, breeding, kidding, chevon, goat milk products and more. Plenty of "how-to" diagrams and photos. Terrific insight! 150pp.
Quality paperback\$3.95



G-37 LOW-COST POLE BUILDING CONSTRUCTION by Merrilees and Loveday — Now with PLANS for small barn, garage, tool shed, year 'round homes! One-of-a-kind book will save you money, labor, time, materials. 60 drawings, all-inclusive details. Unbelievably clear, easy and economical! 115pp.
Oversized paperback\$4.95

RAISING POULTRY THE MODERN WAY



Dr. Leonard S. Mercia
The University of Toronto

G-80 RAISING POULTRY THE MODERN WAY
by Leonard Mercia—

Covers stock selection, feeding, brooding, rearing, management, current disease prevention, treatment for LAYING FLOCK, MEAT CHICKENS, TURKEYS, DUCKS, GEESE. Also housing plants, processing, preservation and more. 240 pp.
Quality paperback\$5.95

R-27 THE HOMESTEADER'S HANDBOOK TO RAISING SMALL LIVESTOCK by Jermone D. Belanger — A most complete and informative book on raising goats, chickens, sheep, geese, rabbits, hogs, turkeys, and other small stock. The chapters cover diet, feeding, breeding, butchering, bedding, tanning hides, using manure, building housing and feeding equipment. 256 pp. 50 illustrations.
Paperback\$3.95
Hardback\$8.50

Ten Best Sellers!

GF-01 KEEPING THE HARVEST: Home Storage of Vegetables and Fruits by Nancy Thurber and Gretchen Mead — Taking the mystery and awe out of home food processing is exactly what this book does. Practical information about storage of fruits and vegetables makes this a truly valuable source. Over 100 step-by-step photos for canning, freezing, brining, drying, pickling, making jams and jellies! It tells you how to avoid serious kitchen canning problems, as well as planning your garden for usable quantities, when you want them. A must book for today's farmsteader! 224 pp.
Oversized paperback\$5.95

Wood Heat



Wood Heat
By John Vivian

R-25 WOOD HEAT by John Vivian — As prices of more conventional fuels continue to rise, more people are turning to wood heat as a natural alternative. **Wood Heat** is a how-to book on the uses of wood stoves, furnaces, and heaters. This book stands as one of the most practical compilations of information on the most practical winter appliance you can own. It also contains chapters on The Science and History of Wood Heat; Chimneys and Flues; Fireplaces Old and New; Cooking with Wood; and Harvesting Wood. Wonderfully descriptive drawings by Liz Buell. 336 pp.
Paperback\$4.95
Hardback\$8.95

R-13 RAISING THE HOMESTEAD PIG by Jermone D. Belanger — Raise a pig in the backyard? Why not, challenges the author, as he explains that properly maintained pigs are not smelly or dirty. It covers the full range of hog raising including feeding, diseases and related management topics. 224 pp. 36 illustrations.
Hardback\$7.95

G-41 DOWN-TO-EARTH VEGETABLE GARDENING KNOW-HOW by Dick Raymond — We honestly believe if you have a vegetable garden you ought to have this book! Absolutely unique, otherwise unavailable practical advice from a gardener of 40 years. Extending vegetable productivity, "wide-row" planting for triple yields, picking at peak flavor, saving and storing seeds. Heavily illustrated. Succession planting, in-depth information, excellent regional advice. Many gems of garden wisdom. 160pp. Large.
Quality paperback\$5.95

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The cover of Farmstead Magazine features a black and white illustration of a horse and a person in a field. The horse is standing and facing right, while the person is kneeling or sitting on the ground, possibly tending to something. The background shows a simple landscape with a fence or structure. The title 'FARMSTEAD MAGAZINE' is prominently displayed at the top in a bold, serif font, with the subtitle 'Horse Gardening & Small Farming' underneath it in a smaller, italicized font.

Check contents sampler below for some of the topics covered in previous issues of FARMSTEAD.

TO:

Talking Turkey
Those Terrific Treadles
Saturday Night Bath
Chapatis
Beautiful Creations With Weeds
Quilting
Woodburning Basics, Part II
Finding Water With A Stick
All-American Maize
Hopi Blue Corn

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SU78

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The Farmstead Reviewer

By Jay Robbins

I for one, would like to see a change in the public's definition of the word "weed". A weed is *not* an obnoxious plant growing where it isn't wanted, but rather an untamed, aboriginal, vigorous plant in its natural condition. Our cherished field and garden crops are, in reality, nothing more than domesticated weeds...weeds that some uncommon person took the time to understand and put to use. It was weeds that built and held the perfect soils discovered by our earliest American ancestors. And it is weeds that still 1) aerate our soils, 2) build the humus (fiber) content of soil, 3) open deep channels for "crop" roots to travel downward, 4) determine the soil's ability to retain moisture and prevent erosion (in fact, many weeds actually bring moisture up to the topsoil), 5) mine nutrients and minerals from the subsoil, thus making these necessities available to our shallow-rooted domestic varieties, 6) temporarily store these plant foods that might otherwise be washed, leached, or blown away, 7) have some beneficial "companion planting" effects, 8) provide sanctuary for the beneficial birds, snakes, toads, and the like, 9) provide wonderful free cover crops and green manures, 10) are excellent indicators of soil imbalances, 11) make darn good eating, and 12) are at least as beautiful in bloom as any ornamental garden flower.

Why, then, do weeds have such a rotten reputation? I'm not quite sure. Perhaps it's because they are so perfectly suited to the harsh conditions of the natural environment that they continually outwit man's efforts at domination. Perhaps it's because weeds do most of their good works underground where the results cannot be quickly observed. Perhaps it's because they don't lend themselves to many gardeners' and farmers' efforts at maintaining tidy plantings. Whatever the reason, it's time that we all made an effort to better understand our precious weeds. For this, I highly recommend these two weeder readers:

Weeds, Guardians of the Soil, by Joseph A. Cocannover (Devin-Adair Co., Old Greenwich, CT, 1950, \$3.95) is the single greatest attitude-changer that I've read in several years. Written in a very warm, personal style, this book reads like poetry. Mr. Cocannover explains how his real interest in the positive aspects of weeds began as a child while hoeing pussywillow out of a neighbor's cornfield. Through observation, it appeared as if the unweeded sections were doing better than the weeded areas. What could explain this? As the years rolled on, more and more evidence of this kind of beneficial weed-crop relationship came to Cocannover's attention. Here in his book, the author reveals all these findings about the *controlled* use of weeds in agriculture.

Reading Weeds and What They Tell, by Ehrenfried E. Pfeiffer (Bio Dynamic Farming and Gardening Association, Inc., Springfield, IL, reprinted 1976, \$2.75) should be your second step towards enlightenment. Here the focus is on weeds as indicators of soil condition. Mr. Pfeiffer explains how there are good weeds and bad. *Controlled* use of weeds is stressed. After a brief survey of mechanical, chemical, and biological control methods, the author quickly gets down to the thick of his book. Here we find sections introducing us to the various families of weeds. In each section we find 1) the various varieties listed by common and Latin names, 2) where they are found (the kind and condition of the soil) 3) how best to control them (through crop rotation, cultivation timed according to the weeds' life cycle, use of compost to increase humus content, grazing by particular animals such as sheep and cattle, increasing the drainage of the land, etc.) 4) a use of two (i.e., ancient and not-so-ancient herbal cures) and 5) the kind of problems a particular weed presence might cause (i.e., off-tasting milk). This information will be of use to both the farmer and the gardener. **Weeds and What They Tell** is not directed at any specific region of the U.S., so you'll have to know if a particular weed is found nearby to you. For this kind of assistance you'll have to go elsewhere, for this is not an identification book (although there are a few sketches and a few characteristics are listed.)

The most useful weed identification books that I've come across follow. Certainly there are many such books available and I've surely overlooked one or two that rightfully should be listed here.

Common Weeds of the United States, Agricultural Research Service of the USDA. (Dover Publications, NY, 1971, \$4.50).

This encyclopedia of weeds devotes two facing pages to every variety that you'd ever care to know about. For each weed, one finds a detailed sketch, a distribution map, and a few short paragraphs on where to look for it, and what to look for.

Newcomb's Wildflower Guide, Lawrence Newcomb (Little Brown and Co., Boston, 1977, \$6.95.)

If you come across a weed that you cannot identify, run it through this "key" system. The "keys" are the flower type, the plant type, and the leaf type. This is my most soiled field guide. Only on two occasions have I failed to unmask the identity of a mystery guest.

Wild Flowers and Weeds, Booth Coutenay and James H. Zimmerman (Van Nostrand Reinhold, NY, 1972, \$6.95.)

Although specifically directed at the greater Great Lakes region, you'll find this book helpful due to its more than 650 color photographs of individual species. I find the "key" system used by this book to be a bit tedious, but workable. The species' genus, size, time of bloom, and habitat are also noted.

Weeds in Winter, Lauren Brown (Houghton Mifflin Co., Boston, 1977, \$4.95).

Here is a book written for those of you who find your warm weather days so full of demanding chores that you can't find time to thumb through plant identification books. Or perhaps you just like a challenge. Winter weed identification is just that. □

By Ron Poitras

Whenever I read biodynamic literature, I'm always reminded of the refrain we recited as kids, "The knee bone's connected to the thighbone...the thighbone's connected to the hipbone..."

Some of the most worthwhile insights are easy to recite, but most difficult to actually learn. The premise of biodynamics is another of these profound, simple lessons. The farm is an organism. It has a life of its own. It affects and is affected by everything that surrounds it. The task of the intelligent farmer is to enhance its life, encourage its diversity and maintain its health. Simple, yet apparently so difficult in practice!

Rudolph Steiner (1861-1925), who not only originated biodynamic agriculture, but also the popular Waldorf schools, may have been one of this century's greatest natural scientists. Many of his insights are only now being proven. **Biodynamic Agriculture, An Introduction**, written by Herbert H. Koepf, Bo D. Pettersson, and Wolfgang Schaumann, (The Anthroposophic Press, Spring Valley NY, 1976, \$12.00) not only surveys biodynamics practice today, but carefully reports on many of the latest research findings documenting Steiner's "impulses," as they're called. The book is an unusual mixture of mystical, wholistic thought and scientific report. It's long on justification for some of biodynamics more widely accepted practices, and short on those areas of controversy that have hounded the movement over the years. Planting by the signs and companion planting are two recommended biodynamic practices that are highly suspect and even ridiculed by more conventional farmers.

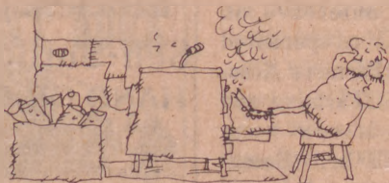
Biodynamic Agriculture: An Introduction, does little to quiet the controversy. Only two pages are devoted to planting according to the phases of the moon and not many more pages are given to the uses of companion planting. This is unfortunate. The book does dwell on the more familiar aspects of biodynamics: care of animals, use of

organic fertilizers and herbal sprays. Research undertaken in Germany and reported on in the book documents the value of using the sprays in composting and on field crops. Frequent yield increases of 10-30 percent and more are reported. These experiments are discussed in detail.

The Biodynamic Farming and Gardening Method, called by some the cream of organic farming practices, emphasizes a living, balanced soil. Composting is a keystone of the process where manure is properly handled and treated to maximize its nutrients and humus-building qualities. In nature, animal life and plant growth are closely linked. As a result, animal manure is a prerequisite to the biodynamic farm. The mixed, self-sustained, ecologically sound farm is the basic unit and these farms are most common in Europe. The book, in fact, is based largely on the techniques used by the famous "B.D." farms of Southwestern Germany. These farms are much smaller and less specialized than most United States farms, yet they remain economically viable enterprises. The emphasis is on blending quality with quantity of farm products sold. Interesting sections of the book describe markets set up by "B.D." growers, which emphasize that quality. As a consequence, these cash crops command a higher price. Quantity produced has been the overriding objective in this country, and still is. Until we find the means and heart to provide quality as well, our agriculture will no doubt contrive to diminish. **Bio Dynamic Agriculture: An Introduction**, is a good place to start looking. □

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plant mission

Twenty sunflower plants will be rocketed into space during a 1980 spacelab mission. Dr. Allan Brown of the University of Pennsylvania hopes that by freeing the plants from gravity, he can study the sunflower's habit of moving its head back and forth with the sun. This habit, called nutation, will be recorded by time-lapse photography while the plants are in space.

Extra, 5/78

high mortality rates

Towns with the highest infant mortality rates and lowest life expectancies are those with the most hospitals and doctors, according to a report by Michael Miller, a researcher with Cornell University. Miller came to this conclusion by comparing statistics from 145 northeastern counties where he equalized various economic and social characteristics, so valid comparisons could be made.

Extra, 5/78

energy lifestyle show

Efficient production and the use of energy forms will dictate the future of the lifestyle we now enjoy. This will be the theme of the Energy Lifestyle Show at the International Centre in Toronto, Ontario, on November 3, 4, and 5, 1978. Exhibits will include new ideas in the use of energy for transportation, recreation and communication; energy conservation techniques, energy safety, and more. For further details, write Energy Lifestyle Show, 3 Church St., Suite 603, Toronto, Ontario M5E 1M2, Canada.

conference on alternative agriculture

The Fifth Annual Conference on Alternative Agriculture, co-sponsored by the Natural Organic Farmers Association, and Bio-Dynamic Farming and Gardening Association, is now being planned. The theme will be: "Essentials for a Native Agriculture." It will be held August 4, 5, 6, at the Lasalett Conference Center in Enfield, N.H. For details, contact Samuel Kayman, Program Chairperson, Natural Organic Farm Association, Wilton, NH 03086.

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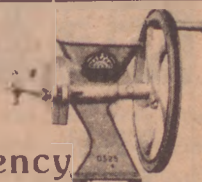
northeast agricultural leadership assembly

The Northeast Agricultural Leadership Assembly (NALA) is a year-long research and planning project to improve rural life and agricultural economy in 10 northeastern states. The NALA is addressing a wide range of tough policy problems dealing with land, energy, marketing, government, alternative technology, rural life, production, and financing. More than 50 experts throughout the Northeast are now preparing background information to identify and support a set of policy recommendations and future research needs.

This comprehensive effort will culminate in a three-day conference Sept. 16 to 19 at Cherry Hill, NJ. Up to 500 people, including public policymakers, researchers, farmers, and other concerned individuals will gather to put final touches on specific documented policy recommendations and to put these into the hands of major state and federal decision-makers. The assembly is co-sponsored by the Coalition of Northeastern Governors and the Northeast Association of State Departments of Agriculture.

Information on the program is available from Northeast Agricultural Leadership Assembly, 'Blaisdell House, UMass, Amherst, MA 01002.

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noise-caused birth defects

Children born of parents who live near the Los Angeles airport are much more likely to suffer from birth defects than children born elsewhere in Los Angeles County, according to UCLA researchers. The rate of abnormal births was 61 percent higher among blacks and 37 percent higher among whites living under the landing patterns of the airport, than for those living elsewhere. Other studies have shown that stress on pregnant mothers can cause birth defects. The researchers suspect that stress caused by airport noise caused this increase in birth defects.

Mother Jones, 6/78

our friends the fire ants

Recent studies by the Texas Agricultural Experiment Station indicates that the dreaded bane of Southern farmers, the fire ant, may actually turn out to be a beneficial insect. After years of trying to exterminate fire ants with persistent insecticides, it has been found that fire ants, a predator of the boll weevil and boll worm, can kill up to 80 percent of the weevils and 100 percent of the boll worms in cotton fields.

Extra, 4/78

a storage container for nuclear wastes

Swedish Electro-Chemical Professor Goesta Wranglen reports that there is only one safe way to store nuclear wastes; that is, in containers made of gold. Gold is the only material that will last for thousands of years without being eaten by radioactive water that surrounds nuclear wastes.

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eating away from home

Americans will spend 50¢ of every food dollar eating away from home by 1981. So predicts Patrick O'Malley, President of the National Restaurant Association. Bob Aders, President of the Food Marketing Institute admits that grocery store owners are trying all kinds of gimmicks to get people back to supermarkets, but with limited success. Let the restaurateurs and grocers fight it out, as we continue to grow our own.

water loss

A hot water faucet dripping at one drip per second represents 100 gallons of wasted hot water per month. That's a lot of hot showers down the drain and an extra dollar on each month's electricity bill. It is easy to fix dripping faucets.

new england could produce more protein

Most protein fed to livestock in New England is imported from other areas. The price of protein has risen to 30¢ per pound over the last few years. An acre of good alfalfa can easily produce 1600 pounds of protein per year, making it worth almost \$500 per acre in protein value alone. New England could produce more good legume forage to replace imported protein concentrates.

number of farms continue to drop

USDA's Crop Reporting Board reported another drop in farm numbers in 1977. The number of farms decreased by one percent since 1976 to 2.71 million. Total land in farms also dropped about 3 million acres to 1.08 billion acres. Thus, the long-term drop in farm members continues and is predicted to continue at the same rate in 1978. The most farms are in Texas (197,000), Missouri (133,000), Iowa (128,000), Illinois (117,000), and Kentucky (117,000). The average farm size was 397 acres in 1977 and is predicted to reach 400 in 1978.

food additive poster

There are more than two dozen food additives on the market today which threaten the health of the American consumer, according to a new poster by the Center for Science in the Public Interest (CSPI). The poster also offers basic rules on choosing food. Copies of the "Chemical Cuisine" poster may be obtained by sending \$1.75 per copy to CSPI, P.O. Box 3099, Washington, D.C. 20010. Bulk rates are available upon request.

A LOOK AT THE CANDIDATES FOR GOVERNOR

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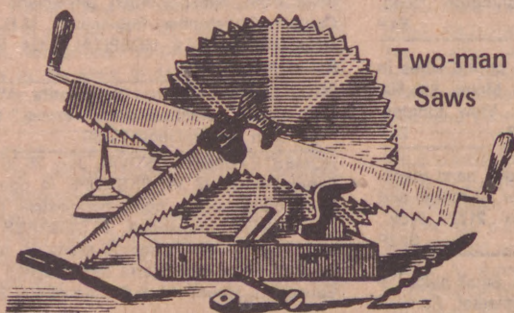


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