

CDC 00200
Number 25

Summer 1979

\$1.50

5th Year & Still Growing!

FARMSTEAD MAGAZINE

Home Gardening & Small Farming



Oxen on the Farmstead
More Green Thumb Gardening Tips
How to Sell Your Crafts
Tools - A Basic Farmsteader's Guide
All About Growing Beans

7 JUL 80 023087
C & M GARFIELD-STEWART
ATHOL-RICHMOND RD RFD 2
ATHOL MA 01331
How Beans
Your Own Property
Much More!

JOHN DEERE "LITTLE-BIG" DIESEL TRACTORS...



THE SIZE YOU WANT, THE VERSATILITY YOU NEED FOR SMALL-ACREAGE FARMING AT A VERY ECONOMICAL PRICE

There's more to small-acreage farming than a few rows of beans, a stand of corn, and a



"Hi-Lo" 8-speed transmission

patch of Honeydew melons. There's grass to be cut, fences to build, material to transport, and pens to be cleaned. That's why you need a John Deere 850 or 950 Tractor.

Powered by high-torque 3-cylinder diesel engines (22 PTO hp on the 850, 27 PTO hp on the 950*), these "little-big" tractors handle just about any job that needs doing.

Engage-on-the-go differential lock

And they're action equipped with features you might expect only on larger, more costly machines. "Hi-Lo" transmission with 8 well-spaced speeds. Category 1 3-point hitch. 540-rpm PTO. Hand- and foot-operated throttles.

Differential lock. Drawbar. And adjustable wheel tread. All are standard equipment on both machines.



Category 1 3-point hitch, 540-rpm PTO, drawbar

And John Deere doesn't shortchange you on comfort or convenience. To make your days in the field easier, there's a padded, high-back seat,



Hand- and foot-operated throttle controls

nonreflective instrument panel, and a decompression lever for surer cold-weather starts.

Look over the full list of implements on the facing page. Then visit your John Deere dealer for a test drive. He has a "little-big" tractor with the size and versatility you need for small-acreage farming at an economical price.

TELL ME MORE. Your "little-big" tractors sound great. But before I buy I'd like more information. Please send me your colorful 20-page brochure, "Tractors 22 and 27 PTO hp."

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

Mail to John Deere, Dept. 63, Moline, IL 61265

*Maximum PTO horsepower at 2600 rpm for the 850 and 2400 rpm for the 950 (factory observed).

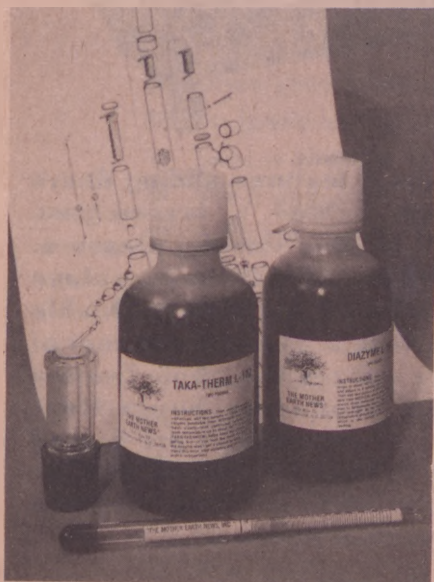


Beat the gas crunch . . . "brew" your own alcohol fuel!

(For as little as 43 cents a gallon.)

Long lines at service stations are back . . . and gas is selling at outrageously inflated prices . . . but there is a way out! With the help of **MOTHER'S ALCOHOL FUEL KIT** you can build your own still . . . turn renewable crops into a alcohol fuel . . . and beat the gasoline shortage *for about 43 cents per gallon!*

Everything you need is included: a **SET OF MOTHER'S WOOD-BURNING STILL PLANS** to show you how to build your own still . . . one quart of **DIAZYME L-100** liquid and two pounds of **TAKATHERM L-170** (two enzymes that will help turn your corn to mash, then alcohol) . . . a **FERMENTATION LOCK** to insure that gases from the fermentation process can bubble out of your container without letting air back in . . . and a **HYDROMETER** to measure the exact proof of the distilled alcohol, --simple, step-by-step instruction on how to use each item and how to apply to the government for the necessary license to "brew" . . . plus, **BROWN'S ALCOHOL MOTOR FUEL COOKBOOK**. Mike Brown's authoratative best seller that shows you how to convert any gasoline engine to alcohol. It's easy to do . . . and best of all . . . inexpensive. Also included are mash recipes and operational instructions for an alcohol still.



This complete package is available only through **THE MOTHER EARTH NEWS**®. . . the national, bimonthly magazine that is recognized as an authority on alternative energy, ecology, working with nature, and doing more for less.

Each of **MOTHER'S ALCOHOL FUEL KITS** costs \$45, plus \$2.00 shipping and handling. But you can order -- and -- reorder items separately as well . . . at the following prices:

- Hydrometer . . . \$4.95, plus 50¢ shipping and handling.**
- Fermentation Lock . . . \$1.50, plus 50¢**
- One quart Diazyme L-100 . . . \$8.40, plus 95¢**
- Two pounds Taka-Therm L-170 . . . \$8.90, plus 95¢**
- MOTHER'S Wood-Burning Still Plans . . . \$15**
- Brown's Alcohol Motor Fuel Cookbook . . . \$9.95, plus 95¢**

To order **MOTHER'S ALCOHOL FUEL KIT**, or any of the items listed above, simply fill out and mail the coupon below -- along with your payment -- to **MOTHER'S PLANS, Dept. W, P.O. Box A, East Flat Rock, N.C. 28726**. Credit card orders will be shipped immediately by calling toll free 1-800-438-7265.

MOTHER'S PLANS • Dept WS • P.O. Box A • East Flat Rock, N.C. 28726

MOTHER: I want to beat the gas crunch! Please send me the set(s) of plans and/or other items I've marked below. My check or money order in the full amount is enclosed.

_____ **MOTHER'S ALCOHOL FUEL KIT(S)** — including all of the items listed below — for \$45 each, plus \$2.00 shipping and handling. \$ _____

_____ Hydrometer(s) for \$4.95 each, plus 50¢. _____

_____ Fermentation Lock(s) for \$1.50 each, plus 50¢. _____

_____ Quart(s) Diazyme L-100 for \$8.40 each, plus 95¢. _____

_____ Two-Pound Package(s) Taka-Therm L-170 for \$8.95 each, plus 95¢. _____

_____ Brown's Alcohol Motor Fuel Cookbook \$9.95, plus 95¢. _____

_____ **MOTHER'S WOOD-BURNING STILL PLANS** for \$15 each. _____

_____ N.C. residents add 4% sales tax. _____

_____ Total enclosed \$ _____

NAME _____ (please print)

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Please charge my ☐ BankAmericard/VISA

MasterCharge ☐ (Interbank No. _____)

Name _____ (please print)

Account No. _____

Expiration Date _____

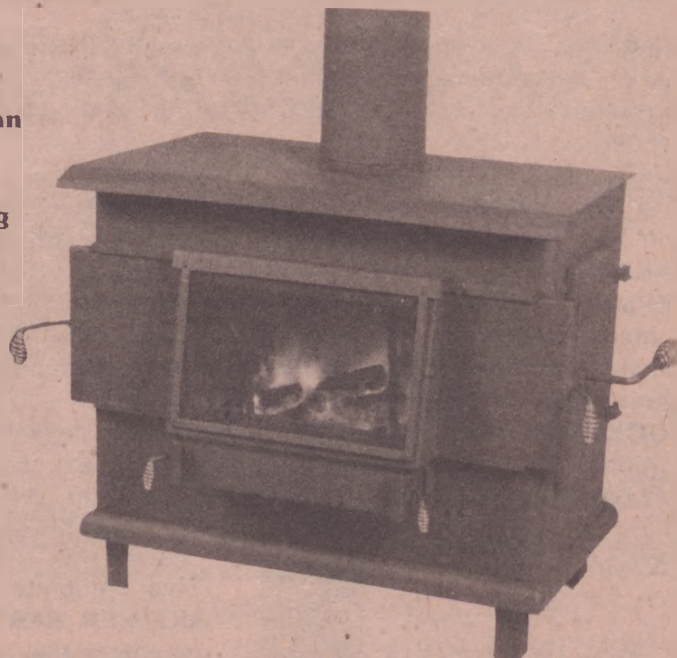
Signature _____

The
"Superior"

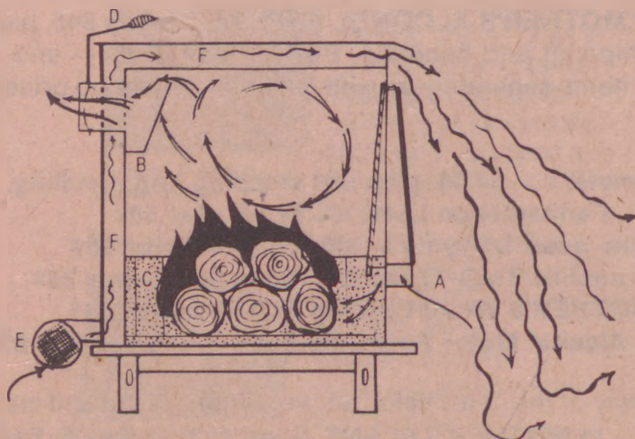
FLAME-VIEW[®] STOVE

(Patent Pending)

• It is more than just a name . . . it is an accurate description. SUPERIOR FLAME-VIEW[®] stoves are the finest air-tight, most efficient home heating stove on the market, and our quality control and research departments keep it that way!



- A. - Air Inlet Damper
- B. - Recirculating Heat Baffle
- C. - Firebrick Lining
- D. - Rear Vent Exhaust Damper
- E. - Blower; Optional
- F. - Thermo-Flow System



• The stove features sliding doors that open behind a screen/glass window for your viewing pleasure. The FLAME-VIEW has the advantage of the Thermo-Flow system. Double wall construction on top and rear of the stove utilizes the whole heating chamber, producing Super-Heat with blower attached. A pre-heated air inlet damper is utilized with an exhaust outlet to give you complete control of your heat output.

• The SUPERIOR FLAME-VIEW has been tested and approved by a recognized testing laboratory ICBO #TL-110 and SBCCI #QA-7901-79.

■ Dealerships Available

BURNS Wood/Coal EFFICIENTLY! SEND FOR OUR CATALOG TODAY

SUPERIOR STOVE COMPANY, Inc.

159 Mill Street, P.O. Box 218

Phone: 617-344-9342

Stoughton, Mass. 02072

"SUPERIOR" fabricators since 1963 . . .

SAFE HEAT is our FIRST AND FOREMOST concern!





FARMSTEAD

Table of Contents

Volume 6, Number 3

SUMMER 1979

4	Letters	
8	Energy and You —	
	Now is the Time to Buy Your Woodstove	Lynn Ann Ascrizzi
14	Ask Farmstead	
16	The Truth About Beans	Louis V. Wilcox
17	Varieties of Dry Beans	
20	Varieties of Green Snap Beans	
22	Raising Guinea Birds	Jan Willems
26	Hand Hew Your Own Beams	Dennis King
29	Green Thumb Gardening Tips	
33	On Ignorance and Bliss	Janice Bailey
36	Land — Knowing What You Own	Paul Chartrand
39	The Empty Barn	Jack C. Barnes
40	A Pair of Oxen — The Beauty of the Beasts	David Paling
45	Life on an Amish Farm	Grover Brinkman
48	An Amish Barn-Raising	Helen Forrest McKee
50	Eating Flowers	Mary E. Allen
52	How to Run a Successful Craft Business	Ken Vogt
56	Stocking Your Toolshop	Gordon Catt
58	Hand Tool Checklist	
59	Power Tools	
66	The Farmstead Reviewer	Millie Halpern, Sam Brown and Lynn Ann Ascrizzi
72	Wise and Useful Farm and Garden Guide	
76	The Feedbag	

Staff

PUBLISHER—EDITOR

George Frangoulis

ART EDITOR

Robert Shetterly

EDITORIAL STAFF

Lynn Ann Ascrizzi

Dennis King

BUSINESS MANAGER

Mary Weaver

BUSINESS STAFF

Diane Cody

Chris Harmon

Jane Ingraham

Gigi Meader

Terri Nivison

FARMSTEAD MAGAZINE is published bi-monthly by The Farmstead Press. Advertising, Editorial and Subscription offices are at P.O. Box 111, Freedom, Maine 04941; telephone [207] 382-6200. © Copyright 1979 by The Farmstead Press. All rights reserved. Second class postage paid at Freedom, Maine 04941 and at additional mailing offices.

Subscription rate is \$7.00 for one year [six bimonthly issues], \$13.00 for two years and \$18.00 for three years, in the United States and its possessions. Subscriptions surface mailed to Canada and abroad \$10.00 per year.

Publication No. USPS 088 350

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



8½" x 11"
softbound, 169 pp
260 drawings
47 photos

Fight rising building costs and soaring interest rates . . .

You can build an energy-efficient home **yourself** beginning with a traditional timber frame. Join the more than 16,000 owner/builders who have purchased **The Timber Framing Book** -- the **only** book available on how to cut and raise a timber frame.

"This book is extraordinarily good in every way. I can't recall ever seeing a book on any subject that was so easy to understand . . ."

J. Baldwin
Co-Evolution Quarterly

Mail \$9.95 & 75c postage
& handling to:

HOUSESMITHS PRESS

P.O. Box 157, Kittery Point, Maine 03905
(207) 439-0638

Maine residents add 5% tax.

Organic Plant Food
FOR HYDROPONIC, GARDEN,
FARM USE. 1 LB. MAKES 200
GALLONS. \$4.50. SEND LONG
S.A.S.E. FOR FREE CATALOG.
Pyramid Hydroponics, Inc.
701 W. Ivy • Glendale, CA 91204
(213) 240-0421

Letters

Dear FARMSTEAD,

A while back I wrote to you and asked for ordering information for scarlet runner beans. Well, the response from readers has been fantastic! The day **before** we received our Spring 1979 issue, I received a package of the beans from a fellow in Maine. We've gotten beans from folks in California. There have been so many nice letters and catalogs from all over. I think the long distance neighborliness is wonderful and it has boosted my morale.

Ever think of a column where readers **briefly** state a problem or ask a question and give their name and address for reader response? Judging from my experience with this one small request -- it would undoubtedly be a useful service.

Thanks again!

Jo Ellen Martin
Blue Ridge, Texas

Editor -- Let's hope more readers write us request letters of this nature, and find themselves on the receiving end of "long distance neighborliness!"

Dear FARMSTEAD,

I am a regular reader of Farmstead and I love it. I've been watching "The Farmstead Peddler" ads, but I don't seem to see what I'm looking for. I want a buggy horse and a work horse that is not too large. Down here in Connecticut all horses seem to be saddle and driving type. I live in the Litchfield hills and need a horse with a little more beef.

I also need a buggy and harness. Does anyone know of someone with the whole works or where I can find this? Thank you.

Henry Dauphinais
P.O. Box 235
Bantam, Connecticut 06750



Dear FARMSTEAD,

I like the cover on your Fifth Anniversary issue very much. It really shows the beauty of an Alpine buck. It might be a good idea to have a color photograph of different farm animals on the cover of each issue.

The inside was also as good as the cover. Maybe your best issue yet! I especially like the article "The Farmstead Buck Goat." We have been raising Nubians for the past year now and are still waiting for a buck to be born. We've been breeding them with a buck of a friend of ours. The buck has a very good background and is well marked, so we're hoping for some champions.

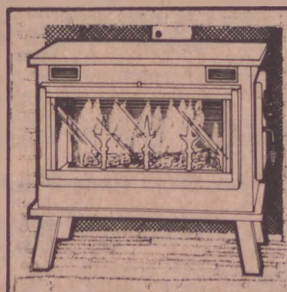
One thing that I would like to see in your magazine is maybe an article on devices that require no electricity such as treadle and pedal-powered tools. We live without electricity and have developed simple inventions for some things. But some of your readers must have good ideas. Someone might have plans to build a pedal washing machine or someone might know how to turn drill bits fast enough to go through metal without using electricity. Maybe a special section in your magazine could be set aside for readers to send in their favorite inventions. It's an idea that might make your great magazine even greater.

Ted Williams
Caleb's Hollow
Knowles Road
Belgrade, Maine 04917

**ENJOY THE WARM WEATHER NOW.
BECAUSE THINGS ARE GOING TO GET A LOT HOTTER
THIS WINTER.**

If you think the fuel situation is bad this summer, wait 'til you see what it's like next winter. So before oil becomes as extinct as the ferns and dinosaurs that gave it to us, make a positive move. Install a Russo Glass-view wood stove this summer. This air-tight stove provides a clear view of the fire while it heats your home efficiently and cleanly. For more information and a dealer near you, write

Russo **GLASS VIEW** Patented



Russo Wood Stove Manufacturing Corp. Dept. FMS Water Street, Holbrook, Mass. 02343 617-767-2521

© Copyright 1979 Russo Wood Stove Mfg Corp

SELECT DEALERSHIPS AVAILABLE.

**Wooden Toy
Patterns Catalog**



OVER 200 DESIGNS
FREE PATTERNS & WHEELS
WITH CATALOG PURCHASE
ONLY \$1.00 REFUNDABLE

Love-Built Toys & Crafts
2907 Lake Forest Rd.

P.O. Box 5459-156 Tahoe City, Ca. 95730

Dear FARMSTEAD,

In Mr. Larry Lack's article "Speculators Shall Inherit the Earth" (Spring, 1979), he sure lacks (pun intended) the knowledge of the real cause of inflation, namely U.S. Government spending.

In his article he says: "Inflation occurs when there is more money in circulation than there are real goods and services to buy with." For the quote to be correct it should state: "Inflation occurs when there is more money in circulation than there is real wealth backing it, such as gold, silver and rare gems.

The reason land is sold at high prices is that people are willing to pay those high prices, because land is real wealth, hence the term real estate. It is a common fact that but for a few active volcanoes throughout the world, no new land is being made. Therefore, the demand is high, especially during inflationary times.

In one of his other paragraphs, Larry Lack states that land is the most important element in earthly life. This is true only if the land can produce something of value. The lands the Arabs occupy were almost worthless before the internal combustion engine was invented. It's nothing but desert. The Arab countries take our worthless dollars and turn around and invest them in U.S. real estate because they want real wealth. The people in Washington D.C. tell us this is good because we even out our balance of trade this way. Baloney, don't believe it. The Arabs and other countries we trade with are only exchanging the goods we need for something that is real wealth -- Land -- not worthless paper.

As far as I'm concerned, Mr. Lack is all wet, because he like the majority of Americans who believe what the politicians and bankers tell them, says you and I are the cause of inflation; therefore the person who buys land and hopes to sell it at a higher price is causing inflation. Stop being fooled by this Washington, D.C. propaganda. The government and only the government can stop inflation by having the dollar in equal proportion to the free market value of gold, the standard of all currencies.

Please, in the future stick to the subjects you know best, such as giving us advice on how to more efficiently raise livestock and crops.

Joseph R. McNicholl
Jackson Heights, New York



Culinary & Medicinal Herbs
Black Herbal Teas
Coffee beans Pot pourri
Bath & Body care products
(We're just behind the Great Indians)

The Pot Pourri Jar
1416 Maine St. Brunswick, Me. 02072-2441
open 10 am. to 5 pm.



The Moravian Parlor Stove

The Moravian Parlor Stove — a wood burning stove that is truly the ultimate in design and efficiency. Completely baffled and air tight with double glass doors, the Moravian offers to you the pleasure of safely enjoying your crackling fire while its warmth and beauty add charm and comfort to your home.



Also available in a Fireplace Insert, the Moravian is another Quaker Stove product designed to give you a lifetime of warmth and safety efficiently.

Please send me your free brochure and list of local dealers:

Name

Address

State Zip

200 W 5th St., Lansdale, Pa. 19446 (215) 362-2019

Why Own a Reproduction When You Can Own the Original!

One-of-a-kind antique kitchen ranges and
ornate parlor stoves.

These stoves have
proven themselves to
be superior in terms
of efficiency, crafts-
manship, and quality.

Send \$1⁰⁰ for catalog



**GOOD TIME
STOVE CO.**

Box F, Goshen, IN 46532 (413) 268-3677

WISH & WANT BOOK

ALL NEW GOODS
IN ENDLESS
VARIETY FOR
MAN
& BEAST!



Stoves, Barrels, Lamps, Churns, Har-
ness, Books, Presses, Hardware, Bug-
gies, Tools, Mills, Pumps, Baskets,
Windmills, Water Rams, Livestock
Needs, Horse Drawn Plows, Dairy
Supplies, Pea Shellers, Tubs, Knives,
Anvils, Forges, Veterinary Supplies,
Poultry Equipment, Bells, Axes and much,
much more!!! Send for our big new
illustrated catalogue --- \$3.00.

CUMBERLAND GENERAL STORE
Dept. FP7, Rt. 3, Crossville, TN 38555

Now!! Selling Direct

Big Powerful 8 H.P. Mustang
Briggs & Stratton RIDING MOWER
Easy Spin Start **FACTORY TO YOU**

Compare at
\$500
Made in U.S.

All New
1979 Model 12th
Year

Now Only
\$329.
Tax & Freight Paid
factory warranty • Bank cards accepted
Complete with Big Mowing Deck & Cutter
Grass Bag \$29.50 / Snow Plow \$35.00

NOT AN IMITATION OR IMPORT
12th PRODUCTION YEAR

to own one, send check or money order to:
LAWN PRODUCTS OF AMERICA
1128 S. Edgewood Ave., Jacksonville, FL 32205
for free catalog on all lawn & garden equipment
OR PLACE YOUR ORDER BY PHONE
BY CALLING FREE! 1-800-874-9169
at no charge to you for calling!

In Florida call (904) 387-1512

5 H.P. Rototiller only \$229.95

Dear FARMSTEAD,

I would like to comment on Amy Alpine's article on buck goats in the Spring 1979 issue of Farmstead. The article contained some useful information, but I felt that it could be on the whole misleading, especially for the novice homesteader who is not involved in dairy goat associations or shows, and thus does not have a lot of information available to him from the professionals.

I hope no one will be tempted by the beautiful drawings to buy a horned goat of either sex. Ms. Alpine should have warned her readers that horns are dangerous weapons, dehorning a messy and painful procedure, and that all goats should be properly disbudded soon after birth.

Perhaps a really fine purebred animal would bring enough income in stud fees to pay for his feed, housing and medical care. The initial investment would be at least \$400.00, to purchase the buck. A second-rate animal will not improve the genetic potential of the herd and becomes a liability rather than an asset. Few people can afford a good buck; nobody can afford a poor one.

Standing an animal at public stud is not as simple as it sounds. Your buck needs routine veterinary examinations and tests. A cursory examination of incoming does will not guarantee that they won't pass something nasty onto your buck and ultimately your entire herd. You'd have income tax to pay, too. If you expect many breedings, you might have to advertise; in areas where there is a lot of competition, people take their does to proven bucks, who are well-known in the area for the superior quality of their progeny.

A buck might be able to protect his herd from dog packs, but I certainly wouldn't depend on it. Dogs can kill bucks, too. Good fences and a rifle are the only deterrents.

Some does refuse to mate with a descended buck; the odor acts as a sexual attractant. I'd warn people that they ought to be able to cope with the odor, and not depend on descending the buck.

Ms. Alpine may have had no problems in running her buck with the does, but this is the exception rather than the rule. The milk can very easily become off-flavored (she may be less sensitive to "bucky" milk than I am) and there is no control over when the does are bred. In addition, she may not even know exactly when each doe is due to kid; if she is not present at the

kidding, she can lose both kids and doe. It's just plain poor management to house bucks and does together.

As for the companionship angle, I have no quarrel with Ms. Alpine on that score. Bucks can be good companions; so can wethers. I would certainly not base my decision on whether to keep a buck on their personality.

In summary, the main objection I have to Amy Alpine's article is that it could lead an inexperienced homesteader into something he is inadequately prepared to cope with. A breeder with 30 purebred does and a lot of experience will put a buck to good use, but I feel the homesteader with only five or six animals is better off paying stud fees. It could save him a lot of time, money and heartbreak.

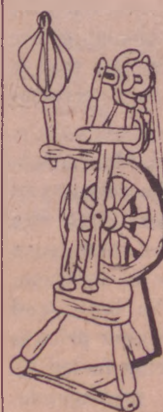
Margaret A. Hicks
Eugene, Oregon

FOR HEATING AND COOKING
Grate Makes Fireplace Great
HEAT and COOK with WOOD The RADIANT® GRATE
REQUEST FREE NEWS STORY REPRINTS
SINCE 1971 1-800-977-4068 108

HEAT YOUR HOME
UPGRADE HEATING COOKING
HOT! HOT!
NO GREASE SMOKE
ROAST, BRAISE, BROIL, BAKE
RADIANT BEAUTY
P.O. #1181
DEPT. FS
31 MORGAN PARK
CLINTON, CT 06413
ASIC
FEATURED IN PRINCIPAL NEWSPAPERS, MAGAZINES & TV NEWS IN U.S. & CANADA
FIRST IN CONCEPT, MARKET AND TIME BY YEARS
LAST WORD: SAFETY, CONVENIENCE, EFFICIENCY
OTHER EFFORTS CONFIRM THESE EARLY FINDINGS

Build Your Own

Spinning wheels and reelers



- Heirloom Quality
- Solid Hardwood
Maple, Walnut, Oak
- Pre-cut parts
- Easy-to-assemble
- 6 different models

Master Charge/Visa.
Credit Cards accepted

Send \$1.00 catalog
refundable on first order

The House of Spinning Wheels
P.O. Box 341-F
Fox Lake, Illinois 60020

HOW-TO BOOK CLUB

invites you to take this
840-page how-to library
for only

49¢

with a Trial
Membership in
the Book Club
that saves you
25% to 75% on
a wide selection
of how-to books

- ✓ Only 49¢ for both!
- ✓ List \$22.90
- ✓ Top Quality Leatherette
- ✓ 840 pages—over 400 illus.
- ✓ 34 Chapters—150,000 words
- ✓ 5,000-word quick-find Index
- ✓ Covers over 1500 subjects

Practical Home Construction/ Carpentry Handbook

If you've ever hammered a nail or sawn a 2x4, you can build your own house or barn. This 3-in-1 how-to handbook tells you all you need to know to pick the wood, construct from the foundation up, and put on all the professional finishing touches. And it includes detailed designs and building plans for 11 tried-and-proven house ideas that have survived the crucial live-in tests of time and cost! Also covered are barns, feed bunks, gates, fences, tanks, vats, and storage bins, etc. Economy is the key word of the 3 books contained within the pages of this single volume (prepared by LeRoy O. Anderson in conjunction with a University of Wisconsin Forest Service Team). To make it convenient and economical for you to sidestep the problems involved in dealing with others and do it yourself! There's nothing magic about house-building—not if you know exactly what to do and how to do it. And this book shows how, leaving nothing to chance. You can use the principles contained in these pages to build any one of a number of unique designs, including conventional structures, tubular houses, or a breathtaking circular home. But, there's more to house-building than carpentry—even though a very large portion of the material in this volume is devoted to woodworking techniques. There's roofing. There's plumbing. There's ventilation. There's foundation and masonry work. And, perhaps more important today than ever before, there's insulation. All of these and more are covered in depth. All you have to do is follow the straightforward instructions and illustrations that will serve as your guide from beginning to end. 448 pps., 180 illus. Leatherette.

Concrete & Masonry

This 2-in-1 handbook answers almost every question you could possibly ask about concrete and masonry. It covers concrete construction (including formwork, batch mixing, slump testing, brick manufacturing, construction procedures, and reinforcing methods), as well as masonry work (mason's tools, mortar, scaffolding, concrete-block construction, plus brick & tile masonry techniques).

Part 1 of this comprehensive course on concrete and masonry gives you all the practical do-it-yourself facts about concrete—its strengths and its weaknesses, how to work with it in any temperature, how to test it before placement, how to construct forms of every type and description, how to prepare the site, how to work with various aggregate mixes, the different kind of mixes, how to make sure curing and finishing is complete and predictable, plus data on plastic concrete, footings, stairs, joints and anchors, remixing concrete, placing concrete under water, etc. There's even a complete Chapter on reinforced-concrete construction (for concrete floors, joists, walls, stairs, and roofs). Part 2 tells all you'll ever need to know to set brick-and-mortar for any purpose, indoors or out. Nothing is left to the imagination. You learn how to erect simple or complex scaffolding, what tools to use, how to work with concrete blocks, bricks, and tiles. Thoroughly discusses masonry walls, weatherproofing, lintels and seals, patching masonry, rubble stone masonry, arches, corbeling, maintenance and repair of brick and block walls, etc. Photos and drawings show what to do and how to do it, step by step, every step of the way. 392 pps. 213 illus. Leatherette.

TYPICAL CLUB SELECTIONS and their List/Club prices are: Central Heating/Air Conditioning Repair Guide, \$9.95/\$5.95—Woodworking Handbook, \$11.95/\$6.95—How to Subcontract Your House Building/Remodeling, \$7.95/\$3.95—Homeowner's Guide to Energy Conservation, \$7.95/\$3.95—Step-by-Step Guide to Carburetor Tuneup/Overhaul, \$7.95/\$3.95—Customizing Your Van, \$6.95/\$3.95—Home Laundry Appliance Repair, \$8.95/\$4.95—How to Build Your Own House Without Help, \$7.95/\$3.95—How to Make Your Own Upholstered Furniture, \$8.95/\$4.95—Homeowner's Roofing/Insulating How-To Handbook, \$8.95/\$4.95—Homeowner's Guide to Solar Heating, \$7.95/\$3.95.

Let us send you these 2 practical, time-and-money-saving books as part of an unusual offer of a Trial Membership in How-To Book Club.

Whatever your interest and needs—be it home building/remodeling, furniture building/repair, cars, electronics, appliance servicing, energy-saving, house wiring, boats, lawnmower and engine repair, hi-fi, motorcycles, gardening, technology, upholstery, concrete/masonry, aviation, plumbing, photography, hobbies (model railroading, model shipbuilding, hanggliding, snowmobiles, mini-bikes, crafts, etc.), locksmithing, woodworking, etc.—you'll find How-To Book Club offers practical, quality books that you can put to immediate use and benefit...books that will help you increase your know-how, save you money, and make your leisure hours more enjoyable.

This Special Offer is just a sample of the help and generous savings the Club offers you. For here is a Club devoted exclusively to seeking out only those titles of direct interest to you. Members are annually offered over 50 helpful do-it-yourself books.

Facts About Club Membership

- The 2 Introductory books carry a publisher's retail price of \$22.90. They are yours for only 49¢ for both (plus postage and handling) with your Trial Membership.
- You will receive the Club News, describing the current selection, alternates and other offerings, every 4 weeks (13 x a year).
- If you want the selection, do nothing; it will be sent to you automatically. If you do not wish to receive the selection, or if you want to order one of the many alternates offered, you simply give instructions on the reply form (and in the envelope) provided, and return it to us by the date specified. This date allows you at least 10 days in which to return the form. If, because of late mail delivery of the Club News, you do not have 10 days to make a decision and so receive an unwanted selection, you may return it at Club expense.
- Personal service for your account—no computers used!
- To complete your Trial Membership, you need buy only four additional monthly selections or alternates during the next 12 months. You may cancel your Membership any time after you purchase these four books.
- All books—including the introductory Offer—are fully returnable after 10 days if you're not completely satisfied.
- All books are offered at low Member prices plus a small postage and handling charge.
- **Continuing Bonus:** If you continue after this Trial Membership, you will earn a Dividend Certificate for every book you purchase. Three Certificates, plus payment of the nominal sum of \$1.99, will entitle you to a valuable Book Dividend of your choice which you may choose from a list provided Members.

This extraordinary offer is intended to prove to you, through your own experience, that these very real advantages can be yours...that it is possible to keep up with the literature published in your areas of interest, and to save substantially while so doing. As part of your Trial Membership, you need purchase as few as four books during the coming 12 months. You would probably buy at least this many anyway...without the substantial savings offered through Club Membership.

Here, then, is an interesting opportunity to enroll on a trial basis...to prove to yourself, in a short time, the advantages of belonging to How-To Book Club.

To start your Membership on these attractive terms, simply fill out and mail the coupon below today. You will receive the 2-volume How-To Library for 10-day inspection. **YOU NEED SEND NO MONEY!** If you are not delighted, return the books within 10 days and your Trial Membership will be cancelled without cost or obligation.

HOW-TO BOOK CLUB, P.O. Box 8, Blue Ridge Summit, Pa. 17214

HOW-TO BOOK CLUB

P.O. Box 8
Blue Ridge Summit, Pa., 17214

Please open my Trial Membership in HOW-TO BOOK CLUB and send my 2-volume How-To Library, invoicing me for only 49¢ plus shipping. If not delighted, I may return the books within 10 days and owe nothing, and have my Trial Membership cancelled. I agree to purchase at least four additional books during the next 12 months, after which I may cancel my Membership at any time.

Name _____ Phone _____

Address _____

City _____

State _____ Zip _____

(This offer valid for new Members only. Foreign and Canada add 10¢.) FS-79

Now is the Time to Buy Your Woodstove

By Lynn Ann Ascrizzi

How could a wood stove — with its iron disposition and fateful association with freezing winds and snow possibly compare to a summer's day? Yet, this warmest of seasons gives us a crucial edge when it comes to hunting down and finally purchasing one of these energy-resourceful, wood burning items.

If you want to get the stove you want, **when** you want it — start now. Dealers report that fall is hectic. As one retailer summed it up — “unreal.” Along with fall's sales increase goes an increase of price. But waiting lists get longer too. For example, if you order some models in September, you can expect to wait one, two or even three months for delivery. I learned, however, that in summer, the waiting lists are almost nonexistent unless there is an unexpected factory back-up for a particular model.

So, order your stove now. This fall could be worse than ever for stove availability. Many dealers are expected to run out of some models prematurely. The reason is that most dealers do their major purchasing based on the previous year's sales.

A talk with a New Hampshire stove manufacturer resulted in this insight: It seems that 1977 was a bounty year for wood stove sales. Many small manufacturers were not able to keep up with orders, and there was a back-up. As a result, manufacturers tended to over-compensate in 1978. But, because of a slack in sales last year, they were left with too much inventory.

Therefore, the projected sales for 1979 was quite conservative. But with all the publicity surrounding the present energy shortages and upsets, the rush is on. Wood stove sales are booming. And this company reported that

by June it had met 50 per cent of the entire year's production. They foresee their supply holding out for a month or two, and then a shortage on their stoves is inevitable. Although the very large stove companies who turn out thousands of stoves will probably not experience a severe back up, many stove companies making high quality stoves will be caught short by increased demands for their products.

In warm weather, when everyone is at the beach soaking up excess solar power, your dealer has more time to help you assess your true needs. During this less pressing time of year, a wood stove dealer is often willing to learn of your unique heating problems and ascertain the best stove for you. Many will even come to your home and help you locate the best stove site. This can also be a good time to trade in your older stove for a newer model, as the dealer feels he has more time to re-sell your old one. What's more, at this time all the necessary and charming wood stove accessories are more available.

You'll also have more time to see clearly how to get the most out of your stove. This is a good moment to discuss the proper stove size. The more mass a stove has, the longer it will hold heat after the fire burns low, and the more heat output. So consider the weight of the stove you buy. Weight is often-times one good indicator of how sturdily a stove is built.

A Bigger Stove is Not Always Better

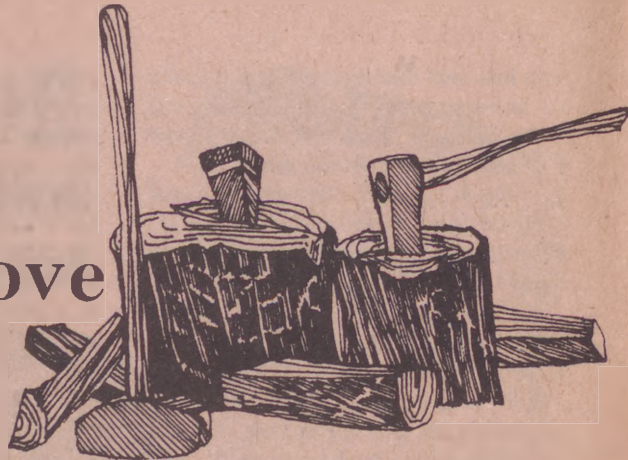
Many folks who are purchasing stoves for the first time do not realize that bigger does not always mean better for their individual situation. For example, a stove too large for your needs will not only drive you out of the room but over-

ly damping the fire means that the wood will never reach the temperature at which volatile gases burn efficiently.

When wood is first heated, the moisture is driven out. Then as the wood begins to get hotter and burn, it reaches the “charcoaling” stage. Now the combustible gases are released. If your stove is always dampened, you create ugly creosote — a pyroligneous acid that condenses in the pipes and chimney and increases the hazards of a chimney fire as it builds up. You might want to meet requirements to satisfy an insurance company. You certainly want to provide for your own safety.

Speaking of homeowners insurance, companies do not as a rule, increase premiums for wood heated homes, but are insisting on on-site inspection. They will require a 36" clearance from an unprotected wall and 36" clearance from any object. If the wall is adequately shielded with asbestos millboard and sheet metal or tile with a 1" air space between it and existing wall, then 18" seems to be the general requirement. All stoves should provide a minimum 4" clearance from the hearth or stoveboard (1/2" asbestos millboard covered with 28 gauge sheet metal to protect the millboard.) The stove board should extend 18" beyond all sides of the stove where coals or embers can drop, and extend 12" on all other sides. Call your insurance company now, rather than at the last minute to check your policy.

With time at your disposal, your stove can be installed at your convenience and you won't be forced in a last-minute panic, with the dealer telling you when your stove will be delivered and installed. Now you can



TILLER USERS!

Just **ONE HAND!**

The wonderfully different and better idea in Tillers!

The TROY-BILT® Roto Tiller-Power Composter is so easy to handle, you guide it with Just **ONE HAND!**

- Has its revolving tines in the REAR instead of the FRONT!
- Has POWER DRIVEN WHEELS!
- You leave NO footprints nor wheelmarks!
- Now has 4-SPEEDS! "Whisper Quiet" Power Reverse!
- The TROY-BILT® Roto Tiller-Power Composter is built by the builders of the original famous ROTOTILLERS, which introduced rear-end tillage over 45 years ago. This latest and greatest of them all is now, more than ever, the favorite coast to coast with home gardeners, growers, nurserymen, tiller renters, landscape gardeners!
- Several models, including ELECTRIC STARTING!
- Does NOT tangle near as much as ordinary Tillers!
- It chops garden residues, weeds, green manure crops, old mulch, any kind of organic matter right into your garden soil without unbearable tangling!
- It turns your whole garden into one big fabulously fertile "compost pile"!
- Does NOT require great strength ... older people, ladies, too, operate it easily. We have many delighted owners in their 70's, 80's, even 90's who tell us they would have given up gardening if they did not have our Tillers!
- Instant depth control! Hood encloses tines for safety and for close cultivating!
- Furrowing, snow removal and other attachments available!
- Automotive-type engineering — precision gears, tapered roller bearings, no chains to stretch, wear or work loose!
- Sold direct to keep prices down—would have to be at least \$125 higher if sold ordinary ways!
- Comes with our famous no-time-limit promise to you!
- Will GREATLY increase your gardening joy!

© 1979 Garden Way, Inc.



**OFF-SEASON SAVINGS
UP
TO **\$215.80**
NOW IN EFFECT!**

Why, for heaven's sake,



suffer any longer with the FRONT-END type of tiller shown at left—the type with the revolving blades in FRONT and NO POWER to the wheels—the type that shakes the living daylight out of you—the type that leaves Wheelmarks and Footprints in the nice smooth soil you have just tilled or cultivated?

SO, PLEASE don't buy any other Tiller—don't put up any longer with the Tiller you now have! Mail the coupon NOW for complete details, prices, OFF-SEASON SAVINGS for this wonderfully different and better idea in Tillers — The TROY-BILT® Roto Tiller-Power Composter!

**TROY-BILT® Roto Tiller-Power Composters
102nd Street & Ninth Avenue
Troy, New York 12180**

CLIP AND MAIL THIS COUPON TODAY

**TROY-BILT® Roto Tiller-Power Composters
Dept. 94407
102nd St. & 9th Ave., Troy, N.Y. 12180**

Please send me the whole wonderful story of your Tillers, with and without electric starting, including prices, OFF-SEASON SAVINGS now in effect.

☐ Mr.
☐ Mrs.
☐ Ms. _____

Address _____ Box # _____

City _____

State _____ Zip _____

shop around and get educated, learning to familiarize yourself with a bewildering array of new models. One retailer broke down stove types for me in this way:

1. *Bor Stove.* This type is basically a horizontal design. They lack grates, so the wood sits on a bed of ashes or two inches of sand. They feed from the top or front, and can take big logs.

2. *Combination Stove.* A viewing stove with front doors that open so you can observe the fire. They come with screen or tempered glass plate "windows."

3. *Free-standing Stove.* (i.e., a free-standing fireplace) They can be placed anywhere, but preferably in the center of a room.

4. *Chamber Stove.* Takes up less space because of a vertical construction. An arch or heat chamber above firebox increases heat transfer.

5. *Cook Stove.*

6. *Fireplace Insert-type.*

7. *Circulator Stove.* This type allows the heat to pass between an exterior cabinet and the radiant heater, and have a thermostatic draft.

8. *Wood Furnace.*

Altogether, I counted 150 models of wood stoves and furnaces in one catalog, and each company was not listing all their models. To help you evaluate the stove you want as you shop around this summer, here are a few more pointers:

Stoves are Constructed of Steel or Iron

Stoves are most commonly made of sheet metal or cast iron. The sheet metal stove is made out of sheets of metal cut to shape with a torch and joined under extreme heat. Steel can be rolled to varying thicknesses. "Sheet steel" refers to metal 1/64"-1/4" thick. "Sheet metal" refers to sheets up to 3/16" thick. Sheets 3/16" or thicker are termed "plate steel." What is important is the thickness, or gauge, of the steel.

The thinner bodied sheet steel stoves are the most inexpensive (\$100-\$200). They may give a first surge of heat, but under the continued stress of heating and cooling, they may bend or warp. Warping most often occurs in stoves constructed with sheet metal of 1/16" or less. This warping will let undesirable, uncontrollable air to

enter the stove and reduce efficiency. To offset this, some sheet metal stoves are designed so the warping is not visually offensive and have cast-iron doors to help keep the stove airtight.

The highest quality, longest lasting steel stoves are constructed of "plate steel" or boiler plate, lined with firebrick, and come with a long-term manufacturer's guarantee. Firebrick absorbs the heat, raises the temperature in the firebox and slows down the heat transfer. This is good if you want a long, steady heat. The lighter the gauge, the more important it is that the stove have a metal or firebrick liner.

Heavy gauge steel stoves are best when the welds are strong and are designed in combination with other materials to make them stronger. They cost from \$200 to \$650.

The cast iron stove is made of an alloy, melted and poured into molds. The pieces are then machined and assembled to create a tight fit. The joints are caulked with furnace cement. Even though the seams overlap, they should be caulked each year with furnace ce-

The top of the heater is conveniently equipped with two flat cooking surfaces.

Heat Deflector

Heat Shield

Brick Retainer

The patented window vent allows a constant flow of air over the glass to keep it cool and free from smoke or soot.

The tempered glass window provides a generous view of the fire and is removable for cleaning.

The patented collapsible door behind the viewing window may be closed for night or unattended burning, or for cleaning the glass while the heater is in operation.

Window Vent Screen

Glass Screen

LOOK

FOR THE NAME . . .

FIRE-VIEW®

WOOD HEATER

FIRE-VIEW's tubular firebox is constructed of 12 gauge hot rolled steel, the ends are made of 3/16" and 10 gauge hot rolled steel. The modern, patented design provides a large radiant heating surface for even transfer of heat into the room.

FIRE-VIEW's firebrick lining acts as an insulation barrier to protect the bottom of the firebox as well as the floor. The combination of the steel and the firebrick retain heat, thus contributing to more even heat radiation. No special grates are necessary.

The firewood is loaded through a large loading door on the right end of the heater. Left hand loading door available.

Combustion air is provided through a draft tube that supplies air directly to the base of the fire for more complete combustion. A sliding draft door on the draft tube allows excellent control of combustion air volume.

The VHT flame-proof coating used on **FIRE-VIEW** wood heaters will withstand temperatures of 1200° Fahrenheit. The surface is sandblasted to gray metal prior to application.

FIRE-VIEW was introduced in 1969, bringing to the fire place market a design which has proven to be a safe, sound and desirable wood heater. Prior to **FIRE-VIEW** there were no attempts made to place glass in the front of a wood heater. **FIRE-VIEW's** patented glass cooling system permitted the success of this design. The effort to put **FIRE-VIEW** on the market was not stimulated by energy shortages. Rather, it was created at a time when there was no particular demand for wood heaters. **FIRE-VIEW** stands among the top line products on the fireplace market today, and we intend to keep it there by continuing our quality control, good service and competitive pricing.

DESIGN AND MECHANICAL PATENT IN U.S. AND CANADA

For more information or the dealer in your area
WRITE: FIRE-VIEW PRODUCTS, INC.
P.O. BOX 370, ROGUE RIVER, OREGON 97537
Telephone (503) 582-3351 or 582-0736

MOBILE HOME APPROVED UNIT AVAILABLE
I.C.B.O. APPROVED UNIT AVAILABLE
I.C.B.O. RESEARCH REPORT #3144

ment. Generally speaking, cast iron stoves last longer than steel stoves, but consequently, they are more expensive, costing from \$235-\$1400. (The latter price is about what a good cook stove costs that offers a water jacket arrangement to make hot water.)

Cast iron stoves are quite heavy, to say the least, and you should carefully consider the size and whether you intend to dismantle it every summer to store in a basement or garage. Furthermore, these stoves require care, because repairs are difficult. They are sensitive to sudden changes in temperature and heavy blows, because cast iron is brittle and can crack, though not under normal conditions. When buying one, you need time to look for a well-bolted, well-cemented stove. Check the cast-iron for uniform thickness. Beware an unevenly cast stove that may be porous or badly pitted. Check doors and lid for a tight seal.

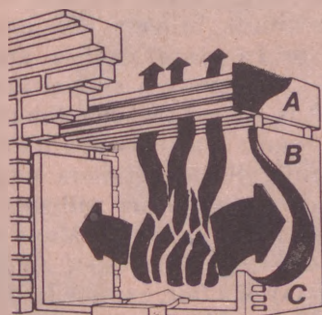
The Scandinavian stoves are very efficient and offer high quality, and the more expensive models have a deep-baked enamel finish in attractive colors. They cost anywhere from \$250 to \$610. Most feature interior baffle plates, and are designed to burn wood from front to back "cigar fashion." There are many good American-made stoves with this design, also. Baffles retard the passage of air by lengthening the flame path. Thus, more heat is produced because there is greater radiating surface.

Stoves can be loaded from the top, side or front. Top-loading is the easiest because there's no stooping. With side or front loading, the wood is less likely to jam, and can be more readily fed into the fire. There is also less trouble with the smoke that may escape while loading with this type. The smaller the door, the more wood splitting you'll have to do. The roomier doors allow for a larger and longer burning chunk.

In giving yourself time to choose the correct stove for you, remember that you're more likely to work out a good service arrangement with a store whose major specialty is stoves, rather than with a store which only offers a few stoves as a sideline.

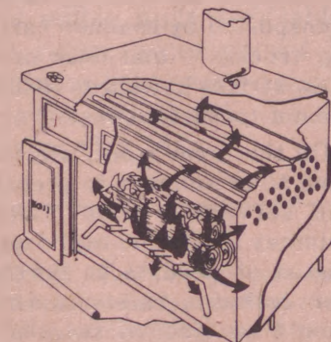
Want a better way to lower heating costs?

Here's how we do it.
Hydro-Heater



A. Water circulates through the tubes, passing above the fire six times to capture heat normally lost up the chimney.

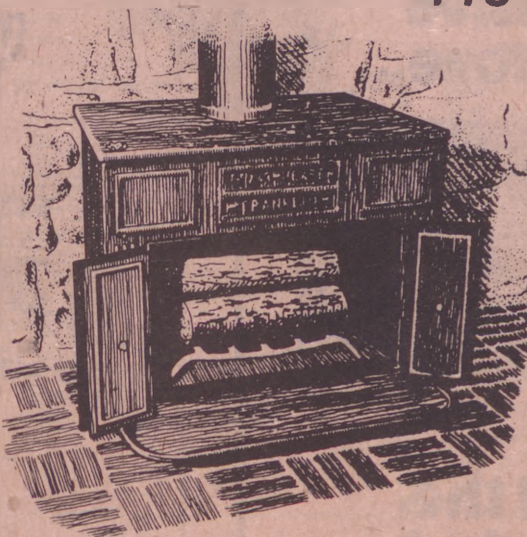
**HEATS
TOTALLY
THROUGH
YOUR
HOT WATER
OR
HOT AIR
SYSTEM**



B. The sides and bottom are 1 1/4" water jackets to absorb additional heat.

C. The heated water connects with your existing ducts or radiators to spread valuable warmth to your entire home.

Hot Air Stove Electric Heat - - - Heat Pump **Complete Wood Heat Pre-Heated Draft**



STERLING L. ORT
R.D. 1 - Lewisberry, PA 17339
(717) 938-2673



Dealer Inquiries Invited

Send 50¢ for additional information.

During warmer weather, delivery of your stove is less of a problem. Some retailers are willing to absorb the freight cost this time of year. This can save you anywhere from \$15.00 to \$50.00 depending on the weight of the stove. (A 600 pound cookstove would fall into the latter category.) Freight cost is surely a good bargaining point, now that there's less pressure. Everything you can save, helps. Furthermore, since gasoline shortages are looming, who knows how this will add to your total expense later? Expect the unexpected. A wood stove is not an item to be shipped by UPS. It is mostly transported by common carrier — big trucks — and dock or other labor strikes have been realities in the not-too distant past.

On the home front, what better time than summer to prepare for the servant-to-come? Does the chimney need cleaning? Any pipes rusted or need to be purchased? For optimum safety, a chimney should be cleaned twice a year. Any masonry work to be done? Perhaps you don't have an existing unused flue; you'll need to send your stove pipe out a window

or up through the ceiling and roof. For this project you'll need insulated pipe; perhaps an "insulated tee;" wall supports; trim collars; chimney caps and other accessories. If you're going to do the work yourself, how much easier to assemble all this during warm weather! You may also want to build a hearth for the stove to safely sit on, or construct an attractive wall panel behind the stove. All this takes time.

Another tip I discovered from chatting with people in the wood stove business, is that in the summer many retailers display their wares at country fairs. Not only do these exhibits provide excellent places to compare models and values, but usually a special fair discount is offered and the climate of such events is more conducive to bargaining. Some retailers only take orders; others are willing to sell their display models. Many a tremendous deal has been made the last day of a fair, especially if a customer is able to provide the take-away vehicle himself, sparing the dealer the weary task of loading one more weighty piece of equipment back on the truck. Of

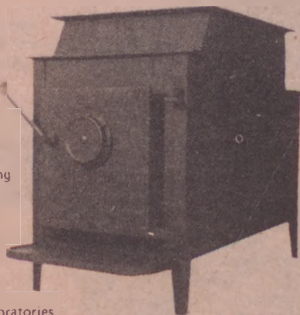
course, beware that "fair fever" doesn't interfere in your making a rational last-minute decision.

One of the most over-looked reasons for making an early purchase of a wood stove, but an important one, is that you have extra time to gain experience with your brand-new fascination. Even for the wise, getting used to the new model often turns into a time-consuming and nerve-racking romance. Most people are afraid of the novelty of it all, and the beginner will certainly feel intimidated, not realizing his or her new possession needs to be "seasoned" — that is — gradually and gently used. (No roaring fires at first, please.) Every wood stove has its idiosyncrasies.

Therefore, by buying early, on those first few chilly evenings you'll have more time to warm up to your purchase. One person told me that many customers declare that their stove's second year was far superior to the first. The person I was speaking to quickly pointed out that it wasn't the stove that changed — it was the woodburner who finally mastered his help.

Everything you've always wanted in an expensive wood stove...

- Heavy steel plate construction with air tight seams
- A total welded baffle system
- Life time guarantee
- A heavy gasketed cast iron door
- Pre heat chamber
- Single control to regulate primary and secondary air intake
- Space saving flue connector, allowing closer placement of stove to walls
- Full lining with high temperature fire bricks
- Large ash lender
- Choice of rear or top flue
- Optional water heating hookup
- Approval of Consumer Testing Laboratories
- Availability of Double Door Fireplace Model



except the high price!

WARNER Stove

P.O. Box 201, Belmont, N.H. 03220
(603) 267-8562

Send for our
free brochure

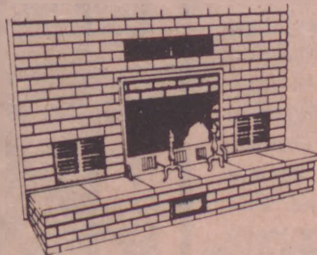
Dealer inquiries
invited

WOOD-BURNING CENTRAL HEAT

from a
FIREPLACE!!

~ The Amazing ~
wood·aire

Fireplace/Furnace System



NOW!!! A complete, automatic central heating fireplace, capable of heating even the largest of homes!

Your Wood-Aire[®] is designed to be ducted to every room of your house . . . and thermostat control makes sure your entire home stays whatever temperature you want! . . . and that's not all . . . Thanks to Wood-Aire's[®] unique heat collection system, you'll use less wood than your neighbor . . . that is unless he has a Wood-Aire[®], himself!

— Come See for Yourself —

wood·aire

The most efficient Fireplace you can own!

**WOOD-AIRE EAST
HINGHAM, MA
(617) 749-6359**

**NEW ENGLAND DISTRIBUTOR
DEALER INQUIRIES INVITED**

We have the books you want... at a price you'll like!

Botanical Illustration

by RONALD KING. 40 lavish, full-color reproductions ready for framing—a magnificent sampling of historic and contemporary drawings that are successful as both science and art. *A Clarkson N. Potter Book*. Paper \$6.95 (order #535262); cloth \$14.95 (order #535254)

Cooking with Berries

by MARGARET WOOLFOLK. For all interested in growing, gathering, and cooking berries: includes a collection of berry recipes for everything from appetizers to after-dinner wines. *A Clarkson N. Potter Book*. \$10 (order #534290)

Early New England Wall Stencils

A Workbook by KENNETH JEWETT. 95 full-size patterns for anyone to use, each accompanied by a color illustration of the room from which it was taken. *A Harmony Book*. Paper \$8.95 (order #535610); cloth \$17.95 (order #535602)

The Vegetarian Handbook

by ROGER DOYLE. Nutritional information, health guidelines, recipes, more. "Leaves few questions unanswered, and presents a solid case for vegetarianism."—*Publishers Weekly*. Paper \$6.95 (order #534711); cloth \$10 (order #534703)

Cooking with Nuts

by DOROTHY FRANK. The first complete nut cookbook—covers everything from how to make Pecan Pie to Chestnut Stroganoff. Illustrated. *A Clarkson N. Potter Book*. \$12.95 (order #537273)



Illustration from *Gardener's Delight*

Gardener's Delight

Containing the Description, Place, Time, Names, Nature, History, and Virtues of All Manner of Fruits of the Earth for the Growing and Consuming Thereof by JOHN SEYMOUR. PETER MORTER'S 44 full-color illustrations of edible fruits, vegetables and herbs, accompanied by charming, light-hearted text. *A Harmony Book*. \$5.95 (order #537990)

Bears

by BEN EAST. "East's magnificent opus is an authoritative study...startling anecdotes of the continent's greatest carnivore."—*St. Louis Post-Dispatch*. With 28 chapters on bears, habits, behaviors, etc. *Main Selection of Outdoor Life Book Club*. \$9.95 (order #53231X)

A Horse Around the House

by PATRICIA JACOBSON and MARCIA HAYES. A revised and expanded edition of "the book that does for horsemen and horsewomen what Dr. Spock has done for a generation of new parents."—from the introduction by U.S. Olympic Riding star Frank Chapot. Illustrated. \$10 (order #531666)

Smoke Cookery

by the Editors of *Consumer Guide*®. The first comprehensive guide to smoke cooking at home. Descriptions and tests of the cookers, and hundreds of recipes. 150 illustrations, many in color. Paper \$5.95 (order #531542); cloth \$10 (order #531534)

Make Use of Your Garden Plants

by BEN CHARLES HARRIS. "An interesting and often entertaining collection of recipes for preparing plants as food, medicine, and cosmetics."—*Library Journal*. Illustrated. *A Barre Book*. \$8.95 (order #531984)

The Log Cabin

Homes of the North American Wilderness by ALEX W. BEALER and JOHN O. ELLIS. The log cabin's complete story: history, tradition, construction, and preservation today. 175 photos in color and black-and-white. *A Barre Book*. Paper \$7.95 (order #533790); cloth \$17.95 (order #528924)

Now at your bookstore, or use coupon to order

Crown Publishers,
Dept. 615
34 Engelhard Ave.,
Avenel, N.J. 07001

Please send me the book(s) whose order number(s) I have circled below, for which I enclose check or money order (please no cash). If I wish, I may return book(s) postpaid within 10 days for full refund.

535262	535602	537990	531534
535254	534711	53231X	531984
534290	534703	531666	533790
535610	537273	531542	528924

Name

Address

City State Zip

Please add \$1 for a single book, \$1.95 for 2 or more books—for postage and handling

Total of order

Applicable handling charge

Sales tax (N.Y. & N.J. residents only)

Amount enclosed

CROWN

ASK FARMSTEAD

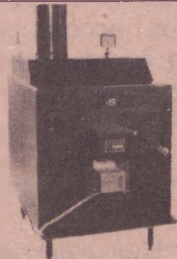
Down in Vermont

Down Comforters



Send 50c for brochure to:

Down in Vermont P.O. Box 902F
Burlington, Vermont 05402
(802) 863-5165



SAVE
WITH
WOOD

GLENWOOD 1250

A wood stove to supplement an existing system of hot air or water that needs NO BABY SITTER.
Complete Auto. Controls, Gaffed, airtight.
Optional equipment to hook up as the primary furnace in greenhouses, hog barns, homes, etc.
2 hot water, 3 hot air sizes.

Get The Complete Glenwood Story Free

Dealer Inquiries Invited

Call or Write: **GLENWOOD STOVES**
RD 1, Dept. FM Glenwood Dr.
Ephrata, PA 17522
Phone: (717) 733-9644
1 1/4 mi. NE of Green Dragon

ORCHARD INSECT TRAPS

for safe, economical control and monitoring of specific pests on apple trees



FRUIT PICKER

a useful tool for
picking fruit
out of reach

also Picking Bags & Buckets

We have everything for the home orchard.

Send \$1.00 for catalog of home orchard supplies & books.



P.O. BOX 73
SPRINGVALE, ME.
04083

My husband and I have moved to rural Kentucky from New England. We've had problems, but nothing we can't handle--except snakes! Copperheads, and Eastern Diamondbacks. We have a small child, and as winter closes, I'm looking toward spring in dread. We checked with local people who either shoot them or have pigs which they say discourage snakes. We will keep the grass down, but last fall--fields, garden, everywhere -- snakes!

Do you have any suggestions? Is there anything that might repel them? Neither of us can shoot.

Mrs. Thomas Braber
General Delivery
Kettle, Kentucky 42752

This is a very difficult question, but I can give you an opinion about it. I too, moved from the North to a farm in Arkansas, so I'm aware of your situation. As a general statement, fear is very often alleviated by knowledge. In other words, the more you become familiar with snakes or any other fearful subject, I suspect the less you will be fearful of them.

The first thing I did when moving to Arkansas was to get a book on venomous snakes and read all I could about them. I learned their habits and where to expect them. The kinds we had were Copperheads and Cottonmouths. One interesting fact I learned was that the average annual mortality from snake bites in the U.S. is 12. This demonstrates that the danger from snakes is quite minimal compared to countries where there are cobras or very aggressive pit vipers. In those countries the mortality rate is much higher.

In short, my advice is to learn about them, teach your child how to recognize poisonous snakes and how to avoid them, learn to control your fear, and finally -- learn to coexist with them. You could also find out where the nearest health center is, and be prepared to deal with an emergency.

Where can I find these three varieties of potato -- "Bounty," "Norchief," or "Chieftan?"

You can write to:

Idaho Crop Improvement Assoc.
Box 188
Idaho Falls, Idaho 83401

They will be able to supply the seed required, or tell you who is currently supplying it.



What is the best breed of sheep to raise for wool?

You have already taken the first simple step toward successfully raising sheep -- deciding what you want to do with them; for one can sell meat and wool, lambs and Easter lambs or pure-bred breeding stock. The various factors that influence a choice of breed would be locality, climate, terrain and use.

As far as the best breeds of sheep to raise for wool -- the **Merinos**, **Rambouillets** and **Debouillets** are fine-wooled sheep -- hardy, gregarious and long-lived. The **Merinos** like range conditions and will breed out of season. A strain has been developed today possessing better meat qualities and a skin free from folds. Information may be obtained from A.L. Liming, Lou-Ida Farms, Mineral Ridge, Ohio 44440.

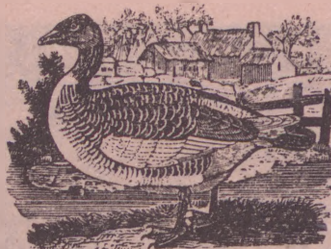
The **Rambouillet** is a dual-purpose sheep. The skin is almost fold-free, and the wool is long staple, of fair density and uniform shrinkage -- an ideal fleece for the hand spinner. This breed is very hardy, and can survive rough conditions and sparse forage. It has a strong flocking instinct. Contact: American Rambouillet Sheep Breeders' Association, 2709 Sherwood Way, San Angelo, Texas 76901.

The **Debouillet** is similar to **Rambouillet** and have a fine, dense, wool. Write: Mrs. A.D. Jones, Debouillet Sheep Breeders' Association, Roswell, New Mexico 88201.

The **Cherviot**, **Columbia**, **Corriedale** are fine wool breeds. The long-wool breeds are **Cotswold**, **Leicester**, **Lincoln**, **Romney** and **Karakul** (the skins of baby Karakul lambs are known as Persian lamb). Information concerning all of these should be sought from state departments of agriculture.

Where can I get a special type of goslin called "Pilgrim?"

The goose you refer to gets its name due to the tradition (and there is evidence) that this waterfowl was brought over by the founding fathers of our country. They were once quite common in early New England, and weigh from 12 to 14 pounds -- a small breed. The Pilgrim gander is all white, with sometimes a trace of grey on the back -- while the goose has grey-brown coloring. From the day they hatch, their sex can be distinguished by color: males a bright yellow -- females a pale pea green.



To find more information, the following sources should help:

Pilgrim Goose Hatchery
Dept. FP-9
Williamsfield, Ohio 44093
or

Stromberg's Chicks & Pets
Unlimited
Pine River
Mn 56474



DOUBLE BARRELLED EFFICIENCY!

A futuristic solution for today's heating problems. An Air Tight 64-72% Tested Energy Efficient wood stove made from recycled propane tanks. For brochure send to:

GREEN MOUNTAIN STOVE WORKS

Box 477 Saxtons River, VT. 05154
(802) 869-2772

NEW ZEALAND PERMANENT ELECTRIC FENCING SYSTEM

Holds all livestock - even sheep and goats. Predator proof. Charges thru weed load.

Come see it in action! Over 100 acres fenced. Compare prices.

9 miles inland from Searsport. (207) 223-4791 - please call first.

MANNER FARMS
Swanville Rd., Frankfort, Me. 04438

"OLD MILL"



Getting tired of high oil costs

Yes, it's true a dog is a man's best friend but we could be too. "Old Mill" the stove built for the working man's pocket book. Completely air tight solid weld stove with a gasket seal in the door. We have 3 step stoves with a double baffle and 2 fireplace inserts with a single baffle. All have a 25 year limited warranty.

DE VAULT FAB-WELD & PIPING CO.
SPRING MILL ROAD
DE VAULT, PA 19432
TELEPHONE (215) 647-5590

Pole Structures



Pole Structures by Northern Homes are the answer for low cost shelter, and can be as attractive as your imagination will allow. Available in all sizes from huge riding arenas to one car garages. If you have a need for space, we can show you an economical and attractive solution. Built of treated square poles, kiln dried western lumber with engineered trusses by Northern Homes. We offer all selections of roofing and siding, from metal and asphalt to wood. So if you're looking to build a woodshed, stable or multi-purpose shelter write today for free information.

For info and Free brochure contact:

VISION INC.

Rte. 90, Rockport, Maine 04856

236-8838



USDA Photo

The Truth About Beans

by Louis V. Wilcox, Jr.

Peas and beans always remind me of the Scottish nursery rhyme . . .

Oats, peas, beans and barley grow,
Oats, peas, beans and barley grow,
Nor you, nor I, nor anyone knows,
How oats, peas, beans and barley grow.

We do know more now about how oats, peas, beans and barley grow, but one should never assume we know everything. There is much to be learned still about peas and beans, which along with the grains, form such a staple part of our diet.

Beans are in the genus *Phaseolus* and are native to the area stretching from warm temperate regions to the tropical regions of the New World. There are about twenty species in this genus. Like peas and other members of the Leguminosae, the roots of beans have a symbiotic relationship with a bacterium that forms nodules on the roots and the bacterium produces nitrogen in the roots.

Dr. Louis V. Wilcox, Jr. is the chairman, Center of Environmental Sciences at Unity College, Unity, Maine.

Phaseolus coccineus L., the Scarlet Runner Bean or Dutch Case-Kinfe Bean is a tall, twining perennial that produces bright scarlet flowers. It is frequently grown for ornamental purposes. *Phaseolus coccineus* var. *Albus*, the White Dutch Runner Bean, produces white flowers and seeds and is grown mostly for the edible seeds. It is also available now in a dwarf strain.

Phaseolus limensis Macfady, the Lima Bean, is native to tropical South America. It is a decidedly warm weather crop and does not do well in the more northern, temperate regions of the United States. *Phaseolus limensis* var. *limenanus*, the Bush Lima Bean or Dwarf Lima Bean, is grown a great

deal in the home garden where the climate is appropriate.

Phaseolus lunatus L., the Sieva Bean, Butter Bean, Civet Bean, Sewee Bean, or Carolina Bean (and sometimes called the Lima Bean too), is also native to tropical South America. It is different from **P. limensis** because it has a less robust growth and flowers earlier. **P. lunatus** var. **lunonanus**, the Dwarf Sieva Bean, is a bush form.

The largest number of varieties with which we gardeners are familiar are in the species, **Phaseolus vulgaris** L. This species is called Kidney Bean, Green Bean, Snap Bean, Haricot Bean, Common Bean, French Bean, Frijol, Runner Bean, String Bean, Salad Bean, Wax Bean, depending upon the variety or local usage. This species is one of the most important legumes due to the quantity and variety of food that we derive from the species. We consume beans in the forms of unripened edible pods or fruits; unripe seeds, such as shell beans; mature seeds -- dry beans; and indirectly by using them as forage for animals. Varieties such as Pinto Beans are variants of this species.

Bean Culture

In contrast to peas, beans are a warm weather crop. Beans are grown over a much wider area of the United States than peas, though the commercial growing areas do overlap. Beans can be broken into three categories: the green or snap beans where the whole pod is used; the shell beans where the seeds are shelled out in an immature state and eaten fresh; and the dry beans or the ones that are dried for later use. Regardless of these use categories, the general cultural practices are the same for all of them.

Beans grow best in a soil with a pH of 6.0 to 7.5. The soil should be rich and in good physical condition with a good supply of potassium and phosphorus but only a modest amount of nitrogen. The seed should not be planted until the soil is thoroughly warm. This means that the soil stays at a temperature of 50 degrees F. day and night. There is no vegetable seed that rots more under damp and cool conditions than bean. This is due to the large quantities of food that are stored in the seed. If you wait until the soil is warm,

the rate of growth then will more than compensate for the losses incurred by planting too early.

The seed should be planted one to two inches deep in the soil. This is the same rule as with peas -- the larger seed get planted deeper. The seeds should be spaced one to two inches apart, preferably closer to two inches apart. The soil placed over the seeds should be pressed down so that the soil is firmly in contact with the seed. This allows the seeds to become uniformly moistened. If you are faced with a dry period after planting, it is best to water your seed. Partially germinated seed in the soil do not do well when the soil dries out. The soil must be moist throughout the period of germination.

There are several ways of planting bean seeds. You can use the old standby of planting in a single row, but you can also go to wide-band planting and double row planting. In wide-band planting, you proceed as you would with peas. But here, you can make the wide-band as wide as two feet. Scatter the seed over the two foot wide band and proceed as above. I do not recommend this method, for I have consistently seen reduced yields with this procedure. On the other hand, double row planting seems to do quite well and is equally as economical in terms of garden space. Here you simply plant two rows 4 to 6 inches apart. This type of planting is no more difficult to harvest than a single row, and is far easier than the wide-band planting method. Whatever row method you use, you should leave about 2½ feet between the rows.

Varieties of Dry Beans

Dry and Shell Beans. There are a lot of different types of dry and shell beans. In terms of variety selection, it is a matter of personal preference and the type of use you intend to make of the beans. If you have never grown dry beans before, I would suggest that you start with Red Kidney beans. Red Kidneys are easy to grow, easy to harvest, and they sure do make good chili in the middle of winter. If you are more adventurous, add to the Red Kidneys either the Soldier Bean or the Navy Pea Bean. The following will give you beans for making baked beans:

Garbanzo Bean: matures in 65 days. This is also called the chick pea. It produces a large somewhat round bean that has a somewhat nut-like flavor. It does not grow well in the more northern part of the country and does do well under drought conditions.

(Continued on next page)

Beans, as was the case with peas, should be treated with the bacterial inoculum that allows for nitrogen fixation in the roots. You can buy this in most garden stores or order it from seed companies. Place the seeds in a paper bag, add some bacterial inoculum, and shake the bag. Some people also sprinkle the inoculum on the seeds once they have been placed in the seed row.

Beans do best on a rich soil. You should start with a soil that has a good supply of phosphorus and potassium and a modest supply of nitrogen. Despite a good start like this, when the plants are about six inches tall you should give them a side dressing of a fertilizer such as 5-10-5.

Bush beans produce prolifically, and if you are to have a supply all summer long, you need to make plantings about every 10 days to two weeks up until two months before the first average frost. As for the production of a crop for freezing and canning, we find that the first crop is usually the best, so it is best that your first planting be the large one and subsequent plantings be just for table use.

Snap beans should be harvested when the pods will still snap when broken. At this stage, the pods are crisp and moist. Beans for other uses should be left until all the beans in the pod are fully formed. Beans to be used for dried beans should be left on the plant until the pods turn a light brown color. After that, they should be harvested and heated in an oven to about 130 degrees to 145 degrees F. to kill any bean weevils and eggs that may be in the seeds.



USDA Photo

Great Northern White Bean: matures in 85 days. Produces a very good bean for baking and can also be used as a shell bean. It does well in the northern tier of states. If you are into baked beans, try this variety.

Jacob's Cattle Bean: matures in 88 days. It does well in the northern tier of states and is good for baking and in soups. It is one of the more colorful beans -- it is a white bean with red speckles.

Soldier Bean: matures in 85 days. An age-old favorite in New England, it produces slender white beans. It does well in drought and is best used for baking. Like other baking varieties, Soldier Bean tends to be viny, so give it plenty of space -- more space than you would a row of snap beans.

Navy Pea Bean: matures in 85 days. This is a smaller plant than the Soldier Bean and produces a small white oval bean that is excellent for baking.

Maine Yellow Eye: matures in 92 days. A long time favorite with packers and canners in Maine. Maine does not produce as many dry beans as it used to, but this variety is still used by home gardeners and is excellent for baking.

French Horticultural Bean: matures in 64 days. It is used primarily as a shell bean, but can also be used as a dry bean (matures in about 90 days). As a shell bean, it does can and freeze well.

Black Turtle Soup Bean: matures in 85 days. The maturity date varies depending upon which strain you buy from which seed dealer. You will see maturity dates as long as 115 days. The beans are jet black and it is used in soups and stews. It is best grown as a dry bean, but when young, it can be used as a snap bean.

Pinto: matures in 90 days. It is closely related to the Red Kidney Bean and is widely used over the whole country due to its full flavor and ease of cooking. It is a good baking bean, and is used in many Mexican dishes. This is a very viny variety and should be given a lot of space; in fact, it can even be grown as a pole bean.

Red Kidney Bean: matures in 100 days. This is the workhorse of the dry bean world. It produces large, plump red beans. Needless to say, the beans are kidney shaped. It is used in baking, boiled, in soups, and in Mexican dishes. If you are going to try any dry bean, this is the one to try.

How many beans should be planted? Again, it depends upon your tastes and personal preferences and whether you intend to produce beans for year-round use. A pound of bush bean seed will plant 150 feet of a single row, and a 150 foot row will yield about 70 pounds of beans. Thirty pounds or one bushel of snap beans yields 12 to 16 pints of beans for freezing or canning. A fifteen foot row of pole beans yields about 12 pounds, a 15 foot row of shell beans yields about nine pounds, a fifteen foot row of pole shell beans yields about 18 pounds, a fifteen-foot row of bush lima beans yields about 4 pounds, and a fifteen foot row of pole lima beans yields about 7 pounds. From this information and your decision on how many beans you want to produce, you can figure out how much you need to plant. In so doing, you should consider some variety in your bean plantings. Consider both green and wax (or yellow) snap beans, shell beans, pole snap beans, and dried beans. Again, I do not recommend limas for the northern tier of states, and Canada.

Bean Diseases and Pests

Beans are susceptible to **seed rot** and **damping-off**. However, most of these are controlled today by a seed treatment with a protectant fungicide. If you are adverse to the use of fungicides on the seed, make sure that you rotate your crops over a three year rotation and do not plant when the soil is too cold and damp.

Beans are also susceptible to **Rhizoctonia**, **Pythium** and **Fusarium root rot**. There is no known treatment for these diseases. The best that can be done is to rotate your crops on a three year basis.

Beans are susceptible to the **fungus disease anthracnose** and to **bacterial blights**. Both of these diseases can be controlled by a good rotation program and by sanitation. Do not put any bean refuse on an area that you intend to use for beans in the next three to five years. The refuse contains the fungus and the bacteria and it can survive for quite a while. You should not grow beans on the same area more often than every three to five years. Again, it takes this long for the fungus and bacteria to die out. Make sure that you use disease-free seed; buy your seed from a good supplier. Do not save your own seed from year to year or you will

be inviting trouble. The fungus and bacteria do survive on the seed. Avoid working in your beans when they are wet. When the foliage is wet, the spores of the anthracnose fungus and the bacteria are readily spread from one plant to the next. If you follow these practices of rotation and sanitation, you should have few problems with either anthracnose or with bacterial blights.

Sclerotinia white mold and **Botrytis gray mold** are serious problems when there is wet humid weather, particularly when this type of weather occurs after the bloom. It is usually not a serious problem in the home garden. It can be controlled with fungicide application; I do not recommend this for the home garden unless you get into a real problem.

Powdery mildew is usually only a problem on dry beans at the end of the season. I do not recommend any spraying for this disease since it does occur at the end of the season. However, if you do have a problem with it, apply sulfur dusts or sprays and they will control it quite effectively.

Rust can also occur on beans. One of the best ways to control this disease is to follow the recommendations for the control of anthracnose and bacterial blight. Do not work with the plants when the foliage is wet.

Beans can be attacked by **potato leafhoppers**, **black bean aphids**, and **bean beetles**. In the home garden, I do not recommend any routine control program for these insect pests. If you do have problems with beetles, you can treat the plants with a rotenone dust.

Oats, peas, beans and barley grow... And, they will grow with a few common sense measures in the home garden. Plant beans when the soil is warm -- at least 50 degrees F. Rotate your crops. Do not plant on the same area any more frequently than three to five years. Buy your seed from a reputable dealer. Do not save your own seed from year to year. Do not work in the garden when the foliage is wet. Remove all plant debris from the garden. Do not plow it back into the soil.

Beans are a real staple of the garden. Plant a variety for diversity of beans will add a great deal to your eating pleasure, whether you use them fresh or set them by for those cold winter nights.



USDA Photo

Varieties of Green Snap Beans

Bush Green Snap Beans. There are any number of good varieties of bush green snap beans, some of which are described below:

Greencrop: matures in 48 days. This is an early, flat-podded variety that was developed at the University of New Hampshire. The pods will reach 8 inches in length, but if you let them go this long, watch out that they do not get overripe. If you have a hot, dry summer, this variety will not do well. It is best to plant this variety along with another variety in case you have a hot, dry summer. Greencrop is good for table use, canning, and freezing.

Top Crop: matures in 52 days. The pods are 6 inches long and are stringless as is Greencrop. It is good for table use, canning, and freezing.

Provider: matures in 50 days. It produces pods that are about 6 inches long and grows well even under adverse weather conditions. This variety is excellent for canning and freezing, though it can also be used for fresh eating.

Tendercrop: matures in 54 days. This bean was developed for the freezing industry in the Northwest. It will also grow in a variety of climates and under adverse conditions. If you plan to freeze beans, this is a good one to pick.

Blue Crop: matures in 56 days. This variety is considered by many to be the choice for freezing because the seeds are white. Blue Crop tolerates hot weather very well and can be used in conjunction with Greencrop. Like Tendercrop, the Blue Crop pods are smooth and straight.

Bush Blue Lake: matures in 58 days. This variety was developed from the famous Blue Lake pole beans. It matures late and the harvest is spread over a longer time than most varieties. It is a favorite with canners and freezers.

Again, I would suggest that you plant at least two varieties, one of which does well under hot, dry conditions.

Wax or Yellow Snap Bush Beans. Wax beans do add variety in terms of color. I have also found them to be prolific producers, and in many summers when my green beans are just piddling along, the wax beans are producing like mad.

Eastern Butterwax: matures in 53 days. This is the latest maturing of the wax beans. It produces 7 inch long somewhat curved pods. It is an excellent variety for freezing.

Sungold: matures in 56 days. It produces pods that are 5 to 6 inches long and straight. It was developed at the New York Agricultural Experiment Station at Geneva, N.Y. and is considered by many to be one of the best looking and best tasting varieties of wax beans.

Cherokee Wax: matures in 50 days. It produces nearly straight pods with black seeds.

Pole Snap Beans. There are both green and yellow pole snap beans as well as purple podded pole beans.

Kentucky Wonder: Green pod. Matures in 64 days. An old standard that continues to be popular. It produces pods that are long, straight, and smooth. It has good flavor and is excellent for freezing.

Kentucky Wonder Yellow Wax Pole Bean: Yellow Pod. Matures in 65 days. This is about the best pole wax bean, and it has been around for a long time. The pods are about 8 to 9 inches long.

Romano: Green pod. Matures in 64 days. This is an Italian-type pole bean and produces the flat Italian beans. It is used a great deal in the freezing industry. The pods are about 5 inches long.

Champagne: Green pod. Matures in 62 days. This is a flat podded variety that produces pods 8 inches long.

Earlywax Golden Yellow Bean: Yellow pod. Matures in 54 days. It was used for years in the freezing industry because it has good shelf life and is now being used more and more by the home gardener. Like the other pole varieties, it is just as good fresh.

Purple Podded Pole: Purple pod. Matures in 55 days. The vines grow to over 6 feet tall and it continues to produce over a period of a month. It is best when eaten fresh, but it can also be frozen. The purple pods turn green when boiled. We have found this bean to have an excellent flavor and texture.

White Dutch Runner Bean: Green pod. Matures in 88 days. This is one of the most prolific of the pole beans. It can be used as a snap bean, boiled when older, or as a shell bean.

Scarlet Runner Bean: Green pod. Matures in 70 days. This pole bean combines food with its ornamental appearance. It produces bright scarlet flowers that are frequently grown just for the flowers. The pods are 12 to 16 inches long and are very good when cooked fresh.

Lima Beans. Below are listed some varieties of lima beans, both bush and pole types. Because lima beans require warmer temperatures than snap beans, they do not do as well in the northern tier of states. But, if you like lima beans, give them a try and make sure that you do not plant too early.

Henderson: Matures in 81 days. Bush type.

Fordhook 242: Matures in 85 days. Bush type.

Burpee's Improved Bush Lima: Matures in 70 days. Bush type.

Baby Fordhook Bush Lima: Matures in 70 days. Bush type.

Christmas Lima Pole Bean: Matures in 80 days. Pole type.

Prizetaker: Matures in 90 days. Pole type.

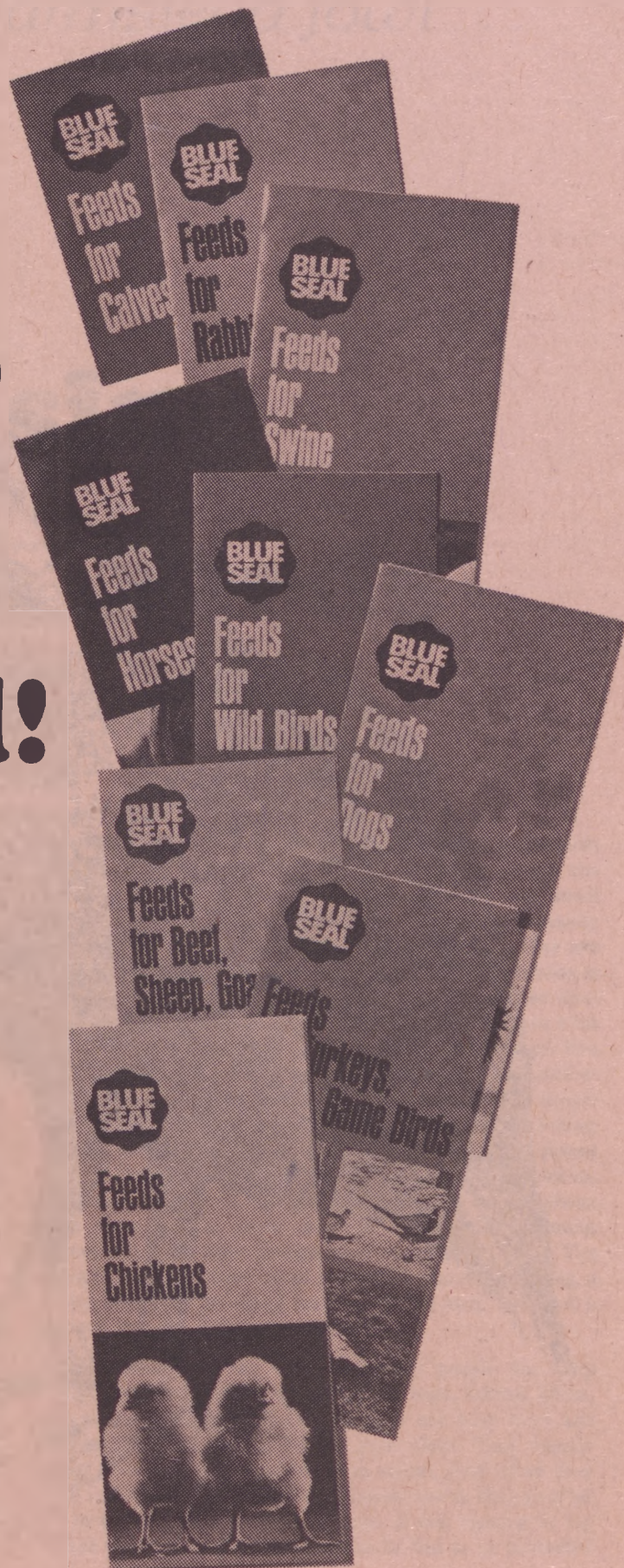
If you love animals, you'll love Blue Seal!

These handy Blue Seal folders, based on the latest nutritional research, can help you feed and manage whatever you raise . . . Blue Seal Feeds — there's one for every feeding requirement — can help you get the most out of your animals, and birds, too. Your Blue Seal Dealer is the man to see . . . look for him in the Yellow Pages.



FEEDS

Lawrence, Mass. 01842





Those high-flying farmstead fowl . . .

Raising Guinea Birds

By Jan Willems

Do you want an exotic-looking creature, a gourmet tablebird, an alert watchdog? Get yourself some guinea fowl! Of course, you also add to your animal stock a noisy, free-roaming, at times quarrelsome, and explosive character, but you won't mind—unless something stirs these ever-watchful birds at four o'clock in the morning to give an early morning concert of highly excited shrieks. Visitors to your place, who invariably ask: "What is that?" usually see a small, grey, pearl-dotted bird. Although there are other color varieties, such as white, lavender, and mixtures, the pearl-grey is the most common. The guinea hen is about the size of a small to medium chicken, low on its feet, and has a vulture-like, bare-fuzzy neck, upon which is mounted a witch-like small head—a spooky white voodoo mask decorated with fiery red wattles, some stray short stiff hairs, and a silly grey/brownish small horn or helm. You see a pair of alert, almost aggressive, dark eyes and a pronounced, sharp, pointed, predator-like beak. On first sight, you see no difference between the males and females, unless you notice that the females have slightly smaller horn/combs and wattles.

These birds, (long since domesticated by the Greeks and Romans, who used them for their meat) originate from West Africa, where they are still wild game birds, roaming

Jan Willems has previously contributed to Farmstead and raises small livestock in Bar Harbor, Maine.

around in flocks of 150 to 200. Guinea hens, or *Numida Meleagris* is one kind of *Numida*; the other two are the crested guinea fowl *Numida Cristate* and the small vulture-like *Numida Vulturina*. They have been mainly kept as a kind of substitute game bird and when they are still young, their meat, served in high class restaurants is considered a gourmet delicacy. By the way, after that tender age of three to four months, the meat becomes a bit tougher and rather dry. At the right marketing age, live birds weigh about one-and-three-quarters to two-and-a-half pounds live, the greatest demand being for the larger birds weighing over two pounds. When a good marketing outlet can be found, they usually bring command prices about three times the price per pound as live chicken, although the cost of raising these birds is definitely about the same or even lower than the cost of raising young meat-chickens, since guinea hens require less feed. The basic trouble in most rural areas like Maine is finding a good outlet; so for many fanciers of this bird, it is just a gourmet extra for their own table.

Of course, you can also—and many people do—keep them as a kind of cheap watchdog (no tags, license, shots, or expensive dog chow). These birds are very alert and notice anything strange around your place. They usually beat your dog in giving the alarm signal. And when they see something disturbing in the animal world, they go after it in small groups of three or four. A dog visiting at my place was fastened to a tree. (Soon he had to be protected

against these audacious guinea fowl who nearly scared the poor animal to death.) They notice anything flying overhead, and when they give the alarm, all animals on my farm, including the dog, immediately pay attention. The legend has it that they keep hawks and other birds of prey out of sight. From what I have noticed, this is not entirely true. The fact is that a bird of prey may still appear over your place, but the devastating noise-riot this little gray watchman produces (in a far from melodious chorus) makes the preying bird realize that this is not a good place for hunting, and pretty soon you see it drift off. But don't believe that guinea hens keep predators (foxes, raccoons, etc.) permanently away.

How to obtain and raise these lively characters? The best way is to get day-old young, usually called keets. Young guinea fowl are charming, very lively, little game chicks. Some big general bird hatching companies carry them. Sears still has them in the 1977 farm catalogue, but you can order them only for the months June through August (this is the best time to start, although the earlier the better).

The price is roughly two and a half times the price you pay for a good, one-day-old chicken. You can also try to find someone who breeds guinea chicks from his or her own small flock, but often that supply is very limited, as many breeding attempts are not successful enough for surplus marketing. You can try to buy a few adult birds, males and females of course, but they are not so easy to find and the price would be between \$5 and \$10 a piece. If you are a novice with this fowl, check carefully that you get both male(s) and female(s). Comparison of the wattles and helm from about the same age birds will give you some idea, but ask the supplier to guarantee you what he sells. Almost all brochures, booklets, and articles about guinea hen mention sound-sexing. The female calls "buck-wheat" or "put-rock" (whatever you want to hear) and the male has an ear-piercing, one-syllable shriek. The problem is that once the female gets excited, she produces the same one-syllable cry, and then just try to catch only one guinea hen in a flock without the whole group exploding into a deafening shriek-concert! Another hint: if you try to catch them, get a good hold on their legs or whole bodies; a partial hold on their feathers will leave you just with a handful of nice fly-tie material, and the half-plucked bird gone. Guinea hens, like many other game birds, can instantly shed their feathers when in danger of capture.

Another way of starting is to get eggs. Guinea fowl usually start to lay eggs a little late in the season; that is, (here in Maine) about May or later, but it can vary quite a bit and may go on till fall. They can lay between 30-100 eggs a year. The best laying period is the first two to three years. Older hens lay fewer eggs, but have the advantage of becoming broody earlier and more easily. In case you don't use the eggs for hatching, they are, in my and many people's opinion, a real delicacy. The shell, particularly when the egg is not yet cooked, is pretty hard. I still remember my pleasant surprise as a youngster, when I dropped a small basket of guinea eggs on the floor and none broke, nor even cracked. Eggs can either be put under a broody hen (or bantam) or in an incubator. In fact, in case you should have a guinea hen sitting on eggs, she will, in most cases, leave the nest once a couple of chicks have

hatched and dried, and leave the other eggs for a loss. If you are there in time, fostering the eggs under another broody hen or incubator may salvage quite a few chicks. The guinea hen is very choosy about her nest site; she may lay at various locations and even leave a clutch of several eggs until she decides on a well-hidden place to hatch. Trying to control this or forcing the hen to hatch in a certain place usually doesn't work. Hatching time is about 26 to 28 days, and in an incubator, the right humidity, (a bit higher than for chickens) is a must, as is turning the eggs two or three times daily (except for the last four days).

Rearing the chicks can be done a) by brooder, b) with a brooder-hen, c) with the guinea hen mother. Feeding is about the same as for chicken and turkey poults, but with the emphasis on high protein mash. One precaution: don't raise guinea chicks with a hen when there are other adult guinea fowl on the range. Both male and female will desperately try to take a part in raising the young, and in many cases will chase the mother-hen away without assuming the warming task themselves. According to most breeders, raising by guinea hen is a rather risky experiment, with the possibility of large losses, because the chicks can't keep up with the over-active tempo of the parents, are led through wet grass, or wet spots, and die of exposure, or simply drown in a deep puddle or water container.

This gives guinea hens the reputation of being poor parents, but in fact, it is because they are naturally subtropical birds and do not have the proper brooding instincts to raise their young in this northern climate.

Once the chicks have covering feathers and are old enough to roam around, give them, if possible, a chance. This will complement their artificial diet with a host of wild seeds, bugs, and greenery, which will be very beneficial to their development. However, realize that at six to eight weeks old, they will start roosting in nearby trees or other high spots which not only means chance of losses, but a heck of a job if ever you want to catch or house the young birds. If the old birds are used to roosting somewhere inside (the high beams in a barn, perhaps), then they will faithfully return with their brood each evening to the spot. Also, a roosting brooder-hen will usually take the foster children with her. One little risk here is that the hen may abandon her youngsters sooner than the guinea hen does, and leave the bewildered guinea chicks to fend for themselves. (Guinea hens often keep their young with them until they are full-grown.)

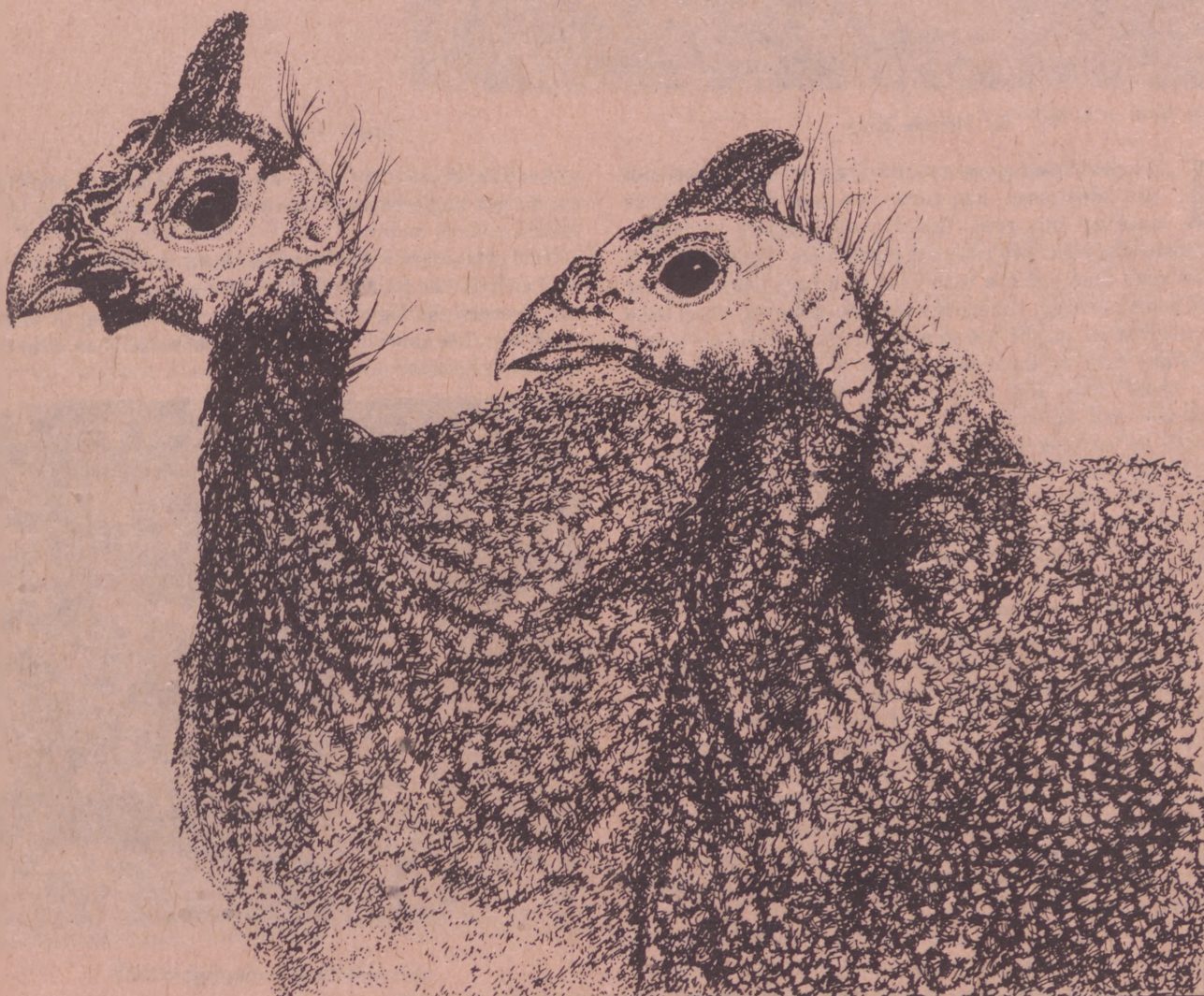
In general, guinea fowl are true freedom-loving birds, who will roam over a wide area, but almost always return to their usual base. When confined they will try desperately to get out. I once lost a nice young bird who hanged himself by forcing his head between some chicken wire mazes.

Guinea hens are cheap boarders, as they get most or all of their feed off the land; that is, if you give them a chance. Being originally a sub tropical bird, they feel a little uncomfortable in the Northeast winters and prefer to stay inside, even if you open the door of their pen. But as soon as it is 20°F. or so, with a nice, bright winter-sun, they'll go out to a protected area and sun themselves like a group of grey-haired little ladies on a park bench in the sun. □

Contrary to the general opinion (and experience) that letting guinea fowl raise their own offspring is a risky venture, last summer I had a successful, pleasant experience. In early June, two of my guinea hens disappeared into a marshy/woody area with a lot of growth. Occasionally, I would hear a soft "buck-wheat" sound, but was never able to locate the nest in the thick undergrowth. Then one Sunday in July, I noticed some movements in the tall grass and saw, from a safe distance, two pairs of guinea fowl with at least two dozen very small, fluffy chicks around them. The one or two-day-old chicks were very small indeed, and made themselves almost invisible in the vegetation at the slightest sign of alarm. They were able to walk through the mazes of one-inch chicken wire as if it wasn't there. As I write now, near the end of August and almost eight weeks later, they are still all alive and well. Both females and males take care of the brood, and during the first two weeks the males also took the chicks under their wings to keep them warm on a chilly or occasional wet day. They fed mostly on wild seeds and small insects, and after about three weeks, ventured into the barn to savour some birdseed which had dropped out of the dove cages. Gradually, they lost some of their inborn shyness. The parent-birds were extremely alert to any intruder and were even respected by the big geese—the permanent masters of the many kinds of feathered friends on the farm.

Part of the secret of successful brooding seems to be leaving the birds alone (I watched them through binoculars and never walked through an area where I knew they were) and providing them with plenty of shelter in tall grasses and other thick vegetation. They seem to prefer the open fields, and hardly ever go into the woods. The young started their first flying lessons at about three to four weeks of age, fluttering to the top of boxes, cages, and other points two to four feet high. Pretty soon, other skills improved, and at about five to six weeks they started roosting in the lower branches (10-12 feet) of a big cedar tree close to the house. There were always a couple of youngsters who apparently had to muster all their courage for the take-off to the heights of safety. Sometimes one of the parents came down to encourage the chick, or kept calling persistently from the tree.

They still live closely together as a flock, and a chick which finds itself separated from the family promptly produces a series of piercing alarm cries. On a few occasions, when a couple of chicks could not follow their crowd because they had wandered into an empty cage and were trying to get out at the wrong end, the adult guinea hen sounded a persistent "buck-wheat" and ran nervously back and forward between the general herd and the trapped youngsters.



Of Log Dogs and Broad Axes . . .



Hand Hew Own

By Dennis King

I've developed a real respect for good hand tools—not the electrical wonders you see in the Sears catalog—but real “hand tools.” Hand tools are extensions of your own physical capabilities. They allow you to do more than you can with your own bare hands but use only human energy, not energy transported over wires from the nearest (or maybe not so near) electric utility company.

At any rate, an excellent example of a good hand tool is the broad axe. It's been almost forgotten except by museums and collectors, but I believe most people would benefit by learning how to use one. You'll find that squared beams can come from places other than saw mills. They can come from trees in the woods and go right into your house or barn without even leaving your property. I suspect if you spent your time cutting logs, squaring beams, and building your house or barn, your work time at home would almost equal the time you'd have to go out to work in order to earn enough to pay someone else to build for you.

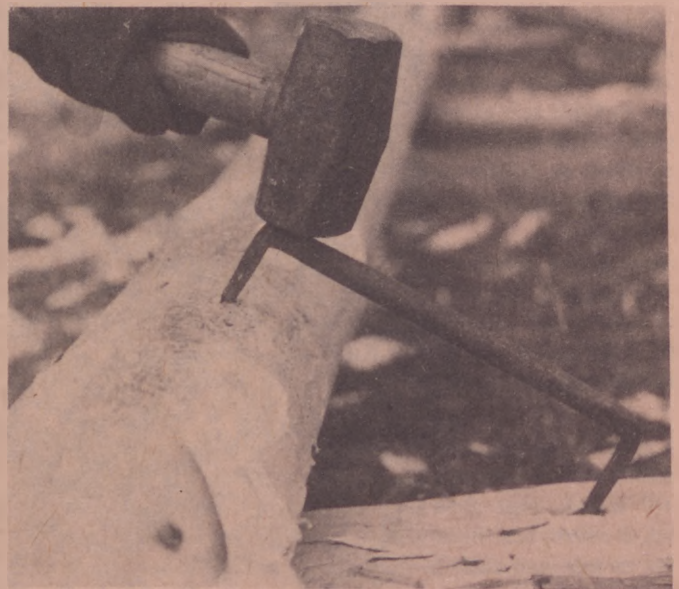
In case I've convinced anyone to learn to use a broadaxe and hand hew some beams, here's the method I use:

You can use most any species of wood, but the soft woods are a little easier. Around here spruce and pine are the major species used, but a lot of old barns and houses have tamarack or larch beams. Recently, I realized that the barn of the farm I grew up on in Southern Michigan was made of black cherry beams. It's a lot less work if the logs you use are fairly straight and have little taper. That's more important than species.

Put the log up on blocks, and select the straightest side to start. Then secure the log in place with log dogs. We found some old dogs at junk dealers, but they would be easy to

make. Simply point the ends of a piece of steel rod and then put a right angle bend about two to three inches from each end.

Next, you mark a straight line down the edge of the log with a chalk line for a guide line. Use a good, sharp limbing axe to score the log along the edge, into the depth of the chalk line. It's quite important that your axe goes in to the depth of the line.



Setting a log dog.

Your Beams



Striking a chalk line.

Keep Your Eyes Open!

Now comes the broad-axe. Start at the end of the log so that the chalk line is on the right side of the log (if you're right-handed as I am.) Stand on the left side of the log so you'll be opposite the side you're chopping. Now, take the broad-axe and hit straight down on the line. By doing this you will flake off the pieces of log between the score marks you just made, and the flat side of the log will be on a vertical plane. Back down the log and continue chopping



Finished log hewn on one side.

flaking off pieces, until you get to the end of the log. You should now have one nice flat side on your log.

There are variations to this procedure you can try. I'm right-handed and I find it easier to stand on the left side of the log while chopping on the right side. You can also straddle the log if you're brave or dumb. I'll admit I've done it that way at times. It seems to be easier to hit right on the line, but I wouldn't want to sacrifice my leg for accuracy. I guess in the old days there were a few one-legged broad-axers around to remind people of the hazards of log straddling. If one leg is on the side you are chopping on, one wrong glance of the axe and an eight to ten inch width of razor sharp steel with plenty of momentum could come crashing into that leg. If you do straddle the log, keep the leg that is on the same side of the log as the axe, as far away from the axe as possible. And keep your eyes open!

The last innovation made in broad axes before they went out of use, was the off-set handle. For a right-hander the handle would come to the right as it goes from your hands to the axe head. This off-sets the axe-head to the right of where your hands are on the handle, making it easier to stand on the side of the log opposite your chopping. The broad-axe I use was an old axe head found in a cellar hole and was re-fit with a straight handle. You certainly could not find an off-set handled broad-axe in the local hardware store these days, so you may want to make one. Or, you can buy an off-set handle for a broad axe from Woodcraft Supply Corp., Woburn, Mass. 01801.

If you've seen Eric Sloane's **Museum of Early American Tools** you might notice that my method is different from the



Using limbing axe to score log to depth of chalk line (represented by dotted line).

one he depicts. Sloane shows the chopper with both feet on the same side of the log that he is chopping, and the off-set handle allows hand clearance between the chopper's hands and the log. It also might allow the chopper to stand a bit farther from the log. You can try this out on small logs. But I still like my method, since I wouldn't trade my long walks in the woods for every square timber in the world.

The procedure I've described for one side of the beam is simply repeated for the other three sides if you want. It's not really necessary to square all four sides of beams for many building purposes, however. I only flatten the tops of floor joists because the mice running around under my cabin certainly don't mind looking at rounded beams. Neither do I for that matter. I only flatten the sides of beams onto which I want to nail a flat wall. Rafters need to be flattened only on the top and bottom if boards are going to be nailed to each side.

Is A Broad Axe Worth It?

Is it worth hand-hewing beams? You can tell that I think it is, but I have an experience which might be of interest. A few years ago I helped a friend re-sill his old barn. The sills and posts were eight foot by eight foot

but since we could buy six by sixes much cheaper, we put in mill sawn six by sixes for sills. We found that we needed about a ten foot piece of eight by eight to replace a corner post that was completely mined out by carpenter ants. We had hand-hewn one side of all the new floor and loft joists, so I decided to make the eight by eight out of a log we had cut which was too big for floor joists. At that time eight by eights from the mill at 20 cents a board foot cost \$1.07 per linear foot. They would cost a lot more now.

It took about one and a half hours for me to convert a ten foot log, (which would have scaled about 50 board feet and been worth maybe \$3.00 as a saw log,) into an eight by eight worth \$10.70. That is a \$7.70 return on my labor, or \$5.00 per hour. This was in the early 70's where \$5.00 per hour was worth a lot more than now, but I'd do that work for \$5.00 per hour today. I never keep records of things like this, but I could give you many more examples.

So, the next time you need a large timber, go out and limber up the old broad axe and make one. You don't need one of those magic mini-mills for your chain saw, either. I've got one and use it once in a while, but I don't think it really saves any time.



Correct position for hewing with broad axe.

Green Thumb

Gardening Tips

Mulch is My Black Gold

by Betsy Hibbard

With great relief I watched the first big township truck dump its load of plastic bagged leaves next to the asparagus patch.

"Don't you hate to cover that beautiful black soil with those dirty leaves?" asked my neighbor.

I kicked at the crumbly dark loam. "Leaves **made** this soil," I said, "and

we've gone without those bags of gold for two years. I'm tired of hoeing weeds."

"How can you call that trash gold? I'm glad to get rid of mine since we're not allowed to burn leaves anymore. In fact, my fifteen bags are probably on this truck right now. Yep, those are my yellow bags all right. Five of them are full of pine straw. Nothing grows under

pine trees. That straw is pure acid poison."

I sighed. Should I tell this man about the many benefits of leaves and lose another fifteen bags for my own use? When we first asked for the leaves collected from the yards of our North Eastern Pennsylvania community we received sixteen dump truck loads. But since I couldn't keep my big mouth shut when I spoke to garden clubs and



The author, Betsy Hibbard digs in her black gold in LaPlume, Pennsylvania.



Free gift from the township dump truck--175 bags of leaf mulch.

visitors, now we are lucky to get eight or nine loads. At last altruism overcame my selfishness, so I walked my neighbor over to the strawberry patch growing in the blueberry row.

"Promise you won't take back your pine straw?" I asked.

He snorted. "I said I was glad to be rid of the stuff. The Township collection saves me a dumping fee at the land fill. What are you driving at, anyhow?"

"We save the **Township** dumping fees and many miles of driving. They're glad to dump close by and we're glad to get the leaves. See this soil? And the size of these strawberry plants? We grew them in pine straw, the pure poison you mentioned." I disconsolately pulled a couple of weeds. "I'm going to carefully save all the pine straw I find in those bags and mulch down these strawberries with it. Do you want your bags back? Empty, of course. You promised."

"What about the acid? And won't you smother the plants?"

"Strawberries and blueberries **like** acid soil," I said. That's why we use pine straw and acid oak leaves. We get a dividend of oak seedlings from the acorns which we can sell at the annual charity flea market. No matter how thickly we spread the mulch, it's almost all gone by the end of the next growing season. Worms eat it up and bury it with their castings, and they do all our cultivating. Rain penetrates the worm holes and the mulch retains moisture. As you can see, things grow very well."

"Humph," grumped my visitor.

"Don't tell me you put leaves on your **asparagus**. You know as well as I do that asparagus doesn't like acid soil."

"That's why you saw me spreading bone meal. I use two cups for every plant and spread our wood ashes in there too. Bone meal and wood ashes raise the soil pH.

"You weren't even putting the bone meal **on** the plants," he protested. "You were wasting it between four foot wide rows."

"Hold on a minute while I get the spading fork."

When I returned I saw my friend had dumped two bags of pine straw on the strawberries and was kicking it around. I spread the pine needles with the fork until an occasional leaf poked through.

"Will that hold down weeds without smothering the plants?" he asked.

"Maybe I should try it on my plants. I've been **buying** straw for my beds." I saw him eyeing his remaining bags of pine needles as the dump truck drove away.

"Ah - ah - ah! Wait 'til next year. You promised. Let me show you how asparagus grows."

We walked over to the fifteen hundred square foot bed of plants growing in mounded rows four feet apart with only their November dead stubs showing above ground. The tops had been cut off and hauled away to reduce the risk of asparagus worm infestation. I dug into the center of one of the aisles and uncovered heavy, white ropes of roots

growing near the surface of the rich black loam and completely filling the aisles.

"I thought asparagus was **deep** rooted," my neighbor exclaimed. "These roots are almost on top of the ground. I dug a bed **for my** plants two feet wide and two feet deep, but I have to admit my asparagus isn't as good as yours. Didn't you dig deep beds for your plants?"

"We couldn't. This section was full of stones, stumps, and weedy shrubs when we started so we couldn't dig it even with a pick axe. We just **had** to plant on top of the ground. Besides, no matter how deep you plant asparagus, they grow right to the top of the soil anyhow."

"I know you organic gardeners tell tall tales, but I never thought you'd actually **lie**," he exploded. "I can see with my own eyes you have **plenty** of good soil here. You not only lie but you're too lazy to dig. On top of the ground my eye!"

I couldn't keep from laughing. "True as I'm standing here, we couldn't dig. We saved the plants we ordered by laying the roots over mounded rows of old horse manure right on top of the ground. We covered the roots with more manure, two feet of spoiled hay, and then tossed on some bone meal. We started picking the second growing season, and the bed is now nine years old. It's been under leaf mulch all but the last two years, and I'm mighty glad to be smothering weeds again instead of hoeing. I **told** you leaves made this soil. Leaves and earthworms."

"Did you **buy** worms? You must have **millions** to eat up all this stuff. How heavy do you put on the leaves?"

I dumped out a couple of leaf bags and barely spread them out. "We'll use about one hundred and seventy-five bags for this fifteen hundred square foot section, so the leaves will be almost two feet deep if they're dry. Less if they're wet. These leaves have made us about six inches of pure black loam as you can see. All our worms just multiplied by themselves. Worms are good at that, you know."

"Don't you get crooked stalks?"

"We check the rows in spring to make sure the leaves aren't too heavily matted. Our worms work away all winter because this ground never freezes under thick leaves. Sometimes I plant potatoes before the leaves go down in the fall. Or rather, I lay them on the ground and cover them with leaves."

"You plant **potatoes** in here, too?"

"Not always. Sometimes we plant tomatoes, or squash."

"You must use a lot of fertilizer," said my friend.

Only ashes and bone meal, and grass clippings for nitrogen in the fall. Grass-clippings contain sixteen percent nitrogen. One year I threw out potato peelings with the kitchen scraps, covering them with hay and grass clippings. The following spring I watched great healthy potato plants grow from those peelings. We threw grass clippings over the forming tubers to keep them from greening in the sun, and harvested smooth, lovely big potatoes with almost no labor on our part. Why do we work so hard?"

"You must have to use special seed," said my neighbor.

"Oh, I know what the books say," I retorted. "The books say always buy certified seed -- never use store potatoes, or save potatoes from your own patch for more than one year. They say save your best and biggest potatoes, never the small ones -- which makes sense. They say never plant scruffy or diseased potatoes. All of this advice is good -- even correct. But we've planted the lowly spud every which way -- old, new, large, small, saved, grocery store bought, certified, and diseased -- they all grow well if the hills are covered during the growing season so light won't strike the tubers and turn them green. It's supposed to be a poisonous substance, and going by

the books, I always peel it off. A shallow soil and poor cover yields small and misshapen tubers, but even these miserable spuds yield well the following year when they are well grown under mulch."

Not bothering to let my friend get another word in edgewise, I continued with my lecture.

"I've planted potatoes as close as twelve inches apart each way. Under mulch you never cultivate, you don't need paths, or space between rows. All you need is more mulch as the potatoes develop and crowd near the surface. Grass clippings are easy to come by during summer, so we throw some on the hills once or twice.

When the plants blossom, we reach under the mulch and feel around for the largest tubers, gently rob the plant and leave it to grow. New potatoes and peas, dressed with butter, cream, salt and pepper --Umm.

We've had a few prize plants yield almost a peck of good potatoes even after robbing. Not being underground, they have no competition with clods or stones, so they are smoother. They don't need to be dug, so you don't have a lot of sliced and pierced tubers at harvest to eat up before they spoil."

"Any problems?" My neighbor was determined to poke a hole in my picture balloon of mulch paradise.

"The biggest problem we have is with mice and shrews. I've known them to eat a whole hill. A good cat or rat terrier is a valuable garden asset."

"What's more," I added, not to be



The author arranges the leaves.

deterred -- "The heavy potato mulch will soften, loosen and enrich the poorest land during even one growing season. Potatoes need air. They will rot in wet heavy soil. We've added as much as two inches of worm created topsoil during one summer. We often follow potatoes with strawberries, planting in the fall of harvest, if possible. A good crop to follow two years of strawberries is corn -- and back to potatoes again, planted right on the pushed over corn stalks, again covered with heavy mulch."

But what about bugs?" asked my friend, determined to find some loop hole. "What about asparagus beetles? You know -- those little black beetles with red spots? And their worms? I have to spray my asparagus all the time."

"We get a few," I admitted. Yep. Asparagus beetle larvae! They eat the ferns down to bare stalks -- stalks die -- weakens plant--no photosynthesis, etc.. I tried spraying with garlic, salt water and detergents, but we finally put up a wren house in here and now we aren't bothered enough to notice. The soil gets better every year and the plants stay quite healthy. We get a lot of food out of this patch. Even mushrooms."

"Wild mushrooms? Aren't you afraid they'll poison you?"

"No," I answered. "I planted some edible mycellium I found growing on wood chips. In fact, it's about time for another load of chips because lately the mushrooms are petering out. These chips have rotted away to nothing. I suppose I won't get your leaves any more, will I?"

"How do you plant tomatoes in two feet of leaves?" he countered.

"If I tell you, promise you won't ask for more than one truck load of leaves? I'm getting less and less each year. It's not fair."

"I could use at least two," he speculated.

"Then figure out how to plant your own tomatoes," I snapped.

"Now, now, don't get upset. I guess I could just push away the leaves and stick in the plant, couldn't I?"

"As long as you're standing around gabbing, you might as well spread some leaves. It's a good thing the family is grown up and gone. By the time I get too old to spread leaves you Johnny-come-latelys will be using them all yourselves."

I glared at him as he grinned at me.

Caring for clematis

Arthur H. Steffens
Fairport, N.Y.

The clematis stem is quite fragile. If your plant has a small stake attached when you purchase it, leave this in place for a few years. After planting, place a protective collar around the plant to prevent any damage to the young stem.

Loosen the soil where you are planting your clematis, to a depth and width of two feet. Mix in peat moss and sand with your soil to improve drainage and add a handful of lime to this mix. Set the plant in the hole so that the crown is at soil level. Stake the plant on three sides, particularly in areas where there is high traffic from children and pets. Tie a string to the stem that leads up to the vine's permanent supports to help guide the vine.

Water freely and often the first year, and soak well, once a week, during dry weather in subsequent years. Feed twice a season with a good garden fertilizer and lime.

Prune the plants the first spring after planting to just 6 to 12 inches from the ground. The tips of growing shoots can be pinched during late spring and early summer to produce extra branching. The more you prune the first year, the better your plant will appear in the following years. Mulch the plant in late Fall with peat moss to prevent damage from frost heave caused by winter freezing and thawing.

Using helpful containers

Lucretia Douglas
W. Baldwin, Maine

If you want to experiment, you can plant a few hills of early (white spine) cucumbers in the waxed cardboard containers some cottage cheese comes in. You might want to try a few zucchini seeds, too. Put about five cucumber seeds or three squash seeds in each container. After danger of frost transplant to the garden. After setting them in the soil, cut slashes in the containers with a sharp knife so the plant roots can escape. But be careful not to dislodge roots as the plants wilt and die easily. Musk melon or watermelon can be started in the same way, but I have better luck planting it in sandy loam (well-enriched with rotted manure and wood ashes) after danger of heavy frost.

Cover young plants with hot tents or tops of gallon plastic milk jugs. Remove the cap on the jug for ventilation and then remove the caps entirely as soon as weather is safe.

Melons need warm soil to germinate and grow well, so it's a good practice to spread black plastic between your melon hills. Work a good shovel full of well-rotted manure under each hill. Wood ashes are beneficial here too. Be sure to plant at least six seeds per hill as you will be lucky to end up with three plants even then.

High altitude intensive farming

Bill Higgins
Laramie, Wyoming

Here in Wyoming our rainfall is only 10-12 inches per year. Accompanied with severe drying winds, unexpected summer snows and frosts and only 100 days of growing season, there is more to gardening than just planting and sitting back.

Deep soil preparation, combined with intensive companion planting procedures produces an abundance of food in a short growing area or in a high altitude.

The use of fast-maturing, hardy varieties, transplants and observing local planting dates are necessary steps. The garden beds have a width of two or four feet and any desirable length. I prepare the soil to a depth of one to two feet, with all needed compost, manure, grass clippings, leaves, wood ashes and other organic material added to the soil. Between each raised bed leave a path of 12-15 inches to permit necessary garden activities.

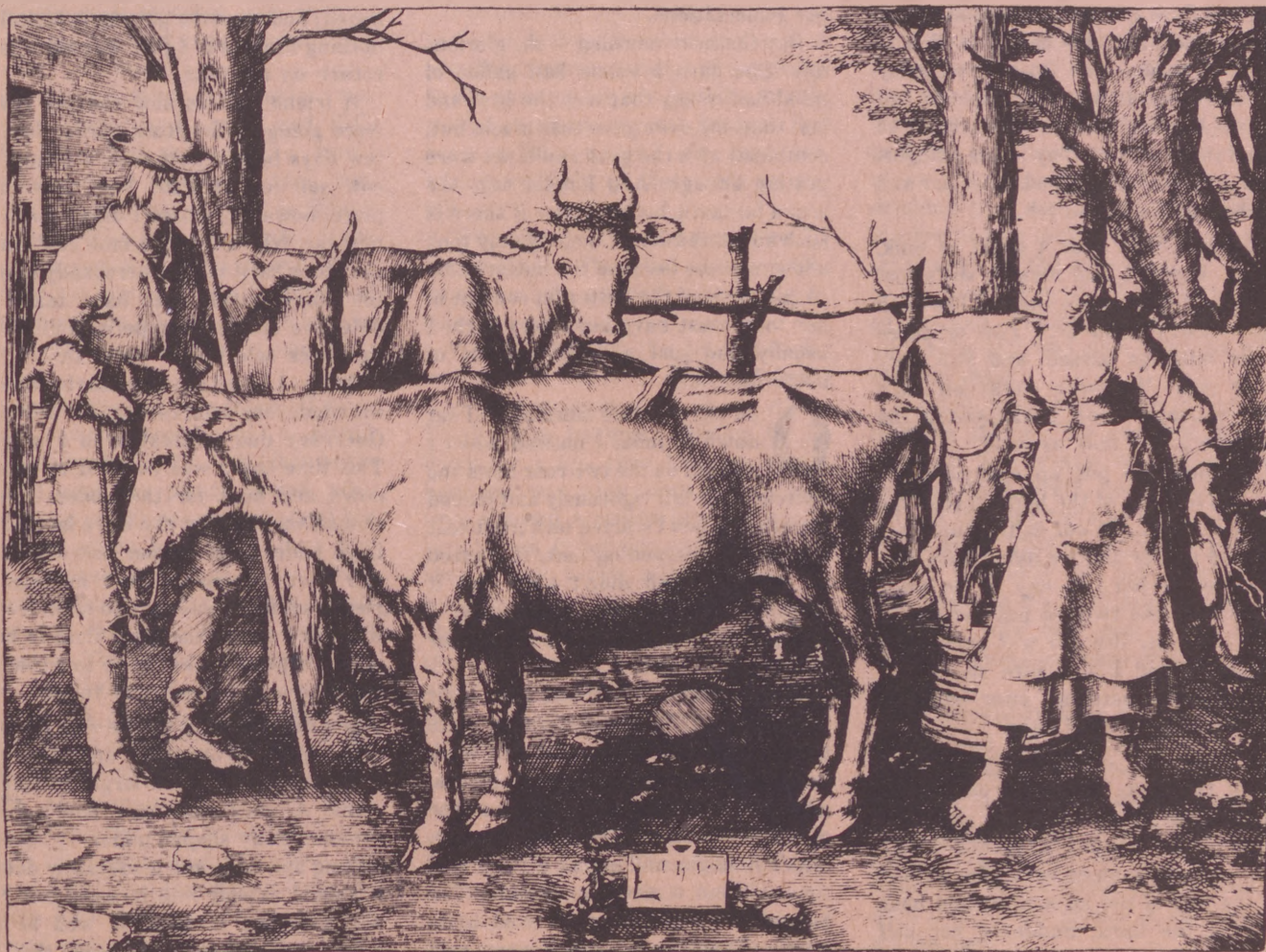
The raised bed of at least three or four inches provides for increased warmth and drainage. The deep soil preparation and heavy additions of organic matter allows vegetable roots to penetrate deeper and obtain essential nutrients. The close spacing of plants increases humidity conditions under the leaves and minimizes soil erosion due to drying winds. You might say a mini-climate is formed in the first few inches above the soil.

We Want Your Gardening Tips!

The above "Green Thumb Gardening Tips" have been submitted by *Farmstead Magazine* readers. If you would like to share your tried and true methods for growing fine vegetables, fruits and flowers please send them to us. In return, you will receive \$5.00 in payment. We'll be looking for your tips.



On Ignorance and Bliss



by Janice Bailey

When we decided to buy our first cow I was blissfully ignorant of what to look for although I'd been looking around and listening to the Swap Shop on our local radio station for quite some time. We had one goat, but she just didn't produce enough milk for our family, and we were still buying butter. I wanted a cow which would supply all our needs and that of my parents, also.

We decided to look for a heifer with her first calf. At last I heard of one that seemed to fit the bill -- a two-year old Guernsey-Roan with a two-month old calf. She was in the pasture with several other cows and her calf was at

her side. Although she was just a heifer and had never been milked, (her calf had been allowed to run with her) she let us walk right up to her. The farmer even milked her a bit. I was quite impressed with her gentleness. The calf was a nice plump heifer, and I reasoned that she must give a good amount of milk for the calf to look so well. However, her udder was quite small. In fact, I had to stoop down in order to see it.

Later, I learned I'd made two mistakes right there. NEVER buy a cow, especially a heifer, which has been allowed to keep her calf by her side. And NEVER buy a cow when you need a microscope to find the udder. If it ain't there, it ain't gonna produce!

However, in my blissful ignorance I thought she was a fine cow and promptly bought her. The next day the farmer delivered her and the calf. I had

to put them together in one stall for a couple of days, but soon my husband had the other stall ready and I separated them. What melodious mooings from them both as they gazed wistfully through the cracks at each other! That lasted a couple of days, and then they became resigned to their fate.

The following morning after separating them, I went happily to the barn with my brand new 10-quart milk bucket. I poured in the dairy feed and seated myself on my brand new little milk stool which my husband had made for me. Soon happiness turned to dismay. Sure, she was very easy to milk, but the teats were so tiny I could only encircle them with one finger and a thumb! My little goat's teats were gigantic in comparison. In a few minutes my hands were cramping, but I kept doggedly at it.

Janice Bailey lives in Marion, Indiana. Lucas van Leyden -- "The Milkmaid" a familiar farmstead scene in 1510!

Suddenly, to my complete surprise, I was lying against the opposite wall with my glasses 'down on my chin, clutching the milk pail which miraculously hadn't spilled. I blinked for a moment then jumped up. My gentle little cow had done **this** to me? Actually, she hadn't viciously attacked me. It was just that she had finished eating and turned around to see if there was any hay in the manger. I poured more dairy feed in for her and rushed to finish the job.

I got a little over a quart of milk. Don't worry, I told myself, she's just holding it up because the calf has been taken away from her. Two or three more milkings passed, and still very little milk. We were worse off than before because now I was giving the calf the goat's milk as well!

My husband put up electric fence around one end of the barn so that she could at least get out in the sunshine. (It was winter and we didn't have any pasture for her.) A day or so after separating the two we put her out in that little lot. The day was balmy and sunshiny, and I was sure she would welcome the outdoors after being in the barn for several days.

Ungrateful wretch! She walked along the wire, (coming from a field surrounded by electric fence she knew what it was) cautiously touched it with her nose and jumped back. She walked to the end of the lot and started back toward the barn. Suddenly her calf bawled. Wild-eyed, she raced past us and, heedless of the voltage, tore through the electric fence and hurried to the aid of her calf.

So ended that deal. (My husband had never quite trusted electric fences, anyway.) Down came the electric fence and up went a picket fence which kept even the goat in. We got the pickets from a nearby pallet mill. What wasn't usable for fencing was chopped up for stove wood. The fence didn't look bad at all and cost less than ten dollars.

After a couple of milkings when I had to pour in extra feed so that she would stand still, I had my husband put a chain on the wall with a snap on the end to fasten to her halter. At first she objected strenuously, but it at least kept her from turning around to the manger when she finished eating.

A few days after we got her, my mother-in-law took the calf. I was glad to see it go, for I thought we would now

have more milk. That afternoon the cow bawled her head off for several hours, but her mother love soon passed away. I expected her to hold up her milk that evening and she lived up to my expectations.

But the next morning -- oh, glorious day! She gave a whole half gallon of milk! Sad to say that was the first and last time she ever gave that much, but, combined with the goat's milk, we were getting enough. And I must say, she was a fantastic butter cow -- if there is such an expression. Churning only took a few minutes because the butter came so quickly, and the butter fat content of her milk must have been very high; I usually had just a small amount of buttermilk left.

One bitterly cold morning as I sat down to milk, I noticed when I started on the two rear teats she switched her tail vigorously and moved uneasily. When I started on a front teat she gave a resounding kick. It glanced off my knee and didn't hurt, but it certainly startled me. Cautiously, I finished milking with an eye out for her tail and that wicked leg.

When I told my husband that night he asked me if I'd warmed up her teats before milking. Oh, should I? (Well, there was mistake number -- shucks, who was keeping track of the number of mistakes, anyway?) So, now I knew, NEVER begin milking at a very cold time without a warm-up session. The hot milk coursing through cold teats hurts. (Ever come in with **very** cold hands and immediately try to warm them by a hot fire? Hurts, doesn't it?) After that when my cow's teats felt cold, I held them in my hand long enough to warm them.

Immediately following the first of the year we had some very cold weather and the cow went down on her milk. I was getting about a quart in the morning and a pint at night. She was five months away from freshening and certainly shouldn't be going dry that quickly.

I was hearing discouraging comments from every side, all to the effect that letting the calf run with her had ruined her. Some said she would do all right next lactation, and others said she was ruined for all time. All agreed, however, that letting a calf stay with a cow prevents her from making an udder. As soon as she makes a little milk the calf is there to take it out.

I finally decided to sell or trade our

cow. By now, I didn't care if I had to take an older cow, just as long as she was giving plenty of milk. Our cow was eating a prodigious amount of feed, (or so it seemed after being used to feeding a goat) and we were getting practically nothing in return. I just wanted a fair return on my feed.

A friend told us how cheaply cows were going at the stock yards. Just a few days before he'd seen a beautiful cow sell for \$129.00! That was one place, however, where I didn't make a mistake. NEVER buy a milk cow from the stock barn sales. I personally know too many people who have taken a defective or mean-tempered animal to the stock sale to get rid of it.

At last I heard of a cow nearby which sounded very interesting -- a Jersey-Guernsey due to freshen in a week. This time there was no need to stoop down and hunt for the udder. Even though she was dry, she had a beautiful huge udder. The farmer told me that she gave 10 quarts each milking. I tried to see if she was easy to milk. Even when dry a cow has some fluid in her udder, especially that close to freshening. She was indeed easy to milk.

The milk veins on the udder were quite prominent, and also in front of it were large, tortuous veins. A good milk cow has a big, symmetrically shaped udder. It should be long and wide and moderately deep. It should extend well forward and be well attached in back as well as in front. A misshaped udder, one that is not evenly balanced or symmetrical, or that is deformed in some other way, will become worse with age. I remember reading somewhere that a well shaped udder should be rather flat on the bottom and the teats placed four square. Before milking, it should appear full and taut; after milking it should appear rather collapsed.

Even though the cow was supposed to be seven years old it didn't take me long to decide to trade. And trade we did. As the buyer drove off with my little heifer, I couldn't help feeling a pang of sentiment. After all, she was my first cow and I was her first "milk maid." I'd certainly learned some lessons from her. I wonder what she'd learned from me!

Then began our vigil of waiting for our calf. One week passed -- two weeks -- three weeks. Then I found out that she'd run in the pasture where other cows and a bull were kept. My husband

decided that she probably wasn't bred when they thought, but three weeks later at her next heat period. I settled back to wait a while longer then. I kept very close watch, though, checking her carefully each morning and evening when I fed her, and even at noon -- just in case, you know.

In the meantime her udder was getting bigger and bigger and BIGGER! It looked as though it would surely burst. I checked it each day, also. I remembered reading in "Starting Right With Milk Goats" that if the udder becomes very hard and shiny before freshening a small amount of milk should be milked out. As long as the udder is flexible there is no need to worry.

Because she had been taken off dairy ration when turned dry a month before, I fed her just a little bit to begin with. I gave her plenty of hay, also. Perhaps it wasn't necessary to feed her the dairy ration, but I wasn't sure how well she had been fed. I was afraid there might be nutrients she would need for calving and the onset of lactation. Therefore, I increased her feed gradually so as not to cause diarrhea. A cow must have **plenty** of water if you expect her to keep up her milk production.

One morning I noticed what appeared to be a thin membrane filled with fluid and about the size of a golf ball protruding from the vagina. I watched her carefully and she seemed quite restless. Several hours passed and nothing happened. I had read somewhere that something could very well be wrong if a cow hasn't delivered after four hours of labor. Of course, I wasn't positive she was in labor, but I figured we had quite a bit of money tied up in that cow and it would be foolish to lose her by being too timid to call the vet. Many cows are lost because the farmer waits too long to call the vet. By the time a cow has been in labor for many hours, she is too exhausted to do anything when the vet does come to assist her.

I talked to our vet, and he said that a cow her age should deliver within two hours after starting labor. He said he would be out as soon as he looked at a case of milk fever. A couple of hours later he came by, and after examining her, he said she was just beginning to dilate. It would probably be another 48 to 72 hours before she calved! What I had seen was the mucous plug, and that

preceded birth by some 48 to 72 hours. Was I ever relieved! She surely had given me a scare -- I had visions of vaginal prolapse or uterus prolapse, or some such thing equally horrendous.

The next day my son and I went out to the barn about 1 o'clock to check on her. We tossed a handful of hay down in the barn lot for her, but she merely sniffed it. Quite unusual for her. She kept walking around the barn lot, gazing wistfully at the woods on the hill.

"She's going to have her calf now," I told Robby. "They like to go somewhere to hide when they're ready to calve."

We got her into the barn and she walked back and forth, back and forth, mooing nervously once in a while. Finally she stopped walking to lie down for a bit, then back up again. Soon she was lying down again. Each time she had a contraction she would turn to look at her side and moo in that special way a cow talks to her calf. Soon the water broke and it was only about fifteen minutes after that when the calf was born. Heavens! I don't know who was most excited in that barn -- Mama cow or Robby or myself.

As the vet had said, she delivered almost exactly two hours after her labor actually began. The calf was a big one and looked exactly like his Hereford sire. (We called him Porter -- short for Porterhouse steak.)

Before leaving the barn, we stayed long enough to be sure the afterbirth passed all right and to see the calf wobble uncertainly around. I guided him to the lunch counter and was pleased to hear him noisily begin to fill his little stomach. The afterbirth should pass within a few minutes to a few hours. If it hasn't passed in twenty-four hours call the vet immediately.

I left the little fellow with her the first three or four days to make sure he got the colostrum. Following my father's advice, I milked her out some, about three times a day the first couple of days, because she was producing more than the calf could take. To guard against trouble, though, a cow should not be completely milked out the first few days -- only about half milked out each time. At first the colostrum was quite bloody and I was a little worried. But my father said this was because tiny blood vessels had burst with so much milk crowding in. After the first two times I milked her, it disappeared.

The calf was born Tuesday, and Friday evening I put him into his own stall. Talk about noise! They both bawled all night long. I'd gotten a special calf bucket with a nipple to feed him from, and it was surprising how quickly he caught on. Some people just use a plain bucket and teach a calf to drink from that. However, a calf's nature is to throw back its head and get its milk from above. Putting its head down and drinking goes contrary to everything Mother Nature taught it. Sometimes it takes days for the little thing to catch on and they get so very hungry and cry so piteously. The calf bucket lets them suck naturally, and with care, one will last for years.

I could have saved the Saturday morning milking for our use, but I didn't. It was pretty and white, and foaming quite nicely. Some people will not use the milk for nine days -- which is nonsense. Then again, many people say it shouldn't be used for nine milkings. But my folks always used it when it was nice and white and foaming -- however many milkings that took.

We decided to have her bred again by artificial insemination. The cost is quite low when balanced against the cost of hiring someone to truck her to a farm where a bull is kept and then paying the service fee for the bull. Besides that, we could choose semen from a purebred animal of any breed we wanted.

A cow will come in heat after calving anywhere from a few days to several weeks. The man who did the A.I. told us to call him at her third heat period after calving -- and then on the second day of her heat cycle. We kept close watch (the usual cycle is 21 days -- more or less -- apart) and called him when one day she stood outside the barn and bawled continuously all day long. Goodness! Is there anything noisier than a lovelorn cow?!

In using A.I. it is best to inseminate the cow toward the end of her estrus -- before that, it's nearly always a lost cause. So, we had her bred with purebred Jersey semen, and for nine long months waited hopefully for a beautiful little heifer. Alas. She presented us with another little bull. Oh, well. Maybe next time we'll get our little heifer to replace old Mama who will be getting along in years by the time her daughter freshens.

If you're a landowner, you should know the legal boundaries of your property as determined by a professional surveyor. On the other hand, a walk across your acreage can help you get to know your land in a more personal way.

Land—Knowing What You Own

by Paul Chartrand

When you walk across your land, do you ever wonder who walked along the very same path 100 years ago? Feel sentimental. Look all about you. The actual story of your land and its previous owners is written all over it.

Think of it! George Farmstead, circa 1878, may be just a dusty old name on the records at the Registry of Deeds now, but he was once a real living, breathing landowner like you, who in fact, chopped your wood, raised crops in your fields, drank from your stream, and maybe had a cow grazing in your pasture. He lived on **your** land! Old roads and trails often follow the contour of the land in a way that was found to be most useful to George and his family. Try to imagine what he used them for in his time, and what you will do with them now.

The water sources on your land tell another story. Did George gather water from a stream, or haul it from a dug well? Where water collects and how it meanders over and under the ground on its way to the ocean, plays an important role in determining the present shape and contour of the land, as well as what life it will support. How did water determine the use of this land for George?

The trees, all of them, have grown where they are as the result of soil type and past land use. Note what George has done to the wood growth in the past. What has the land produced in the past through its tree growth?

What about the land's boundaries? You need to know the correct ones, and

perhaps time has erased the casual marks that told George where his land ended and the neighboring farmer's began.

If your land was recently surveyed and clearly marked off, then much of your work has already been done. But perhaps your land, like so many pieces in New England, was sold to you with "more or less" acreage and indefinite boundaries. If this is the case, it will be worthwhile to learn the history of your land, and from this information, plot the approximate boundaries on the ground. This process can save a lot of confusion with neighbors, not to mention the sense of familiarity and enjoyment it will give you.

We recently moved onto a parcel of land in Knox County, Maine, described on the deed as '12 acres, more or less, bounded on each side by the landowner named there or his heirs, being the same property sold by John Doe to Henry Smith in 1966' (the last time the land was sold). This is typical of many deeds to rural land, where tradition and lack of development have left boundaries somewhat loose. Actually, most land has some physical indication of boundaries on it, but these are often too worn to be used as sole proof of ownership. After building simple warm weather housing and moving many materials to the land, we were told by our neighbor that we were settled in the wrong place and should be further into the woods along an old logging road. After investigation, we found him to be correct, despite what the previous owner had told us when the land was sold. Our buildings were temporary enough to be moved and our neighbor was understanding, so we

learned by the experience. Possibly you can make use of our learning to add to your knowledge of where you now live.

New England has been settled long enough so that many deeds can be traced back to 1800 or earlier. Much land was acquired by wealthy landowners after the Revolution, in return for favors granted the new country during its birth. For example, General Henry Knox divided up and "granted" much of his land in the later Knox County area to settlers already living there. Our 12 acres came from one of these original grants, and the Knox to Fogarty deed for this grant is the first record for this land on file at the Registry of Deeds. Much land in New England followed this pattern of large areas being divided, until the parcels assumed their present shape, with many changes of ownership and configuration over the years. Land was sold or used for collateral in debts and loans very often in the past, as it is now, and the deeds for one piece of land can seem endless in number. Because of the fact that many townships have altered their names and/or boundaries over the years, you may live on land that was part of another town at some time. To trace each and every transaction your particular piece of land has been through, you must go to the nearest Registry of Deeds, probably in the county seat.

The Registry of Deeds has several files that contain copies of all deeds in existence for all the land in the county. With these, you can follow your land back in time as it was traded, sold, inherited or otherwise transferred time after time. Listed alphabetically,

Paul Chartrand works and lives in Hallowell, Maine.



the "Grantor" file lists all persons who ever sold or gave land to another. The "Grantee" file lists all recipients of land in the county. Starting with the current owner of your land as the latest grantee, you can find **who** sold land to him, **when**, and in **what** volume of deeds lies a copy of that transaction. Often a person is the grantee of many deeds. In this case, record all deeds relevant to the town you are interested in, and look up each one to determine if it relates to the area of land you wish to survey. When you find the right deed, look up whoever was the grantor in that case in the grantee file, to see from whom this person obtained the land. It will be helpful to have a copy of the latest deed to compare with filed copies of interest to you.

One confusing element in these files is that many small towns were owned in large part by a few families and there will be several people of the same name listed. Also, through marriage and death, names and land changed hands, often with confusing results. In many cases of inheritance, wives may be listed as grantors of land originally bought by their husbands. Watch that all these similar names do not sidetrack you, stick to the person or persons and the particular land you are following, and keep plugging. Work backward through time from the current owner. You may lose the progression at some point; if so, you can work from the original owners, (if you know of them) forward in time using the Grantor file. Locate a past owner in the file, record all names to whom he sold land, and check each one to see who bought the land in question next. The land must continue changing hands up to the

present. It may have been seized or inherited, but these transactions are also recorded. Wills filed in the Registry of Probate can be helpful in getting more details on land left to surviving relatives.

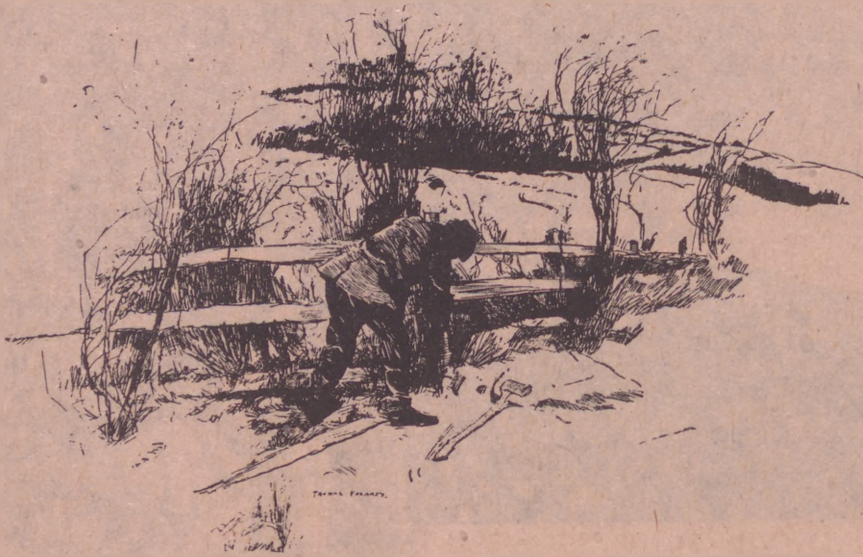
At some point in the progression, the description of land will change if it was ever divided or cut off a larger section. In other words, if John Doe bought 100 acres and sold Henry Smith 10 acres, John will be listed as the Grantor of the 10 acres, but there will be no listing for him as grantee of 10 acres. Instead you will have to look for a deed in which he is the grantee of land that could possibly include the ten-acre parcel (in this case, the imaginary 100 acres). This can occur at any point and you must be thorough in checking all deeds that could possibly include your land. Follow this land as far back as possible, recording all descriptions of it, or pieces of land of which it was once a part.

The object of this searching is to find any and all information about the location and description of the land. Facts pertaining to earlier divisions of land, markers used, or acreage, may be found only on these older deeds and left out of later descriptions. This is what we seek: accurate measurements from known or locatable points of reference, along known compass headings. The reference points, such as trees or rocks, may be impossible to locate on the land, but the measurements and directions will be a great help. All this should be on the present deed. If so, the search will at least assure you of a legal succession of title up to the present. When confronted with a vague deed such as



we had, however, the search is the only way of finding some basis for marking off boundaries. In our case, a deed from 1820 alerted us to the fact that our land had been left out of a larger piece for a widow's dower, and the corresponding will contained measurements we sought. The deed office also has maps that may be of some help, although they don't illustrate all the land in the county.

Town tax maps also will give you a general idea of your land's shape and that of the adjoining landowners. A



corner of the land may well be a reference point, and although the corner marker is lost, you can find that spot by intersecting the borders of land adjoining your own. Tracing back deeds to neighbors' lands can also be helpful, because there are borders in common, and all land in an area may have come from one larger piece. When it was divided, at least one of the deeds to smaller parcels would have had details on the division and later boundaries. Using all possible sources of information, you should get some data concerning acreage, corner points, measurements, and compass readings along boundaries. It is true that there are gaps in much of the old paperwork, but by the time you run out of sources, you will have learned something about the recorded history of your land.

If you find no record of definite boundaries, then the best course is to look along neighbors' boundaries to find indications of surveyed lines. Talk to local families who may know about your land's past owners or its true position. Some may know much of local land bounding methods, old boundary disputes, and other useful information. Their recollections will lend a balance to the dry, boring parade of deeds you have studied.

Let's assume you do have some specific details describing your land. Finding visible proof of these on the land will give you verification of old descriptions. You will have to pick a place to start from along the assumed or known boundary. Probably you know at least one boundary, possibly where it crosses a road, stream, or other easily identifiable location. An-

other possibility is that an extension of one boundary line through neighboring land can be used to start one, if that is easier to locate. In our area, boundaries of the original land grants all run along parallel lines, and our land is bordered to the north by one of these lines. We found a corner of the land by extending one of these original lines far enough to intersect the western border of land to the east, which ran square to our northern boundary. Finding a stone wall running in the proper direction where the line should have intersected a road, we simply carried that line through the woods using a rod and compass.

A surveyor's compass set on a tripod with sights is ideal for this. Using a surveyor's rod or something similar to line up in the sights, the compass is set to the proper reading. All brush and trees must be cleared from the line extended from the compass to the rod, to provide a clear swath along the line. Extend this cutting as far as possible by moving the rod further along, and continually aligning it with the compass. When the rod can no longer be kept in sight, bring the compass up to where the rod is, and start the process again. Cut ahead of the rod as far as possible by extending the line in your mind through the growth. It is slow progress, but you are left with a clear path along your boundary. As you go, watch carefully for signs that you are indeed following an old boundary.

Magnetic declination changes over time, and metal objects in the area can offset compass angles slightly, but if there are any indications of previous surveys, you should be able to find them using this method. Although not perfectly accurate, the line you will cut can serve to familiarize you with the bounds of your land.

Almost anything is suspect when searching for an old line, as early surveyors used whatever was at hand to mark their progress. Piles of stones,



stakes, trees cut off at the same height in a line, or large trees left growing along a line, are all popular markers. Old barbed wire may be sighted going through trees or along the ground. Remember that these signs may not be exactly on the line, but if there are indications of previous work in a parallel direction, you are probably on the right track. Sometimes existing trees were used if they were close to the line as long as they followed a similar course. Trees were often slashed or cut on opposite sides of the trunk in alignment with a direction. Look for indications of the end of a cut-over area to one side, for at times only verbal agreements were used in separating woodlots, and woodsmen cut up to where they agreed a boundary existed. Trees also were planted along boundaries in some instances. Any of these signs could be quite old and hardly identifiable, for the woods have a way of growing over anything man-made. Someone who has done surveying locally can be of tremendous help in locating old markers.

As you clear a path along the compass line, be sure to mark the line

as you go. If a large tree is growing right on the line, leave it and gash it on opposite sides in the proper direction. Also use stakes, cut off at about four feet and cleaned of bark on two sides. Paint can be used, as well as anything that will indicate where the line goes.

Cut this line as far as is necessary. In our case, we got to where we reached another intersecting line we had cut. The intersecting line was cut square to the original grant line, and we followed traces of barbed wire we found in an area where we figured the eastern end of the land would be. Large trees marked where the wire was strung, and it followed perpendicular to our original line, so we extended this line to meet the forthcoming northern boundary. Every case is different, but the line should be cut as far as you figure your property extends, and from there get an intersection with another of your boundaries.

The next step is to measure the boundaries of your property. Your deed should give you some indication of where to start. Use a 100-foot tape or surveyor's chain, and pull it out over and over again until you have each side measured. Mark important distances

and corners with stone piles, metal stakes, or other permanent markers. Remember, many measurements on deeds are given in rods or chains. A rod is 16½ feet and a chain is 66 feet.

All this work along your borders will do a lot to familiarize you with the nature and extent of your land. Much of the work we went through may not be necessary if your deed has correct and detailed information on the direction of boundaries and distances, which can be verified on the land itself. You may investigate this yourself, however, using the deed office, local information, a personal survey of the borders, and at least a pocket compass and tape.

As you search in the offices and on the land, begin to feel your land as a personality, a very old one. Read the names of previous owners, how long they kept the piece, why and how they gave it up. How has the value changed? Is it a family piece or was it exchanged many times? Did people inhabit the land before? Much land now being settled has changed over and over from woodlot to field back to forest. Try to see what changes your land has been through by reading the deeds -- and reading the land itself.

THE EMPTY BARN

by Jack C. Barnes

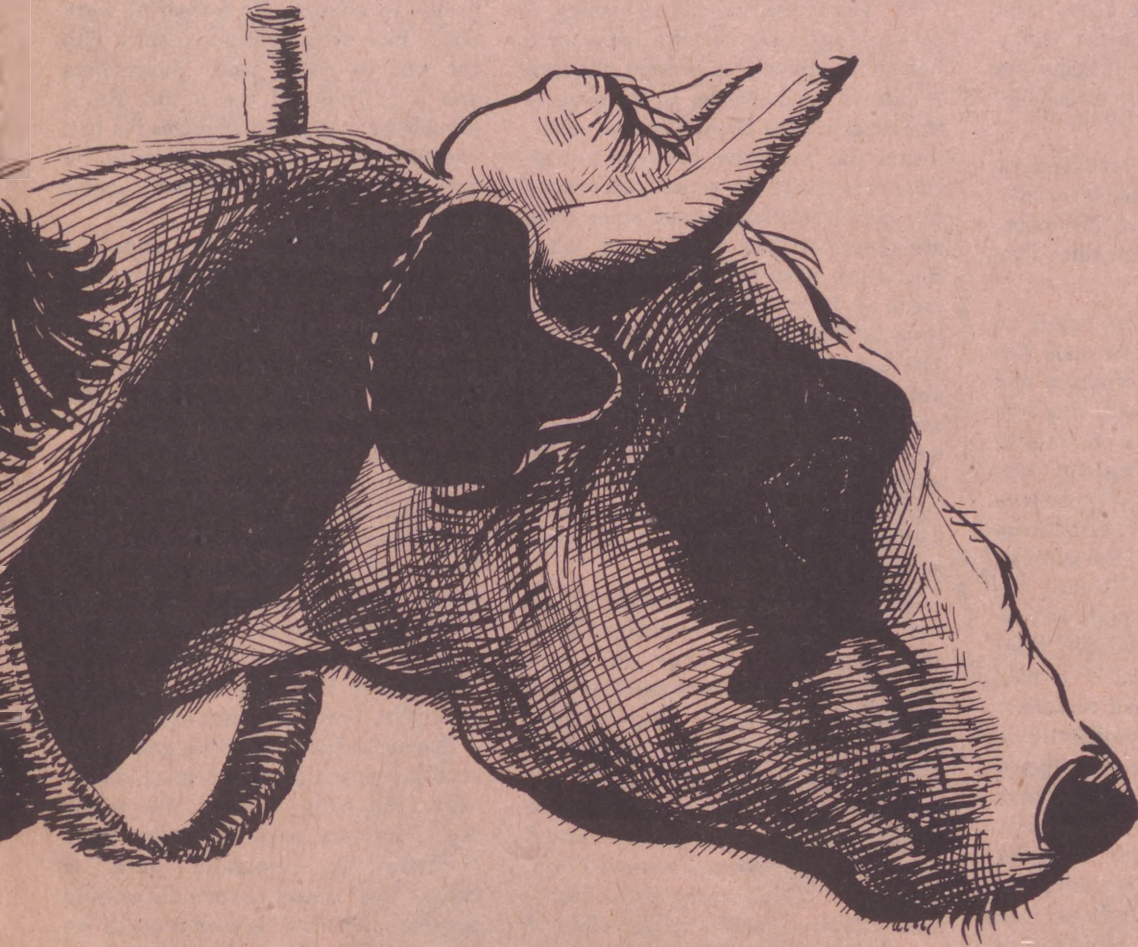
As I stand here in this empty barn,
A decade of yesterdays flash before my eyes —
Where mountains of sweet-scented hay
Fill each loft to the mighty rafters;
And the laughter of children,
Frolicking from mow to mow,
Echoes through the vast emptiness.
The long row of stanchions
And the pens in the fold
Are haunted by the ghosts
Of fat brown cattle with white faces,
And wooly ewes with spring lambs.
I hear the clarion call
Of the proud old Chantecleer,
Summoning his speckled harem
To the perch above the horse stall.
I hear the squeal of piglets
And the grunt of the contented sow.
But when the yesterdays vanish,
I hear only the north wind
Rattling the huge door at the end of the barn
Where I used to sit
Looking at apple-blossoms and distant hills
And a thousand feet or more of rail fences
Ascending the gentle grassy slope
To where the pine grove silhouettes
Against a clear blue sky.
Oh, but now when I slide open the door,
I see only rails and posts,
Like dead soldiers on a battlefield
Lying chaotically in a sea of grass,
And the forest is creeping into the orchard
Silently and stealthily like Indian warriors.

I remember when I moved here;
It was many years ago.
I beat back the forest with an axe.
I breathed life into tired soil.
All that had once been became renescent
With time, patience, and toil.

I reared two sons who learned to love the land.
They helped to plant a continent of corn,
Repair fences and harvest the hay.
We were on intimate terms
With every tree in the forest
And every inch of the land.
Together we shared bountiful harvests;
We enjoyed a life of independence
Few in today's world
Can hope to know.
Yet, nothing is meant to endure forever,
And almost all that we once knew
Has vanished from this idyllic scene.
Only the silent old barn
And the house with shutters over the windows
Stand mutely here on this neglected land,
And I am a tired old man with tears
Who recalls all the yesterdays,
And as the dark and foreboding clouds
Sweep down off the distant hills
To engulf the valley below,
I see little in all the tomorrows
That will bring back the joy
That my sons and I once shared.



A Pair of Oxen —



The Beauty of the Beasts

by David Paling

At present there are more than 800 pairs of oxen kept in the New England states alone, but the handling of them is an uncommon practice. Forty-three-year-old Roland Boardman from Lakeville, Massachusetts is helping to maintain this dying art. Star and Bright, his pair of 3-year-old oxen, perform a variety of chores for him throughout the year on his 10-acre lot in the southeastern portion of Massachusetts.

"...they're calmer than a horse and less stubborn than a mule.

Roland Boardman is a lot like many New Englanders. He has a family, a regular job and enjoys working around his home during his free time. What sets him apart from most, however, is an unusual hobby that is not only enjoyable but helps him to save a substantial amount of money. He owns a pair of oxen.

"I've always been interested in animals," says Boardman as he proudly turns and gestures toward his oxen. "I've loved all kinds of them since I've been a boy."

In the past, oxen were used to perform valuable services for man. The ancient Greeks, Hindus, Romans and Egyptians transported goods, dug irrigation ditches and plowed their farm lands by yoking and training the powerful oxen. They came to believe that there was a mystical relationship between these animals and the successful growth of their crops. In fact, the oxen were held in such high esteem that ancient law provided for their protection by stating that if a man should steal an ox, he shall restore it with five. Oxen were symbolized in drawings and statues and worshipped as gods. The ox was first domesticated when he emerged from the ark, working alongside man for centuries and an important factor in the advancements of some early civilizations. The Greek poet Hesiod, when referring to their affinity for work and handling put it this way:

"For draught and yoking together, nineteen-year-old oxen are best, because, being past the mischievous and frolicsome age, they are not likely to break the pole and leave the plowing in the middle." Boardman is taking advantage of their historically proven capacity for work.

Today in the United States oxen are still used to perform practical functions for man. Their use, however, is largely restricted to the southern Appalachian and New England regions. Roland Boardman is one of the relatively few Massachusetts residents who have raised, trained and used a team of oxen in place of modern day machines.

The Joy of Ox Ownership

The acquisition of Star and Bright seemed like the natural thing for Boardman to do. The owning of several dogs, a pair of cows and a horse helped to nurture his present interest. A visit to the Anheuser Busch plant in Merrimack, New Hampshire, however, meant the difference between a long-time dream and the actual purchase of his pair. Draft horses and some oxen are kept at the plant, and when Boardman saw them, his mind was made up. In May of 1975, he bought his first ox from a local dairy farmer for \$10. Less than three months later he obtained the second of the pair of black and white Holsteins. "They were a week old and weighed 100 pounds when I got them," says Boardman. "I've had as much enjoyment raising and training them as I have from owning any other animal."

Star and Bright stand outside a small red barn beside their master. They snort, and toss their huge heads back and forth to keep bothersome flies from settling on their backs. Dust is raised from their hooves as they scrape the ground, impatiently waiting for the next command. I wonder what terrible damage they might do if they turned upon us or the yoke was removed from their necks. "Don't worry," says Boardman. "They're perfectly harmless if you know what you're doing."

"Haw!" Boardman shouts and the oxen turn to the left, gently prodded by a whip with a lash that Boardman holds in one hand. "Come up," he commands, and his pair move smoothly forward in the direction of the barn that stands roughly 40 yards behind the family home.

The oxen move about as fast as a man can walk. Roland Boardman moves beside them and calmly guides them in the proper direction. As they approach the heavy wooden door to the barn he confidently orders them to stop. Boardman releases the yoke from their necks and directs them into separate stalls inside the barn. Star and Bright immediately dip their heads toward buckets of water. It is hot and

they have pulled a plow for two hours now -- hard work for both man and beast.

Roland Boardman stands relaxed beside his animals. He is wearing work boots, blue dungarees and a shirt with the sleeves rolled back. Suspenders and a hat top off the outfit. He is perspiring freely and removes his hat, one elbow is propped against a stall. He uses this hat to wipe the sweat from his brow.

While it is simple to define an ox as a castrated bull, the difference between an ox and a steer is sometimes misunderstood. A steer is used for meat while an ox is used basically for work. It is not uncommon, however, for a lame ox to be killed and eaten should the animal be unable to perform any useful functions. The life expectancy of a normal ox is roughly 15-20 years.

"They are much easier to train than a horse, and they can actually do a lot more," says Boardman. "From my experience I'd say they're calmer than a horse and less stubborn than a mule. They might kick now and then, but generally, they are quite docile."

Boardman has trained his animals to readily respond to voice commands. To order the oxen forward the words "come up" are used. To order them backward the command "back" is given. "Gee" is used to turn the oxen to the right and "haw" is used to go to the left. When he calls out the word "whoa" his team comes to a halt.

A goad stick, or a whip with a lash, is used to guide the oxen in the proper direction when the voice commands are given. Boardman exercises Star and Bright daily, walking beside them voicing his commands and prodding them with the whip whenever necessary. He practices with them for about an hour each day.

Star and Bright may not be worth their actual weight in gold, but Boardman has found their services to be profitable as well as interesting and fun. "I guess I'm a lot like a teenager with his first car," Boardman admits. "The novelty of taking care of these animals and have them work for me hasn't worn off yet."

They might kick now and then, but generally, they are quite docile."

During the winter months, the six member Boardman family home is heated solely by the burning of hardwood. Star and Bright annually haul several cords of wood from his lot on a cart that Boardman built himself. "When you go out in below zero weather, a tractor might start, but then again, it might not," says Boardman, with the hint of a smile on his face. "I don't have that problem with these animals." Indeed, Star and

ground is rocky or covered with ice."

Oxen are usually harnessed by a yoke that is fitted to their necks, but there are basically two different types of yokes that can be used. Neck yokes, the most popular, are made from wood that is cut, fitted and bent during the winter so that their shape will be maintained. This yoke is fastened around the necks of the oxen and their horns prevent it

known as a sliding yoke, can be manually adjusted to equalize the pull. "Bright is a little lazy at times and would prefer that Star do most of the work," Boardman says. "The sliding yoke helps to take care of that problem." Boardman points out, however, that aside from the one he owns he has seen only one other. This yoke was found in the Heritage Plantation in Sandwich, Massachusetts.

In addition to the neck yoke that is



Bright have been in places where a tractor or a horse just won't go. During the cold months, four or five feet of snow doesn't stop them from towing the wood their master has cut. And in the spring, thick mud makes parts of Boardman's land inaccessible to modern day machines. Star and Bright simply drive right through it. "An ox has a split hoof which gives it a greater pulling power," Boardman explains. "And they can be shod when the

from slipping off. The less commonly used head yoke has a similar purpose but is fastened around the horns of the team. Star and Bright wear a neck yoke that was purchased at a flea market for \$15. "If you have the talent," says Boardman, "you can make the yoke yourself."

If one of the pair tends to work harder than the other, a special, compensatory type yoke can be used to properly balance the team. This yoke,

presently worn by Star and Bright, a smaller, training type yoke was used when they were young. Also, a single yoke may be used to fit the neck of a single ox.

Boardman has acquired or built a variety of machines he uses with his oxen to perform other tasks around his home. These machines are hooked to his team and used when needed. All of these devices are first attached to a forecart which is itself attached to the

yoke.

The forecart that Roland Boardman uses with his team he designed and built himself. A full time employee at Maxim Industries in Middleboro, Massachusetts, a company that produces fire apparatus, Boardman is highly skilled with tools and enjoys designing and piecing together the devices he uses with his team. His forecart, which is nothing more than two metal pipes

home is a large, open, grassy field where Star and Bright exercise and eat. Periodically, the oxen and their master will cut the tall grass using a mowing machine that is attached to the forecart. Boardman sees this as another valuable aspect of their versatile nature. "You couldn't run a power mower through that grass," he says. "And the oxen don't need to have their gas tanks filled or their oil changed."

A potential owner should first see anyone who has cows. Actually, cattle outnumber horses by the millions, and obtaining a pair would be relatively easy. There is a large variety from which to choose: Brown Swiss, Durham, Devon, Limousin, Charolais, Chianina and Maine Anjou. For the beginner, some things to look for when selecting an ox are clear eyes, a good frame and girth, a broad back and deep

"They're good animals.... Some humans are not this reliable."

joined diagonally together that ride on a couple of old wheels, was put together in a short period of time. He has also designed and built a wedge-shaped snowplow used to clear the family driveway of snow during the winter, and has assembled a flat pull cart that can be loaded with concrete blocks used to exercise the team. "Building these machines is a hobby," says Boardman. "I don't drink or smoke. I love working around here and enjoy myself, while getting things done at the same time."

Boardman also built the sturdy 12' x 18' barn used to shelter Star and Bright. In it are four stalls, tools, feed and sundry curious relics he has collected over the years. These relics will be used in whole or part to construct other useful gadgets in the future.

The Boardman family maintains a sizeable garden which provides them with vegetables for the good part of a year. When the ground needs to be broken, first a plow, then a harrow, are hitched to the forecart. Roland Boardman attaches the forecart to the yoke and leads Star and Bright to the fields for work. He characteristically rests one hand in the pocket of his dungarees and holds the whip with a lash in the other. He walks briskly beside them and covers the area by directing them with his verbal commands. "It's easier to lead them than you might think," he says. "I know of a Connecticut family whose 4-year-old boy drives a pair with a combined weight of over two tons. They're trained to react to the commands and behave better than you'd expect." And when the grounds need to be fertilized Boardman's oxen help take care of this too. They provide about \$60 worth of fertilizer each year from their own wastes.

Across the street from Boardman's

Presently Star weighs 1,600 pounds and Bright weighs 1,400 pounds. On their fourth birthday they should reach full maturity and will then weigh about one ton each. Depending on how hard they work, it costs about \$2 per day to keep them which includes the hay and stock primer they eat. Grass from the nearby field and water round out their diet.

"I receive as much enjoyment from owning these two as a boy would a dog," Boardman says, proudly pointing to his oxen. "I intend on always having a pair."

On occasion, Star and Bright are scheduled to appear at a nearby fair or in a parade and will then receive special attention. Each is given a shampoo, a careful and thorough brushing, and if necessary, Boardman will trim their hooves with a hammer and a wood chisel. This trimming is done every few months. Basically this is all the care they require.

Future plans for Star and Bright include entering them in pulling contests which are held during county fairs in many parts of New England. A weighted cart, starting with about a ton, is pulled by the team. Weight is added until the team can no longer pull the cart. The highest number of pounds pulled, which is usually in excess of 20,000 pounds, can draw cash prizes of anywhere from \$50 to \$150. A list, which includes the dates, times and places of most of these New England fairs, can be obtained by writing to the State Department of Agriculture. The oxen can be easily transported to the fair in a horse trailer.

Boardman has found very little existing literature on the purchase, care and training of a pair of oxen. He believes that talking to fellow oxen owners, and firsthand experience, are the best teachers.

chest and solid hind quarters. A pair of young calves can be bought at whatever the prevailing market price. The market is high now, and calves have been selling from \$50.00 to \$100.00.

"About the only problem I've ever had with Star and Bright was when they ran into a hornet's nest," Boardman says, rolling his eyes in mock disapproval. "It took me about 30 minutes to slow them down. So far they've never been sick. I have to worm them about once a year, but otherwise, there have been no major difficulties. I imagine it would be pretty tough to get a vet to come out and work on animals of this size, so I'll probably have to handle these things myself when they occur."

Boardman also points out that when driving the oxen care should be taken to prevent getting stepped on. Presumably, 1,600 pound Star could do quite a bit of physical damage if he walked across your feet. James Avery of Massachusetts, however, had much more to worry about when sometime around the turn of the century he owned the largest recorded team in history. His pair had a combined weight of 8,600 pounds.

To move backward in time is not the intention of Roland Boardman. On the contrary, he is quite like many other Americans who are seeking new ways to become more self-sufficient. He has found that not only do Star and Bright give him the satisfying rewards of owning domesticated animals, but they are saving him a substantial number of hard to come by dollars. Unlike the Biblical days when worldly riches were measured largely in terms of herds and flocks, Boardman has discovered unique wealth and enjoyment in just one pair of oxen. "They're good animals," he says. "Some humans are not this reliable."



Life on an Amish Farm

by Grover Brinkman

A dog barks in the barnyard. Dawn's crimson skyfire streaks the farmstead. Horses neigh, and hungry cattle stir in the feedlot. It is early spring. The workload is heavy, and Amish farm families rise early. Milking must be done before the cows go into the fields. Horses must be harnessed to pull farm machinery. To the Amish, farming is not only a living, it is a sacred way of life, inherited from their forebears.

In Illinois' midlands, where lush hip-deep prairie grass once covered the black soil, more than 2,000 Amish live. They trade in the towns of Arthur, Arcola and Chesterville. They keep themselves aloof from the twentieth century and its computerized society--shunning cameras, TV and movies. The Illinois Amish branch is an offshoot of the Pennsylvania colony. Both were developed by followers of Jacob Amen (or Jakob Ammann,) founder of the Amish religion.

These people are not really Dutch. They came from Western Germany and Switzerland, and their language is primarily German with overtones of French. They still speak

it in their homes, both in Pennsylvania and Illinois, and in smaller "pocket" clans in Indiana and Ohio. However, slowly but surely the English language is predominating in the Amish community, even though many of the elder Amish have twisted it up a bit:

"Throw the cows over the fence some hay."

"Go look the window out and see who comes the yard in."

"Throw papa down from the hay mow his hat."

"Smear me all over with jam a piece of bread."

"Go the bridge over and the street a little up."

The above are not exaggerations. Mingle for a day with an Amish farm family and you'll smile inwardly at the many unusual string-of-words they employ. An elder Amish farmer near Arcola pointed to his livestock, his horses, then at my camera. "That four-horse team should make you a pretty picture," he said. "But don't point the camera at my family!" He recited a Biblical passage that, to him, gave credence to that belief.

The Illinois Amish colony dates its birth to 1865. The few Amish who came in to the Arthur and Arcola areas started purchasing land at \$8 and \$9 per acre, then wrote their Eastern relatives, urging them to come to "the black prairie" of Illinois. Today this same farm land is

Grover Brinkman is a writer-photographer living in Okawville, Illinois. Photos are by the author.



Amish farm rigs on the streets of Arthur, Illinois where they are accepted and rarely criticised.

worth a thousand dollars or more per acre.

In an Amish home, mothers awaken their children early so they can help in the "choring." Boys do the barnyard work; girls make the beds, help with breakfast, prepare school lunches. The Amish eat exceptionally well, as anyone knows who has "sat down at table" with them. There is always bacon and eggs for breakfast, plus cream gravy, rolls, freshly-churned butter, jelly and unpasteurized milk. The Amish child has been taught to clean his or her plate; waste is sin in an Amish home.

The younger children are soon off to a nearby one-room elementary school; older girls do housework, can fruit and vegetables, sew clothing. Boys soon work side by side with fathers and grandfathers in the fields. The Amish are the opposite to worldly and neither have nor crave too much contact with the outside world. Since the Illinois colony is not located on any traveled highway, it was not until highway I-57 was completed several years ago that people in the Midwest, even as close as 50 miles from Arthur and Arcola, had any knowledge that a large Amish community existed here!

To these "plain people," attachment to the soil is second only to their religion. The Amish see beauty in nature and in

the orderliness of the seasons; in the birth of animals; in the inevitable forces of life and death. They find spiritual contact with the soil by working it. This land is their heritage and they live close to it.

To this day, the Amish reject war, materialism and frivolity. During World War I most Amish were conscientious objectors and served as medics and behind the lines. They declined to bear arms. They continue to shun materialism as evidenced by their plain dress, their buggies and the fact they rarely try to accumulate great wealth. They are far from frivolous. Dancing is taboo. Very rarely do they attend stage shows or movies. They don't drink or smoke, and one doesn't see too many TV aerals in an Amish community as well. By average standards today, it would seem that they lead a drab and uninteresting life. But just the opposite is true. They have just as much fun as anyone and laugh easily. They get their pleasure primarily out of work, visiting, and family. Always the family comes first.

The Amish farmer, still using the horse, is one of the most successful in the nation, showing that Old World methods still work. The women dress simply; many of the men are whiskered, but few have mustaches. For long decades, the mustache had an association with the military,

which the Amish disdain.

The Amish rig is a horse-drawn buggy or surrey. Most highways in Illinois Amish country have a "buggy path" alongside the concrete for safety of this slow-moving traffic. Reflectorized signs on the buggies warn motorists of horse-traffic.

Like the American Indian, the Amish respect old age, and take care of their own. There is no welfare problem here. They shrug off persecution and seem to realize that as a people, they will always be persecuted.

The towns the Amish trade in have hitch-racks and shelters for their horses. Even a bank has a horse-shelter for its customers.

In this connection, it might seem odd that the Amish, despite their religion, have no church buildings. Rather, they gather in members' homes for services. In Illinois there are 11 church districts around Arcola and Arthur. In each district there are about 150 members. Each district has a bishop, two preachers and a deacon, who are elected by the congregation and serve for life.

The bishop is the executive branch of the Amish government, and his word on diverse matters is law. They gather for church services every other Sunday. But they spend more time in worship than do members of most other denominations. Services start at 9 a.m. and continue until 1 p.m. There are two sermons, and moments of prayer. There is also singing, but with no organ or piano accompaniment. The hymns are passed on from generation to generation, and most of the songs are in German. Because church services are held in farm homes, Amish houses are constructed so that first floor partitions may be removed, making one big room out of what normally is an area of several smaller ones.

Another oddity to the outsider is the bench-wagon. Several days before the services at a farm home, this wagon loaded with benches, is driven into the farm yard to be unloaded at the proper time. The wagons make the circuit. After a Sunday service is terminated, it is followed by a social hour and a sumptuous dinner. Each family's turn for church comes every eight or nine months.

Education of Amish children is completed in the home and

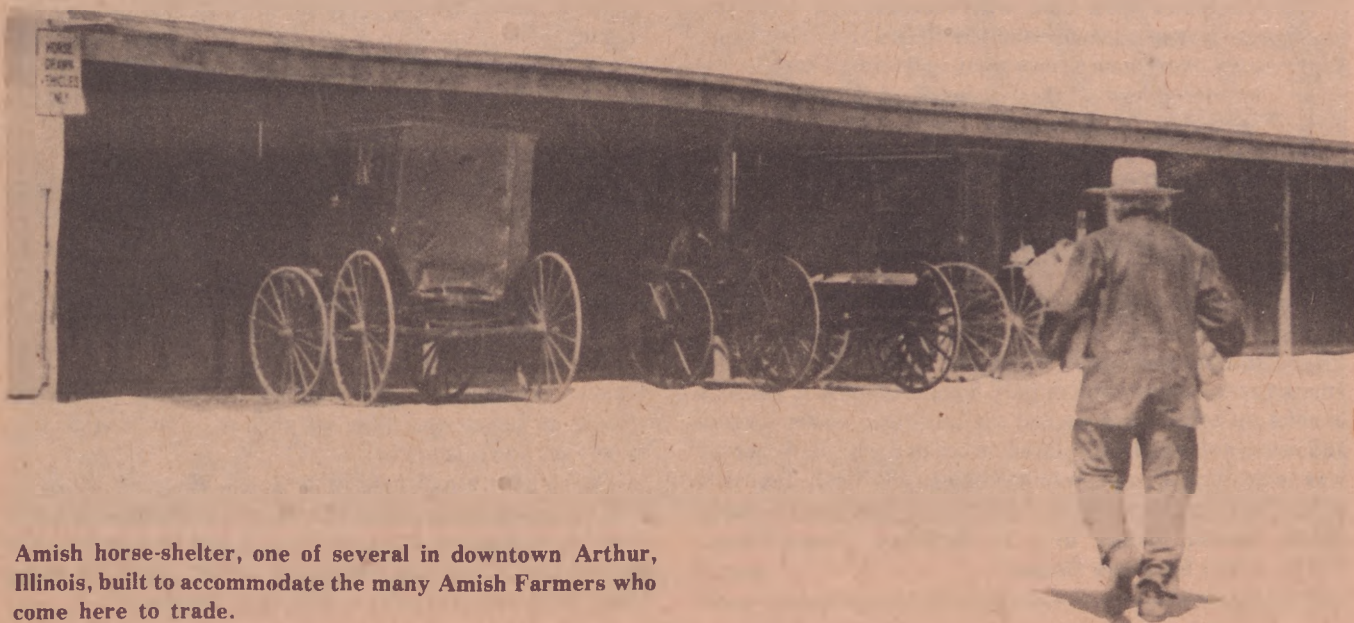
the fields that surround it, a fact that seems to add a family's togetherness. From the time they are able to walk, boys are never far from their fathers, and girls are equally close to their mothers. It is not unusual for an Amish lad to be handling a four-horse team at the age of ten or eleven; an Amish girl is an adept cook and pie baker before she is in her teens. Formal education is not a big thing in the Amish home. When a child graduates from the eighth grade, his or her school days are over. The one-room schools teach the three R's -- very little else, except perhaps a smatter of history and physiology.

The Amish place a strict interpretation on the Bible and follow its tenets "to be fruitful and multiply." Children are wanted in all Amish homes, and "the pill" will always be outlawed here. Amish families are large, with very few exceptions. There is no such thing as divorce in the Amish home. In researching this story, the same question was asked repeatedly: "Do you remember any instance of an Amish person being jailed?" The answer was always the same! "No."

The Amish wedding is a gala affair, usually attended by as many as 500. The groom, clean shaven until he is married, now is privileged to let his beard grow. After the ceremonies, the bride changes from a black cap to a white one, to show she is married. There is never a honeymoon.

The Amish funeral is just as extravagant as the wedding. The Amish make their own coffins, but have bowed to state law that insists on the body being embalmed. A death in an Amish family little changes the economy, for if the deceased has been head of family, the land and buildings already have been passed on to a younger member of the family. There is no insurance policy to divide. The Amish do not participate in Social Security either. In the event of a building loss through fire or tornado, an appraisal is made, and neighbors help erect a new building, and share some of its cost.

This journalist has enjoyed many happy hours on Amish farms. Never has he heard a curse word or been subject to discourtesy. There is little crime and no vandalism; pot would be a cooking utensil not a cigarette rolled of marijuana. Which poses a question: is this simple way of life superior to the ratrace of most Americans?



Amish horse-shelter, one of several in downtown Arthur, Illinois, built to accommodate the many Amish Farmers who come here to trade.

An Amish Barn-Raising

by Helen Forrest McKee

The early sun sends shafts of light through the trees as a parade of horse-drawn buggies quietly drive towards the Eshe farm in peaceful Lancaster County, Pennsylvania. Bearded men wearing black suits and wide straw brimmed hats skillfully guide the reins. Their wives, dressed in long black dresses and little white caps, sit primly beside them, holding containers of food on their laps. Children dressed in their best, peek out of the buggies. Each family is going to an old-time barn raising or frolic at Mr. Eshe's farm.

One by one, the buggies pull into the Eshe farm and let the women out. They carry containers of roasted chicken and baskets of food into the house; even the smallest daughter is carrying something. The women will spend the morning getting ready for the noon day meal.

Up in the pasture where the foundation of the barn stands, every male member of the family is present. They remove their coats and fold and lay them on the buggy seats. Then they unhitch the horses and put them in the pasture. Clutching hammers and saws, they gather in little groups, talking and gesturing. In a few minutes they break up and everyone starts to work.

The air is filled with rasping sound of old nails being yanked out of planks as teenagers attack the piles of used lumber Mr. Eshe bought and transported when an old barn was torn down. While some of the men begin sawing floor joists to length with whining strokes, others hand the boards up to the men already standing atop the foundation. Soon all the rest of the sounds are drowned out by the rat-a-tat-tat of hammers pounding boards into place.

The young men work along with their fathers, while the youngsters play in a nearby sand pile. There are no bosses or supervisors; every man knows what to do and where to go.

Iwondered how all these people had found out about the barn raising, because the Amish do not have telephones—and there were 100 Amishmen working on the barn. I finally asked an old man who sat down to rest. He said simply: "We let some know by postcard and then we just tell the rest. They all come because we enjoy working together."

I walked past the crowds of people who came on horseback, motorcycles and cars to see the barn raising and moved toward the house to see the activity there. I was amazed at the many rows of pies, homemade bread, platters of chicken, boiled potatoes and the traditional seven sweets and seven sours all being placed on tables for lunch. When all was in readiness, word was sent up to the field. The men

stopped working and paraded down the lane like a small army to the house, laughing and joking. They ate at long improvised picnic tables on the front lawn. As soon as they sat down, the food was served. The older women remained in the kitchen keeping the food warm, while the younger girls served the meal. They went at it as if they did it every day.

The bearded married men sat together swapping horse stories and talking about their crops in between bites of food. The younger men clustered in a group enjoying each other's company. When they finished eating, the men immediately got back to work. They had given this day to help build a barn, and they were determined to get it finished.

As I walked back to the field, I could see the main framing timbers were in place with fifty or more Amishmen clinging to them like flies as they nailed down rafters and sawed off ragged ends. The Amish are expert at building barns.

The Amish way of life has changed very little over the past 281 years when they first immigrated to Lancaster County. They are an independent people who live their religion, sticking close to the teachings of the Bible. They do not have electricity in their homes, nor do they drive cars or own tractors. They reject welfare of every kind, do not actively participate in government and refuse to serve in the armed forces. They are highly advanced farmers who seem to do everything the hard way, but they get the job done.

The average Amish family consists of eight children, but there are thirteen in the Eshe family, which is why they want to build a new house and barn in the upper field. These conservative people teach their children to work and be useful at an early age. The girls are taught sewing and cooking. The boys help out with the planting and farm chores. They make their own clothes, grow their own food, sell the surplus and save everything that is useful, passing furniture and farm equipment on from generation to generation.

The Amish are a soft spoken, gentle people who enjoy helping each other, so it was no surprise to see five Amish girls drive a horse and wagon up to the barn and start pouring cold drinks from large milk cans. Two of the girls served homemade cookies to the workers who gathered in little groups enjoying their afternoon snack.

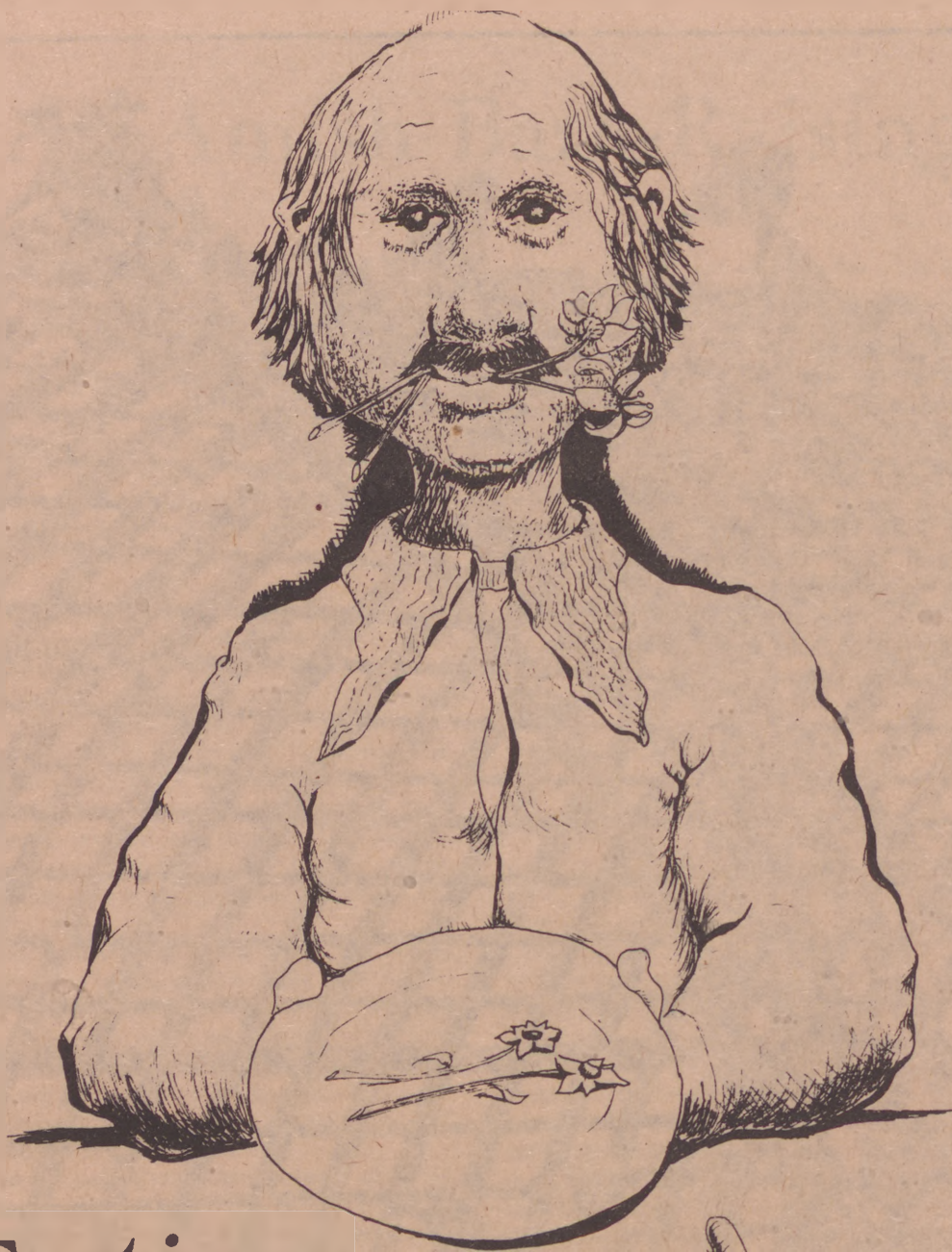
All too soon the day ends and the sun begins to set. Amish families regretfully wave goodbye. A stocky Amishman rounds up his brood, clicks his tongue to the horse, then moves on down the lane.

Magically, a brand new barn stands silhouetted against the ruby-red sunset—a proud monument to these people who have the courage to live as they wish and to practice their beliefs. One Amishman summed it up this way: "It was a frolic. We take pleasure in helping a neighbor."

Helen Forrest McKee lives in Rutledge, Pennsylvania.
Photo taken by Paula Ganser.



Framing the barn.



Eating Flowers

by Mary E. Allen

Flowers are not just to look at. Many can be eaten, too. So, why not try some from your garden this year or collect them in the wilds? Sometimes the blossoms are edible and, in other instances, you use the leaves, stems, or roots. But before you start nibbling, make sure the plant is good to eat and won't harm you.

Dandelions, violets, lillies, daisies, clover, roses and

nasturtiums are just a few of the flowering plants that we often think of using for decorative purposes but which can be delicious as well. Some are eaten raw. Some are cooked. Others are made into tea.

The dandelion is one of the best known flowering plants that we use for food. We're familiar with it for its "spring tonic" properties. The leaves can be cooked as greens or eaten raw in salads. However, although most people know about using tender, young dandelion leaves, they don't

always use the **flowers**. But dandelion blossoms, or heads - young, tender ones - can be boiled. Add them to boiling salted water and simmer for five minutes. Then take them from the heat and stir briefly. Cover, and let set for about two minutes. Then you serve them hot with butter and perhaps some vinegar, if you desire.

Dandelion roots, are also used; they can be baked or boiled. Or you can dry them, crush them into a powder and use this for a coffee substitute. Then, of course, there is dandelion wine, which people have made for years and years.

You can also make dandelion tea. Fresh or dried dandelion leaves are used for this. Place some dandelion leaves in a non-metallic pot or cup. Add some hot water, and let this brew steep for three to five minutes. Serve plain or sweetened with honey. **Never** boil dandelion tea for the resulting beverage will be too bitter.

Use violets in your tea cup, too, and make a tasty brew. Violet leaves and blossoms can be used both cooked and raw. If you like, you can also make a syrup from violet flowers to use as a sauce or for making a violet drink. To make violet syrup, pour boiling water over violet heads and steep for 18 to 24 hours. Strain the juice through cheese cloth. Then for each 2½ cups of this violet water, add 1½ cups of sugar and two tablespoons of lemon or lime juice. Bring to a boil and simmer about ten minutes. Pour into hot jars and seal, if you're not going to use it right away. The syrup will keep in a cool place for about one year. If you're going to use it right away, you do not have to seal. Simply store the syrup in the refrigerator in a covered jar.

This syrup can be used on ice cream, on pancakes or in milk shakes. To make a refreshingly cool violet tea, add two tablespoons of violet syrup to a glass with some ice cubes. Fill with water. Or, you can eliminate the ice cubes and add water for a hot tea.

Violet blossoms and greens can be used in salads for they provide an excellent source of vitamins A and C.

You can add them to tossed salads, or make a salad entirely of equal amounts of violet leaves and blossoms. Then add a dressing of olive oil, red vinegar and salt and pepper mixed in proportions to your taste.

What's more, violet leaves can be boiled for about five minutes in salted water, then served with butter. They can be cooked with spinach or chard too, for a dish of different greens at a meal. Other ways of eating violets include jam, jelly, in soup, candied, fried, or in aspic. It's also recommended that you use a teaspoonful of violet syrup when you have a cough or sore throat.

The orange and yellow variety of day lily is another flower that can be eaten. The Asians have used them for centuries, cooking the roots as well as the tasty flowers. A search along roadsides and near old houses or foundations will yield you these edibles. However, if you pick flowers along roadsides, make sure the area has not been sprayed and is free of possible car pollutants.

Various parts of the day lily are good to eat. You can cook both the young buds and the tips of the flower stalks. These are cooked and eaten like greens. The roots can be sliced and boiled in salted water until tender, then served with butter.

The flowers are served sauteed, boiled, as fritters or as a dessert. Furthermore, they can be simmered in boiling water for about three minutes, then served with butter, salt and pepper to taste. To saute day lily blossoms, add the

blossoms to hot melted butter in a skillet. Saute over medium heat until crisp.

The oxeye daisy is another flower with edible parts. This plant with white petals and a yellow center is very common throughout the northeastern United States. This daisy is so common in some fields and along roadsides it's considered a weed by some people. This plant originated, it is believed, in Eurasia and was brought to this country with the early settlers. Throughout Europe and parts of Asia, oxeye daisy leaves are used.

The young tender leaves, preferably before the blossoms bloom, can be eaten raw or cooked. Cook daisy leaves in salted water over medium heat for about ten minutes. Serve hot with butter, salt and pepper, or make a cream sauce and pour over the cooked leaves. For a different dish, use raw daisy leaves in a tossed salad. Usually daisy leaves and leaves are mixed in a one to two proportion.

Clover blossoms, both red and white, fresh or dried, can be used for tea. This plant grows wild along roadsides, in fields and lawns. It's also a cultivated plant in some places, but usually is free for the picking.

To make Clover Blossom Tea, use 1/3 of a cup of fresh blossoms or 1½ teaspoons of dried ones. Bring 1¼ cups of water to a boil and then add the blossoms. Cover and simmer for about five minutes. Strain, then sweeten to taste. Often honey is used as a sweetener.

Most people know that roses are for eating in the form of petals and rose hips. There is rose petal jelly, syrup and candy. Rose hips are used for tea, soup and jam. Rose Syrup can be used over ice cream, pancakes, waffles, desserts, and for making beverages. To prepare it, bring three cups of water to boil in a saucepan. Remove from the heat and add one quart of packed rose petals. Cover and steep for ½ to one hour. Then strain the juice and add 1½ cups of sugar to each cup of juice. Boil this over medium heat for about 25 minutes. Seal in hot sterilized jars until needed, or store in refrigerator if not sealed.

Rose Hip Tea is an old-fashioned recipe, and this fruit is high in vitamin C. First you dry and grind the rose hips. Then use one teaspoon of ground rose hips for every two cups of boiling water. Let it steep for about ten minutes. This beverage can be served hot or cold. Most people like it sweetened more. Fresh hips are used, too.

Often classed as an herb, nasturtiums are another flower that's good for eating. This plant is thought to be a native of Peru. It was grown in this country after the mid-18th century and began to be used in salads and sandwiches.

Both the flowers and leaves are edible, as well as the seeds and pods and stems. Only the roots cannot be eaten. Many oldtime recipes called for flower petals and leaves chopped into salads. Sometimes the stems are added to the salads, and minced blossoms can be mixed into cream cheese, cottage cheese, and butter for a different dish. Blossoms and leaves are chopped and added to sandwich fillings, too. Another good sandwich is made by using the leaves between bread and butter. The green seeds are eaten pickled, plain or added to stews.

These are a few of the flowers you can add to your list of edible plants. Add some to the menu, and see if you're a flower eater, too!

Mary Allen has written for Farmstead Magazine and lives in Plymouth, New Hampshire. Ink drawing by Chris Armen-tano.



by Ken Vogt

How to Run a Successful Craft Business

Be Professional

Professionalism must be the accepted mode of endeavor. From product design to display and advertising, all must be as strongly representative of your very best efforts and good aesthetic judgements as possible. This is absolutely the key to success, especially when your business' long-range success depends entirely on how others view you and your work. The small business person cannot be anonymous—you deal personally and directly with each customer. Records and orders must be kept precisely and up-to-date; sloppiness in this area reflects directly on the operator, and customers will not allow you more than one mistake before they'll look else-

where for their needs.

How to become "professional" is not always obvious to those just starting their first business. Look carefully at the shops around you that may have something in common with what you propose. Study their operation and look carefully at what attracts you most about it. Talk to the owners to get leads or contacts with the market you propose to attract. Ask tons of questions of all those you think could possibly lend good advice. Most importantly, don't open the doors of your shop until you feel you've done enough homework so that you feel only slightly queasy (butterflies at this time are to be expected.)

Accepting professionalism as

More than eight years ago, we began the planning which would allow us to move to Maine and operate our own pottery business. We are now happily entering the fourth year of operation of the Clay Studio & Gallery and are amazed how the time has flown by. We enjoy our business and are thankful we can do exactly what we want and make a living at it. It seems we have always been here, caught up in our work rhythm, firing a kiln-load of work and starting over to fill another kiln. Orders stack up, customers keep trailing in, and we often feel a little breathless about keeping up.

Coming from teaching and school administration backgrounds, we had no expertise or familiarity with the world of business. Balancing a check book had been our biggest challenge and only real contact with the financial world. Over the past few years, we've gained a great deal of knowledge, mostly by trial and error, about cost analysis, marketing, bookkeeping, production efficiency, product design, and so on. A number of things have become very evident, and they are worth sharing with any artist or crafts person who may be contemplating starting a small shop or gallery, especially with those who intend to market their own handmade work.

Ken Vogt and his wife Pax live in Penobscot, Maine and operate The Clay Studio and Gallery.





Ken and Pax Vogt at work in their studio.

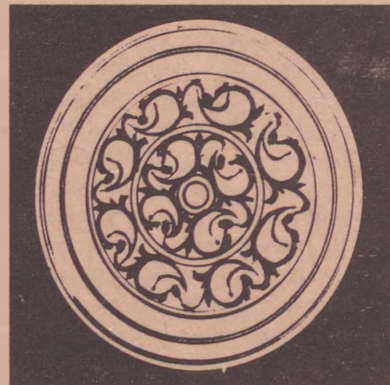
essential, let's look more carefully at some basic questions which must be answered in early planning stages. What constitutes a good marketing plan? To answer this question, we must first ask other questions: What is it you wish to sell? Who will buy it? At what prices? Where? (At your shop, or must you go to the buyer?) What is your profile? Can you live off that?

While it is impossible to come up with accurate and very detailed answers to all these simple questions, it is possible to have outline-type answers that you have researched to your satisfaction. Whatever research you do in advance will solve lots of problems that would naturally occur had you not done this homework, and

you will have a goal to try to attain. A goal keeps you on your toes, and also keeps you headed in a predetermined path so that your energies are not squandered in too many directions at once.

The marketing plan and goal cannot be stressed too much. Do not believe in the romantic notion of the artist/crafts person turning out lots of lovely creations which the world will recognize as far superior to factory-made objects, and want to buy instead of the gift wares offered at the local department store. Even Joan Mondale is having a tough time getting just nine National Parks Concessioners to buy handcrafted work to sell in their park shops. Those

THE CLAY STUDIO



PENOBSCOT ME. 04476

POTTERY BY KEN & PAX VOGT

concessioners know that the 2,000,000 or more people coming through each of those parks annually (mostly in a four month period) are not inclined to buy good, handmade objects, even though those same folks will spend a fortune (at least one out of five buys) on trivia—mostly imported.

Define Your Product and Market

Let's consider the question of what you wish to market. This is not as simple as it appears. If you want to sell **wholesale to many shops**, are you willing to do the same things over and over, perhaps a thousand times? Shops will want to reorder, and if an item is a good seller they may start ordering that item by the dozens. Do you want to wholesale only a few items that you have streamlined in terms of efficiency of production, or do you prefer the challenge of constantly offering your buyers new and constantly changing items? In either case, what you wish to market may become greatly altered by what sells.

You will be the last to predict with any accuracy, at first, which items of your work will sell. The marketplace will be your teacher, and it will often surprise you. An item which you almost carelessly throw together one day as an afterthought will all of a sudden become your best seller. Or a friend will suggest some specific plan for an item they need for a very special purpose, and you will find out lots of people have wanted exactly that same item. But to get started, the best thing to do is visit stores which carry items

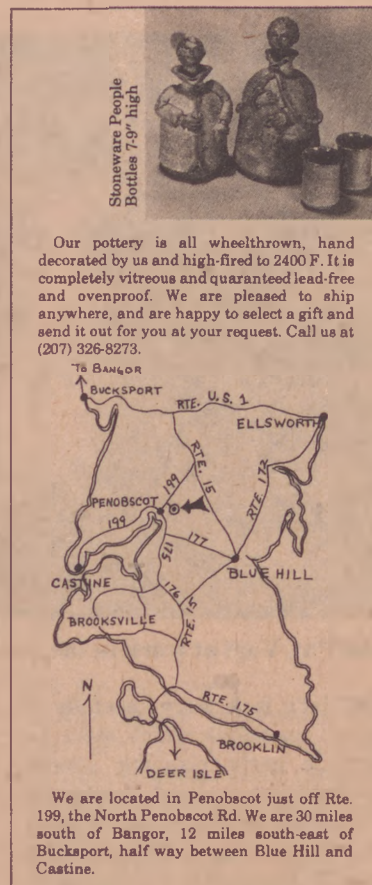


similar to what you intend to make and find out what's selling. By no means do I intend to imply that copying your competition is the answer to the question "will it sell?" I only suggest that in considering an overall marketing plan you make it your business to know what is in demand. I often make potters' pots which I know have little appeal to the general public because they are not often very utilitarian, but which I enjoy making. These sell occasionally, and I am very pleased with the customer's good taste. However, I cannot foresee a time when I could make a living just producing those particular shapes which seem to please me at any given time.

Originality and individuality do sell, but more often than not, they take on the form of gimmickry if you look carefully. A particular texture or finish used over and over by a craftsman may seem original (and perhaps profitable) the first time you see it, but rather boring after a couple of years--or even a couple of days. We have developed items which are "gimmicks" in that they have a nudgy little new twist to them, and they sell just for that reason. However, we get sick of them before the public does. It is best to proceed in the directions which your own talents and interests seem to shove you. In the end, it is your talent and own personality which sells. It may not appear evident at first, but a line of work produced has its own stamp of integrity which in the end keeps the customers coming back for more.

How and where to market depends to a large extent on your production capacity and on the efficiency you bring to bear in that area. Often this is a personal matter, one of lifestyle. A high energy person who streamlines production may never have enough markets to fill, while others may be happy with only a few outlets or just his/her own shop. After a year of actual production, you may have a better idea what your capacity is, but you'll find that capacity becomes larger each year.

There are many market places. Your own shop is a good bet if you can find time to man it and get your production completed at the same time. But be sure your shop is as attractive and appealing to the customer as is possible. Have brochures which display your work expertly and in the most favorable light possible, and spread



Inside the Vogt's brochure (half size).

these around for miles--at restaurants, motels, and other public places. An attractive and easily read roadside sign is essential. Generally, people are not drawn to new shops unless they feel predisposed to like what they find there. Your brochures and sign must therefore speak well of you and your product and help the potential customer decide he/she wants to drop in to investigate.

Determine Your Production Capability

Wholesale markets are readily available, and shows are held throughout the U.S. to which you may go to display and sell your work. There are local, regional and national shows ranging in entry fees from \$75 to thousands of dollars. There is one to fit every type of product. A few words of advice: don't go to one of these shows unless you are certain of your production capacity. A certain item may be snapped up by a large department store or a mail order house who will wish almost immediate delivery on as many as 12 dozen. You can, of course, turn the order down, but buyers do not appreciate being turned down when they see work on display for their viewing and buying. Most of these

shows are competitive and demand some indication of your professionalism before you are accepted. You may have to send slides of your product, and don't be surprised if you are placed on a waiting list. A few national shows have grown so popular, you may have to wait two or three years to get a space. Others are so competitive you may not be juried in unless your product is especially unique and/or technically flawless. More local or regional shows are easier to enter and perhaps the best place to start.

Consignment selling is an option, but rarely a good one unless you know the shop owners well enough to know whether that person will actually display and sell your work aggressively. When you drop off your work at a shop and are not paid for it until after it sells, you may wait a long time for any money at all. This can tie up your work for months without helping your cashflow problems.

How to Price Your Product

In setting a price on a product, check the competition. What does the market seem to bear? Can you produce your item and make enough profit to earn a decent living at those prices? Price is a

combination of many factors: labor, materials, overhead and profit. Set a price for your labor, add all costs for every material which you use, tack on all overhead such as electricity, phone, advertising, bookkeeping, and insurance costs, depreciation of shop and equipment, etc., and then decide what your margin of profit should be. This will give you the price when you divide all this by the total number of items you produce. Sound simple? It isn't.

It is extremely difficult to remember all the items which make up your total hours of labor, such as the hours it takes billing customers or doing your bookkeeping. And it is also difficult to come up with the complete list of items which goes into making up your overhead. But those are all real costs to you and must be figured in for you to get an honest picture of your pricing and your profits. It's also dreadfully important if your books are ever examined by the IRS, and chances are they will be. I've found the best sources of information on all this is in the trade news, and directly from the IRS. Every type business has its own trade papers. Subscribe to them and keep abreast of financial methods and procedures for your type of business. And don't be

afraid to call the IRS at one of their toll-free numbers. They will answer every one of your questions completely. For sticky questions, get an accountant.

Some mention should be made of the physical layout of your operation. Plan for every step in your production and selling facility to be easy and unencumbered. Make sure of a natural flow of procedures: raw materials at one end and display of finished goods at the other. There is nothing worse than tripping over bags of raw material while trying to sell your product. And plan for expansion. Is there a natural direction and space in which to grow? Limiting yourself to a small space without growth potential can drive you mad in a very short time.

New equipment and additional tools which all of a sudden seem essential will need a place to live. Increased volume also means an increase in raw materials, and where can you store those?

The biggest question for most of us is how do you finance this? The bank? No, not unless you already have a proven track record as a good businessman, and not unless you have a very carefully drawn up marketing plan which shows clearly the demand for

your product and exactly how it will be produced and sold at a good profit. Banks are in business to lend money, but to the right people, and they are the most conservative of all institutions. Your chances of getting the money from them are extraordinarily slim unless you request a personal loan backed by healthy collateral. Then the interest rates are exceedingly high.

The best bet is to begin small and invest in space and equipment as you can, while holding down another job. Don't be in a rush! Most small businesses (about 75 percent) go under in the first year because the operator took on too much debt. Again, set yourself a goal, perhaps a five-year plan, and work towards it. It's amazing how you can save money and invest it in things important to you if you want those things badly enough--and have a little luck. Perhaps a low volume, seasonal operation based at your home will lead to full employment and a good life in less time than you think. But don't plan to get rich this way. Unless you have a very ambitious marketing plan with lots of expertise to back it up, you will probably earn only a modest income, well below the national median. Like everything else, it depends on your goals.



Some of Ken's and Pax's wares displayed in their own shop.



Stocking Your Toolshop

by Gordon Catt

Many factors contribute to the success of any farmsteading endeavor today, but one of the most important is the need for a well-equipped toolshop. Without a good selection of quality tools, the homesteader today is simply increasing the odds against ever making it on the land. Tools are needed to build your cabin or renovate an existing building; to erect livestock shelters; install stoves and carry out normal maintenance. There's an old saying to the effect that: "Dry firewood under cover is like money in the bank." But it requires good tools to gather and

Gordon Catt resides in Temperance Vale, New Brunswick. Illustrations by Liz Buell.

prepare that firewood, and additional tools to maintain or repair what you use in stocking the wood for your stoves.

A proper selection of tools will allow you to repair existing items or build new ones, thus saving you the need to spend hard-earned and often scarce dollars at the nearest hardware store, when you can least afford having to shell them out.

Prior to moving onto our present 100-acre farmstead, I had accumulated what I considered a pretty healthy selection of tools to get us started. Compared to the average toolbox of many urban residents, I was well equipped. But not long after facing the realities of farm work ten miles from the nearest hardware store, our stock

seemed woefully inadequate.

Now, two years later, I've added considerably to our equipment inventory; even so, I still could spend a healthy amount of cash purchasing the tools I wish I had picked up when our flow of income was steadier and higher.

What you select or require in the way of equipment will, for the most part, be dictated by your special plans and requirements. Obviously, if you intend to live in an area where electrical power is available and make use of that facility, your choice of tools and equipment will be different than for someone living without power. If you intend to use gasoline-powered machinery, you will need a larger selection and some specialized equipment to keep that machinery in operating condition.

Perhaps the only concession to big business you'll make is to use a battered old half-ton for running back and forth to town or a part-time job. Even so, you'll require some basic tools to perform at least minimal maintenance and repair jobs, such as a ratchet and socket set with spark plug socket; oil filter wrench; battery terminal cleaner; jack and tire iron; plus-tape and clamps for emergency repairs.

Major automotive or tractor maintenance and repair will require a timing light and a dwell-tach unit and voltage indicator. If your major powered equipment is a tiller, do you have the tools necessary to perform your own tuneups and repairs? Most small engines require special instruments for removing flywheels and other parts. Do you have spares of the most-likely-to-be-replaced parts, such as spark-plug, points or belts?

Horsedrawn farming equipment doesn't negate the need for the proper tools to perform maintenance and repair functions. Hammers, wrenches, welding torches, files and screwdrivers are just as important here as they are to work on motor-driven implements.

Horses also require their own special tools on the well-equipped farmstead. A farrier's hammer, hoof nips and hoof knife, as well as a hoof pick and rasps, are just some of the gear you'll need in your shop. Consider part of your purchase requirements to include awls and other gear for emergency repairs, to harness and trace lines.

Whatever your choice of lifestyle or farm operation, the first rule of tool acquisition is: **Buy Only Top Quality!** Go for the very best tools you can afford. You may pay more initially but will save a lot of time, frustration and expense since you won't have to shell out dollars at a later date. Above all, stay away from the 99-cent specials offered by discount, high-volume stores. I have never yet known one of these "specials" to give their money's worth. Stay with nationally well-known brands such as Stanley, Fuller, Craftsman, Nicholson or Disston. For power tools, select at least the medium or top-line categories. If you have lots of "bread" then buy "commercial" or "industrial" duty equipment.

There's only one thing more frustrating than knowing you don't have the right tool when you need it, and that is -- knowing you have the right tool and

can't find it! Which brings us to the Second Rule: **Take Care of Your Equipment.**

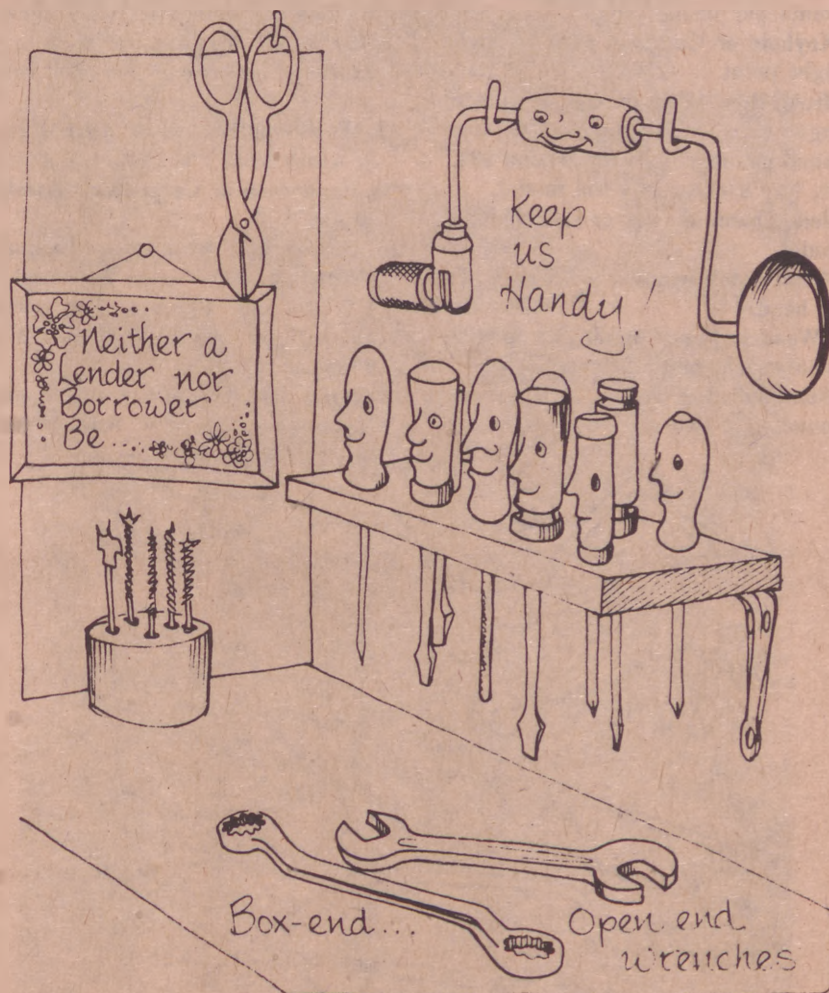
Once you have your tools, learn how to use them properly, maintain them and store them where they won't get lost or damaged. You'll have big dollars invested in equipment which can literally mean the difference between life and death, the difference between success and failure. Treat your tools as "friends" and they should last you a lifetime. No matter if you've been working with a shovel, hoe, rake, hammer, axe, chainsaw or tiller, it should be checked for wear or possible breakage, then cleaned and stored where it won't get damaged or lost.

The ideal situation, of course, is a separate workshop with benches and lots of storage space where tools can be hung on racks in plain sight. If this isn't possible at first, at least keep your tools in special boxes or drawers where they can be stored without damaging each other or getting misplaced.

The third rule concerning tools is: **Don't Lend Them To Anyone!** This may

sound hard-hearted or callous, even downright ornery. However, I can vouch from past experience that most tools which are lent out to friends or neighbors don't come back in good condition. Tools or implements returned in broken or misused condition upon which you depend for your living, are absolutely of no further use to you in that state without time (and sometimes money) being spent to get them back in working order.

There are three solutions to this problem of tool borrowing. First, you can absolutely refuse to lend any equipment, perhaps resulting in broken friendships and poor feelings. Secondly, you can keep old, broken-down tools on hand especially for this purpose which could result in the loss of friends or neighbours. The third solution is to offer the use of the tool and yourself when required. **You go with the tool!** Using this solution means you keep an eye on your tools, offer your expertise (hopefully in its proper use) and in addition, you may gain some valuable knowledge or even an



offer of labor or goods in trade at a later date.

To anyone contemplating a move from the city to a farm or homestead situation, I seriously suggest delaying your move, if necessary, until you have enough cash to finish off your major tool acquisitions. The delay may only mean another week or two at your

present job, but it's better to face that problem now than when you become involved in the many, busy aspects of building your dream in the country when cash may be even more difficult to obtain. At the very least, be prepared to budget some of your nest egg for future tool and equipment purchases. Proper planning at this stage can mean a lot towards your

eventual failure or success!

The following is a selection of handtools which I consider essential for the workshop of any homestead. Note that I have not listed a large variety of specialized tools relating to engine repair, metalworking, etc. If you're going to require tools in those areas, consult any good reference book on that particular subject.

Hand Tool Checklist

1. **Wood axe.** Single bit, four-lb. Good idea to have two on hand. Also purchase a spare handle.
2. **Bow saw.** 36 inch with spare blades. For trimming branches and pruning trees, consider buying a 24-inch model.
3. **Handsaw.** 22 to 26 inch, eight point crosscut.
4. **Handsaw.** 22 to 26 inch, five to seven point rip.
5. **Adjustable frame Hacksaw** with 24 spare blades.
6. **Back or Mitre saw.** 14 inch with ten points per inch.
7. **Keyhole or Compass saw.** 14 inch, eight point.
8. **Mitre Box.** For making accurate angle cuts. Stanley makes a nice bench mount device for around \$24. Or, buy a cheaper wood model.
9. **Sledge hammer.** Six or eight pound model.
10. **Utility club hammer** with two 1/2 lb. head.
11. **Woodchoppers maul.** Six pound head should be sufficient.
12. **Steel splitting wedge.** At least five pound. Get two.
13. **Broad Axe.** Needed if you are into squaring your own timbers. Lightest you should get is with three lb. head.
14. **Peeling spud.** For peeling logs, rails and posts.
15. **Claw hammer.** 16 oz. is best. Get two. If you prefer wood handles, pick up two spares.
16. **Ball peen hammer.** 16 oz. size for main use.
17. **Screwdrivers.** A large selection is essential. Range from shorties for tight spots to those with eight or ten-inch shanks. You'll need some for Phillips, Robertson and slot screws. Buy one inexpensive slot type expressly for prying open paint cans, etc.
18. **Wood chisels.** At least four. Range in width from 1/4" to one 1/4 inch.
19. **Handyman or Carpenter's Ratchet Brace.**
20. **Auger bits** with tapered square shanks for above brace. At least 1/4, 1/2, 3/4 and 1" sizes. For boring above 1", get an expansive bit 7/8" to 3" capacity.
21. **Hand drill.** Get heavy duty model. If possible, buy one with Breast-

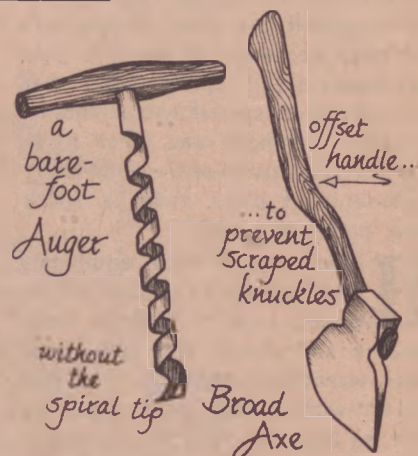
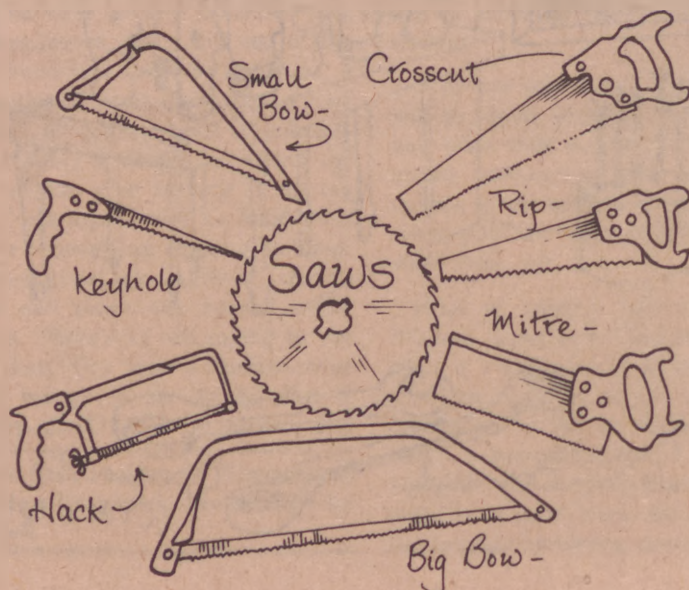


plate for heavy work.

22. **Twist drills** for above in-set from 1/16" to 1/4 inch by 32nds.
23. **Pliers.** Like screwdrivers, you never seem to have enough on hand. Your toolbox should have at least an eight-inch lineman's plier; a nine-inch slipjoint multi-groove plier; a seven-inch diagonal cutter and eight-inch long-nose with side cutter. Good idea to pick up at least two locking pliers (Vise Grip) in seven or ten-inch size.
24. **Tin Snips.** One pair straight cut and one pair circular cut.
25. **Combination Square.**
26. **Rafter square.**
27. **Steel tape.** Minimum ten foot.
28. **Level.** 24" size best for all-round use. For extensive masonry work, also buy a cast aluminum mason's level.
29. **Line level.** Lightweight. Hooks to line.
30. **Jack Plane.** 14 inch is best for all-round use.
31. **Drawknife.** Straight or curved blade. For shaping wood, especially axe or hammer handles, etc.
32. **Spokeshave.**
33. **Chisel and punch set.** Cold chisels, drift and pin punches. Add two nail sets in 1/16" and 1/8" sizes.
34. **Wrecking bar.** 30".



35. **Combination Fence Tool.** Has two wire cutters, staple puller and hammer head all in one tool.
36. **All-purpose socket set with ratchet handle.** Best to buy 3/8" drive for all-round use. Get 1/2" drive set if likely to be working on heavy machinery.
37. **Files and Wood Rasps.** Include those needed for sharpening axes and chainsaws. Include a file card for cleaning.
38. **Oilstone.**
39. **Woodworking vise.** At least four inch jaw capacity.
40. **Mechanic's vise.** At least four inch jaw capacity.
41. **Staple gun.** Great for tacking up chicken wire, plastic on windows, hothouses, insulation or window screening. Buy a healthy selection of staples while you're at it.
42. **Box and open-end wrench set.**
43. **Adjustable Wrenches.** Eight and 12-inch lengths with jaw capacity from 1/2" to 1 1/2" should do for most jobs. Large Stillson-style wrench for really heavy jobs is nice to add to your selection.
44. **Oxygen-propane Welding Torch.** One of these rigs won't tackle the really big jobs but should be sufficient for most occasional work encountered around the farm. Will cut 1/2" bolts and braze 3/16" steel.
45. **Clamps.** A good assortment of "C" clamps and bar clamps make any number of projects possible.
46. **Grease gun.** Not only for truck or tractor maintenance but for tillers, mowers, wagons, etc.
47. **Hydraulic jacks.** Get two. One with one and a half-ton capacity and one with three-ton range.
48. **Wire.** In all forms and sizes from snare wire to the heaviest you can find. Great for repairing axe handles, bucket handles, bracing stovepipes, etc.
49. **Gear-type clamps.** Relatively expensive but great for repairs to radiator hoses, water lines, etc. Keep a good selection on hand. While you're at it, lay in a supply of electrician's tape for the same purposes.
50. **Adhesives.** A couple of tubes of five-minute epoxy as well as other adhesives are invaluable in making repairs to a variety of materials, from water buckets to rubber work boots.

Power Tools

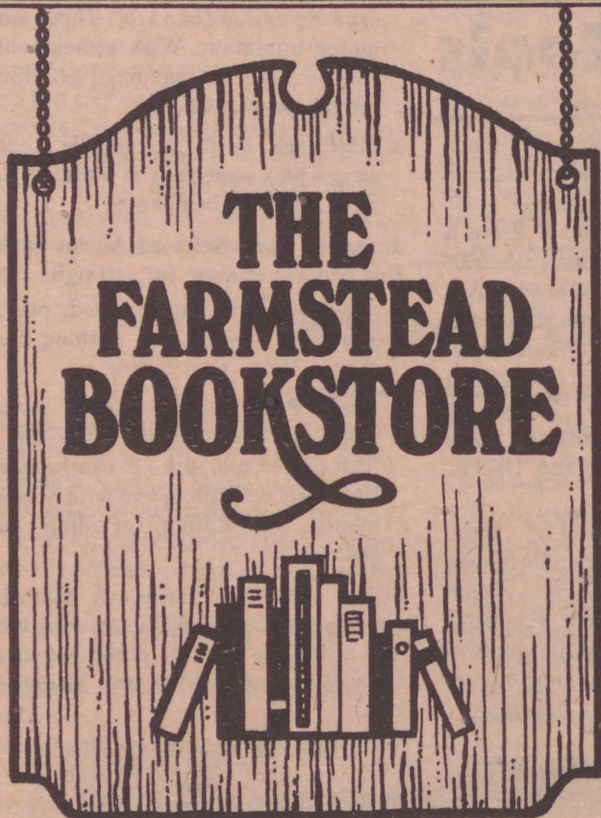
Even though it makes us more "beholden" to the big corporations, the use of electricity can make life a lot easier around the farmstead. Even a limited selection of power tools can make your workload more productive. When purchasing power tools, always select "professional" or "industrial" rated equipment if you can afford them. If not, aim at the "better" or "best" categories of home-use tools from such lines as Black and Decker or Craftsman.

1. **Portable Power Saw.** 7 1/4". First choice of them all. Will handle 90 per cent of your cutting chores. Never get one with less than a nine amp motor. Unless involved in quality, precision woodwork, put your money into one of these over a bench saw.

2. **Drill.** Better to buy 3/8" chuck capacity rather than 1/4". Three amp motor minimum. With attachments can be used for sanding, grinding, mixing paint, etc.
3. **Half-inch Drill.** To handle those larger jobs, especially in metal. A 4.2 amp motor is best here.
4. **Sabre Saw.** Selected blades make this item suitable for straight and curved line cutting in wood, plastic and light metal. Get nothing less than a three amp motor.
5. **Drill Press.** A top-quality model would be my personal choice for a fifth power tool since it can be used for precision drilling and with attachments, for buffing, grinding and routing.

The first four items on this list should cost around \$200 and with care last a lifetime with no other expenses than replacing brushes and blades or bits.





many new
exciting ideas!

The FARMSTEAD BOOKSTORE

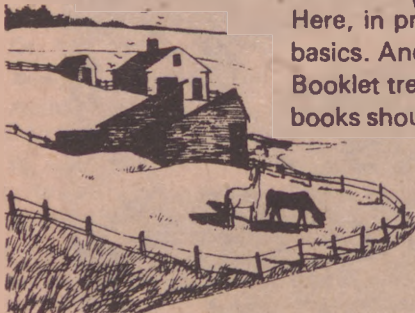
Now, it's easy to shop by mail for those special interest books . . .

How-to do-it information on everything from wood heating to gardening to raising livestock . . .

Valuable, useful additions to your collection of data on living more self-sufficiently.

Check the FARMSTEAD BOOKSTORE in each issue for new listings.

Country Wisdom Booklets



Here, in precise, accurate "how-to" terms are the natural methods for getting back-to-basics. And you don't need a huge volume to find what you want. Each Country Wisdom Booklet treats a single subject — thoroughly, but without the frills, like serious "how-to" books should.

Only \$1.00 Each!



- A-1 Home Strawberry Growing.
- A-2. The Amazing Wide-Row Planting Technique.
- A-3. Braiding Rugs.
- A-4. Growing the Best-Ever Potatoes, Irish and Sweet.
- A-5. Cover Crop Gardening: Soil Enrichment with Green Manures.
- A-6. Building Simple Furniture.
- A-7. Planning Your Orchard: Dwarf Fruit Trees
- A-8. Planting Your Dwarf Fruit Orchard.
- A-9. All the Onions and How to Grow Them.
- A-10. Buying and Installing Your Woodstove.

- A-11. Save \$\$ on Fuelwood.
- A-12. Hooking Your Woodstove to a Fireplace.
- A-13. Sharpening and Using Axes and Chain Saws.
- A-14. Chimney Sweeping and Wood Stove Cleaning.
- A-15. SCAT/How to Keep Unwanted Animals Out of Your Garden.
- A-16. Cane that Chair.
- A-17. Hens and Chicks with a Minimum of Feed.
- A-18. Raising Ducks and Geese on the Small Place.
- A-19. Build Your Own Pond.
- A-20. Soil Improvement For Successful Gardening.

- B. Easy-To-Grow Herbs and How to Use Them.
- E. How to Raise a Pig Without Buying Feed.
- F. The Homestead Way to Grow Grapes.
- H. Growing Raspberries and Blackberries.
- I. How to Build and Use a Root Cellar.
- O. Growing Corn for Many Uses.
- Q. Tomatoes — Home Grown the Year 'Round.
- W. The Grafting Manual.

R-37 DUCKS AND GESE IN YOUR BACKYARD by Rick and Gail Luttmann - This book presents all the basics of domestic wildfowl husbandry in an enjoyable, easy-to-read manner. It covers breeding, hatching, feeding and health maintenance; how to get eggs, meat and down from the backyard flock; how to construct ponds and use wildfowl for insect control, pets, and show birds. 252 pp., 75 drawings. Paperback \$5.95

G-26 STARTING RIGHT WITH TURKEYS by G.T. Klein - A complete guide for the beginner, covering every necessary topic from choosing a breed to harvesting the birds. 128 pp., illustrations. Quality Paperback \$3.50

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

R-26 A VETERINARY GUIDE FOR ANIMAL OWNERS by C.E. Spaulding, D.V.M. - Here's a book that's long been needed on the farmstead - a handbook for specific preventive measures and cures for all common pet and livestock ailments. It's organized by animal, and each chapter gives health-care information for that particular animal. A book that animal owners will use time and time again. 432 pp. 60 illustrations. Hardback \$9.95

R-28 THE HERBAL HANDBOOK FOR FARM AND STABLE by Juliette de Bairacli Levy - This book brings information to farmers and owners of domesticated animals in treating their livestock without chemicals. Separate chapters on each animal include herbal care for diseases, delivering young, and keeping animals healthy. 320 pp. Paperback \$3.95
Hardback \$7.95

GF-04 RAISING SHEEP THE MODERN WAY by Paula Simmons - Modern sheepraising has shown a trend toward the small holder, with emphasis on profitable, self-sufficiency. This book provides the small flock owner with information on the fundamentals of sheep management. It stresses sheep health and preventive care, and of the latest in medical treatment, should that become necessary. 234 pp. with illustrations. Quality paperback \$5.95

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 \$4.95



G-92 THE FAMILY COW by Dirk van Loon - Perfect for the single-cow family or for semi-commercial needs. Highly informative, usable information on buying a cow, handling techniques, housing, feeds and feeding, milking, health care, breeding, calving, land use, all about hay and roots. Excellent illustrations. 200pp. Quality paperback \$5.95

G-24 RAISING A CALF FOR BEEF by Phyllis Hobson - Enjoy superior beef for less than half the supermarket cost. In 15-18 months you can have 600-700 lbs. of beef with just ½ hour of care per day. Includes complete information for care, feeding and housing. Also complete photos of home butchering. 128 pp., 100 illustrations. Quality Paperback \$4.95



R-33 GUIDE TO BEES AND HONEY 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 HONEY** 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 \$10.95

R-14 THE SHEPHERD'S GUIDBOOK: Raising Sheep for Meat, Wool and Hides by Margaret Bradbury - For anyone contemplating raising sheep. The author discusses what to look for in buying a flock with emphasis on marketable production. She talks about breeds and even gives instructions for preparing wool for spinning, directions for tanning sheepskins, recipes for lamb, and some tips on butchering. 200 pp. with photographs. Hardback \$7.95

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 \$4.95

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. Hardback \$10.95

R-55 RAISING RABBITS by Ann Kanable - Covers all aspects of raising rabbits on a small scale: housing, stock, breeding, feeding, and health care. Discussions of meat production and use of by-products such as pelts and manure are included. 208 pp., photos and illustrations. Hardcover \$8.95

G-8 SMALL-SCALE PIG RAISING by Dirk van Loon - Raising a piglet for pork is a short-term commitment. Between spring and Thanksgiving you can raise a family's supply of bacon, pork and ham - enough for the winter. Here van Loon covers all the basic information of buying a piglet, handling, penning, nutrition, feeding, butchering and curing. 180 pp., 100 illustrations. Paperback \$5.95



G-25 KEEPING LIVESTOCK HEALTHY: A VETERINARY GUIDE - by N. Bruce Haynes, DVM - Dr. Haynes' emphasis is on prevention and early detection of farm animal disease problems. For horses, cows, pigs, sheep and goats he provides information on how and what to feed, shelter, reproduction, diseases and much more. 160 pp., 70 illustrations. Paperback \$6.95
Hardcover \$10.95

R-27 THE HOMESTEADER'S HANDBOOK TO RAISING SMALL LIVESTOCK by Jermon 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

R-13 RAISING THE HOMESTEAD HOG by Jermon 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-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, GESE**. Also housing plans, processing, preservation and more. 240 pp. Quality paperback \$5.95



R-22 STEP-BY-STEP TO ORGANIC VEGETABLE GROWING by Samuel Ogden — This well-known guide to raising vegetables without chemical fertilizers and insecticides is based on the author's 40 years of personal experience. Mr. Ogden's book represents a solid reference source for beginners who need the basic information on caring for the soil, organizing the garden plot, collecting the necessary tools, controlling pests, and growing two dozen of the more popular vegetables. 192 pp. 95 illustrations.
Paperback\$3.95
Hardback\$7.95

GF-05 PROFITABLE HERB GROWING AT HOME by Betty E.M. Jacobs — The author of this book writes from experience, having run an herb farm in Canada for eight years. Here she shares knowledge on growing, harvesting and marketing herbs. The text is well-organized and the illustrations are delightful. 225 pp.
Quality paperback\$5.95

R-23 HOW TO GROW VEGETABLES AND FRUITS BY THE ORGANIC METHOD by J.I. Rodale — This hefty volume is actually seven books in one, covering general organic gardening techniques, vegetable growing, the home fruit garden and orchard, organic fruit culture, organic nut culture, herb gardening and growing unusual fruits. This remarkable book is the organic vegetable and fruit grower's bible. More than 600 charts, tables, how-to-illustrations and photos. 926 pp.
Hardback\$13.95

R-11 THE GARDENER'S GUIDE TO BETTER SOIL by Gene Logsdon — How to develop rich, fertile soil and keep it that way year after year. Every gardener, novice and veteran, can derive down-to-earth tips on ensuring bountiful harvests of tasty and nutritious fruits and vegetables, beautiful flowers and majestic trees. 260 pp. 33 illustrations.
Paperback\$4.95
Hardback\$7.95

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-44 PLANTS-A-PLenty by Catharine Osgood Foster — This is the complete how-to-propagate book which describes the biological processes that play a part in plant multiplication. Included are instructions on how to multiply outdoor and indoor plants through cuttings, crown and root divisions, grafting, layering and seeds. The second part of the book, which is arranged alphabetically under plant categories, discusses each plant individually, highlighting special considerations. 344 pp., illustrations and photos.
Paperback\$8.95

R-63 TERRIFIC TOMATOES compiled by Catharine O. Foster — Provides all the information required to grow tomatoes: from soil preparation to harvesting to using tomatoes. Includes 100 unique recipes. 272 pp., photos.
Hardcover\$8.95
Paperback\$3.95

R-61 THE EARTHWORM BOOK by Jerry Minnich — The most complete up-to-date book on earthworms and their use. Information is included on raising worms indoors and out, care and feeding, bedding, temperature and pH considerations. 384 pp., photos and illustrations.
Hardcover\$10.95

R-62 GARDENING WITH KIDS by Sharon MacLachie — Gardening with children is not as simple as it might first appear, so this book has been prepared to alert the adult gardener to what children expect, how they approach things and the best methods for successful organic gardening. With the child in mind, this book covers planning, choosing foolproof vegetables, and recipes for young gardeners. 224 pp., photos.
Hardcover\$7.95



G-13 GROWING AND SAVING VEGETABLE SEEDS by Marc Rogers — Step-by-step information on raising vegetables for seeds. How to grow, harvest and store them to help cut gardening costs and improve the quality of home garden crops. 112 pp., 75 illustrations.
Paperback\$4.95

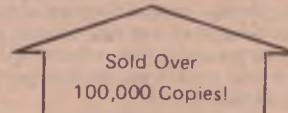
G-15 GROWING YOUR OWN MUSHROOMS by Jo Mueller — The first workable approach to small-scale mushroom growing. All you need is a small cellar or outbuilding to start. Easy methods, plus many recipes and special section on preserving mushrooms. 180 pp., 100 illustrations.
Quality Paperback\$4.95
Hardcover\$8.95

G-16 VEGETABLE GARDEN HANDBOOK by Roger Griffith — Every good gardener knows the importance of careful record-keeping, especially when it concerns seeds, quantities, varieties, crop rotation, yields. This planter's handbook and gardener's record book could well make the difference between a "fair" garden and a successful, money-saving garden. 120 pp.
Quality Paperback\$3.95

G-20 THE MULCH BOOK by Stu Campbell — Learn everything about mulching: every mulch material from bark to stones, improving poor soil, mulching perennials and annuals, assisting "finicky" plants, free mulches and more. 144 pp., illustrations.
Quality Paperback\$4.95



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



G-21 WHAT EVERY GARDENER SHOULD KNOW ABOUT EARTHWORMS by Dr. Henry Hopp — encourage your earthworms to multiply and thrive, as there is no better fertilizer in the world than earthworm casting. 44 pp., illustrations.
Quality Paperback\$1.50

G-19 THE BUG BOOK: HARMLESS INSECT CONTROLS by John and Helen Philbrick — Over 100 bugs are clearly illustrated and described with types of damage, preventative measures, and natural remedies. All remedy recipes are non-toxic, natural approaches to insect control. 128 pp., illustrations.
Quality Paperback\$3.95

R-60 BEST IDEAS FOR ORGANIC VEGETABLE GROWING by the editors of Organic Farming and Gardening — More than 100 experienced organic gardeners contribute their tips on growing 50 vegetables, from the popular tomato to the uncommon feticus. 216 pp., 93 photos.
Hardcover\$7.95

GF-07 SUCCESS WITH SMALL FOOD GARDENS: Using Special Intensive Methods by Louise Riotto — 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\$5.95

G-18 GROWING BERRIES AND GRAPES by Louise Riotte - Luscious homegrown berries are the best treat in the garden! Learn how to order varieties, planting care, pruning, safe pest control, nursery sources for every berry and grape. 142 pp., illustrated.

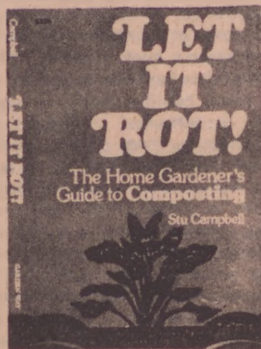
Quality Paperback \$4.95

R-53 THE SEED-STARTER'S HANDBOOK by Nancy Bubel - A practical guide to growing vegetables from homegrown seeds. The techniques are thoroughly explained and the basic botanical principles of germination, dormancy and light response are presented. Handsomely illustrated by Rob Shetterly. 384 pp., 44 photos, 150 illustrations. Hardcover \$10.95

R-54 UNUSUAL VEGETABLES: SOMETHING NEW FOR THIS YEAR'S GARDEN edited by Anne M. Halpin - Contains all the information needed to grow 79 out-of-the-ordinary vegetables. A wide range is covered, including some from other parts of the world which can be grown in this country. Contains appendices listing seed suppliers, seasonal growing guides, charts, food values, and recipes. 464 pp., 72 illustrations. Hardcover \$12.95

R-39 GROWING FOR MARKET, edited by Roger B. Yepsen, Jr. - This book tells how to make the transition from garden to truck patch, from hobby to part-time or full-time business. Gives a realistic look at what's involved in making money from the land. Illustrated profiles of two dozen small-scale growers and processors. 320 pp., 40 photos. Hardcover \$8.95

R-40 THE ENCYCLOPEDIA OF ORGANIC GARDENING by the staff of Organic Gardening and Farming Magazine - A revised, up-dated version of one of Rodale's all-time best sellers, this is the most authoritative handbook of organic methods yet to be published. Over 2,000 topics listed in convenient encyclopedic form provide reliable answers to almost any question. Comprehensive and concise. 1200 pp., 275 photos, 100 illustrations. Hardcover \$19.95



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-17 NUTS FOR THE FOOD GARDENER by Louise Riotte - Care, cultivation, propagation, grafting, budding, harvesting, and recipes for 15 nut varieties. Also grove improvements, felling predators, source lists. 192 pp., illustrated. Quality Paperback \$4.95

G-22 DWARF FRUIT TREES FOR THE HOME GARDENER by Lawrence Southwick - Covers buying and propagating your trees, planting and pruning, soil management, pest control, climate and space considerations. 118 pp., illustrated. Quality Paperback \$3.95
Hardcover \$5.95

G-23 IMPROVING GARDEN SOILS WITH GREEN MANURES by Alther Raymond - Increase fertility, help rid gardens of weeds, prevent soil erosion, allow easier and earlier planting. Step-by-step procedures for sowing these special cover crops. 48 pp., illus. & photos. Quality Paperback \$2.50

G-6 THE COMPLETE GREENHOUSE BOOK by Peter Clegg and Derry Watkins - Everything from a simple cold frame to an attractive window greenhouse to an elaborate solar structure is thoroughly covered here. Heavy emphasis on energy conservation, solar considerations, small greenhouses and attached greenhouses. Complete details on designing, building and using; ways to save and produce heat; progressive designs to fit every budget, every location; excellent details on construction, foundation, floors, structure, framing, materials. Also included are operating and growing details with special insights into the greenhouse environment, soils, growing conditions, pests and diseases. 176 pp. with 120 illustrations and photos. Paperback \$8.95
Hardcover \$12.95

R-36 SUCCESSFUL BERRY GROWING - How to Plant, Prune, Pick, and Preserve Bush and Vine Fruits by Gene Logsdon - For berry lovers and growers everywhere this handy book gives important detail for raising and enjoying berries and grapes from the garden. From preparing the soil right on through to eating or marketing the berries, **SUCCESSFUL BERRY GROWING** covers it all. Among the many plants discussed are strawberries; raspberries (yellow, black, red, and purple), blackberries, blueberries, dewberries, elderberries, gooseberries, currants, grapes, and muscatines. The book also provides essential and fascinating information about wild berries, berries for birds only, berries for decoration, dyes, inks, and other non-edible uses. 208 pp with 12 illustrations. Paperback \$3.95

R-31 COMPOSTING: A Study of the Process and Its Principles by Clarence G. Golueke, Ph. D. - One of the nation's leading authorities covers in depth the processes, pitfalls and profits of making compost at home and large-scale composting as a solution to our solid waste problems. 128 pp. Paperback \$3.95

R-42 THE VEGETARIAN ALTERNATIVE by Vic Sussman - Readers will find in this book both an introduction to the ethics and aesthetics of vegetarianism and a guide to sound meatless nutrition. It will appeal both to ethical vegetarians - those who give up meat completely - and to people who simply want to eat less meat for reasons of health or economy. Straight-forward, noncultist information plus recipes for good eating and nutrition. 304 pp., bibliography. Paperback \$6.95

R-64 DID YOU EVER SEE A FAT SQUIRREL? by Ruth Adams - A sane and documented guide to achieving weight loss through a natural nutrition program. No fad diets, starvation or pills, just natural weight control through better eating. 280 pp., illustrations. Hardcover \$6.95

R-56 MANAGING YOUR PERSONAL FOOD SUPPLY edited by Ray Wolf - How to eat better for less by taking an active role in producing, processing and preparing your food. Explains how to incorporate homegrown products and outside purchases into a nutritious lifetime eating plan. 480 pp. Hardcover \$11.95
Paperback \$8.95

G-28 MAKING HOMEMADE APPLE PIES AND CRUSTS - No less than 63 apple pie recipes, 51 pastries (baked and unbaked), 7 dumplings, along with general baking tips for guaranteed success. Absolutely mouthwatering delicious! 68 pp. Quality Paperback \$2.95

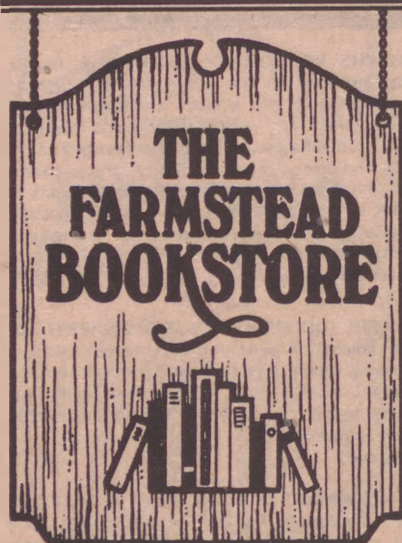
G-30 THE SPROUTER'S COOKBOOK by Marjorie Blanchard - Tasty! Crunchy! Nutritious! Amazingly easy to grow, low-cost fresh greens. Learn five sprouting methods and specific directions for 11 seed varieties. 135 delicious recipes - soups to desserts! 144 pp., 40 illustrations. Quality Paperback \$3.95

G-27 THE SOYBEAN BOOK by Phyllis Hobson - This is the definitive book on soybeans. If you've read bits and pieces about soybeans, how packed with protein they are and the thousands of ways they can be used for tasty foods, here is the book to explain it all. 222 recipes plus ways to use soybeans to replace or extend meats. 160 pp., 50 illustrations. Paperback \$5.95

R-52 STOCKING UP: HOW TO PRESERVE THE FOODS YOU GROW, NATURALLY edited by Carol H. Stoner - One-third larger than the original edition, with many more illustrations and almost 100 new recipes, the new edition has expanded directions for jams and jellies with honey; for drying fruits, vegetables, and meats; and for making a variety of soft and hard cheeses. An excellent reference work on all aspects of preserving. 552 pp., illustrations. Hardcover \$13.95
Hardcover Deluxe \$15.95

G-14 SECRETS OF COMPANION PLANTING FOR SUCCESSFUL GARDENING

by L. Riotte - Companion planting is planting your garden around positive plant relationships. Ask any old-time gardener - IT REALLY WORKS! And Louise Riotte 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 \$5.95



R-48 THE SOLAR GREENHOUSE BOOK edited by James C. McCullagh - This is the first comprehensive book dealing with design, construction and crop production in a variety of solar greenhouses. It provides detailed technical and design information, with emphasis on low-cost, low-energy structures. 344 pp., 136 photos, 135 illustrations.

Hardcover \$10.95
Paperback \$8.95

R-49 30 ENERGY-EFFICIENT HOUSES YOU CAN BUILD by Alex Wade and Neal Ewenstein - Shows how to plan and build an energy-efficient home and use every inch of space as well. The authors explore efficient room layouts, insulation, heating and ventilation, plumbing and natural lighting. They emphasize use of low-cost, recycled and easy maintenance materials, post and beam framing, and ingenious shortcuts for construction. 336 pp., 202 photos, 30 floor plans.

Hardcover \$12.95
Paperback \$8.95

R-19 LOW-COST ENERGY-EFFICIENT SHELTER by Eugene Eccli - For the owner and builder, this book tells how to cut energy bills for heating, cooking, appliance use, lights and water. In addition to money-saving advice, it includes plans and specifications for 14 low-cost, energy-efficient homes with 150 detailed illustrations, understandable to the novice designers, builder and handyperson. 416 pp.

Paperback \$7.95
Hardback \$10.95



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 \$12.50

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 \$4.95

G-37 LOW-COST POLE BUILDING CONSTRUCTION by Merrileas 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 \$5.95



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 . \$5.95 - Hardback \$10.95

G-12 PLANNING AND BUILDING YOUR FIRE-PLACE by Margaret and Wilbur Eastman - Every aspect of planning, building, maintaining and using your fireplace. Step-by-step construction, masonry details, all about flues, free standing fireplaces, materials, costs and improving efficiency. 144 pp., 100 illustrations.

Quality Paperback \$5.95
Hardcover \$9.95



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 solar house costs. 288pp.

Paperback \$8.95
Hardcover \$13.95

R-20 PRODUCING YOUR OWN POWER: How To Make Nature's Energy Sources Work For You, Edited by Carol Stone - This book includes the advice and information from many experts on how to harness energy from the sun, wind, water wood and organic wastes. Over 165 charts, tables, building plans and detailed instructions are included. 332 pp.

Hardback \$8.95

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

WINTER '76

Growing Christmas Trees
Workhorses on Your Farmstead
How To Sell Your Crafts
Starting Seedlings Indoors
Fruit Leather
Ravens In Maine
Bee Keeping

SPRING '76

Spring Pig Power!
How To Work and Play With Squash
How To Build a Fence
Clearing Land Without Backache or
Backhoe
Raising Bees in Maine
Tapping the Maine Sugar Bush
Heirloom Beans

SUMMER '76

The Grasses of Maine
How to Buy a Horse
Making Hay Despite the Weather
Planting an Organic Orchard
Some of my Best Friends are Bugs
Enjoy Your Own Farm Pond
Plants that Poison Livestock

FALL '76

Old Time Apples
A Guide to Raising Ducks
Muscovies on a Maine Farm
More about Muscovy Ducks
On Augers, Froes and Crozes
Ergot
Forest Management
Flight from Winter, Flight to Spring
In Homage to Angelica

WINTER '77

THE Commonsense Gardener
Farming With a Draft Horse
How to Make a Barrel Stove
Winter Deer Feeding
Lambing Time
Harvesting Salt Hay
Wood Stove Cookery
Wood Stove Safety
John Vivian's Convenience Garden
Saving Energy is Saving Money

SPRING '77

Know Your Soil
The Modular Cold Frame
On Choosing Your Goose
Making Maple Wine
Smelting by Moonlight
Digging Dandelions
Starting Tomato Seedlings
A Bee for The North

EARLY SUMMER '77

Let Weeds Protect Your Garden
Hoes for Hard Rows
Understanding Passive Solar Heating
Systems
Home Childbirth
Nutrition and the Vegetarian Diet
Woodsheds Are Beautiful
Beefalo

SUMMER '77

Getting A Line on Bees
How to Hook a Hon'd Pout
Cooking Carp and Other Rough Fish
Making Low Sugar Jams & Jellies
Tea Thyme
Palate Pleasing Pickles
To Husband A Goat: A Moral Tale
Rural Poland - A Glimpse of Our Past
Legumes - Selecting Seed Mixtures
for the Small Farm

FALL '77

Home-Grown Tractors
Green Manure For The Fall Gardener
Wild Harvest
Building a Log Cabin by Hand
Making a Sheepskin Rug
Woodburning Basics
Herbs in the Fall Garden

HOLIDAY '77

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

WINTER '78

The Truth About Potatoes
Dogs on the Homestead
Take a Good Look at Your Garden Soil
Salads On My Windowsill
Easter on Energy
Have You Any Wool?
Hearty Hot Chowder

SPRING '78

- Plowing with a Draft Horse
- Start a Strawberry Bed
- Secrets for Starting Seeds
- How to Make a Hotbed
- The Truth About Onions
- Asparagus
- Dining on Daylilies

EARLY SUMMER '78

The Common Sunflower
Growing Grains
Building a Log-End Home
The Reliance Peach
Sensible Pest Management in the Orchard
Plowing with a Draft Horse, Part II
Harrowing and Seeding

SUMMER '78

- Plowing with a Draft Horse, Part III: Haymaking
- Raising Rabbits
- The Truth About Salad Greens
- Getting Your Goat
- Weeds to Encourage
- Our Spring-Fed Reservoir

FALL '78

Preserving Your Garden's Bounty
In Praise of Chickens
Caring for Small Stock
When It's Time to Butcher the Hog
Water Closet Blues—A New Look at No-
Flush Toilets
Our Unique Waste-Water System
The Art of Splitting Wood

HOLIDAY '78

The Truth About Cauliflower
Five Easy Ways To Make A Rug
A Beginner's Guide to Raising Bees
First Aid for Fruit Trees
The Sweet and Sour of Sugar Substitutes
Honey Cookery

SU79



by Millie Halpern

We twenty to forty year olds are slowly getting it through our skulls that the 'future' the popular prognosticators of our childhood extrapolated from the past, is not the future that our children will know. A while back it all seemed so clear -- Daniel Boone beat a foot path through the Appalachians; later the pioneers on the Oregon trail drove carts and oxen; our parents rode the train; we took the plane; and our children would zip around in their own personal, little whirly-birds.

In **Muddling Toward Frugality**, Sierra Club Books, 1978, San Francisco, California, \$6.95, the author Warren Johnson lucidly explores possible scenarios of what our future will be, now that energy and resource shortages are making us face the fact that our earth cannot support unending exploitation of non-renewable resources by a larger and larger population.

Johnson, who is professor and chairman of the geography department at San Diego State University, presents a forecast basically optimistic. We'll probably never again experience the cheerfully wastrel, throw-away abundance of the Sixties, he says. But in a simpler, more frugal future we may enjoy more personally satisfying lives, with more individual control over our livelihoods, and the social and political circumstances in which we live.

The Farmstead Reviewer

The word frugal has come to have an austere, bare-bones connotation. Johnson uses the word in its original meaning, "to suggest economic conditions in which society is obliged by the force of circumstance to make full and 'fruitful' use of all its resources."

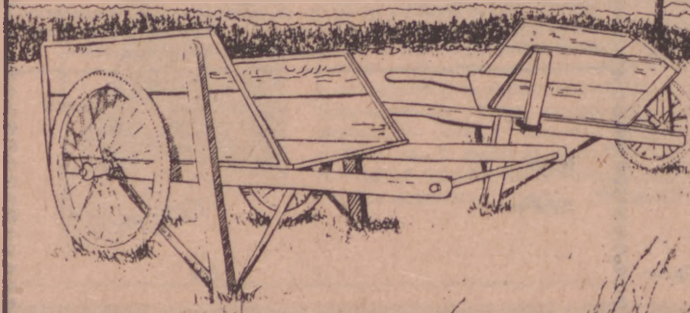
How will we reach such a frugal society? Johnson presents his thesis that our economic structures respond to changing circumstances in much the same way that living things respond to changes in their environment -- by adapting and evolving. We'll 'muddle' through. Johnson feels that situation-by-situation muddling is indeed the best course to follow as we are pushed by circumstance into evolving a new economic and social order. Master plan, Great Leap Forward-type solutions are hard to establish and call for more bureaucracies and regulations. And, Johnson argues, we can't really know what the results of such sweeping policy decisions will be.

Johnson writes that the era of resource abundance is ending, but it is not the end of the world. Hopefully we will have enough time to gradually change the way we live and produce things. Sudden, massive changes and reallocations might disrupt our society so much that they would pave the way for a dictator.

Using Johnson's evolutionary analogy, our technological prowess has allowed us to pass the ideal point; we've filled our niche and beyond, and now environmental resistance is beginning to slow us down. Actually, we'll be lucky if it is limited resources, and not environmental resistance of some other sort, like the buildup of poisons in the environment, that slows us down.

As resources and energy grow scarcer and more expensive we'll begin to change the way we do things. Massive, energy-intensive factories, that have their raw materials shipped from great distances, and then send their finished product out great distances, will grow less competitive. Smaller, more local, labor-intensive factories will be able to produce goods more economically.

terra firma



Terra Firma carts and wheelbarrows are individually constructed in Maine. Whatever season or chore, from hauling firewood to harvest time, our functionally designed products will save you time and energy. Over all dimensions of the cart are 43½" wide x 60" long x 32½" high with heavy duty 24" wheels and a load capacity of 450 lbs., (10.10 cubic ft.); wheelbarrow specifications are 69" long x 32½" high, a 20" wheel and capacity of 250 lbs., (4.13 cubic ft.) If you heat with wood, work a farm, orchard, garden, or are just plain interested in our quality carts and wheelbarrows, write Terra Firma for our free brochure.

terra firma

Searls Mill Road
Chelsea, Maine 04345

(207) 582-1635

Available at Northeast Carry, 110 Water St., Hallowell

Johnson points out that we've been eating cheap energy. How? For one thing, we've managed to grow larger crops by the use of chemical fertilizers. Nitrogen fertilizer is made directly from fuel, mainly natural gas. Heretofore it has been economical to do this. With increasing scarcity it will not be.

Johnson says that simpler technologies are also more democratic. People can understand the workings of a community windmill, and have some say in its development and use. In contrast, a nuclear power plant designed to produce energy for a huge area is remote, both physically and mentally, from most people, though its function or failure will affect their lives deeply.

A more frugal society, less mobile and less centralized, will foster the reassertion of the traditional values of family life, friendship, loyalty, and cooperation. This all to the better.

But though the future would harken back to the old days in the above mentioned respect, Johnson says that life in such a world need not have the disadvantages of the old days. Solar energy can be used to heat our houses and water. The wind can be used for mechanical tasks and to generate adequate amounts of electricity, to be stored in batteries, for lights and radios and small tools.

It is clear that the world that Johnson hopes will evolve is not one where all the advances human kind has made are dismantled and it is just 'back to the cave.' He looks forward to human and comfortable society, in tune with the carrying capacity of our earth.

To quote Johnson's concluding remarks, "Above all, we will have the comfort of knowing that our relationship with the environment is sustainable, and that the earth is a true home to us."

Quadractor

Revolutionary multi-purpose vehicle for all logging and agricultural needs. 4-wheel drive, 4 wheel steering. 31" ground clearance, low center of gravity, easy maintenance, low cost, fuel efficient.



Available At:

R. B. Sales, Inc.
79-85 Commercial Street
Portland, Maine
(207) 773-6426

Northeast Carry Trading Co.
P.O. Box 187 110 Water St.
Hallowell, Maine
(207) 623-1667

Sunshine In Your Shower means Money In Your Pocket

DUMONT
SOLAR

I WANT TO KNOW MORE?

Call or write for details on our 2, 3 and 4 collector systems, costs and payback, substantial Federal Tax Credits, and our no-obligation Solar Site Analysis.

DUMONT INDUSTRIES Main Street
Monmouth
Maine 04259
(207) 933-4811

MOVING? PLEASE LET US KNOW . . .

Subscription Service

TO SUBSCRIBE OR RENEW:

- | | |
|---|--|
| <input type="checkbox"/> new subscription | <input type="checkbox"/> 1 Year \$7.00 |
| <input type="checkbox"/> renewal | <input type="checkbox"/> 2 Years \$13.00 |
| <input type="checkbox"/> Payment enclosed | <input type="checkbox"/> 3 Years \$18.00 |

CHANGE OF
ADDRESS
AND
RENEWAL:

PLEASE ATTACH
MAILING LABEL HERE

SU79

name

(please print)

address

city

state

zip code

MAIL TO: Farmstead Magazine, Box 111, Freedom, ME 04941

by Sam Brown

O.K., you've seen the beer horses, you've watched the oxen pull at the fairs and the neighbor who is so proud of his buckgoat that pulls his children around in a cart -- but all there is at home is a small bag of ponyflesh that gets patted and fatter and only occasionally ridden. How do you make the cute little buddy more useful?

Allen Conder addresses this problem in his book, **Training the Driving Pony**, Arco Press, New York, New York, \$3.95, paperback. He begins by assuming that the pony and the trainer are quite green, and speaks from the position of gentle authority and personal experience. Young drivers and beginners are cautioned on care and safety first, results later, a wise ordering in my experience. (I learned about horses mostly by trial and error, and expected results would justify the means, when the opposite is the truth.)

Furthermore, the author also makes allowances for habits that riding ponies must change when being broke to drive. Conder's tips on handling the lines, adjusting the harness, and other little things to watch for, make this slim book worthwhile to someone who hasn't got an oldtimer just down the road. He is unafraid to state his frank opinions on a few controversial methods of training, and seems very sure that his method, if followed carefully, will produce a workable, obedient pony that can be used effectively in the right conditions to contribute its share of muscle around the farmstead.

— UNDER \$10,000 — MAINE LAND INVESTMENTS

- \$6,750 - 22 acres - primarily mixed wood growth with 2 acre field area located in an attractive farming area of central Maine. Perfect for small farmstead. Protective restrictions ensure quality of area.
- \$7,500 - 13.2 surveyed acres including lovely 4-acre field and nice views of surrounding hillside and Sandy River Valley. Good gravel access and access to river. Easy commute to Skowhegan.
- \$4,700 - Kezar Lake building site. Excellent 2.1 acre site close to beach area. Soil tested. Perfect spot for your summer vacation home. Good family area.
- \$8,600 - Are you a canoist looking for the perfect spot to build a rustic cabin? If so, consider this terrific buy - 14 acres with 411' of frtg. on Long Pond in Jackman, Maine connecting the Moose River Waterway.



LAND/VEST, INC.

76 Main Street, Box FP
Yarmouth, Maine 04096
207/846-5111



The Clark Agency

Realtors
Belfast, Maine

Specializing in listings of
Waldo County.

THE CLARK AGENCY
89 High Street, Belfast, Maine 04915
207 - 338 - 4610

*Sirs: Please send me Free mail outs
of Penobscot Bay area real estate*

MR./ MRS. _____
ADDRESS _____
CITY _____
STATE _____ ZIP _____ TEL. _____

THEY DON'T COME ANY TOUGHER.



Gravely riding tractors have all-gear drive, no belts. An eight-speed transmission housed in cast iron. A choice of 10, 12, 16 or 18 hp to match your jobs.

Instant forward and reverse for fast maneuverability. Powers over 20 optional attachments.

Call for a free demonstration. We service what we sell.

GRAVELY

Brunswick Equipment

SALES AND SERVICE

EVERETT DEHAHN
Telephone 729-3576

4 Miles Out on River Road
BRUNSWICK, MAINE

by Lynn Ann Ascrizzi

Perhaps all of us as children, or as grown-up children, have rescued and tried to keep alive one of Nature's wildlings in distress -- the broken-winged, the starved, the dispossessed. On this subject, Mae Hickman and Maxine Guy have contributed an extremely helpful book, illustrated softly and realistically, on **The Care of the Wild Feathered and Furred: A Guide to Wildlife Handling and Care**, Unity Press, Santa Cruz, California, \$4.95.

In reading their sensitive remedies and rescues, however, one could possibly fall prey to a sense of futility -- seeing how truly frail a gesture it is to tend to one of those nameless and countless ones -- especially if the image of a world oppressed by human problems comes to mind: mass starvation, war, disease and seemingly endless accounts of people-made afflictions. Compared to the enormity of these, why so much consideration lavished upon a common fledgling or just another small creature stunned along the highway?

The book, however, sparked in me the quiet memory of a time I witnessed two children hurrying along one of the humbler streets of a New York neighborhood, both of them clutching a shoebox and looking down into it with great solicitude. As they ran past me, I saw nestled on a make-shift paper nest, a baby pigeon. The children, looking scarcely watered and fed themselves, ran past granite buildings and busy traffic, through a dim doorway and up unknown steps, with their pitiful, precious and naked spark of life.

Fragile as the gesture is, the authors of this guide book make us realize that caring for the creatures is proof of our humanity. Once more, the desire to help and to mend is awakened -- an innate and more promising side to our natures.

Their guidance has been gathered over 60 years of first-hand experience and includes treatment for injuries, disease and shock, special equipment (such as an incubator costing

less than a dollar), a natural food chart for birds and animals. There is a special chapter dealing with oil spill damage to waterfowl and tar damage -- another on preparing an animal for release and identifying with tags and banding.

A section on pet shops was most enlightening. Who hasn't experienced sadness upon seeing wild birds and animals poorly treated in cages and then sold as amusements? I am sorry the conditions in some zoos were not mentioned and evaluated, but of course, that is a separate topic in itself. We are reminded by the book that in America, over a million acres are being developed a year, thus destroying so much natural habitat. The authors underscore the necessity to keep wildlife free.

Though this is not the definitive book on wildlife care (there is too little known on the subject to allow for such a work), Mae Hickman and Maxine Guy are to be gently applauded for such a careful and constant guide book and for reminding us again that nothing is too small or unimportant.

**The Most Significant Breakthrough
in Recent Solar History**



**OUR
SUNTAP**

SOLAR DOMESTIC HOT WATER HEATER uses * NO ELECTRICITY, has no pump and no controls. It utilizes freon, a non-corrosive, *NON-FREEZING transfer medium which changes phase from liquid to gas causing natural circulation in the system.

The freon is heated to a gaseous state by the sun in the collectors and rises into the heat exchanger in the H₂O tank. There the heat is transferred to the water which cools the freon and causes a change back to the liquid state. The freon then gravity feeds back down to the collectors to be heated again.

♦SIMPLE ♦ RELIABLE ♦ EFFICIENT ♦
INTERESTED?

Please send SASE for brochure or system quotation.
Dealer inquiries invited.

Alternative Resources
101 High St., P.O. Box H, Belfast, Me. 04915 338-4038
We're open 8:30 - 5:00 Monday - Saturday
Send \$1.00 for Alternative Resources Catalog.

**Select Your
LOG HOME**



Use your custom plan or select one of ours. Treated and hand-peeled Cedar or Lodge Pole Pine log homes and cabins with "EXTRA" insulation from \$3,900.00. We manufacture Kits for any log structure. Brochure/Plan book \$3.50.

★ "EXTRA" Insulated Log Homes ★

Wilderness Log Homes

P.O. Box 434 • Cumberland Center, Maine 04021

YES, PLEASE SEND
☐ Brochure/Plan book \$3.50

Name _____
Street _____
Town _____
State _____ Zip _____

NASHUA'S ARE IN!



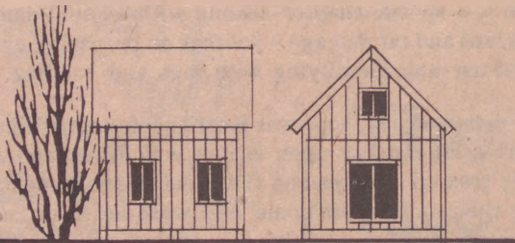
featuring both
RADIANT
and
CIRCULATORY
HEAT at:



The Black Stove Shop
[Stocking 175 solid-fuel heaters]

Off Rt. 201
Vassalboro, ME
Phone: 622-6040
Open: Mon.-Sat. 9:00-5:00
Friday till 8:00

Off Rt. 95, exit #13
1394 Lisbon St., Lewiston, ME
Phone: 784-6144
Open: Mon.-Sat. 9:00-5:00
Friday till 8:00



HOUSE KITS

Our traditional and contemporary designs are of exceptional quality and low cost. The pre-cut kits are packaged for portability (great for island construction) and can be assembled by two inexperienced builders. For more information about these outstanding houses, send \$1 to:

Shelter-Kit Incorporated

Dept F Franklin Mills Franklin NH 03235

by Lynn Ann Ascrizzi

A landmark addition to anyone's collection of nature guide books, **The Heritage of Our Maine Wildflowers**, Courier of Maine Books, 1979, \$9.95, soft cover -- is the only book devoted exclusively to the wildflowers of the state. The author, Judith B. Johnson, who lives near Skowhegan, Maine, is an amateur botanist and has written and illustrated in color a guide book combining the charmingly simple with the plainly practical.

The bulk of the information is plant identification, with flowers easily cataloged by color. But, there are also pages on medicinal herbs, a conservation guide, and history, folklore and legends surrounding wild plants. Her work is a wonderful summer companion for the enthralled Maine vacationer and wanderer, or an enlightened friend for the native enthusiast who wonders what sort of flower is growing along the meandering dirt path to the pond or gracing the fence line.

E
E
C

HELP PREVENT CONTAMINATION OF STREAMS & GROUNDWATERS

Wastewater Treatment Systems

- Purifies all household wastewater rapidly.
- Eliminates odor, sludge and 98% of pollutants.
- Flexibility of design & installation allows on-site treatment for individual homes or groups of homes tied into a single system.
- Two year service policy & five year warranty.

Phone or write: **EASTERN ENVIRONMENTAL CONTROLS**

(301) 778-0467 Box 475, Chestertown, MD 21620

**One of
our Trust
Specialists
at work**



Bar Harbor Banking's Traveling Trust Team -- experienced, energetic, knowledgeable, will be glad to visit you in your office or home, providing Trust services and information . . . another of the full service banking activities at Bar Harbor Banking & Trust.

Contact any of our Trust Officers: **Dwight Eaton**, **Geddes Simpson**, or **Maurice MacIsaac** at our Bar Harbor office. Phone 288-3314.

BAR HARBOR BANKING & TRUST COMPANY

Bar Harbor • Blue Hill • Deer Isle • Lubec
Milbridge • Northeast Harbor • Southwest Harbor

MEMBER FDIC

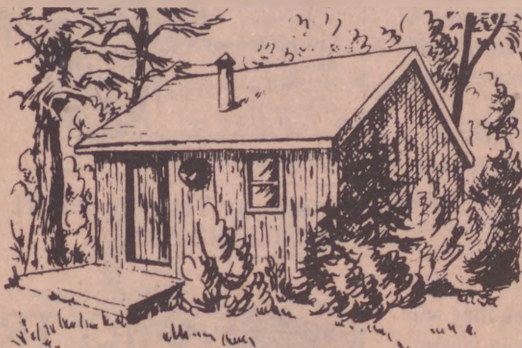
Another new Courier of Maine publication is **The Gulf of Maine**, by Spencer Apollonio, \$3.95, paperback. The author has researched this "very marked and peculiar piece of water" -- its history, landscape, currents and animal life. This area, which is primarily a 36,000 square-mile backwater of the Atlantic, has long been, says the author, "a focus of intense activity in the politics, exploitation and management of rich fishery and mineral resources."

A short but to the point guide.

Designed to fit in a hiker's backpack or possibly in a blue jean's baggy pocket, **The Mushroom Trail Guide** by Phyllis G. Glick, Holt, Rinehart & Winston, N.Y., 1979, \$5.95, paperback -- is a must for the happy mycologist -- or the most ordinary mushroom hunter.

Edward Marggraf, Founding Chairman of the Los Angeles Mycological Society, recommends this trail guide as "one of the best of its kind."

Wood-fired Sauna



Please send me information on complete, ready-to-assemble PRE-CUT EXTERIOR SAUNAS with wood-fired sauna stove.

- _____ 6 x 8 pine construction
- _____ 8 x 12 pine construction
- _____ 8 x 12 redwood construction
- _____ 8 x 12 cedar log construction

Interior sauna with wood-fired sauna stove (adapted for garage or basement installation.)

- _____ 6 x 8 pine construction
- _____ 6 x 8 redwood construction

FINN-MAID SAUNA
Star Route 32, Rockland, Maine 04841
(207) 594-2843

CLYDE'S STOVE SHOP



- Wood Stoves
- Wood Furnaces
- Cook Stoves
- Fireplace Inserts
- Glass Doors
- A Lot More

We will guarantee Best PRICES, SERVICE, QUALITY and SELECTION.

If we don't have it we can get it.

Kennedy Memorial Drive
465-2217

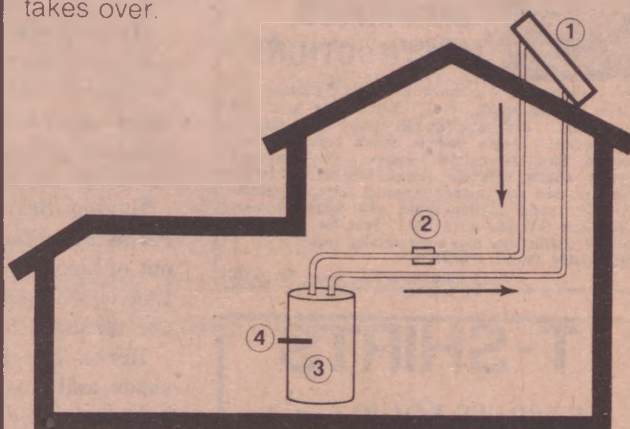
Waterville, Maine
873-4467



Cut Your Fuel Bills With Solarcraft

The water heater than runs on sunlight.
How does it work?

It's simple. Heat from the sun heats water for your daily needs. Whenever solar heat isn't available, a conventional electric heating element takes over.



1. Energy from the sun is absorbed by collector panels.
2. The heat is transferred to a closed circuit of distilled water that is pumped to the water heater.
3. The distilled water heats the potable water in the tank.
4. A standby electric heating element heats the water when the sun is covered by dense clouds.

**Come in and see
Solarcraft...
the water heater
of the future
is here, today.**



Installed system on display.

Learn all about Solarcraft from—

Colonial Supply Corp.
75 St. John St.
Portland, Me. 774-6191

Name _____

Address _____

City _____

The Wise and Useful Farm and Garden Guide

JULY



Miniature Brass Bed
All brass construction. 1/12" scale. Includes bed spring, mattress, and two pillows. \$17.50. We pay postage. Allow 3 weeks for delivery.
AVALON SALES
P.O. Box 122
Washington Mills
New York 13479



FREE!
VENEER CRAFT
CATALOG PLUS
SIMPLIFIED
INSTRUCTIONS

90 varieties world's rarest veneers, pre-joined veneers, checkerboards, broad choice wood band and art inlays. Illustrated in full color — at reasonable prices. Learn how to create beautifully veneered furniture quickly, easily. Re-veneer old tables, chests, cabinets, clocks, with ease. Transform cracked and chipped veneered surfaces instantly! Illustrated catalog shows new contact cement technique that you learn fast. Send for FREE simplified instructions plus color catalog today.
MORGAN, Dept. F09K3

1123 Bardstown Rd., Lou., Ky. 40204

T-SHIRTS

EXPRESS YOURSELF!!



S, M, L, & XL — \$5.50

plus 75¢ P & H

Brochure 25¢

CUSTOM DESIGNS, TOO!!

THE WOODSPEOPLE

Box F

Hampden / Maine / 04444

We are again amid the fervid heat of July, the hottest and oftentimes the driest month of the year. But clear the deck for action! The great fight of the year is now close at hand. When the grass is fit to cut, haying must take precedence over everything else. Barns and shed should be put in order immediately, if not ready to receive the new mown hay.

Buckwheat--Sow a large breadth of this if there is likely to be any deficiency in the other grains.

Cabbage--Should be more largely cultivated upon the farm. It's a good succession crop to early potatoes. A great value as a fodder for cows, and will last well stored until spring. It's excellent for pigs and poultry.

Haying--Begin with the clover and cut as the different fields are passing out of bloom. The indication of cutting time is, with many, when half the heads are turned brown.

Herbs--The best are dried in the shade, and preserved in boxes that will hold their aroma. Cut while in bloom.

Manures--All kinds of vegetable matter, weeds and grasses from the swamp and roadside, leaves from the woods, small brush and clods, sea weed and mud, make valuable manure. Gather everything of the kind that is available, and put it in the compost heap. Either cut before the seeds ripen, or secure thorough fermentation, that there may be no foul seeds in the manure.

Mowings--As soon as the grass is cut, spread fine, well rotted manure uniformly upon the surface. It is the best time to manure grass land. If it rains soon, the effect is very great, and at any rate, just as good as if applied at any other time.

Orchard--There is not much to be done in the orchard this month. Early in July is a good time to prune both in orchard and nursery. The rapid growth



Thousands of Baby Chicks, Ducklings, Turkeys, Guineas, Goslings, Peafowl, Pheasants and Bantams hatching during season. Safe shipments anywhere. One of America's Finest Hatcheries. Send 50¢ today for Catalog & Price List.
Country Hatchery, Inc., Dept. FM, Wewoka, Oklahoma 74884

Scotch Highland

BEEF CATTLE

Tender,
Tasty,
Quality Meat
from Grass
Ease of Calving
Hardy Foragers
Bred in Highlands
of Scotland



HENRY CARSE

Hinesburg, Vermont 05461

Tel: 802-482-2294



TRACE YOUR OWN FAMILY TREE

Unique new family record album. Sections for photos, clippings, documents. Deluxe 11"x15" 136 pages, easy and fun to use. Write for **FREE BROCHURE** \$19.95 plus \$2.00 postage & handling

Mail check to **PASTIME**
Dept. Z, Box 1464, Ventura, CA 93001

150-YEAR-OLD POST AND BEAM CAPE AND 26 ACRES with fruit trees and enough sugar maples to be worth the tapping. Kitchen with wood cook stove, 3 bedrooms, living room, bath, attached shed. Central heat, full insulation. With some work, the perfect small farm. On a quiet country road in Industry. (No. 1823)

\$39,500.
OLD COUNTRY INN AND 4+/- ACRES in Weld's lake and mountain resort area. 9 bedrooms, country kitchen, parlor, living room with fireplace and storage benches. Needs extensive renovating. Near Mt. Blue State Park and Webb Lake, in the midst of snowmobiling country. (No. 1848) \$19,500.

SANDY RIVER REALTY

Box 230FP, Farmington, Me. 04938

Tel. 207-778-6333

Waterless, Odorless, Composting Toilets

Examine our complete range of systems from largest to smallest, oldest to newest, and most passive to most sophisticated systems on the market today. We've installed systems in homes, on islands, and in condominiums so we can help you choose the system most suitable for your needs based on size, cost and operation. On display are:

■ **CLIVUS MULTRUM** ■ **TOA-THRONE** ■ **HUMUS** ■ **BIO-LOO** ■ and the new **ENVIROLET**.

ALTERNATIVE SYSTEMS, Tasker Hill, Conway, NH 03818. Russ & Joan Lanoie 603-447-5266 for appt.

Enjoy all the benefits of country living! Let Farmstead Magazine show you how...



If you'd like to grow a terrific garden, heat your home with wood, and enjoy a healthier way of life all year 'round, subscribe to **Farmstead Magazine** and find out **how-to:**

grow fruits, grains and vegetables of all kinds • raise goats, sheep, rabbits, pigs, cattle, ducks and geese • forage and prepare edible weeds, mushrooms, wild flowers and fruit • heat with wood • build a stove, woodshed, chimney, cold-frame or fence • make soap, feather pillows, Christmas wreaths and other crafts you can sell • plant by the signs • tap maple trees • dig a farm pond • befriend beneficial birds and bugs • can, preserve and store family foodstuffs • keep bees • fish for crabs, mussels, horned-pout and smelt • birth your baby at home • cook up a kitchen-full of healthy and delicious country-tested recipes ... AND that's just for openers!



Farmstead Magazine is a unique publication for gardeners and small farmers everywhere. Each issue is a storehouse of practical, commonsense information. In addition to the variety of articles, there's a bookstore section, interviews, book reviews, plenty of original illustrations and a touch of humor now and then. So if you're looking to become self-reliant and improve your lot Farmstead belongs in your home.



Farmstead Magazine

SU79

Box 111 Freedom, Maine 04941

Please

enroll me as a subscriber to Farmstead.

I enclose payment for:

- ☐ \$7.00 (One Year) ☐ \$13.00 (Two Years)
☐ \$18.00 (Three Years) ☐ Bill me later.

Name

Address

City

State Zip

Subscribe Now & Save

For just \$7.00 a year you get six BIG bimonthly issues (you'd pay \$9.00 on the newsstand). Or subscribe for two years for only \$13.00... that means even BIGGER SAVINGS off the single copy price!

Money back guarantee: If at any time you're not completely happy with Farmstead, you may cancel your subscription and receive a full refund for all undelivered copies.

SAVE SEPTIC TANK PUMP-OUTS!

with
Septictrine
THE 5 NATURAL ENZYME
SEPTIC WASTE DIGESTER



ELIMINATES

- FOUL ODORS
- CLOGGING
- BACK-UPS

• An exclusive blend of 5 natural enzymes that completely liquifies ALL waste solids, including HOUSEHOLD TOILET PAPER and FACIAL tissues.

• Regular use reduces costly pump-outs! Some customers report they never had to pump out since using Septictrine!

• ECONOMICAL to use...2 ozs. every other week assures a clog-free, free flowing system.

DRAINTRINE

NATURAL ENZYME
DRAIN CLEANER

1 Pint

FREE!

with purchase
of 3-lb. container
SEPTICTRINE

5.00

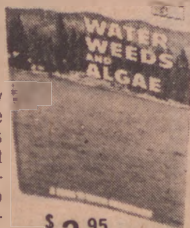
VALUE

- The NEW...SAFE way to CLEAN DRAINS
- Non-Poisonous
- Non-Caustic
- Will not Harm Plumbing
- Ideal for Garbage Disposals

The ONLY Complete Guide to WATER WEED and ALGAE CONTROL at Lakes & Ponds.

This full-color guide graphically describes and illustrates the most common water weeds and algae. Experts present recommended control methods...everything you need to know about this critical subject.

1979 Revised Edition **\$3.95**



BROWN DEER CO. Dept. FS779
9600 N. Garden Dr., Mequon, WI 53092

Here's my check _____ M.O. _____

Send: _____ 1# Trial Size - \$7.95

_____ 3# w/Free Draintrine - \$19.95

Send me _____ copies of HOW TO IDENTIFY
AND CONTROL WATER WEEDS AND ALGAE.

Enclosed is \$ _____

Send me your Free Catalog

Name _____

Address _____

City _____

State _____ Zip _____

For quicker delivery of your order, call TOLL-FREE 1-800-558-5106, 8:30 AM - 5 PM CST, Weekdays.

of new wood will soon heal over small wounds, and the wood will season firm and hard where large limbs are removed. Neglected orchards should by all means receive a good but judicious trimming now, and young trees will be improved in appearance and rendered more fruitful by heading back the most luxuriant branches. Do not allow suckers about the trunks or on the limbs. After trees have attained considerable size, it is better to keep the orchard under tillage, plowing lightly and harrowing frequently during Summer.

Pastures--The great trouble is overstocking. They have no change, and no chance to recuperate. Corn, sorghum, rye and other green crops fed out now, will save the pastures, and in the end secure more feed.

Poultry--Keep them from the grain fields until after harvest, then allow them to glean.

Rye--Cut before fully ripe, when the grain is passing out of the milky state.

Sheep--Give good pasture or sell a part of the flock. The profit is in well fed sheep. They can be made efficient helpers in subduing brush pastures. Goats are still better. Visit and salt weekly, and see that they have good water. Watch against the appearance of foot rot.

Swine--Will find good picking in the grain fields after the crop is removed. Flesh and fat are made much more economically in warm, than in cold weather. Feed those confined in the pen with corn stalks and other green fodder. They want plenty of succulent food until frost comes.

AUGUST

The trees stand with drooping leaves in the breathless air, the grass loses its fresh green look, the flowers hang their heads or close their petals, big drops stand on the water pitcher as if uttering its tearful protest against the torrid weather. The very thought of ice sends a thrill through the blood like the rapture of song.

Harvesting and haying are nearly completed. This done, the attention may then be profitably occupied until time for fall sowing, with making improvements, such as draining, getting out muck, repairing buildings, and implements, working roads, etc.

Hay--Cut any remaining. Gather coarse wild grasses for bedding for animals. Secure salt marsh hay and sedge, during the low tides of August, and remove to safe quarters.

CIDER PRESSES -- Goodnature Products, Inc. offers the finest in commercial and home cider presses and grinders. Sizes range from 1 Bu. capacity up to completely continuous press capable of 400 Gals./Hr. Send \$1.00 for catalog to:



Goodnature Products
P. O. Box 233
East Aurora, N.Y. 14052
or call (716) 655-1424

A-DAN-D PRODUCT SOLID BRASS CRIBBAGE PEGS

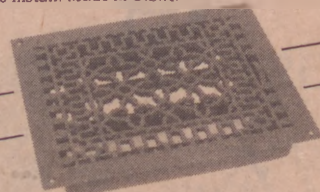
24K Gold and Silver Plated Cribbage Pegs. A

Unique Gift for the Avid Player. Set of four 1 1/4" pegs -- \$14.95 ppd. Send ck. or m.o. to: DAN D PRODUCTS
P.O. Box 442, Malden, MA 02148
Money Back Guarantee in 30 Days

HOT AIR TRAPPED? Let it flow with this decorative

Cast Iron Floor Register

Allows heat to circulate between floors. Warms those hard to reach areas of your home or office. Makes wood-burning stoves even more efficient. Simple footwheel opens and shuts built-in louvers. Rugged construction. Easy to install. Made in U.S.A.



Complete details available. Send 25¢ for our illustrated brochure.

The Reggio Register Co. P.O. Box 511 Dept. F7
Ayer, Massachusetts 01432

TABLE STROKE SANDER

\$350.00
Assembled
(less motor)

Ball Bearing - 190" Sandbelt
"Build Your Own" Kit, 5 plans, \$160.
F.O.B. 30 lbs. You furnish wood,
motor, time. Original in use over
3 years. (2 models Sidestroke
& String also available)

McCall House, Box 1950-F
Lenoir, N.C. 28645



COTTON FUTON MATTRESSES

Smooth, firm support. Foldable. Six inches thick. Standard sizes: \$50 to \$70. Supercalc 100% cotton sheets by Wamsutta, hemstitched solids, Piping Hots, and candystripe. Cannon cotton thermal blankets. Write for brochure and shipping information.

ESSENTIAL ALTERNATIVES

38F Center Street Rutland,

Vermont 05701

802 773-8834

THE WORK SWEATER

From New Zealand

Price \$30
Shipping \$2.50
ME residents
add 5% tax

Densely knit of
65% wool & 35% nylon
Sheds wind and water.
Warmer & more durable
than most. Sweater won't
bag, stretch or shrink.

GREY TWEED S-M-L-XL

FREE ILLUSTRATED CATALOG

Harborside Shop, Bay View St.
Dept. FM, Camden, ME 04843 Tel. 207-236-4567



The SEIZA BENCH WITH DESK
100% HARDWOOD

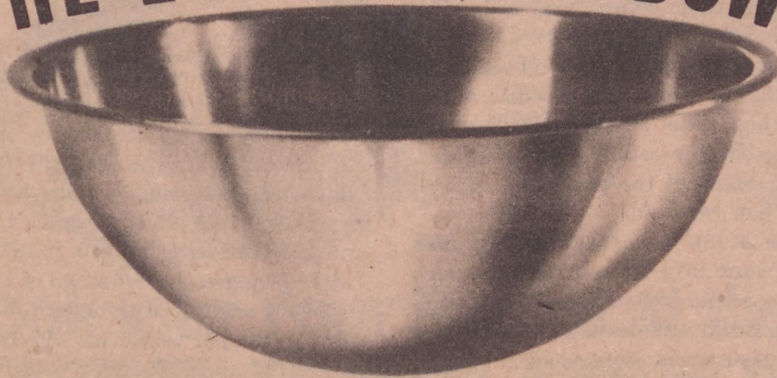
BENCH 13.95 ppd.
DESK 39.95 ppd.
SET OF BOTH 50.00 ppd.
ADD \$4 W.OF ROCKIES
PLANS: BENCH \$2.50
DESK \$3.50
HOMeward BOUND
BOX 97 F
E. CALAIS, VT 05650
MONEY-BACK GUARANTEE

Orchard-Gathering the fruit in the orchard will be the chief labors of August. The ripening apples and pears must be secured or they are lost. In gathering the fruit, great pains should be taken not to injure the trees. Heavy boots are apt to start the bark on the branches, if worn when climbing about in the trees. Thrashing the trees with poles is an abominable practice, beating off the fruit spurs with the fruit. Some of the trees will need to have their overloaded branches braced or tied up, or what is better, a portion of the fruit removed that the remainder may be finer, the tree not overtaxed, and the branches saved from splitting down beneath their burdens.

If borers have been permitted to hatch or penetrate the bark of peach, apple or quince trees, they can be found and cut out before they have done much damage. They are still in the bark, or between the bark and the new wood, into which they will penetrate, if not disturbed, upon the approach of cold weather.

Seeds--Save the earliest and best kind. Label each one distinctly with the name, and time of raising.

THE EVERYTHING BOWL



AT LAST — A bowl big enough to be **really** useful!

This 13 quart beauty is made from heavy gauge stainless steel and is as functional as it is attractive. 16" wide and 6" deep, it's perfectly proportioned for a variety of uses. For example:

- Toss and serve large salads.
- Mix stuffing, large batches of cookies, pie fillings, etc.
- Make bread dough.
- Fill with ice and use as a cooler for beverages, salad plates, etc.
- Bathe baby, soak feet, wash socks, bob for apples, catch drips, etc., etc., etc.

We Guarantee you'll find many, many more uses for it!

Regularly \$20.00 Now yours for only \$11.95!

PLEASE RUSH ME _____ 13 qt. Everything Bowl(s) @ \$11.95 (plus \$1.75 shipping)

_____ 8 Qt @ 7.95 (plus \$1.00)

_____ 5 Qt @ 5.95 (plus \$1.00)

_____ 3 Qt @ 4.95 (plus \$1.00)

_____ 1 1/2 Qt @ 2.95 (plus 75c)

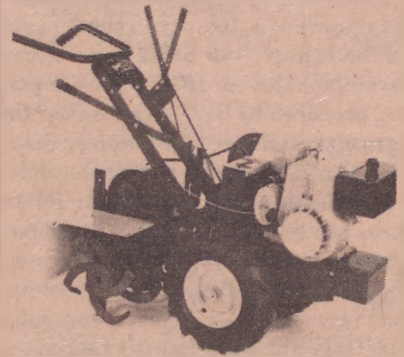
SAVE over 15%! _____ THE SET (All Five) @ \$29.95 (plus \$2.95)

Check, Money Order, American Express, Master Charge, or VISA please

The Wooden Spoon
INC.

Dept. 256, Rt. 6
Mahopac, NY 10541

ROTO-HOE BRINGS YOU THE FAMOUS 990 MODEL REAR MOUNT TILLER



NOW AVAILABLE WITH 8 HP Cast Iron sleeve engine, designed to take other attachments such as Roto-Hoe's Snow-Densa Thrower, or the Cut 'N Shred Shredder shown below. Features chain drive tiller, Peerless Gear transmission, 4 speeds forward, 1 reverse, separate tiller clutch, one-hand operation if desired, tractor tread wheels, easy-mounted hilling and furrowing tools.

This combination 8 HP tiller, snow-thrower, and shredder can be yours for under \$1,000.00! Compare with other single purpose tools which can cost you over \$2,000.00.

Model 990 8 HP rear mount tiller suggested retail about \$600.00; 5 HP model about \$460.00.

ROTO-HOE'S CUT'N SHRED SHREDDER



Allows you to use America's most outstanding shredder at popular price. Here are some of the reasons:

1. The patented side feed shreds stalks, vines, and small branches FAST.
2. Grate bars allow material to pass through much easier than perforated plate. Every other bar can be quickly removed for extra wet material.
3. Offset rotor for less material flying out of top hopper.
4. Slow rotor speed; high torque; less material flying out of top hopper. Saves horse-power.
5. Hammers changed to 3 other positions on 3 of 4 models easily; no removing of rotor required.
6. Sold as an attachment for tiller Models 190, 910, or 990; also as a complete shredder only, having 4 wheels and towing bar handles. No back break here.
7. Tailored catcher pan most practical for catching shredded material.
8. Priced very fair - you get the best for less. Attachment prices start at \$159.00; complete 5 HP shredders start at \$259.00.

THE ROTO-HOE COMPANY

Dept. FP, Newbury, Ohio 44065

Gentlemen:
Please send me information on your Tiller and Shredder.

Name.....

Address.....

City.....

State..... Zip.....

bibliography for small & organic farmers

The U.S. Department of Agriculture has published a 158 page report called "A Bibliography for Small and Organic Farmers-1920 to 1978." The report was prepared by J.W. Schwartz of the Agricultural Research Station at Beltsville, Maryland 20705, and single copies are available from the author. References are broken down into 19 subject groups including -- Animal Wastes, Conservation Tillage, Crop Residue, Earthworms, Green Manure, Inorganic and Organic Fertilizers, Legumes, Mulching, Nutrition, Organic Matter, Sewage, Sludge and Wastewater Effluents, and Soil Microorganisms.

a celebration of rural living

The Common Ground Country Fair, sponsored by the Maine Organic Farmers and Gardeners Association, will be held September 21st, 22nd and 23rd at the Litchfield Fairgrounds in Litchfield, Maine. Capturing the hearts of young and old alike, it is truly an old-fashioned fair with demonstrations of forgotten skills now revived, workshops, displays, fine wholesome food and timely speakers. The Common Ground Country Fair 79 promises to be a unique and joyful experience.

hazards of low level radiation

There is new evidence that low level radiation, even below the maximum-permissible occupational limit, causes chromosomal changes. The study was conducted on 197 British nuclear-dockyard workers between 1968 and 1978. Workers who received a cumulative exposure to radiation of 20 to 30



rem over the ten year period showed a fourfold increase in chromosomal aberrations in their white blood cells. The maximum-permissible occupational dose is 5 rem per year or 50 rem over ten years. A rem is a measure of the absorbed dose of radiation that accounts for the relative biological destructiveness of the particular type of radiation received.

The study was conducted on men who work in a British facility which services and refuels nuclear submarines. Blood samples were taken prior to exposure to radiation and at several times during the ten year period. The significance of the study is that it is one of the few studies where before and after samples could be taken and thus conclusively link the results with the low level radiation. There are many studies that have previously determined that the observed chromosomal changes can be caused by radiation.

In another study scientists have linked an increase in leukemia deaths among children in areas down wind from the Nevada test site, where nuclear explosives were tested in the 50's.

--Science News

protein from grass

USDA scientists have extracted protein from native grasses to make a high value food supplement called Leaf Protein Concentrate (LPC). The food supplement can be added to bread, vegetables, and many other foods to increase their protein content. A side benefit of the process developed is that fungal foods, yeast and mushrooms, can be propagated in the nutrient rich liquid left over from the processing cycle. The residue left from extraction is also a suitable feedstuff for cattle and sheep.

--Acres, U.S.A.: 4-79

fifth annual NOFA conference

The Fifth Annual National Organic Farmers Association (NOFA) 1979 Conference: "Essentials of a Native Agriculture -- a Continuation," will be held August 17-19 at Lyndon State College, Lyndonville, Vermont, amid the beautiful hills of the Green Mountain State's famed Northeast Kingdom.

The conference "will further explore the intricacies and challenges of small scale farming and gardening in the Northeast.

farm numbers still decreasing (but not in all states)

According to recent USDA figures, Maine is one of only six states where farm numbers are increasing instead of still decreasing. The general trend, which has been going on since the 30's, is still down; 2,409,130 farms in 1977 and 2,330,070 farms in 1979. In 1978 the USDA changed the definition of a farm to include only those units with sales of over \$1,000. per year. This conveniently deleted about 300,000 small farms from the USDA rolls.

ANTIQUE APPLE TREES

First varieties grown in America.

A flavor treat unknown to most people today. One of the largest collections in the United States. FREE List.

Lawson's Nursery

Route 1

Ball Ground, GA. 30107

[404] 893-2141

RUFUS A. CANDAGE

REAL ESTATE BROKER

KNOWLEDGE GAINED

FROM FIFTY-FOUR

YEARS OF LIVING

IN COASTAL MAINE

AT YOUR SERVICE

SPECIALIZING IN APPRAISALS

207-374-5645

HOMEBIRTH! Exciting, detailed new book for parents, **Special Delivery.** Lavish illustrations and photographs. \$9.95 plus 75c postage. Also write for free information on our cassette tape course and teacher training. Informed Homebirth, Box 788-G, Boulder, CO 80306.

LOOK INTO YOUR FUTURE

The second annual ENERGY LIFESTYLE SHOW, Canada's largest energy show, will put you in touch with the latest advances in energy technology that have practical application to your needs.

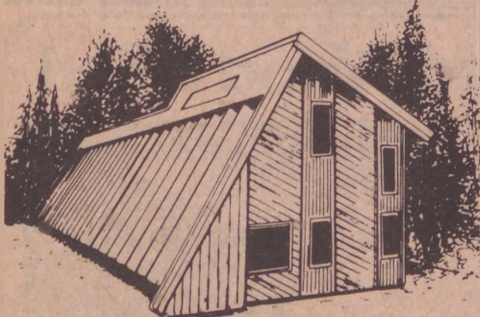
Your Own Utility

The windmill is back. But how it has changed. The new windmills will let you produce your own electric power. These wind generators represent the various new concepts in design to get every bit of power from even the lightest breeze.



Plug Into The Sun

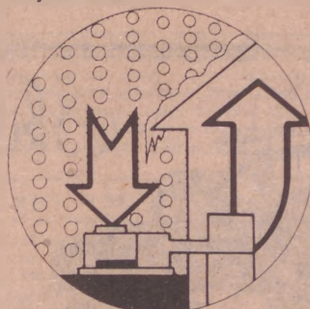
Solar energy. What's the real state of the art? You've read lots about how we can use the sun to heat our homes, even in winter. What do these solar



heating systems look like? See how you can heat your domestic water supply with solar energy.

What's a Heat Pump?

Even in the coldest weather, there's still some heat in the atmosphere. How do you get that heat into a building? They've found a way. See how it's done at the Energy Lifestyle Show.



Piggybanks That Keep You Warm

The Energy Lifestyle Show brings together the greatest collection of wood burning stoves, fireplaces and

furnaces ever assembled in Canada. See new, efficient designs and updates on traditional styles.



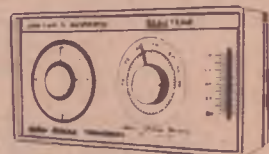
The Electric Car: Its Time Has Come.

Transportation that is practical, clean, quiet and energy-efficient. Find out how it can save you money, too.



Energy Conservation Can Save You Money Now and Protect Your Lifestyle Later

Find out what is being done to conserve energy and what part you can play. See products and ideas that will give you fast investment return.



See Canada's Largest Energy Show

- Energy Cinemas: a lot about today and tomorrow in energy.
- New ideas on how to use traditional energy forms.
- Photovoltaics: electricity from the sun.
- Water power: your own hydro plant.
- Hydrogen and methanol: new power for cars.
- The electronic revolution: energy efficient communication.
- Land sailers and hang gliders: fun from the sun.
- Portable generators: spare power.
- Fire detectors and extinguishers: lifestyle investments.
- Chain saws and wood-splitters: save even more.
- Money savers for your home: windows, skylights, fans, appliances.

Plan Now! Send \$1.00 for visitors kit-reduced show admission and hotel reservation cards, area maps, to:

Look Into Your Future at the ENERGY LIFESTYLE SHOW

TORONTO INTERNATIONAL CENTRE: AIRPORT ROAD

OCTOBER 26-28, 1979

THE ENERGY LIFESTYLE SHOW INC., 1 Sparks Avenue, Willowdale, Ont. Canada M2H 2W1 (416) 496-0551

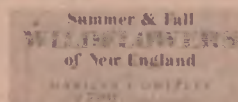
TWO WAYS TO LET YOUR KNOWLEDGE OF WILDFLOWERS BLOSSOM!



SPRING WILDFLOWERS OF NEW ENGLAND

By Marilyn Dweley

A quality softbound book containing more than 470 full-color drawings of wildflowers native to Maine and the New England region. Written in layman's language and intended for use as both a reference and field guide. **\$6.95.**



SUMMER AND FALL WILDFLOWERS OF NEW ENGLAND

By Marilyn Dweley

The author and illustrator describes and depicts with her delightful, colored, true-to-life drawings over 700 wildflowers to be found in New England during the summer and fall months. Book is keyed to color of flower. Soft cover - **\$8.95.**

Available from better book stores, garden shops or direct from publisher. Note: If ordering from Down East, please add 50¢ per book to cover postage and handling. Maine residents please add 5% sales tax.

Down East

"The Magazine of Maine"
Dept. B
Camden, Maine 04843

BEEFALO CATTLE and semen. Armand Jutras, Lisbon, Maine 04250, Tel. 207-784-6181 E3P

WEAVING LOOMS--30" maple \$180, 45" restored antique with bench \$475. Hardy 2 yr. chive clumps, herbs, perennials. Lambs-registered romneys, blacks, prime fleeces. For list send SASE: Chamomile Farm, P.O. Box 619, Rangeley, ME 04970. 864-5261 E2P

REDISCOVER THE JOY OF NATURE thru the pages of rustic, hand-crafted "Backwoods Journal," Box 126-F, Paradox, New York 12858. Interesting, attractive and unusual quarterly, published by wilderness homesteaders in an Adirondack mountain log cabin! Each issue 60 pages--no advertisements. Homesteading, wildlife, wildflowers, birds, hiking, conservation. Correspondence section for outdoor-minded. \$4.00 per year. Recent sample copy \$1.00. For those who truly love Nature. S1P

HARDY GOSLINGS. UNUSUAL DUCKLINGS. Chicks and books. Catalog 25¢. Pilgrim Goose Hatchery, Dept. FP-9, Williamsfield, Ohio 44093. Sp3P

MAINE COAST--Live the good life in rural, coastal Maine. Send for our current brochure of offerings. J.C. MILLIKEN AGENCY, INC., Cherryfield, Me. 04622 Sp6P

EVERYBODY'S LOOKING FOR A SAWMILL. A new concept in sawmills, available in two sizes--8 ft. 6 in. and 12 ft. 6 in. Steel construction, easily moved by two men or small garden tractor. Handles logs to 28 inches in diameter. Powered by your chainsaw. Free brochure: The Old Metal Shop, RFD 2 Box 21, Dover-Foxcroft, Maine 04426. E2P

SAVE!! WHOLESALE PRICES. Chainsaw supplies, motorcycle, snowmobile, small engine parts. 24 hour shipment. Free catalog. MFG SUPPLY, Box 157-F, Dorchester, WI 54425 E2P

THINKING OF HOMESTEADING in Maine? Be prepared -- avoid problems. For a newsletter detailing our experiences looking for and buying land in Maine, send \$1.00 to Apple Hill Farm, Box 39, Searsport, Maine 04974 E2P

MARINATED CARROTS RECIPE. Delicious! \$1.00 plus SASE. Donna, Box 552, Frederic, Wisconsin 54837 E2P

FOOD DRYER. Simple, detailed plans. 24"x24"x36". Dries 15 pounds fruit in 36 hours. Insulated. Fan. Baffled Thermostat control. Drying hints included. \$3.50. FOOD 2831 N. Hy. 83, Hartland, WI 53029 E2P

Skillin's Greenhouses



Falmouth & Brunswick COMPLETE GARDEN SUPPLIES

Fruit Trees, Evergreens, Shrubs &
Trees, Flower & Vegetable
Seedlings, Seeds & Tools
Open Sundays at both locations

89 FORESIDE ROAD
FALMOUTH, MAINE 04105
PHONE 781-3860

BATH ROAD
BRUNSWICK, MAINE 04011
PHONE 442-8111

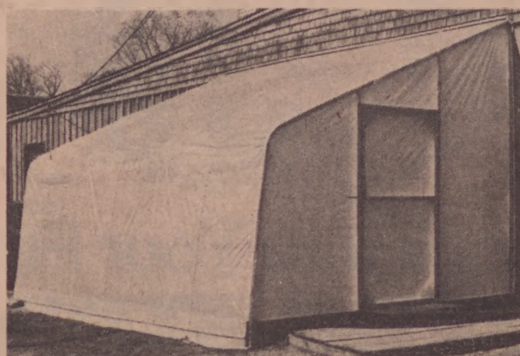
Solar Heated Wood Shed

"Do-It-Yourself" Wood Shed

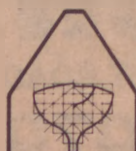
The SOLAR SHED is ideal as the inexpensive solution to a variety of space problems. Firewood stays dry and actually cures more rapidly. Tests show it will cut 35% off drying time. Woodworking or auto repair is a pleasure in this warm bright building. Storage of winter equipment, snowblowers, snowmobiles are clean, dry and always in top condition.

IT'S SOLAR HEATED:

- Wood Shed • Garage
- Greenhouse • Tool and
- Workshop Equipment Shed



EASY TO ASSEMBLE - requires only a few hours for one man. The frames are secured in ground sockets set in concrete, with "T" brackets fastened to the house. Since no door is included, any size can be adapted for any access. The shed remains attractive for many years, as the Loretex covering is exceptionally strong, resists mildew. Quick dis-assembly is fast and simple, as the brackets remain on the house and the sockets stay flush in the ground. The Solar Shed is 11 ft. wide x 18 ft. long, 6 1/2 ft. high at eve, 10 ft. high at peak.



York Marine

P. O. Box 204
Yarmouth, ME 04096
Tel: (207) 865-4677

Please send me information on the
New SOLAR SHED.

Name

Address

City

State Zip

The FARMSTEAD Peddler

BUILD your own garage. **SAVE 50%** and more. Complete 1979 priced material list and plan \$3.00. Detailed architectural blueprints, instructions, and material list \$15. Two sets \$20. **U-BUILT ACCU-STRUCTURES**, Box 1115, Binghamton, New York 13905 **S2P**

ATTENTION PROPERTY OWNERS. GREATLY reduced prices on a few prefabricated GARAGES built last fall. Various sizes. Will deliver or install. Small deposit will hold. 100% FINANCING. For sizes, prices and plans call free 1-800-452-1940 8 A.M. to 8 P.M. or write Maine-Wide Factory, P.O. Box 2106, Augusta, Maine 04330. **S1B**

BREAD -- 10c/Loaf!?! PURE BOTTLED WATER -- 3c/ Gallon!?! Save time, money, nutrition. STARBIRD-FSM. Box 584, Jamestown, ND 58401. **S2P**

HAY WAGON, JOHN DEERE TILLER, MOWER, DOUBLE HARNESSES COMPLETE; CHICKEN INCUBATORS, ETC. P.O. BOX 1012, LEOMINSTER, MA 01453. **S1B**

DON'T THROW IT AWAY How to repair plastic utility pails and containers inexpensively -- same shade. Send \$1.00 to Sylvia Cabot, 311 California Suite 700 Dept. F, San Francisco, California 94104 **S1P**

GROW GINSENG! Bringing \$50 pound. Have seeds, planting roots. Goldenseal. Comfrey. Full information. F.B. Collins, B50, Viola, Iowa 52350 **S4P**

WINE-MAKING: 30 years experience. Turn your excess fruits, vegetables & Grapes into **MONEY SAVED.** 150 page book Winemaking with recipes, price list for all supplies needed. Check or money order \$3.50. Grapevine, 208 Main St. East Haven, Conn. 06512 **S1P**

BEERMAKING--Save dollars! Send check or money order \$3.50 for good book. Recipes and supply list. Grapevine, 208 Maine St., East Haven, Conn. 06512 **S1P**

FREE CATALOG, make your own Wine-Beer, Cordials and save \$\$\$\$\$. Guaranteed to save you many dollars. Enjoy the fun. Our experience is your guaranteed teacher. Free catalog and recipes. GRAPEVINE, 208 Main St., East Haven, Conn. 06512 **S1P**

CLOSEOUTS Hydraulic dump kits for pickups. 2 ton. warranted. Robert Hardacre R1, Lawrenceville, IL 62439 **S3P**

COLDWATER DILLPICKLES! Can in minutes! No hot brine. Delicious, Crisp. Factory Secrets! Recipe \$1.00 Hamiltons Box 652-189 New Ulm Mn. 56073 **S1P**

BOB WILLS, SONS OF PIONEERS, SPADE COOLEY, Patsy Cline, Ernest Tubbs, Jimmy Wakely, your favorite Country Stars-old & new. Bluegrass Gospel, Fiddle, Big Bands. Free giant Catalog. Club Spade Box 1771-F Studio City CA 91604 **S1P**

"ZUCCHINI LOVERS COOKBOOK" Now make 18 different cakes, 22 cookies and bars, 10 pies, Plus: Breads, jams, pickles, desserts and casseroles. \$5.65 postpaid -- 2 books \$9.99 -- Satisfaction guaranteed -- Addie's, Drawer 5426-5FP23, Eugene, Oregon 97405 **S1P**

MOBILE HOME OWNERS. DON'T trade! ADD and save BEAUTIFUL factory built ALUMINUM ADDITIONS. Entrance, bedroom or expanded living room. Also end problems forever and modernize with our PITCHED A-ROOF. 100% FINANCING. FOR free color brochure and prices, call free 1-800-452-1940 8 A.M. to 8 P.M. or write Maine-Wide P.O. Box 2106, Augusta, Maine 04330. **S1B**

SAVE HUNDREDS OF TAX DOLLARS if you are married and self-employed. Completely illustrated, guaranteed to save you money legally. \$3.95 Tax Facts, 1973 Oxford Dr., Fairfield, CA 94533 **S1P**

VITA MIX Super 3600 Juicer, \$225.00, Great Northern Flour Mill, \$199.00, Hand Wheat Grinders, Sprouters, Steamers, Yogurtmakers, Food Dehydrators, Kenwood Bread Mixers. At your local health food store **S10P**

FOR SALE: SLEIGHS, horse, pony wagons, \$375.00 ppd! Dealerships available. Brochures 50c. Natural Vitamins, discount catalog, 50c. 100-B-15 only \$6.75! Sam Chupp, 275 39 FM Londick, Burr Oak MI 49030 **S1P**

YOU WERE DESIGNED TO LIVE FOR 140 YEARS. Send \$1.00 for provocative report. Wings Press, RFD#2, Belfast, ME 04915. **S1P**

DELICIOUS MEAT AND VEGETABLE BALLS recipe, \$1.00. Send self-addressed stamped envelope. B. Davis, 30709 68th Ave. N W Stanwood, WA 98292 **S1P**

MOM'S BEST BEAN RECIPE, simple delicious \$1.00. J. Briggs, 13493 Montfort Ave., Herald, CA 95638 **E2P**

FANTASTIC BARLEY CASSEROLE, old family recipe. \$1.00 and S.A.S.E. to Walkup, Rt. #2, Gravel Switch, KY 40328 **S1P**

SAVE NON-RENEWABLE GAS and oil, or expensive electricity. Low volume nozzle reduces shower consumption by 75%. Sink aeraters available. Invest \$9.95 + .75. Shower-Saver, Box 211, Brewer, Maine 04412 **S2P**

TWO FOR ONE PAY Couple seeking JOBSHARING position. Will consider any location. If you have or will have any openings this year Write: P.O. Box 1052, Springfield, MA 01101 **S1B**

WEAVE RUGS -- Make good profits! No experience necessary! For complete catalog, samples, and low prices on warps, fillers, looms, parts, etc. send 25c. If you have loom -- advise make, weaving width please. OR. RUG COMPANY, Dept. 7999, Lima, Ohio 45802 **S2B**

99 TYPICAL FRENCH QUEBEC RECIPES. English Translation, American measures. Wholesome, simple ingredients, available anywhere. Nourishing dishes. No sweets. Economical, tasty, exciting food adventure. \$2.00 U.S. Immediate mailing. BISAILLON. Box: F-23, Cowansville, Quebec, Canada. J2K 3H1 **Su2P**

CUT YOUR UTILITY BILLS. You are well aware what runaway utility rates have done to your budget. Now you have an opportunity to reduce your bills, help others to do the same and earn an income in the process. Instructions for this energy and money saving program \$2.00. Energy Saving Methods Inc. 2 Sunrise Lake, LeRoy, Mi. 49655 **Su1P**

NATURAL STONE HOUSE. Gather rocks free, build your own lowest cost stone home -- in one summer. Need pickup, handtools -- no experience! Guaranteed "HOUSE OF STONE" manual, \$5. Stonehouse, Box 942, Sweet, Idaho 83670. **Su1P**

"QUICK, EASY Salad-Dessert Recipes" \$1.00 sase, 4915 Saddlebrook-18 Shively, KY 40216 **S1P**

60 ACRE ORGANIC FARM needs permanent, reliable help to achieve self-sufficiency. Housing, salary and future. Neil Box A-666 South Sterling PA 18460 **S1P**

BEER MAKING, HOME BREW, and bottle capping. Southern recipe. Send \$1.00 and self addressed envelope to Home Supply Co., P.O. Box 3313 Victoria TX 77901 **S1P**

HOMESTEADERS NEWS--Will you be surprised! Send three dimes (postage) for your FREE COPY. You too will want to be part of the great community of Homesteaders! Sherrie/Norm, POB 193, Addison, NY 14801 **S1P**

GOOD LIFE GET-TOGETHER, July 24-28. Homesteading workshops & family celebration. "Sherrie and Norm are doing a good job. We're impressed!"--Helen and Scott Nearing. Free Brochure. Sherrie/Norm Lee, POB 193, Addison, NY 14801 **S1P**

125 ACRES WOODLAND, 75 acres open fields, \$32,000.00. 75 acres woods, 3 acre lake, 64 acres tillable, \$30,000.00. Tel: (207) 488-6628, H. Fenton Shaw. **S1P**

HARDY HERB AND SPICE seedlings now available. For free catalog write, Erb's Herb, 8 Ennis St., Falmouth, ME 04105 **S2P**

WANTED: To buy first issue FARMSTEAD MAGAZINE. Farrel Gray, Box 116, Wayne, IL 60184 **S1P**

JACQUELINE ONASSIS' favorite Baked Beans recipe and Queen Elizabeth II Cake. \$1.00 Lois Morris, Rt 1, West Edmeston, NY 13485 **S1P**

33 ACRES Northern Maine. Field, woods, secluded. \$5800 Box 53 Lille, ME 04749 **S1P**

THOUSANDS OF OUTDOOR REWARDING JOBS: U.S. Forest Service, BLM, State Forestry, others nationwide. Complete package includes appropriate application forms. High placement success. \$5.00 Jay Rucker, Box 10-F, Vale, OR 97918 **S1P**

WANTED -- Unusual Horse Colic cures. Contributions and stories acknowledged in publication. Prof. Hobart Morris, Fayette, MO 65248 **Sp4B**

DAIRY GOATS--Milk, profit, pleasure. Monthly magazine. \$9 per year, \$24-3 years. Dairy Goat Journal, P.O. Box 1908 E-42, Scottsdale, Arizona 85252 **Sp5B**

FARMSTEAD AND PROFITABLE BUSINESS FOR SALE 40 secluded acres, farmhouse, barn, organic gardens, orchard etc. near coastal Camden. Conservation related business. excellent net. \$145,000. Call 207-785-4220. **E2B**

RECIPES--fruit wine or Ginger Beer. \$1.50 each, \$2.00 both. Schwartz, P.O. Box 883, Pottsville, PA 17901 **E2P**

THE HEALTH INDICATOR. Alphabetical list of diseases: vitamins, minerals, herbs associated with them. \$3.00 Omnigraphics, Dept. FM, Box 10232, Houston, TX 77206 **E4P**

NEW RECIPES, Breads, Salads plus two old favorites. \$1.00 S.A.S.E. Kurtli, Rte. 1, Box 132, Motley, MN 56466 **E2B**

GREAT HOBBIES! Beer-making, Winemaking, Cordial-making. Drink your achievements...or give as gifts. Kits, books, everything necessary. Free Supply Catalog. Bacchanalia, 289FM Riverside, Westport, CT 06880 **E3P**

SOLAR GREENHOUSE PLANS with materials list and instructions. Build it yourself and grow food year-round. \$15.00 complete from Tao Center, 27 Center St., Rutland, VT 05701 **E2P**

PHOTO KEYCHAIN, pendant or badge, only \$2.00 each. Send your favorite snapshot (loved one, friend, pet) SASE. Pat, 15521 E. Oakbury Dr., La Mirada, CA 90638 **E4P**

MEXICAN MEAL--completely-in-one-dish -- ALSO-- Oyster Dressing. \$1.00 SASE, Norma, Box 174, Edgewood, NM 87015 **E3P**

PEDIGREED ANGORA RABBITS. VanTine. Penobscot, ME 04476. SASE **E2P**

HYDRAULIC LOG SPLITTER PLANS: Complete assembly and detailed drawings. Send \$4.00 to Fabsons Engineering, Box 635F, Leominster, Mass. 01453. **H6P**

Here's how to advertise in THE FARMSTEAD PEDDLER:

Your ad in this section costs only 50 cents a word. You get a 10% discount if you run the same ad in two or more consecutive issues. Closing dates are: Jan. 15th for Spring; March 15th for Early Summer; May 15th for Summer; July 15th for Fall; Sept. 15th for Holiday; and Nov. 15th for Winter.

You may use this coupon to submit your ad; however payment must be included.

Send your ad to:
FARMSTEAD MAGAZINE
Box 111 Freedom, Maine 04941

Name _____

Address _____

Zip _____

Number of words _____

Cost: \$ _____

For issue(s):

☐ Winter ☐ Spring ☐ Early Summer
☐ Summer ☐ Fall ☐ Holiday



Give FARMSTEAD To A Friend ...

A subscription to FARMSTEAD MAGAZINE makes a wonderful gift for a gardening friend or relative. For the low price of only \$7.00 your gift subscription brings a full year (six BIG issues) of FARMSTEAD.

You may enroll additional friends at the special discount rates shown.

An attractive card announcing your gift will be sent to the new subscriber. Simply fill in the coupons below and mail this page with your payment.

Donor's Name _____

Address _____

Zip _____



FARMSTEAD MAGAZINE

SU79

Box 111 Freedom, Maine 04941

1st SUBSCRIPTION—\$7.00

Please enroll the person listed below as a subscriber to FARMSTEAD. Enclosed is \$7.00 to cover the cost of six regular issues.

Name _____

Address _____

Zip

Sign card from:

FARMSTEAD MAGAZINE

SU79

Box 111 Freedom, Maine 04941

2nd SUBSCRIPTION—\$6.00

Please enroll the person listed below as a subscriber to FARMSTEAD. Enclosed is \$6.00 to cover the cost of six regular issues.

Name _____

Address _____

Zip

Sign card from:

FARMSTEAD MAGAZINE

SU79

Box 111 Freedom, Maine 04941

3rd SUBSCRIPTION—\$5.00

Please enroll the person listed below as a subscriber to FARMSTEAD. Enclosed is \$5.00 to cover the cost of six regular issues.

Name _____

Address _____

Zip

Sign card from:

FARMSTEAD MAGAZINE

SU79

Box 111 Freedom, Maine 04941

4th SUBSCRIPTION—\$5.00

Please enroll the person listed below as a subscriber to FARMSTEAD. Enclosed is \$5.00 to cover the cost of six regular issues.

Name _____

Address _____

Zip

Sign card from:

SAVE \$67.30

Same durable materials
found in expensive
competitive brand
... AT 1/3
THE PRICE!!

Copper Clad Huge 10-Piece Stainless Steel Cookware Set ONLY \$34.95 COMPLETE

You can now enjoy the timeless beauty and practical benefits of genuine **copper clad** stainless steel cookery at an affordable price. Your kitchen won't be complete without these elegant and efficient help mates. Turns cooking chores into a joyful pleasure. You'll relish the art of gourmet food preparation... adds a special touch to everyday meals.

COPPER: THE SUPER HEAT CONDUCTOR

That's right! Genuine **copper clad** bottoms provide improved heat dispersion (reduces hot spotting). Heavy-gauge stainless steel bodies... can't rust, pit or corrode. Attractive mirror-finish exteriors enhance any kitchen decor. 'Jeweled' satin-finish interiors are easy-to-clean... resist sticking and scratching. Space age heat-resistant handles and knobs... made tough for years of wear. Superb craftsmanship. Why spend three times the money when you can own this handsome 10-piece set of first-quality **EMPRESS Copper Clad Stainless Cookware**.

Hurry! Order NOW and beat the rush. All orders shipped on a first-come-first-served basis... Only \$34.95... **DONT DELAY... this incredible low price can't last!**

DYNAMIC PRICE COMPARISON!!

EMPRESS COPPER CLAD SET	COMPARABLE VALUE
3/4 qt. Sauce Pan with cover	\$ 9.50
1 qt. Sauce Pan with cover	13.50
2 qt. Sauce Pan with cover	18.00
5 1/2 qt. Dutch Oven with cover	27.75
8" Skillet	14.00
10 1/2" Skillet	19.50
	COMBINED PRICE!
	\$34.95
	\$102.25 (plus sales tax)

cover interchangeable with Dutch Oven

YOUR GUARANTEE

You must be completely delighted with your **EMPRESS Copper Clad Stainless Steel Cookware Set**. You must agree it offers you the same high quality materials and superior craftsmanship of competitive brands. If not, simply return the set within 14 days for a **full refund**—no questions asked! Now, that's a guarantee in writing!

RUSH ORDER COUPON

New Hampton General Store, Dept. BZ-7798
340 Poplar St., Hanover, Pa. 17331

Please rush... set(s) of 10-piece **EMPRESS Copper Clad Stainless Steel Cookware** (Z618371) for the incredibly low price of only \$34.95 plus \$2.95 heavyweight shipping and handling on **FULL MONEY BACK GUARANTEE**.

☐ **GIFTS! SAVE MORE:** Order TWO sets for just \$65.00 plus \$5.00 heavyweight shipping and handling, money back guarantee!

CHARGE IT:

☐ VISA/BankAmericard ☐ Carte Blanche ☐ Diner's Club
☐ American Express ☐ Master Charge Interbank No.

Acc't No.

Exp. Date

Enclosed is \$

(PA residents add sales tax)

Name

Address

City

State

Zip

☐ Check here and send \$0.49 for year's subscription to our full-color catalog of fine gifts (Z618314X)

New Hampton General Store

New Hampton General Store

340 Poplar St., Hanover, Pa. 17331



Come home to the comfortable feeling of knowing that you own the finest heating stove made in America: the Comforter. No other stove made anywhere can boast of the Comforter's unique combination of features — its quality, its versatility, its ruggedness, its efficiency. Or its classic beauty. No other stove is designed to heat equally well with wood or coal. Many may claim so; the Comforter actually does. And none other will operate as safely or efficiently as either

Come Home To A Comforter

a hearth-warming open fireplace, an airtight all-night heater, or even a cook stove. Find out more about the very real advantages — the savings and the security — of coming home to a Comforter. Call us for the name of your nearest dealer.

Or send for our free color brochure. It could be the most sensible step you take toward keeping your home comfortable — and affordable — this winter. And for generations to come. Comforter Stove Works, Box F 175, Lochmere, NH 03252, Telephone 603-528-1855.

A Product of

