

THE "HAVE-MORE" PLAN

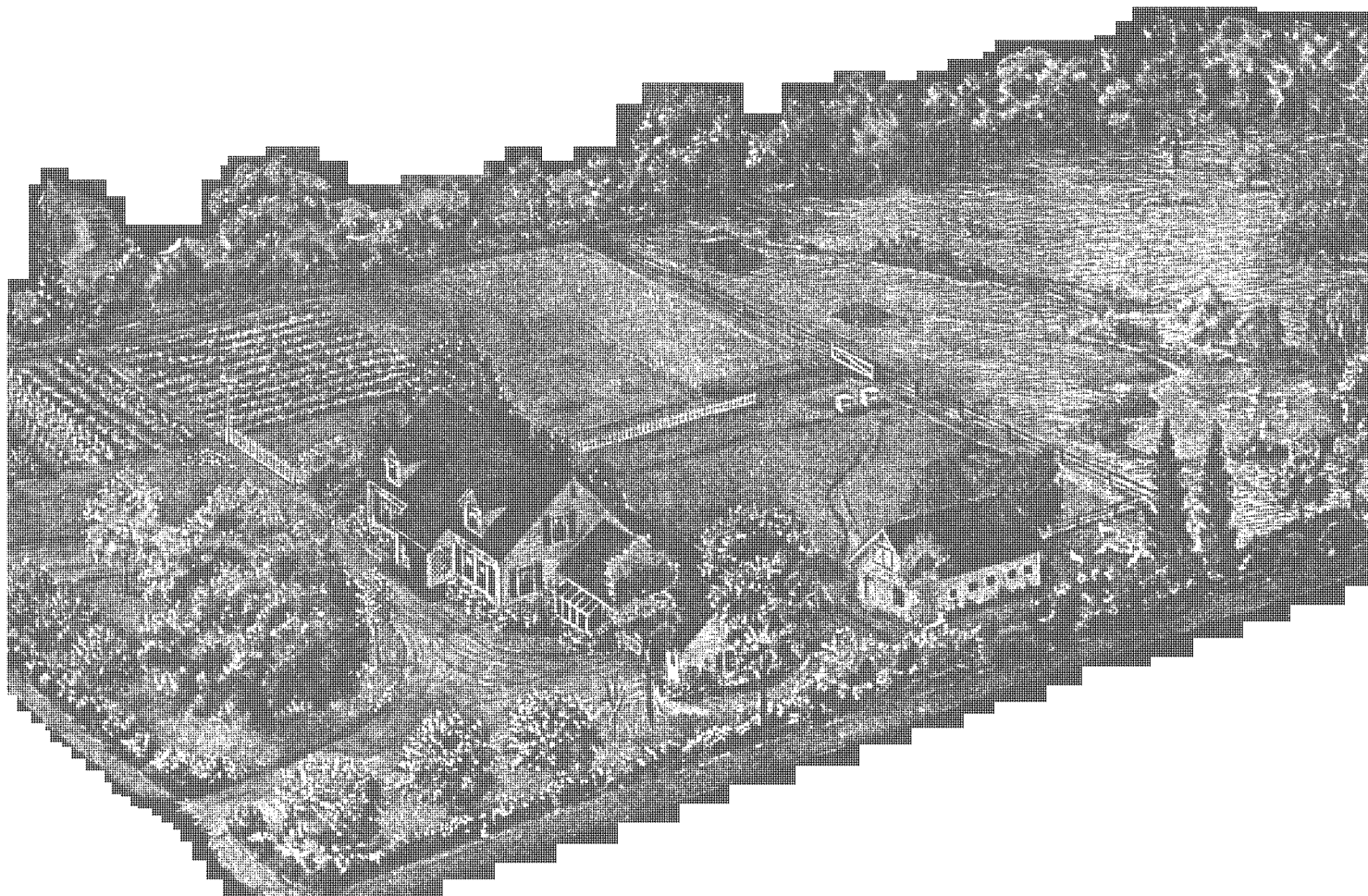
"A LITTLE LAND— A LOT OF LIVING"

How to Make a Small Cash Income
Into the Best and Happiest Living
Any Family Could Want

BY

Ed and Carolyn Robinson

- Buying a Place in the Country
- Laying Out a Homestead
- Remodeling or Building a House Designed for Country Living
- Part-time Farm Pays for Itself
- A Good Garden with Less Work
- Building a Small Barn
- Earning Money in the Country
- Dwarf Fruit Trees and Berries
- Fish Pond in Your Backyard
- Starting Right with Poultry, Rabbits, Milk Goats or Cow, Bees, etc., etc.



Dear Reader,

Garden Way Publishing Co. is the successor to the Noroton Country Bookstore and we are pleased to make the original "Have-More" Plan by Ed and Carolyn Robinson available again.

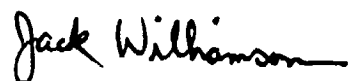
This classic book was written in the 1940's by leading experts of the day, to aid the individual in his search for self-sufficiency and independence on a country acre. We have reissued this work unchanged because it is still one of the best references available for the home gardener and homesteader. After all, poultry, goats, lettuce and home canning haven't changed much in a generation. It's no wonder the "Have-More" Plan has been in constant demand since it was first published. It will show you how to do things in ways that work superbly.

There are, however, just a few items mentioned such as the use of pesticides containing DDT, which we trust you will excuse and overlook. Three decades ago our understanding of such hazards was non-existent. We can help you, through our other publications, to learn more about non-toxic materials and techniques.

Many of the bulletins and books that were developed from the "Have-More" Plan are available once again directly from us. Please write to Garden Way Publishing, Charlotte, Vermont 05445 for our free book catalog which lists the "Have-More" Plan bulletins and books, as well as the most current books by all publishers that we feel to be the best on gardening and country living.

Please do feel free to contact me for any help I can be in your quest for "A Little Land—A Lot of Living".

Sincerely,

A handwritten signature in cursive script that reads "Jack Williamson".

Jack Williamson
Publisher

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Why We Moved to the Country and What We Set Out to Accomplish



CAROLYN, our son Jackie, and I haven't any land to sell—we aren't promoting anybody's products. We just want to tell you

some things we learned about how to have more fun, more health and more security than 99% of the people in this world ever had before.

Back in 1942, we Robinsons lived in a big apartment house in New York. Far from having all the conveniences and easy living you are supposed to have in a big city, we discovered we had very little.

In the first place, we always felt restricted. Living in the city wasn't easy, it was difficult. And every time we turned around—it cost us money.

For example, just to let the baby walk or play outdoors cost us money and trouble. First, we had to dress the baby nice (because we were going to the park), then get together blankets, diapers, his toys, etc., carry all this and the baby out to the elevator, wait until the elevator came for us, then outside we would have to walk two blocks and wait for a bus, then ride about 15 blocks and get off the bus, carry everything into the park, and find a spot where we could sit down.

One terribly hot Sunday afternoon we had gone all through this procedure and finally found a spot that wasn't crowded, spread a blanket to sit on, unpacked the baby's toys, diapers, etc. and settled down for a few minutes' peace. Just then a policeman came up to us: "Look—you can't stay here," he said.

"Why not?" I asked.

"How long d'ya think the grass would last if everybody was allowed to set and walk all over it?"

I suddenly remembered as a boy how wonderful it had been to lie in the grass in back of our house in the little New England town in which I was brought up.

We got up to leave. I said to Carolyn, my wife, "Look, let's get out of here!"

"It'll be awful hot back at the apartment," she said, "and Jackie hasn't had any sun for a long time."

"What I mean is let's get out of this dirty, noisy city—let's go live in the country . . ."

That is how we began to think seriously about living in the country. I say think about it—because we thought about it for a long time before we did it. First, we couldn't see how we could afford living in the country. Then we

began to wonder if we couldn't have a garden and maybe some chickens and by raising some of our food have more money so we could afford it.

The trouble was that a couple of our city friends who had farms always said the vegetables they raised cost about three times what they sold for in the store.

In fact, one man we knew about who had a fine modern dairy used to set before his guests two bottles. One was milk, the other champagne. "Take your choice," he'd say. "They cost me the same."

After we thought about this we realized these men were trying to run a commercial farm by remote control. Usually they went to their farms week ends only because it was so far away—and a hired man ran the farm for them. We wanted to keep a city job, for cash income; we wanted to stay near enough to the city to keep its advantages. We wanted to add the security and fullness of living that seemed more likely to come if we owned our home and some land, not much land necessarily, but good land and at least enough of it to raise most of our food.

There was nothing new about this idea. We were aware that Henry Ford and many others had been advocating just this for years. We knew that hundreds of thousands of American families were already doing what we proposed to do.

We faced the fact that we knew absolutely nothing about raising any part of what our family needed to live. In fact, our utter and absolute dependency on my job was appalling. If I should

lose my job—even temporarily—we would have no money to pay our rent—the landlord would put us out.....no money to buy groceries or pay the butcher and we wouldn't eat.

If there were another depression—and I were to lose my job like millions in the last depression—then there wouldn't be a thing to do but stand in line and beg the government for "surplus commodities" . . . rent money . . . relief clothing until things got better again—which might be years!

Living in the city we couldn't save much. Everything we did, almost, cost money. Our biggest item was food. Suppose, we thought, we could raise a big part of our food . . . We knew nothing about farming. But we began to look at things we ate . . . started to study how we could grow them ourselves. For a long time before we actually did move into the country we studied how to raise things. Perhaps in all we read a couple of hundred books and pamphlets on this. We found that most material was out of date and most of the newer books were designed for commercial farming specialists. For example, we found a dozen huge books on commercial dairy cattle, but no simple, up-to-date little book telling us how to produce milk efficiently for our family—and whether it was really economical to do so.

Then again there were lots of people telling you how to choose a farm of say 50-100 or 200 acres, but a dearth of information on telling us how little land we actually needed to raise food for one family.

Yet we gradually accumulated a good

Life in the City



many excellent books and pamphlets—all of which you'll find listed in these pages. When we had a fair idea of what we wanted to do we moved to our small place in Connecticut, about an hour from my job in New York, to try out our ideas.

This plan is the story of our place, of my family and me. It's the true story of how we have built our homestead. I hope you will be able to get some new ideas from it.

We call our plan—the "Have-More" Plan because that is the way it worked for us. Our plan shows how you can have a lovely home of your own on a piece of land that will furnish your family with food, recreation and health. Yes, and extra income too.

**If you'll follow our Plan
Here's how you'll be situated:**

You too can have a good home and an acre or more of land within a few miles of where you work. Your place will pay for itself as you go along—you will eventually own it free and clear. Think what that means—*no more rent to pay!*

You'll have far smaller weekly grocery, meat, and milk bills. With the small scale, modern, labor-saving methods we'll show you, you can raise up to 75% of all your family's food—perhaps do it all in spare time—and find real pleasure in doing it.

You and your family can become truly self-reliant. You will be able to keep your own home in shape, even improve your house and land. You can be healthier and happier. You can be sure that the food you eat is rich in vitamins and minerals. You need never worry very much about losing your job. You can retire years sooner, if you want to, and if you'll put away enough to be assured of just a small regular income.

Best of all, you can do as much or as little of our "Have-More" Plan as you like. You can fit it to your own pocket-book and spare time. If you are in

earnest it makes no difference whether you start with just a few dollars or five thousand.

If You Have a Full-time Job:

You can easily work out the "Have-More" Plan in *spare time*. If you work long hours and don't have a chance to do the whole plan at present, you can do part of it in as little as 15 or 30 minutes a day. Even so you can have all the health, happiness, and security of this kind of living. You can have a fine garden, beautiful flowers, get your fruit trees and berries, asparagus and rhubarb started, and perhaps have a few chickens.

This way of living is especially good for children. You can get your place all paid for and have that wonderful sense of security and independence knowing that you and your family have your place to fall back on—knowing that you could get by with very little cash income if you ever had to.

If You Have a Part-Time Job:

If you work short hours, such as 40 hours a week or less, you can get all the more benefit out of the Plan. Perhaps in your work you have several days a week free or maybe several weeks or months a year free. Perhaps there's an extra member in your household who'd like to help. If you have a place like ours, you can make your spare time worth money by developing a paying hobby right on your own place.

If You Are Planning To Retire:

Or if you have already retired, you can see that this Plan is a most practical way to stretch your retirement income and help keep yourself in better health. If you are going to receive Social Security benefits, or just a small pension, annuity, or small income of any sort, you can look forward to many years of happiness and security.

This Plan in no sense attempts to

turn you into a commercial farmer. There is all the difference in the world between farming for profit and raising only your own family's food. A farmer is a business man whose factory is his land. Probably—if he is really successful—he has become a specialist in producing one crop—milk—or poultry—or fruit. He has spent years learning to become expert enough not only to produce quantity but also to sell wholesale at a high enough price to pay overhead, his labor, machinery costs, etc. You, on the other hand, produce only what your family needs. You save yourself retail prices. You have no labor costs—practically no overhead—no distribution or selling costs. You sell only your surplus—and can easily find a ready retail market among neighbors or friends where you work.

You will be tempted—especially during a food shortage to produce, for example, more chicken than your family can eat—and sell the surplus at a profit. This you can do—but only if you have enough spare time so that you will not have to sacrifice growing some other foods for your family's own use.

The very fact that our "Have-More" Plan calls for raising a variety of vegetables, fruit, poultry, meat and dairy products means a diversification of work, a lot of different things to do, so that none of them becomes tiresome. Planning to have a garden, a cow or milk goats, laying hens and broilers, rabbits, bees—and maybe other livestock—sounds as though you had as much to take care of as many farmers who are notoriously overworked. But you have only sufficient garden, fruit, and livestock to supply your family's food.

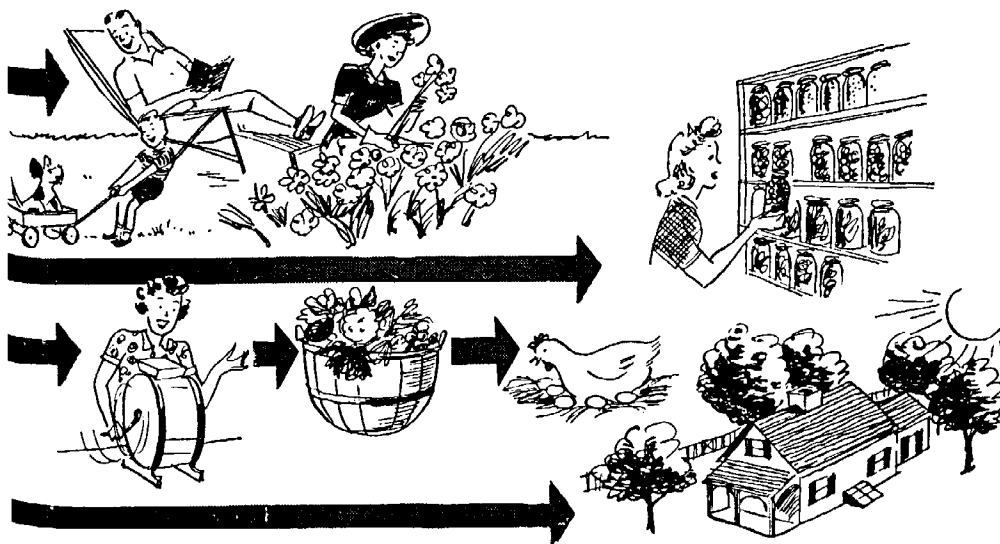
A farmer, to have been deferred in the draft, and that meant that he was farming on a full-time basis, had to produce a certain amount, according to government rulings. For example if he himself were responsible for 5 milk cows, 60 hogs, 150 hens, and a 6 acre garden, he would be considered sufficiently productive to be deferred. On the same basis, if you were supplying 75% of your family's food—that is, you had 1/3 of an acre for a garden, 2 milk goats, a dozen hens, 100 broilers, 2 pigs, enough fruit trees and berries, you would have about 1/16 of what a farmer needed to win deferment.

I point this out so you will see that it is entirely possible for you to raise your family's food in your spare time if you go at it efficiently. A garden, hens, broilers, cow or milk goats, bees, etc. sound like an awful lot. Actually, only the variety is impressive—not the quantity.

Another thing, even though you have only enough poultry to supply your family, you use the most up-to-date, easiest way to take care of it. Then again, you will find this plan broken up by projects so that you add one project at a time and get that working perfectly before undertaking another.

Every so often somebody asks

Life at Your "Have-More" Homestead



"How much of the Plan should I undertake?"

You yourself will have to decide this. The most difficult job is to get your house, barn, fencing and land ready for efficient operation. But once your place is set to go the actual chore time doesn't take long. A small flock of hens takes about 7 minutes care a day . . . a garden, the biggest and most difficult home food raising project, may take 150 hours a year or so.

Many people moving from the city to the country hesitate to add livestock to their places—because they don't want to be tied down. Livestock, however, can supply 40% of your family's food. Our livestock doesn't tie us down—our neighbors will do chores for us and, of course, we do chores at our neighbors' when they want to go away.

What has amazed us, was how relatively easy and practical it has become in the America of today for the average family with modest income to work out this plan of country living and city job.

No doubt many city families who have considered getting a place "out in the country" where they could live and raise some of their own food, have not done so because they thought it would take too much time and trouble to get back and forth; it would be all hard work and no play; it wouldn't be practical—it would cost more to grow food than to buy it—their chickens would die, the garden wouldn't grow, the bugs and birds would get all the fruit and berries; it would cost too much to get started anyway.

Well, the real reason we have written this Plan is to tell other people that these objections just aren't so. The average family can, today, make the country-living-city-job idea work and they can make it pay.

Some of the reasons why they can make it work today, where they might not have been able to even ten or twenty years ago, are these:

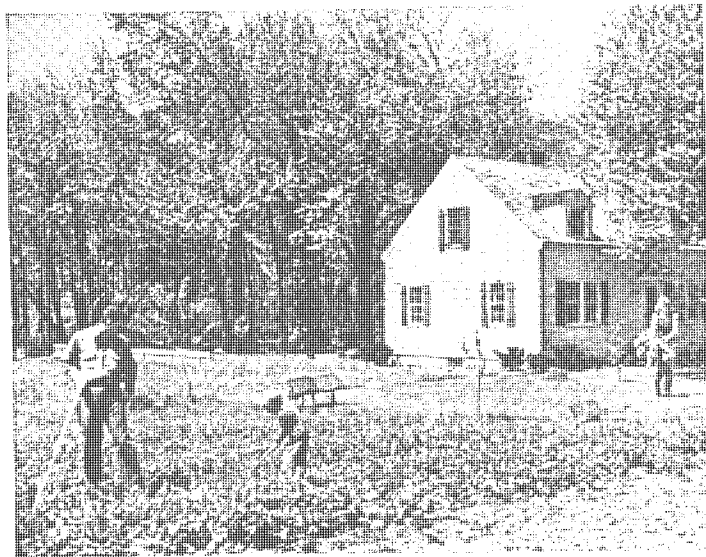
1. *There has been a tremendous amount of highway building in the past*

twenty-five years. Automobiles and busses, plus train service where needed, make it entirely practical for most people to live a considerable distance from their jobs. These same highways and cars have taken the loneliness out of country living, too.

2. *Modern appliances and methods have eliminated much of the really hard work in keeping house and raising food for the family. The pressure cooker and the home freezer, for example, have made preserving far easier than it used to be. The short work week (30-48 hrs.) leaves plenty of spare time for work at home plus plenty of spare time for play. To add work at home on top of a 6 day, 70 hour week was one thing. To do the same work at home on top of a 5 day, 40 hour week is an entirely different thing. What was work actually becomes fun.*

3. *It is easy to learn to raise plants and livestock successfully today. Methods are simpler, more scientific. Seeds and plants are better, surer to grow, more productive. Fertilizers are better. Livestock breeds are better—they produce more per hen, per goat or per pig. Feeds you buy are better, more scientifically prepared. Disease and pest control is far more sure and specific. For example, what the famous sulfa drugs are doing for sick people, they are also doing for sick chickens.*

4. *Low-cost, long-term federal and private financing now bring the possibility of home and land ownership within the means of people who couldn't have even dreamed of it not so many years ago. Mass production of appliances, furnishings, tools, even houses has brought the cost of getting started down to a low figure. Both of these points will be even more true in the post war years. Home freezing equipment, for instance, which before the war was priced in hundreds of dollars will be priced in tens of dollars.*



Even at 3½ our son Jackle likes to "help." Actually as yet, he isn't much help, but we try to encourage him. We want him to learn to do things — older children can be a real help on a homestead. And, more important, country living furnishes excellent opportunities for children to develop intelligent and responsible personalities.

Everything we tell you about in our Plan has been tried out by us personally, or by people we trust. We believe we can make it all work just as well as we've said it would. Of course, nobody can guarantee what results other people in other places will get. But I've made a sincere effort to give you honest and frank answers in the plainest language I know how to use.

And I hardly need to remind you that various parts of the country have differing climate and soil conditions. We are telling what we've been doing here in Connecticut (a fine state, by the way) and you will realize what allowances you must make for your own local conditions.

You don't have to spend as much on buildings as we did. We happen to think this a good investment, but are the first to admit that you can get along fine with less expensive buildings.

Building a small barn for your livestock, buying a couple of acres of land instead of simply a lot big enough to set a house on, or shelling out fifteen dollars for a pressure canner is different from the same amount of money spent on a trip to Florida or an expensive dinner and theatre party. Money invested in productive capital will bring you a great deal for a good long time to come.

We believe that many farm families, too, are going to raise more of their own food. They will forego some of their extreme specialization to develop a more rounded self-sufficiency.

If homesteading, as we mean it here, really does become a trend in the post war years, it can itself create vast business and employment opportunities. It can furnish a pattern, an idea, an objective for the city, highway and industrial planning we hear so much about these days. It can contribute greatly to continuing security for all.

A friend once said to me, "Ed, why do you bother with other people? Why don't you settle down and just enjoy your own job and your "Have-More" Homestead? Why try to spread it all over the country?" I may sound silly trying to tell you why. But I feel, somehow, that in the years to come the U. S. is going to need all the help it can get toward happiness and peace and security. We aren't always going to have a boom going on. I've got a boy and I want to see him grow up in a good country, and if ten or twenty million American families can get set as well as we Robinsons are I don't think anything can hurt this nation.

Do you see what I mean? That's why I've worked so hard putting this Plan together. That's why I was so careful to be truthful and sensible in everything we put in it.

Anyway, Carolyn and I think this is a darn good idea and we hope you think it is a good idea—so good you'll want to get some of your friends to buy a copy of this book too.

A Letter to Wives from Mrs. Robinson

Dear Friends:

If your husband reads this plan and then tries to talk you into doing something like it, you might say, "Poor Mrs. Robinson—I'll bet she has to do most of it and I wouldn't be in her shoes for anything." So I thought you might like to know where I stand on all this.

The cue to our success with the "Have-More" Plan is found in one common little word throughout these pages. Our editorial "we" means exactly that—it isn't used just for the sound effect. We have honestly worked together as a team on everything from our first seven hens to writing this Plan. Believe me, the marriage of a man and woman really means something when you start homesteading. Somehow, working close to the earth and with nature seems to make the combination of man and wife more important and, I believe, makes marriage a happier success than is possible in sterile city life.

Do I sound old fashioned? Let me explain that neither Mr. R. nor I came from farms originally. We married and lived in New York City for five years and I suppose we could have been described as city sophisticates. So what we have discovered as an exhilarating way of life comes from actually trying city life and country living and then choosing (intelligently, we think) the better.

Out here on our wee farm my husband really needs me and I, in turn, could not get along without him. When he calls out, "Quick, honey, bring me my bee veil! These bees are in a bad mood," he really does depend on me to help him out.

Mr. R. naturally does the heavy work in the garden and with the animals, while I take care of canning, freezing and household jobs. But!!! We both encroach on the other's job. Mr. R. canned at least 50 quarts of tomatoes and froze a couple of dozen packages of vegetables—all after he got home at night which isn't before 7 o'clock. He's nuts, you think? Maybe, but he says it's a pleasure after sitting at a desk all day. I, in turn, do necessary chores during the day and I usually milk the goats.

Ed always envies me getting in on all the exciting events here—it's I who watched the bees swarm (sad affair, but very interesting), I who greet the fuzzy day old chicks that are so adorable, I who had the great thrill of watching the goslings gradually emerge from their shells, and so on indefinitely. There's always something happening here. That's what made me decide the old idea is really true—if you want to be happy and stay young, keep growing things around you. When you



grow vegetables, flowers, chickens, pigs, geese, goats and a child all at the same time, how can you be bored?

But about the work—that's what's worrying you, I know. Yes, I do work hard, I suppose—at least, other women seem to be impressed. But I don't work any harder than I did when I was employed in an office and at the same time kept house as so many women do. One secret I have found is not trying to keep a spotless house—I have decided it's a waste of time. I guess our other secret is that what seems dull work to many people frequently is fun to us.

Now I don't claim we enjoy doing everything—for instance, picking chickens, washing too many greens at one time for canning, or cleaning out manure. But even these disagreeable jobs are not too bad when done together, and what satisfaction I get when they're done! Being a woman you can imagine my blessed feeling at knowing I have, to name just one item, 25 broilers in my freezer—ready to be cooked for my family or friends whenever I want them. We women probably place security for our families above everything else—so you wouldn't mind being in *my shoes*, would you, if you could say—"I could feed my family well without buying another thing for six months!"

I guess you may think by now that I am a very unsociable person but I like to play as well as anyone else. I get very fed up with it all occasionally. When that happens, I try to park our child and the chores with a neighbor and off I go to the city—the Robinsons don't begrudge Mom her day off, especially when it makes her so glad to get back.

There are certain basic facts about the work though—summer is obviously the busiest season while winter gives you loads of time for parties, dinners or whatnot. Except in the middle of summer we have weekend guests who like to play at farming and in the winter we have supper parties. Incidentally, I find it doesn't cost much to entertain guests since we started our "Have-More" Homestead, because we

always have surplus food on hand. Nature has worked out a swell scheme—by the very fact of winter she forces you to rest. Then when spring comes, you're refreshed and eager to start all over again.

And I think you'll make some new friends you'll like—without exception, the people we have met in connection with our animals have been tops. I don't know whether owning animals makes people nice or whether only swell people care for animals, but whichever it is, both Ed and I have thoroughly enjoyed the new friends we have made.

After you work on some of the "Have-More" projects, you may well find you are so interested you would like to expand one of them on your very own and develop it to "pin-money" size. I, for example, really adore the geese and next year I think I'll raise a fair-sized flock.

There's one more vital point in what the "Have-More" Plan means to me. That's Jack Robinson, our little son. I can't begin to tell you what our new way of life is doing for him. He loves all the animals and already at the age of four wants to help take care of them. And we let him to the best of his tiny ability. He is already an independent little thing, afraid of nothing. And need I say what has been written so many times before—by seeing and helping care for our animals he will naturally grow up knowing many facts of life (and I don't mean just sex, though that is included). Furthermore, he will have a basic understanding of what living is all about and what it means to earn his own bread. I believe it is frequently the country boys who have made good in America—anyhow, I sincerely believe we are giving Jackie the best opportunity in the world to learn everything from hammering a nail to developing an intelligent and responsible personality.

And what's more—he will have all the childhood fun for which country life is famous. From his standpoint alone all this is worthwhile.

As you can see, I can't even keep "we" out of my own letter to you. Your husband can't "Have-More" alone—he needs all your interest and help—but isn't that the way you want it? If you start the "Have-More" Plan I truly believe you'll find many intangible rewards for yourself and your entire family—for you'll all be working together, probably more so than ever before in your lives.

My very best wishes to you with your plan—I hope you'll get as much fun and deep satisfaction out of it as I.

Sincerely,
Carolyn Robinson

What Sort of Place Do You Have — or Want?



Country home for city worker



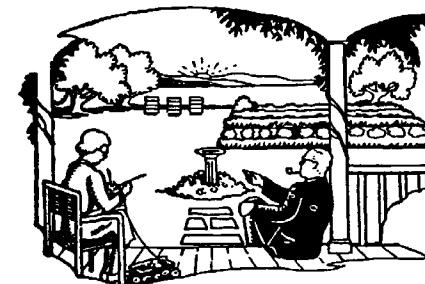
Part-time commercial farm



A business at home



A full-time commercial farm



A place to retire

WHEN we first wrote our "Have-More" Plan we thought of it simply as a way a family could raise a good deal of its food on an acre of land.

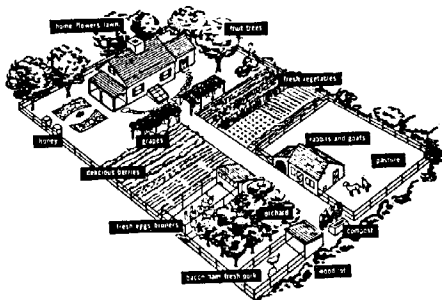
"A little land—a lot of living" was our idea. Imagine our surprise when we began getting letters such as these:

"Dear Ed and Carolyn,
 "Your Plan is just what we've been looking for out here on our 2,200 acre cattle ranch. Why should we drive 40 miles for our groceries? We are putting in a big freezer and raising our meat, fruits, vegetables, etc. . ."

"Dear Carolyn and Ed:
 We think your Plan is wonderful. Of course, we aren't interested in raising our own food, but we have bought two-and-a-half acres so that our two children, Emily, 4 and Johnnie, 2½, can have a nice yard to play in. Keep up the good work. We are recommending your Plan to lots of our friends."

From many letters we saw that, in reality, our Plan is basic to five different patterns of country living:

1) **Country Home for City Workers:** In this set-up a family's main income comes from a "full-time" job. The land that this family can use productively is limited to what can be cared for in "spare time". However, with only an acre and an hour's spare time a day it is surprising how much of its food a family can produce, how many improve-



The "Have-More Plan" is basic for all

ments it can make, how much repairing and maintenance it can do. In fact, with proper instruction a willing family can make an acre home in the country productive enough to pay for itself. More important than any economic considerations, however, are the wholesome aspects—a country home gives a family a chance to work together creatively outdoors in the fresh air and sunshine. As the length of the work week shortens and city workers have more time to themselves, home ownership on an acre or so is going to become even more popular.

2) **A Part-Time Commercial Farm:** The distinction between a "Country Home for City Workers" and a "Part-time Commercial Farm" is a difference of degree. But because a Part-time Farm generally requires a good deal more than one to three acres of land, the distinction is important. Inasmuch as the Part-time Farmer will raise some crops for cash, the whole subject of what to raise becomes complicated by the necessity of considering a market. Generally, "part-time" is associated with hobby farming or "subsistence" farming—but thousands of part-time farmers, particularly truck gardeners, nurserymen, and even turkey raisers, farm during the growing season and work in industry during the winter and do well. The most profitable crops for the part-time or small farmer are those produced for home use.

3) **A Business in the Country:** Great opportunity lies in the "rural service field." Recently, the *N. Y. Times* said:

"The tremendous scope of the rural-service field is visualized by few. In the years ahead it is certain to include more frozen-food community locker plants, rural electrification, custom work with power machinery for farmers who prefer to hire instead of own, repair shops for farm machinery, expanded telephone service, scientific soil conservation, modern forestry and refrigeration. There will be opportunities for roadside stand sale of products bought from farmers who live some distance from main roads.

"It seems evident that we are ready for a great expansion toward higher standards of country living. It does not mean more farmers. It does mean many more part-time country homes on the roads radiating from cities and large towns."

Next time you're riding through the country, notice the many signs along the road put up by people operating little businesses of their own. It's just as though a classified telephone directory had come to life. Most of these people, whether business or professional men, own a home with considerable land around it. Very often they have a garden, fruit, berries, chickens, other livestock.

4) **A Full Time Commercial Farm:** Farmers realize farming can be more than a business—it can be a way of life. A farmer who raises only tobacco is no more secure than the man who runs the corner cigar store. But the tobacco farmer, having gone through food rationing, is now apt to be keeping a cow, a couple of pigs, poultry and a large garden. The Department of Agriculture has found that the indigent farmer was the "one-crop" specialist operating on the theory of raising everything to sell and buying all his groceries, meat, milk, and vegetables, just as though he were a city dweller. Today, most farmers know that it is not cheaper to buy their family's food. In the corn belt, points out Rt. Rev. Ligutti, a year's supply of vegetables would cost approximately \$260 for a family of five. In order for the corn belt farmer to earn \$260 cash, he must spend 520 hours working 50 acres of land and produce 2,000 bushels of corn when corn sells at 50 cents a bushel. A vegetable garden only 50 x 100 feet, with \$1.25 spent for seeds plus 50 hours of field work and 25 hours of canning will produce \$312 worth of vegetables. Which is better off—the man who raises corn to buy vegetables—or the man who raises his own vegetables?

5) **A Place to Retire:** Social Security, retirement income insurance, civil service, Army, Navy and the many pension plans of industry mean millions today can look forward to a regular income in later years. The man who will put his spare time in developing a productive country home can retire years sooner. With no rent to pay, with land and the ability to make it produce the family's food, a man can live in grand style on a small pension or other steady income.

The "Have-More" Plan is basic to each of these five ways of country living. Expressed in terms of a "platform," the "Have-More" Plan calls for:

- 1) A source of cash income.
- 2) Home ownership on at least an acre of land.
- 3) A family willingness to use a good part of its spare-time productively and creatively.

Before you dash off to the country and buy a place, consider carefully what sort of country home you want.

Setting Up a Homestead

AN old farmer struck it rich in oil and his family persuaded him to buy a \$4,000 automobile. Never having had anything better than a second-hand Model T, the old boy insisted on only one thing for the new car—the most colossal and expensive set of bumpers he could find!

I wish we'd had some good bumpers when we decided to move to the country. We bumped our noses on land, on the layout of our house, on the location of our barn, fruit trees, and pasture—on nearly everything a family could blunder at. I hope you'll profit by our mistakes!

Setting up a productive country home is probably the biggest and most important job any of us attempt during our lifetime. Despite all of the people who have needed some basic data on setting up a homestead, no one had completely worked the methods out and put them on paper. Every new family has been left to stumble its own way toward the answers.

Not long after our first edition of the "Have-More" Plan went out we began to get letters asking for help in laying out a place. Of course, we couldn't give specific advice without seeing each piece of property; and then, people have different ideas of what they want to do with their place.

Even though no one layout will fit everybody's ideas and site, there are certain basic points that ought not to be violated.

For example, where should you locate your house in relation to the highway? (If you do this right you can probably get the town snow plow to do your snow shovelling for coffee and doughnuts.) Where should your barn be placed with reference to the house? Toward what compass points should house and barn face?

What are the best locations for garden, orchard, pasture, hayfield? In placing fruit trees how much space should be allowed for them to mature without crowding? How can fencing and gates be placed for easy pasture rotation and so livestock can always get water without your having to carry it?

In planning the house itself, how can

you start small and yet make additions through the years so that the finally completed homestead is attractive and efficient for country living?

If you plan your place correctly from the beginning, you will save countless steps in the years to come. You can actually cut your chore time in half. One minute saved twice a day on chores equals 12 hours a year!

Have a Plan

Before you lay out your place you ought to be able to answer all the above points and more too. Even if you're buying a country house that's already built you should have a definite plan for refitting the house and land to your use. Over and over I've seen city people buy a farm, remodel the house but let the land go to rack and ruin. Even if you can't use all the land you've bought, you should learn enough about land management so you can rent your unused land to a neighbor and see that he keeps it in a good state. Idle land deteriorates just as fast as an idle house.

When we moved to the country about the only layout we could find to help us was the diagram below. Even though it shows so little detail as to be of questionable help to the novice, it has two major faults. The combination barn and poultry house should be located where the berry patch is—this will be painfully evident to anyone who has had to carry 100 pound sacks of grain and 150 pound bales of hay from the end of the proposed driveway 90 feet or so to the barn. The second questionable point is that far too many trees are shown in the orchard—a family couldn't possibly eat all the apples, peaches, pears, and cherries which would total about 75 bushels when these trees were mature. Of course,

you might sell the surplus, but it is difficult to make a small part-time orchard pay.

Some Mistakes We Made

At the top of the next page is a sketch of our homestead. The things wrong with it are errors that any novice is apt to make and if we tell you about them you ought to avoid making them. First, although very pretty, there is too much lawn. Our house sits 90 feet back from the road and the front and back lawn take a good hour to mow each week. Second, our small barn is too close to our neighbor's property; there is no room for a poultry run in back of the barn—in front is our backyard play area. Third, our quarter-acre hayfield isn't large enough. Fourth, there are too many trees in our pasture—good pasture grass needs sunlight. Fifth, originally our house sat right in the middle of a woods. We believed this the best way to have trees around the house, believing it would be easy enough to clear land for garden, pasture, and crops while "only God could make a tree". However, we found it is cheaper to build your homestead on clear land and plant a couple of big trees.

Our total acreage is only about 2½. Three to five acres would give us enough pasture for our livestock and enough hay we could then depend on our place to supply us with over 75% of all our food requirements and a high percentage of the roughage and grains needed to feed our livestock.

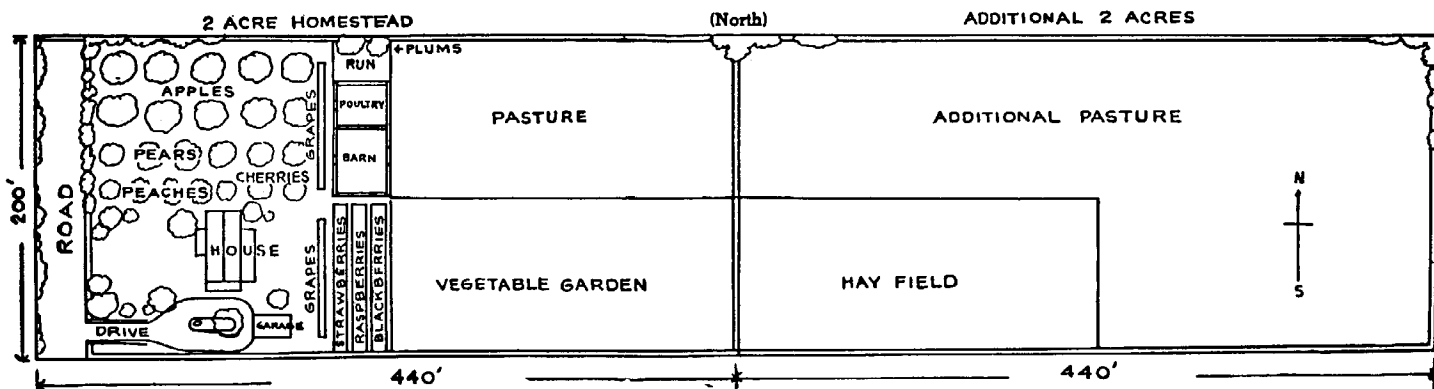
An "Ideal" Layout

At the bottom of page 8 is a cut of an "ideal" layout for a productive country home. The drawing is available in full-

Shown below is a suggested layout for a 4 acre homestead. To the original 2 acre house plot, 2 additional acres are attached to rear. These 4 acres of good land would not only provide the family vegetables, fruit and berries but more than enough pasture and hay for two or three milk goats or pasture for a cow and a good part of a cow's hay requirements. There is also room for a pig or two plus other livestock.

On the front cover is a suggested layout for a 2 acre homestead, and on page 28 is shown a suggested layout for a half-acre.

We emphasize that these are only suggested layouts. Each family will have its own ideas on just how to manage their own particular place.



size (about as large as the top of a bridge table). Two experts helped with this "ideal" homestead plan: Milton Wend, author of *How to Live in the Country Without Farming* and John H. Whitney, R.A., an architect who specializes in designing country homes.

About 40 pages of description accompany this excellent plan; all the details can't be given here, but I'd like to point out that this basic plan of the "homestead area" (the country house, garden, barn, orchard, lawn, pastures, etc.) is a good point of departure if you're interested in any of the five productive homes described on page 6.

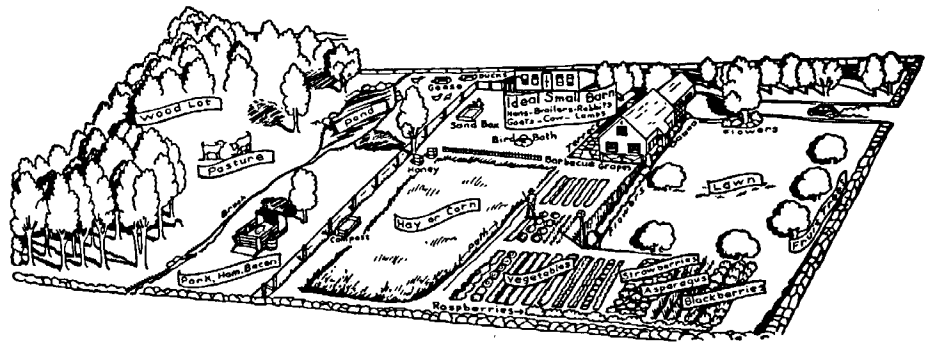
For example, suppose you want only an acre place in the country where you can have a lovely home, a garden, some dwarf fruit trees, and maybe some chickens. An acre is more than enough room; an acre, remember, is 209 feet by 209 feet. The portion of the ideal layout shown in the lower left-hand corner of this page is just over an acre. You'll notice that this "basic acre" includes a large house, an orchard of standard trees, barn and barnyard, a good-sized garden, flower gardens, lawns, driveways, and even some pasture and hayfield. The pasture and hayfield are not shown complete—the wavy line at the top of the cut indicates that these are only partially shown.

A Larger Place?

If you wanted a larger place, a part-time farm where you could, if necessary, grow 75% of the family's food, then you'd want more pasture space and hayfield. But the basic acre is still an excellent layout.

Then again, if you wanted to carry on a business at home, the office and "shop" to the left of the living room could be built. Naturally, this could be as small or as large as needed for your business.

If you want a commercial farm, then this same homestead acre is a good layout. You'd still want a kitchen garden for home use even if you were growing tobacco, or flowers, or fruit; if you



Here's a sketch of our homestead.

were running a commercial dairy or a poultry business then you'd drop your goats or cow out of the small barn, but might well have the rest of the items. Naturally, on a commercial farm you'd add to the basic acre as much land as you needed.

As a place to retire you might want an acre, or enough for a part-time farm.

Basic Acre Most Important

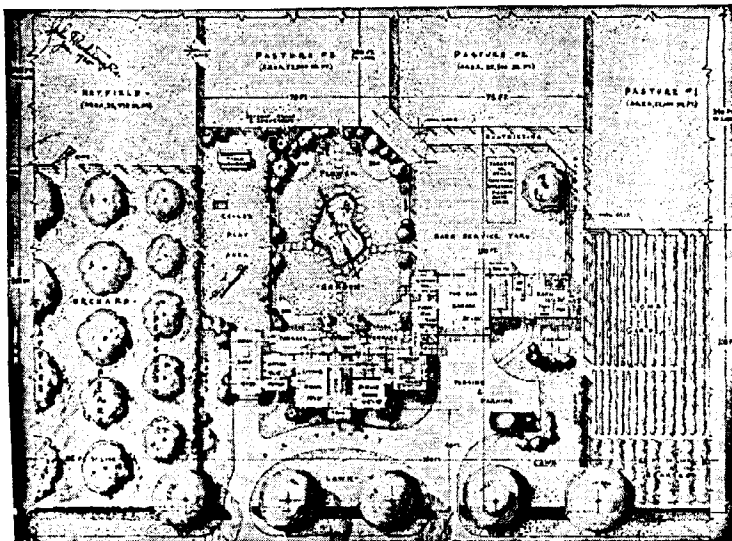
You can see that this *basic acre* is the key to a productive country home. Even though the house may not suit you, or the exact location of the items may be impossible to achieve, due to the fact that you are remodeling an existing place, or even because you want your place laid out differently, I think you'll find that this "ideal layout" makes a good point of departure. It does indicate basic principles that ought to be kept in mind.

For example:

- 1.) Every bit of land should be used advantageously.
- 2.) Garden rows should be of good length for easy cultivation; and run North and South for equal sunlight.
- 3.) Pasture should be fenced into plots for rotation. Pasture gates should be wide

enough for entry for haying and plowing equipment.

- 4.) Vegetable garden should be handy to kitchen.
- 5.) Lawn and shrubbery arranged attractively, yet easily cared for.
- 6.) Child's play area screened from street and located so it can be watched from the house.
- 7.) Compost heap should be placed between barn and garden.
- 8.) Trees should be spaced so as not to be crowded at maturity.
- 9.) Shower, bath, dressing room should be accessible from outside.
- 10.) Barn should be to lee of house; close enough to make supervision of livestock easy.
- 11.) Adequate closet and storage space in house.
- 12.) Space for good home workshop.
- 13.) Housing for garden tools, wheelbarrow, lawnmower, small tractor.
- 14.) A cold storage room for vegetables and canned goods.
- 15.) Fencing so arranged that livestock may be turned loose from the barn.
- 17.) Space for home freezer, laundry, fireplace wood.
- 18.) Orchard should not shade garden.



If you're thinking of having a place of your own — or you want to lay your present place out more efficiently — send for "Layout for a Productive Homestead" from which this small reproduction was made.

This will give you an idea of some of the things that you ought to think about when planning a homestead.

Houses Especially Designed For Country Living

TODAY practically all houses are designed for suburban living—not country living. A suburban house is simply an expanded apartment. No provision is made for the more productive kind of life you can live in the country.

For instance, if you have a garden or chickens or fruit trees, and most certainly if you are going to have livestock, you'll find that the small kitchen of the suburban house is totally inadequate. If you're going to have a laundry or you want to start your seedlings indoors or you plan on a quick freezer, you'll find no provision for these in the usual suburban house.

The fundamental differences between the ordinary suburban house and a house that's really satisfactory for productive country living or a small farming operation is illustrated in the three floor plans at the right.

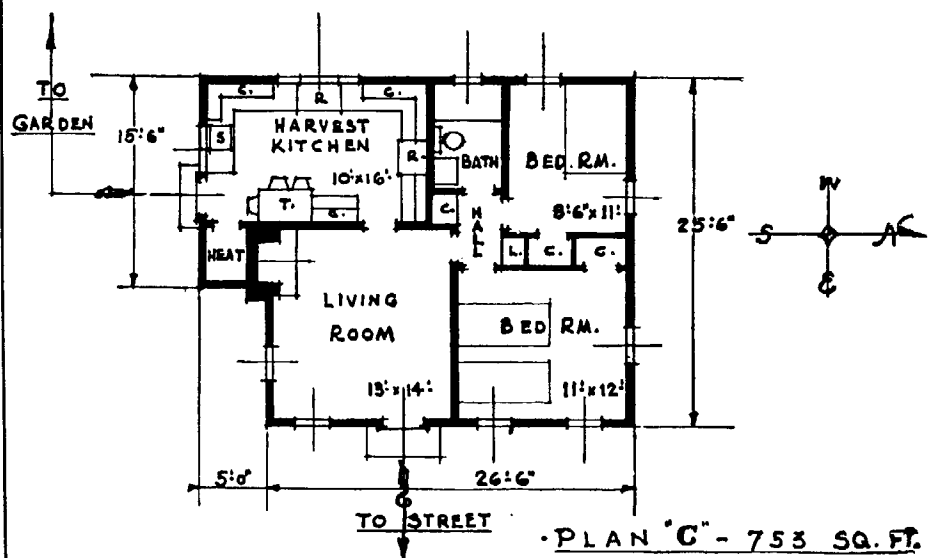
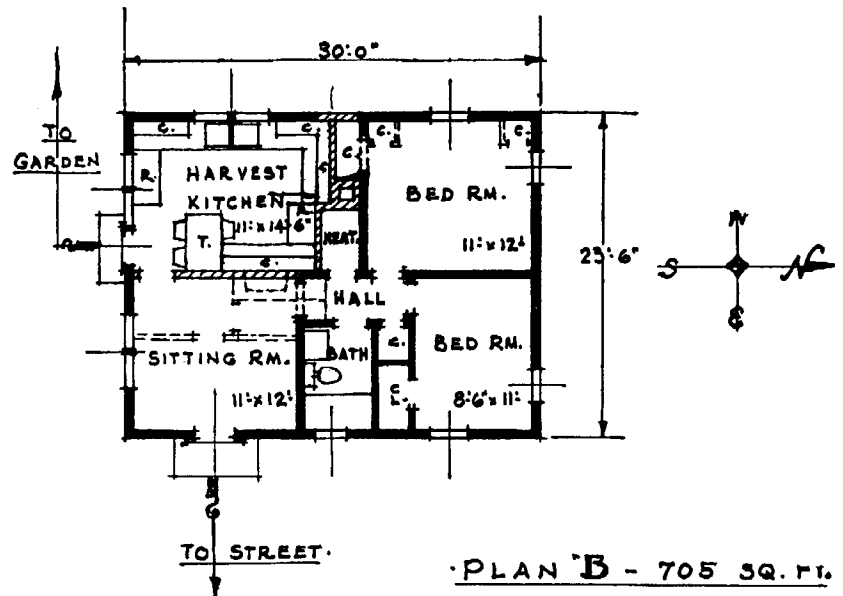
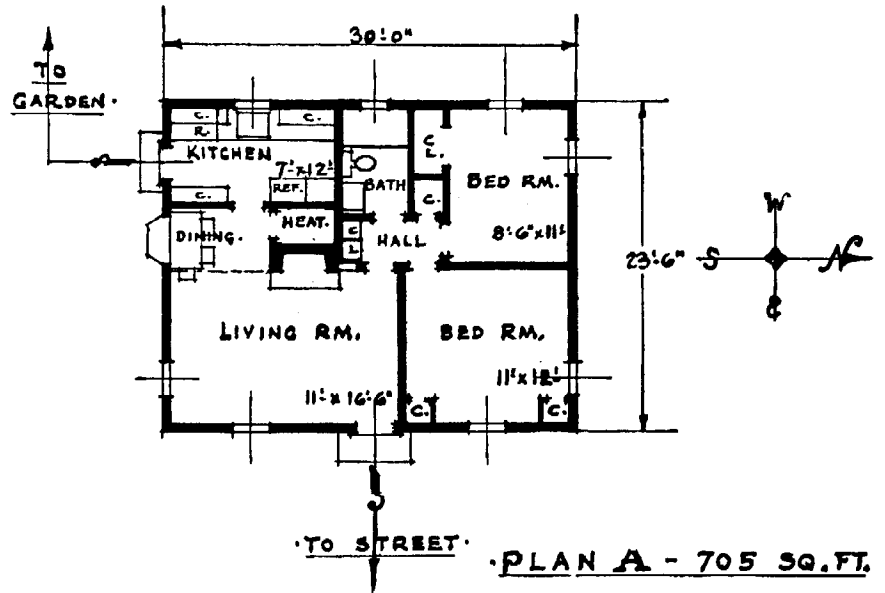
The smaller the house the more difficult it is to provide space for homestead activities. Thus we asked John Whitney, R.A., an architect who specializes in country houses, to take a good small suburban house and show how approximately the same floor area might be laid out in a productive country home.

Note these plans are about minimum—one story, four rooms, with heater space instead of a basement. Ordinarily if 10% of a house is "waste space" (hall area), the plan is considered satisfactory. Hall area in these plans is only 2%!

PLAN A: (705 sq. ft.) Here is an efficient suburban house well planned for that type of living. Note that the kitchen is the small apartment house type. Living room is large.

PLAN B: (705 sq. ft.) This is the same basic plan as "A" achieved by turning "A" up-side-down and reversing it. (Dotted lines show eliminations.) The living-room becomes a "Harvest Kitchen" with heater space, chimney, and bedroom closet off one end thereby eliminating two small closets in larger bedroom and gaining 8 square feet of valuable wall area for dining in the enlarged kitchen. Heat and chimney area of Plan "A" becomes smaller sitting-room. By reversing living-room and kitchen in most suburban house plans you have a better country layout.

PLAN C: (753 sq. ft.) This is an ideal small homestead. By adding 48 square feet, 76 square feet are gained for the "Harvest Kitchen." Here is room for all food preserving activities plus laundry. The living room is 182 square feet compared with 181.5 square feet in Plan "A". Bedrooms are same size in both "A" and "C". By changing the corner closets in Plan "A" there is an additional gain of 8 square feet plus wall space.



Plan a "Harvest Kitchen" With Your Wife

NOT long after Ed and I moved into our country house I began to realize *my* department was going to be overcrowded.

One look at our big quick freezer, the cream separator, the honey extractor, the pressure canner—and another look at our small kitchen and we were somehow reminded of trying to get a grand piano into a phone booth!

You see, when you begin to grow a good part of your food you need a "factory" to process it and preserve it. And you just *live* differently. The ordinary kitchen-dining room combination of the conventional house simply doesn't fit.

What you need is a streamlined, modern little food-conserving set-up, combined with the charm and warmth of Grandmother's kitchen.

We went to John Whitney, an architect who specializes in country houses, with our idea. Together we planned out every detail of food preservation, preparation and serving, added such things as the greenhouse window (for winter herbs, flowers, and spring plant starting), a desk and record-keeping corner and a rocking chair corner for relaxation, darning and sewing and general coziness.

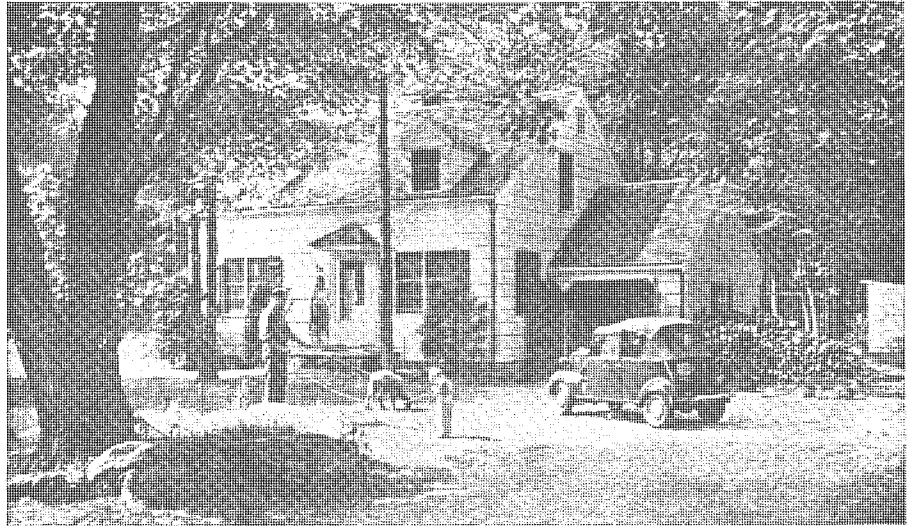
And now we have our "Harvest Kitchen." It has turned out lovelier and more practical than our fondest dreams. Believe me, if you want to make cooking, canning and freezing a joy for your wife build her a "Harvest Kitchen!"

You can add it to any house; you can put it into *new-house* plans; sometimes you can convert your present dining room and kitchen into this needed "Harvest Room" or "Harvest Kitchen" as we call it.

In our "Harvest Kitchen" (see pictures at right) we have such features as a greenhouse window, special milk-handling and cooling equipment, quick-freezer cabinet, hardwood chopping block for meat and poultry dressing, vegetable-cleaning sink, glass-enclosed preserved and canned food compartments, garbage-handling arrangement, dry food storage space, cooking, canning and work space, etc.

Isn't it astounding that such a room has never been designed, not even for a *farmhouse*?

We can't begin to give you all the important details, plans and so forth, but if you're interested in building a country house or remodeling your present one, you can write for our complete portfolio giving full information plus plans drawn up by John Whitney, the architect.



OUR HOUSE: This snapshot shows our house which is the so-called "Cape Cod" style. We found that the ordinary-size kitchen cramped our canning, freezing, and cooking so we planned the addition of an up-to-date version of the old "summer kitchen."



OUR HOMESTEAD: Another snapshot six months later showing how our suburban house has been turned into a homestead by adding a "Harvest-Room." The garage was remodeled—note the greenhouse window. Also, we improved the front entrance and added picket fence at left.



Here is one end of a special room every "Have-More" home needs very, very much. The big, roomy old farm kitchen was its "ancestor"—yet it is completely new in design and conception. We call it the "Harvest Kitchen."



This architect's sketch from PLAN FOR A HARVEST-KITCHEN is one of six showing various ways a "Harvest-Room" may be added to an existing house or planned for if you are building a new house.

Finding a Suitable Place

MAYBE you already have a place of at least $\frac{3}{4}$ of an acre of level, good land. So much the better, but read this section carefully to make sure your land is suitable for intensive cultivation.

I am going to suppose you live in the city—own no land—and know nothing about finding a suitable place in the country.

Here's how you start. Get a good map of your locality. Take a compass and using your place of work as a center point, make a circle the radius of which should be approximately the distance you can travel in one hour.

If you own a car, this radius could well be 25 miles. This 25 mile radius will enclose a territory of 1,962 square miles (an area about equal in size to the whole state of Delaware). If you expect to travel by bus, street car or subway to your job, the radius would be shorter.

Next study the encircled area. Is there any particular part of it in which you would especially like to live? Have you friends in some part? If so—talk to them about finding a place.

The most important single step in the "Have-More" Plan is selecting a suitable place. If there is any question in your mind as to whether you will enjoy owning your own home—raising your own food or living in the country—or any other doubts—rent in the community you select before you buy. Remember, you are choosing a place to make a permanent home—you are not simply leasing an apartment for another year.

The very fact that this first step is so important and difficult is a good thing because if you haven't enough gumption to go out and find yourself a place—then you probably would never

make it amount to anything even if a rich Uncle left you the place in his will.

One reason so many city dwellers continue to go on paying rent and living the restricted life people lead in an apartment seems to be because they don't know how to go about finding and developing a place of their own. Another obstacle is the mistaken belief that they can't afford a country place of their own.

Deal With A Good Real Estate Man

Many people who go to a doctor when they are sick, a dentist when they've got a toothache, balk at going to a real estate man to buy property. Somehow they figure they can find a bargain in real estate themselves if no real estate man enters the picture. Of course, a real estate man is in the business of selling real estate—and he is going to sell everybody he can. But most people who get stuck by a real estate man let him sell them something he wants to sell. They don't tell him exactly what *they* want—and make him find it for them.

We have prepared a "score-card" which you will find helpful in talking with a real estate man. This "score-card" is a guide to the qualifications a place in the country should ideally have in order for you to utilize it successfully in accordance with the "Have-More" Plan. Of course, you may not find a place that has everything you want, but with your own good judgment and careful consideration you can pick the best suited available place in your chosen locality.

Take this "score-card" with you when you talk to any real estate man.

It will save you time in telling him what you want. It will save you fruitless hours of riding from one piece of property to another only to be disappointed because it is not suitable. But most important, it may save you hundreds of dollars and years of work by protecting you from buying a place that you later find impossible to make productive.

When you are buying property it costs nothing to deal with a real estate man. He gets a commission, usually 5% of the sale price, from the seller. Every real estate man has a number of houses with land listed. This same property may also be listed by other real estate agents. So you can see how competition tends to keep the prices on property in line. Usually, it is the best practice for you to talk to a number of real estate agents. Then, you can do business with the agent you like.

A Word of Caution: If you can, rent a place with an option to buy it at a definite price at the end of a certain time—for example, a year—do this if there is any doubt in your mind about the place and the community.

Land More Important Than House

A good farmer in buying a new farm gives primary consideration to the land—the state it's in . . . whether it's easy to cultivate—neither dry nor wet, nor too sandy, nor too shallow. This you should also do.

We are approaching a wonderful new era of home-building. Shortly houses the like of which we have never seen will become available at low cost. Nobody knows just when these houses will be ready—but authorities agree they are coming. Remember this—and consider seriously buying your land now and getting the land in the condition you want it. Perhaps the house on it—even if it's "just a shack"—can be made livable for the present.

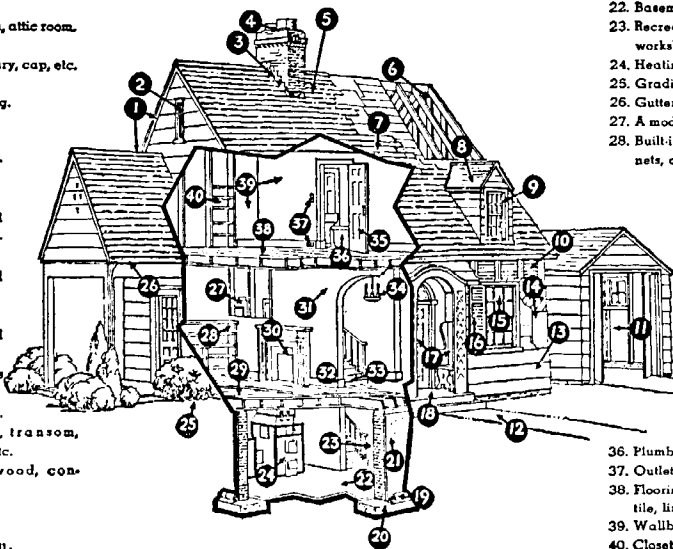
Should you plan to build your own house or buy land with a house on it? This question you can decide for yourself. If you find a suitable piece of land—I mean suitable because of size, condition, levelness, closeness to work—and it has a good substantial house on it that you like then buy it. But if you can't find on one place both a satisfactory house and satisfactory land—take the place where the land is right. You can always build a house—but some land is almost impossible to make fertile.

How Much Money Do You Need?

If you plan to rent a place before you buy—then you can find a house and

Points to check in buying a house (From F. H. A.)

1. Exterior trim.
2. Attic ventilation, attic room.
3. Flashings.
4. Chimney masonry, cap, etc.
5. Roof.
6. Rafters, studding.
7. Roof sheathing.
8. Dormers.
9. Weather-stripping.
10. Lath.
11. Garage—tool space, workshop, etc.
12. Walks and drives.
13. Exterior walls.
14. Sheathing and insulation.
15. Window frames and sash.
16. Blinds, shutters.
17. Porch—beach, transom, door columns, etc.
18. Steps—brick, wood, concrete, tile, etc.
19. Drain tile.
20. Footing.
21. Foundation walls.



22. Basement floor.
23. Recreation room, laundry, workshop, etc.
24. Heating plant.
25. Grading and landscaping.
26. Gutters, downspouts.
27. A modern kitchen.
28. Built-in bookshelves, cabinets, cupboards, etc.
29. Joists and sub-flooring.
30. Fireplaces, mantel, flue.
31. Paint, wall-paper, interior decoration.
32. Interior trim.
33. Stairways—treads, rails, balusters, etc.
34. Electric fixtures.
35. Doors, hardware.
36. Plumbing and fixtures.
37. Outlets and wiring.
38. Flooring—finished lumber, tile, linoleum, etc.
39. Wallboard, plaster, etc.
40. Closet space, shelves, etc.

land for what you are now paying. Specifically, you can rent a satisfactory place for \$15 a month or go as high as \$100, depending on section of country.

If you plan to buy you will find the price of suitable land ranges from \$100 to \$1500 an acre. The larger the piece—the less cost per acre. If you want to buy the land only, this is all right if you are now living close enough to go to it regularly and start getting it in shape.

You can buy land by putting up a cash payment of as little as 30%. Even if your land has no house you perhaps are living close enough to have a garden. The money you don't have to spend on vegetables can then help you pay for the land. Or go get a bank to pay the owner outright and take a mortgage for the balance. If a bank won't give you a mortgage on the land, *be careful*. There might be something wrong with the land, its location or price.

Perhaps you can buy land with a house on it. You can then put your rent money into paying for the property. Also, a house on the land means you can start immediately making the land pay for itself because if you live there you will be able to put more time into getting your "Have-More" Plan under way.

You may be surprised at this, but 44% of all Americans own their own homes. This the government encourages by sponsoring the Federal Housing Authority (F.H.A.).

F.H.A. makes it possible to buy or build a beautiful modern home and pay for it out of a moderate income.

For example—a small home:

Suppose land and buildings are worth . . .	\$2650.00
Of which the value of land is	150.00
Your down payment would be	150.00
Your F.H.A. loan would be	2500.00
Your monthly payment including principal and financing charges (taxes and fire insurance a couple of dollars extra)	\$ 20.90
At the end of 180 months your F.H.A. loan is completely off . . . you own your home and land.	

For a more expensive home:

Appraised value of property	\$7500.00
Total down payment	900.00
F.H.A. mortgage	6600.00
Average monthly payment over 20-year period (including principal, interest, mortgage insurance)	\$ 43.36

The purchase, or building, of your house will probably be the biggest single financial transaction you will ever undertake. Only if you have a super-abundance of funds can you afford to experiment. Few people have the technical knowledge to tell the difference between a well-built house and a poorly built structure. As the F.H.A. points out:

The very elements which make the proposed loan a 'good risk' to the lender and to F.H.A. are the same elements which assure the borrower of a sound investment, good construction, livability, and comfort in his new home.

A Little House Can Grow Into A Homestead



1. Here's a pay-as-you-go house that starts small and can grow step-by-step. In fact, maybe you can pay for additions out of savings made by raising your family's food.



2. Added to the main section is a nice garage and root cellar . . . garage should be deep enough to provide space for a workbench in rear and garden tools.



3. A dining room, or better yet, a "Harvest Kitchen," has been added. The house now becomes a real homestead.



4. Finally, another bedroom (at right) is built. The so-called Cape Cod style lends itself particularly well to growth.

"Score-Card" of What To Look For In a "Have-More" Homestead

I. LOCATION

Owner's or Broker's Name and Address:

.....

Distance to your job ... Commutation Expense

Time Condition of Roads in winter

in spring Distance to: schools (school bus) to church to town Telephone Available ... Electricity ... Mail Del. ... Express ...

II. WATER SUPPLY

Town water..Artesian well..Shallow well..Spring..

If other than town water have tested by State Health Dept. (free). Be sure you have a minimum of 2-3 gallon flow per minute *even in dry season.*

III. SEWAGE DISPOSAL

Municipal septic tank cess pool

IV. LAND

Total Land Available

Should be at least $\frac{3}{4}$ acre of good, level land. Total of 2 to 5 acres to include orchard, pasture, hay field, and land to grow some stock feed.

Size of GardenDepth of Soil

For family of five should eventually be 100 x 150. Dig holes several places. Top soil should be 7" deep; 12" is better. Important: if top soil only 6" or 7" subsoil should then not be hardpan or deep gravel.

Pasture

$\frac{1}{2}$ to 1 acre for goats; 1 to 2 acres for cow.

Hayfield

Not necessary—but will save you buying hay. 1 to 2 acres for 2 sheep; 2 acres for steer. $\frac{1}{4}$ to $\frac{1}{2}$ acre for goats; 2 acres for cow.

Land for grain crops

Part time farmer probably won't have time for grain. Additional 4-12 acres necessary to grow all livestock grain.

Woodlot

Enough for fireplace—fenceposts, etc.

Lay of land

At least $\frac{3}{4}$ acre level; also hayfield level—pasture, woodland need not be level.

Natural Fertility

Observe present garden, vegetation, etc. Watch out for poor drainage, too sandy or too much clay, too many large stones.

V. OUT BUILDINGS

Garage Tool House Workroom Barn

Poultry House and/or Barn

Barn for dairy, rabbits and poultry ideally should contain a minimum of 500 sq. ft. floor area.

VI. HOUSE (see diagram page 11).

VII. ORCHARD

Apple Peach Cherry

Plum Grape Raspberries

Strawberries Blackberries Blueberries

Currants Asparagus Rhubarb

An established orchard in good condition is worth money. For a family of 5 this should contain: 5 apple, 3 pear, 5 peach, 3 cherry, 2 plum trees, 10 grape vines. . . Small fruits: 50 raspberries, 100 strawberries, etc. (See pages 26-29).

VIII. OTHER

Shade trees

Fencing

(Good fencing is worth considerable)

Length of growing season

(Should be 120 days from frost to frost)

Neighborhood ... Land values going up or down ...

Kind of Neighbors

Possibility of disposal Selling Renting

Extra land available

Desirable place to retire to

Other people in neighborhood raising family food.....

Note tax rate Delinquencies in town

Is title sound Have lawyer search title

Any zoning restrictions against raising livestock, etc....

Asking price

How long property owned by seller

Assessed value

Insured value

What price did owner pay

(Sometimes you can get an idea by inquiring at the town recorder's office)

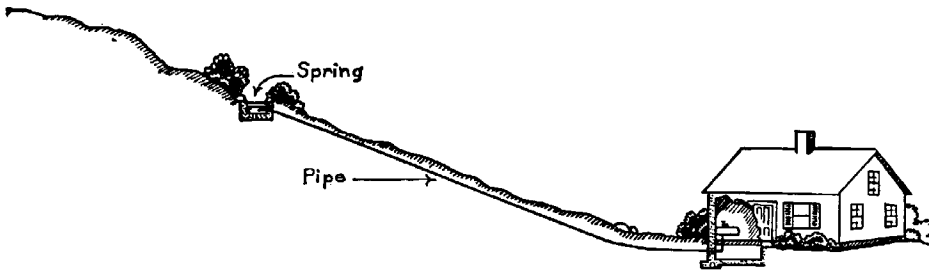
Why does he want to sell

Is there a mortgage\$-----

Down payment needed\$-----

Estimated cost to repair\$-----

WATER . . . SANITATION . . . ELECTRICITY . . . ROADS



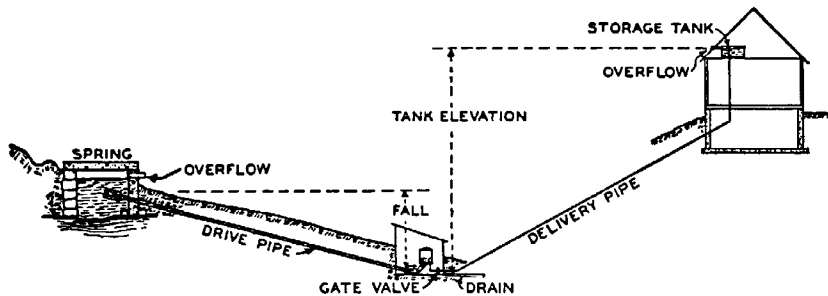
A **SPRING** is simply an opening where water flows out of the ground. It may be located at the bottom of a pond or lake. If you have a good spring near your house you may be saved the expense of digging a well. And if the spring is located on a high enough level you may be able to use a gravity system instead of a pump.

WHEN we bought our house in the country the water, sewage, electricity, and driveway were supposedly all finished. They looked all right to us. But we've had to spend additional money on all four.

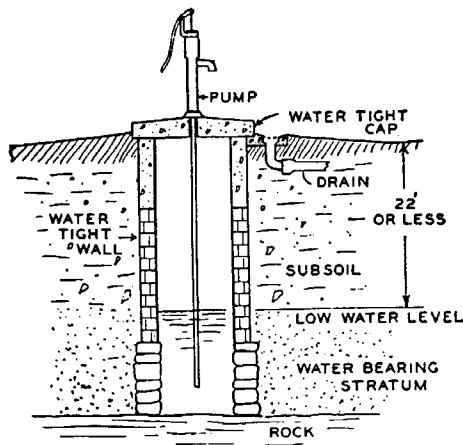
Our main expense was the need to rebuild our sewage system—the builder had installed a minimum amount of drainage pipe and no siphon discharge system. We've also piped water to our barn and to our concrete pig pen. It was an easy job to wire our barn with electricity.

We've had to add more fill and build an edging to our driveway. In short, we've found that knowing a little about country water supply, sewage, electricity, and road building is most worthwhile.

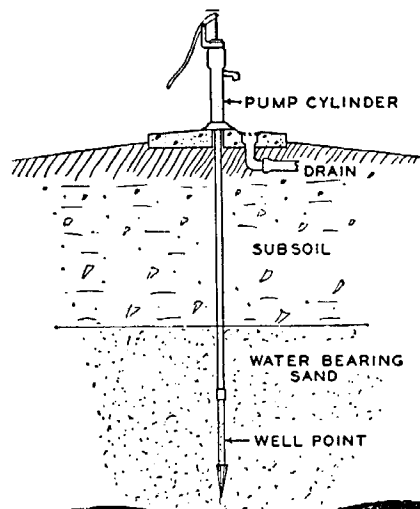
If you are used to city water service, you probably think it means an awful lot of expense and trouble to have your own rural water supply. The expense of digging a well is uncertain because you can't be absolutely sure how deep you will have to go. Still there are a lot of people living within 100 feet of a town water main who find it is less expensive to dig their own wells than to buy water from the city. One man I know, who is now building a house in town, has discovered that installing city water will cost him about \$300. On top of this he will have to pay a water bill of about \$25.00 a year. He figured up this bill for a period of ten



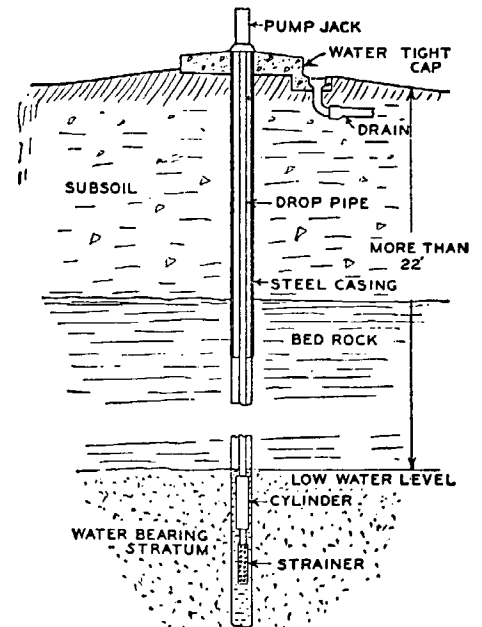
A **RAM** is really a sort of pump but it requires no electricity or gasoline and has no moving parts and is completely automatic. The water virtually pumps itself. There must be at least a 20 inch fall of water between the source and the ram. Under these conditions the ram will pump water to a much higher level, as high as 20 feet.



A **DUG WELL** is the kind that is actually dug with hand digging tools. This is the old fashioned type of well you see on many farms today. Wells are not dug by hand so often nowadays as they used to be because it is frequently easier to get a well driven or drilled. Another reason is that the dug well is more easily contaminated by seepage through the walls or from above. On the other hand, this type of well if properly constructed can be kept entirely pure and provide plentiful quantities of water for generations. If you're thinking of digging a well yourself, you'll want to learn more about this kind of well.

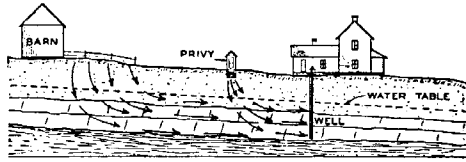


A **DRIVEN WELL** is made by driving into the ground a simple pipe fitted with a well point. It may be either a deep or shallow well, depending on how deep you go to get a satisfactory flow of water. If your soil is suitable for this type of well it is something worth investigating for it usually costs less than drilling a well or digging one. It is not generally considered as reliable as an Artesian well (which produces a steady flow of water), but in some sections it is quite satisfactory. You need a good sized storage tank and you should know what to do if the well points become clogged.

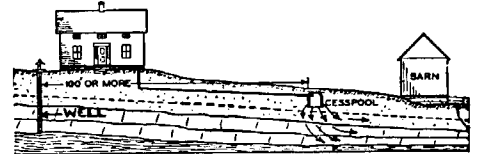


A **DRILLED WELL** is made by drilling a hole into the ground 4 to 8 inches in diameter with special well-drilling equipment. The upper part of this well is lined with a steel casing which protects it from contamination. If you think you will have to go down deep to get water, you should learn more about drilled wells. Also you will need to investigate deep and shallow well pumps. The cost of a shallow well pump is much less and can be used with a good Artesian well when you don't have to pump water up from over 22 feet.

LOCATING THE RURAL WATER SUPPLY



BAD—This well is located too near the barn and sewage disposal system. Sewage seeps into the well or drains directly into ground water the well uses.



GOOD—This well is located where it is not likely to be polluted by the sewage disposal system or livestock in the barn. Cesspool is over 100 feet from the well.

years (\$250) and added it to the \$300 he would pay for installing the city water, getting a total of \$550. When he compared this cost with that of drilling a good Artesian well 100 feet deep and putting in his own electric shallow well pumping system, he found that the city water over a 10 year period would cost him \$50 more . . . And in 20 years this city water would cost \$260 more. In 30 years he could install an entire new pump and tank and still beat the cost of city water for this period by \$400!

Here is a comparison of costs:

YOUR OWN WATER SYSTEM

Low Estimate

Drilling 50 ft. well (@ \$3.50 per foot)	\$175
120 gallon tank	40
Labor	25
Shallow Water Pump	45
Upkeep for 10 years	30
	<hr/>
	\$315

High Estimate

Drilling 300 ft. well	\$1,050
150 gallon tank	50
Labor	50
Deep Water Pump	150
Upkeep for 10 years	50
	<hr/>
	\$1,350

CITY WATER SYSTEM

Installation	\$300
Water bill for 10 yrs.	250
	<hr/>
	\$550

As you can see, your well may cost you anywhere between \$175 and \$1,050. About the only way to predict this cost is to find out how deep your neighbors had to dig their wells. Unless there is something unusual about your situation, you will probably have to go to the same depth. Be sure to have your well water tested for purity. The Health Department will make this test free in most states.

We've discussed a few of the many ways you can obtain water in the country. There's probably *one* combination just right for your circumstances.

Sewage Disposal

If you don't have city sewage disposal there are three practical solutions to your sewage problem: a cesspool, a septic tank, or a septic tank with a siphon discharge system.

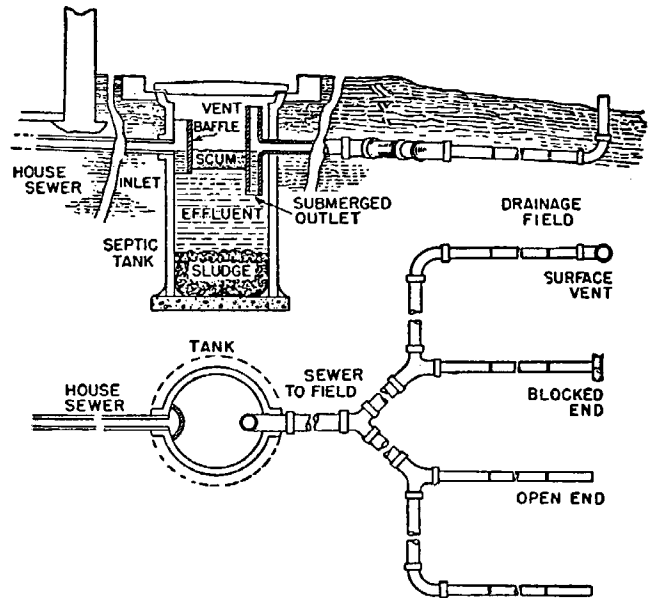
Maybe you can use a cesspool, but on a long term basis you should consider spending a little more money and getting a septic tank.

After we bought our place, we discovered that our septic tank didn't have a siphon discharge system. This caused fouling of the ground near the tank. We had to dig up the whole system and found a siphon discharge tank was needed. The siphon discharge method distributes the sewage more forcefully so it spreads over a much wider ground area. Sometimes you can get by without the siphon discharge feature in a vacation home.

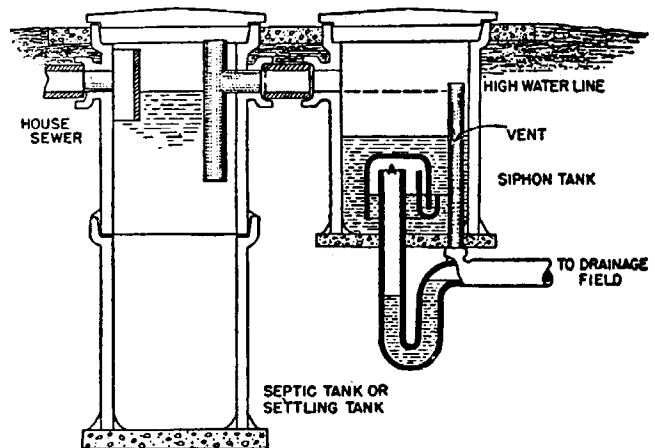
Electricity

If your house has never been sup-

Here is a simple septic system with only one tank and a tile drainage field. Inside the septic tank are anaerobic bacteria which decompose a part of the solids into liquids and gasses. Incidentally these bacteria are killed by pouring strong disinfectants and mouth washes down the drain in your house.



Here is a septic tank with a separate siphon discharge system. Another workable combination is a single septic tank like the one shown above which drains into a cesspool instead of a tile drainage field. The whole problem of proper sewage disposal is so important to health that it will pay you to go into the subject pretty thoroughly before you decide which system to use.



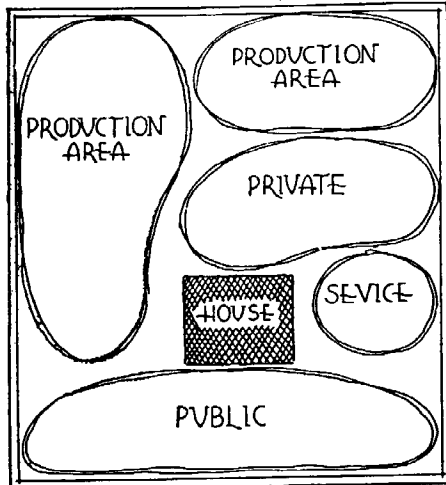
plied with electric power, measure the distance to the nearest power line. In our area the cost of getting this power to the house is about 25¢ a ft. You can reduce this cost by getting neighbors to come in with you. The more people on the line, the less each has to pay. Also, your contract with the power company should entitle you to a rebate when other people come in later. In wiring a house it's important not to underestimate the size of the wire needed. Some day you may want an electric stove, a freezer, electric power tools, or electricity in your barn and hen house so it's safer to use a no. 12 wire rather than a no. 14, the legal minimum.

Roads

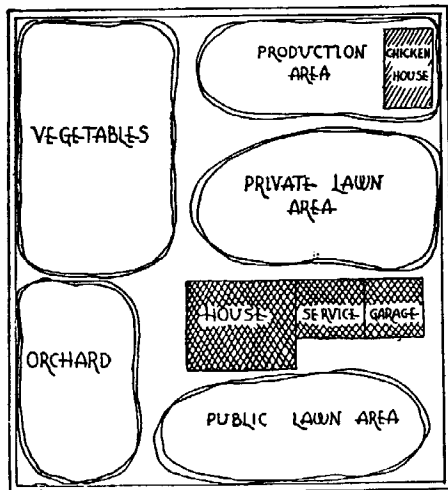
Particularly today when land values are high you may save hundreds of dollars by buying land off the road and building your own road to it. Land not touched by a road may be a far more desirable site and usually sells at 30% or 50% less. If you build a road acceptable to your town or county, you can get it declared a public highway and have it kept up by the town.

Landscape Your Place—Increase the Value 20%

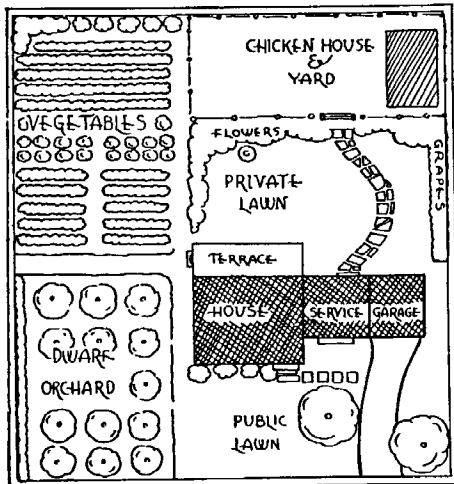
Developing a Plan



FIRST—Divide your place into four separate areas: public, private, service and production.



SECOND—In each area lay out the buildings, gardens, lawns as desired.



THIRD—Decide how each area should be planted to make boundaries for privacy, beauty and productivity.

ALTHOUGH our homestead is not for sale, in January of this year I was offered more than twice the amount we originally paid for it.

Part of this increase is due to inflation and the housing shortage. But even a few years from now when the housing shortage is over and inflation has levelled off—and maybe real estate prices will take a big drop—even then I feel confident that our homestead will be worth considerably more than we originally paid and will be far more desirable and easier to sell than it was when we bought it.

One big reason for this extra value is the simple combination of a few little things that improve its appearance and its outdoor livability. I don't want to call it landscaping because you may think that means we have a large estate or have spent a lot of money on fancy things whereas what we've actually done is to plant a few inexpensive trees, shrubs and flowers in the most natural places. The amazing fact is with \$25 worth of seeds and plants you can add literally hundreds of dollars to the value of a small place. More important, the place becomes lovelier and more livable. Your aim needn't be to make your yard showy—but just the kind of place people want to be in—a place that feels right outdoors.

If you'll look at the two top pictures of our place on page 10, you can see a couple of smaller changes that made a big difference. See how much better the small evergreens look compared with the tree at the corner. Also note the big improvement in the front entrance. Although it doesn't show too much in the snapshot, the picket fence (at left) gives the house a longer look.

Next time you are driving in the country look at the difference in various houses. Some seem bleak and undesirable. Others seem friendly and inviting. Often you see a new expensive place equipped with many modern improvements that you just wouldn't want to have for yourself. Then you'll notice a less expensive, less modern place, perhaps with a nice orchard and an informal hedge of berry bushes and several nice shade trees. This sort of place, though less modern, is the one that says "home".

Just what is it you do to a country place to make this difference? Here are a few suggestions—a five year plan that can greatly increase the value of a small homestead:

A 5-Year Landscape Plan

1st Year

Become familiar with basic landscaping methods so you can work out a good plan for the entire place. Make a pencil layout of your land showing the

house, road, driveway, nearest neighbors, barn, vegetable garden, etc. On this drawing show where you want to plant shade trees, fruit trees (dwarf), hedges and vines. Then mark desirable spots for flower beds, climbing roses, etc. You may need a screen of privet hedge or hemlock for privacy or to conceal the laundry yard or compost heap or close neighbors. If you want tall trees in a hurry, consider the fast-growing poplars—also privet hedge will grow high in one season. You can plant beds of perennials the first year too, but plant only as many as you can manage. Plant the trees, vines and shrubs first because they will take several years to grow and develop. If you don't like cutting the grass, you needn't have a large lawn. You can make it small by setting a hedge of brambles or berries, for instance, at the desired limits and beyond plant a beautiful field of alfalfa or clover.

2nd Year

Finish planting the flowers and any shrubs still desired. Be sure to have some good perennials (peonies, chrysanthemums, iris, hollyhocks). Study up on outdoor furnishings—maybe a terrace near the house or a trellis for climbing roses or grapes. Decide where you'd like to have a garden seat beneath a good shade tree or possibly an arbor with a love seat, swing or hammock.

3rd Year

Develop your present plantings a little more as needed. By now you may be ready to add the trellis you've been planning and some simple garden furniture. A brick walk set in sand can be very attractive and is easy to do. Consider adding a combination fish pond and garden pool using it partly as a fence with a border of blueberries. Any steep slopes or terraces will make a good place for a rock garden.

4th Year

By now you have finished all the foundation plantings. You are getting fruit from your dwarf fruit trees and berries from your "hedges" of raspberries, blackberries etc. A few finishing touches will probably be needed in the flower bed. Try to have enough flowers so they will bloom continuously from Spring to late Fall. Plant borders along the front walk from the house to the road.

5th Year

The plan should now be about complete, but you will see obvious improvements. For instance, you may want a little more variety now in your flowers and fruits. See if you can't find a few interesting and different varieties in your reference library. Consider ways to blend your animals into the general

scheme—especially ducks and geese in the pond, goats in the more wooded section, sheep on the more distant slopes. By now your experience, plus a little study, will tell you what is needed.

Be sure to take a picture of your homestead *before* you start this plan and another *after* it is completed. I'll bet there will be such a difference in the two photographs that you will hardly recognize the *old* place.

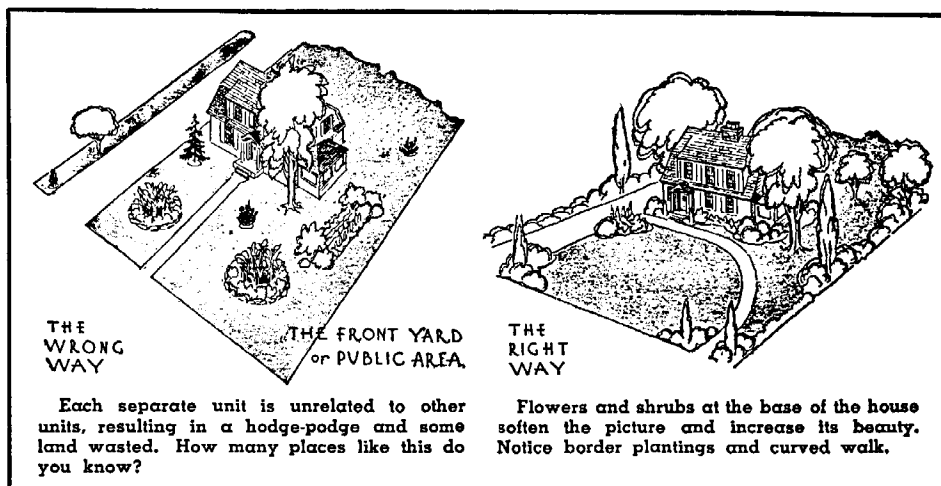
Now finally, to save you needless expense on plants and seedlings and flowers, here are a few practical tips:

- 1.) *Always have your holes dug before you get the plants for transplanting.*
- 2.) *Transplant immediately — don't give the plants time to dry out or they will die.*
- 3.) *Plan to get "bare root" plants in early Spring or late Fall. At this time it is not usually necessary for plants to be balled and burlapped (as it is in the Summer) so you will save money.*
- 4.) *Don't buy more plants than you can plant in a day.*
- 5.) *Most big nurseries have a surplus list of trees and bushes which have grown so large that they must be transplanted. These are often reduced in price "for clearance". They will be perfectly healthy plants if you are dealing with a reliable nursery.*
- 6.) *If you learn enough about trees and plants and flowers you can master the trick of getting them from the woods and having a "wild garden" on your own grounds. Many varieties cannot be obtained in any other way.*

At the right you'll find two aids to landscaping which can be a lot of help. First of all at the top are the two little diagrams showing the "wrong way" and the "right way" to arrange plantings and driveway of a small area. It shows pretty clearly what a mistake it is to just plant anywhere, how you can spoil the looks of your place by bad planning even though you may spend a lot of money for pretty flowers and beautiful trees. Of course you can avoid this by having a landscape architect, but we don't think that is necessary for a small place.

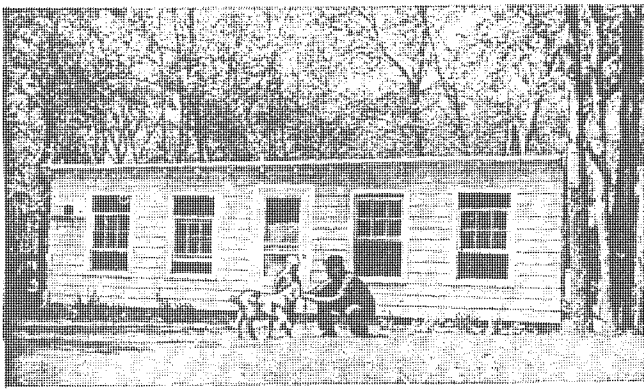
If you will do a little reading on the subject you'll find landscaping is simple and it's easy to learn the *don'ts*.

Below the "right-wrong" diagram is a landscaping score card which we've adapted from a farmstead score card put out by the Agricultural Extension Service at Ohio State University. You may not agree with all of the things listed here—some points are largely a matter of personal taste and a great deal depends on your locality. But we think you'll find this score card very useful just the same, for checking over your own place and finding ways to improve it.



Score Your Own Homestead

	Value points	1st scoring	2nd scoring
I. — CONDITION OF GROUNDS:			
1. Arrangement—well separated areas for lawn, service, storage, stable yards, etc.	8		
2. Livestock and poultry in pens away from house and opposite direction of prevailing winds.	6		
3. Drainage of ground — good natural drainage or by grading and tiling, if necessary.	4		
4. Convenient system of walks and an attractive drive-way, hard surfaced.	3		
5. Freedom from rubbish and scattered machinery.	3		
II. — LAWN:			
1. Well graded. Surface should sag rather than bulge. Should slope away from the house in all directions.	5		
2. Should have a smooth dense turf free from weeds.	5		
3. Should have no flower beds, trellis, or benches except around edges. Center should be open.	3		
III. — BUILDINGS:			
1. Dwelling			
a. Good design. Simple, seems to belong to setting.	7		
b. Well painted and in good repair.	4		
c. Appears as the most important building of the homestead as seen from the approach.	3		
2. Outbuildings and barns			
a. Properly placed — not too close to the dwelling.	5		
b. In good repair and painted.	4		
IV. — PLANTING:			
1. Good shade trees in rear of dwelling to form background, and in the front to frame building and to give shade on dwelling where needed.	6		
2. Screen planting of shrubs and trees to hide unsightly objects from dwelling and road.	6		
3. Good taste and restraint in use of vines on walls and fences; and in shrubbery at base of house and along margin of lawn.	5		
4. Some large hardwood trees in barnyard well protected from livestock. Protective frames on all young trees in this area.	3		
5. Some space devoted to the growing of annuals and perennials. Materials well cared for.	5		
V. — SOME PROVISIONS FOR FAMILY RECREATION: (Tennis court, outdoor fireplace, picnic area, etc., well placed.)			
	8		
VI. — ATTENTION TO BEAUTY OF ROADSIDE: (Adjacent to farmstead.) Absence of billboards. Native trees and shrubs preserved. No weeds.			
	7		
TOTALS		100	



Plans for a Small Barn

THE idea for this "Have-More" Plan came to us at a party—our own "barn warming" party.

When our small "concentrated barn" was finished, we thought it deserved a celebration. And so we invited all the neighbors and our friends to come and see it. We had planned and built our small barn to house not only our milk goats and their kids, but a couple of sheep, 25-30 laying hens, a battery brooder that would produce 30 broilers a month, a six compartment rabbit hutch, a squab loft, plus storage space for grain, straw and bailed hay. Yet the size of the barn was only 16 x 30 feet, as large as a fair-sized living-room.

Of course, Carolyn and I—and Jackie—thought our small barn a thrilling place, but when we discovered how interested our guests were in all the animals and the compact, efficient layouts we had worked out for them, we saw that perhaps many people would be interested in the idea of a family producing a large part of its food in spare time on a small amount of land. Eventually, with the prodding of two friends at the party who are in the publishing business, we got this "Have-More" Plan written.

Now after producing about 75% of our family's food for four years, we realize there are three main fundamentals which set a *productive* country home apart from the ordinary "house in the country." First, the layout of the grounds should be planned for efficient working of the land. Second, a "Harvest Room"—or a large kitchen—carefully planned for the *processing* of food, as well as the preparation, is needed to make the wife's part enjoyable. Third, an efficient small barn is a necessity—a homesteader's livestock can account for 40% to 50% of a family's food.

"Slightly Crazy!"

When we planned our barn we had almost nothing to go by. We wrote to all the barn equipment people, the lumber companies, the state and federal departments of agriculture, asking if they had small barn plans to house goats or a cow, laying chickens, rabbits, sheep, ducks, a pig, pigeons, and geese. Some of the answers indicated that the specialists thought we were slightly crazy. Some wrote of small commercial barns that we might adapt.

Well, we finally ended up with somewhere around \$15 worth of miscellaneous plans. None of them suitable for what we had in mind, however. So we set about designing our own barn. It was quite a job. We got the most efficient layout for poultry from one place, the best arrangement and style of goat stalls came from study and visits to a number of goat keepers and goat dairies. The broiler battery we bought for around \$30 and the rabbit hutch for \$20; both are of wire, sanitary, and efficient.

I was determined that our barn would be easy to operate with the best practices adapted from commercial barns and not cost us a fortune either. We moved to our country house in the fall and didn't start our barn building until the following spring. During the "long winter evenings", which actually flew by as time does at our place, we worked out scale models of goat stalls, brooder, hutch, feed storage, etc.

I was also able to locate not far away, a dilapidated horse barn and bought it "as is" for \$35. It had a lot of good siding and some usable timber in it.

Wrecking Is Fun

Wrecking the old barn was fun. A couple of teen age boys in the neighborhood got interested in my barn project and they turned out to be a big help in tearing down the old barn. In fact, if you can locate an old building to use and get it cheap enough, then I highly recommend rounding up a couple of teen age boys, buying them each a fifty cent wrecking bar, and turning them loose on the barn you want to demolish. Of course, you'd better be around to see that they don't pull the barn down on their heads.

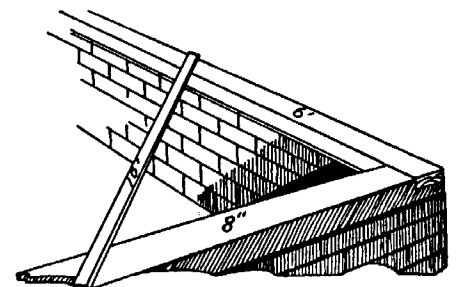
Anyway, a Saturday afternoon and Sunday was enough time for us to get the sizable horse barn down flat. The following half-dozen winter weekends we spent in what is known as "cleaning up the lumber." This is the tedious process of going over every piece of timber and board and pulling out the old nails. Incidentally, this job is what makes it costly to hire a carpenter to take down an old building and re-use the lumber in a new structure. Usually, unless you are given an old building outright, it doesn't pay to have a carpenter pull it down, clean up the lum-

ber, and build with it. A carpenter dislikes old boards because he's apt to run his good saw into a nail and then its an hour's job to resharpen and reset it. Incidentally, an old barn is worth more than an old house—a house doesn't usually supply any more usable lumber and the wrecking job is much greater.

As we cleaned up a pile of lumber, we stowed it in our Crosley, with one of the front seats removed and the top down, and trucked it down the long hill to our place. Naturally, we piled it well so the air could circulate through it until spring.

When the ground thawed, we started building. I believe it was around the first of April when we could actually begin the trenching for the foundation. Before we started, Carolyn and I had a long heated discussion as to exactly where the barn was going to be located. She wanted it six feet closer to the house than I did. Her desire was based on aesthetic reasoning—mine on the practical point that if it were six feet closer, then I would have to dig and chop my way through a tremendous root. Finally, after we delayed the digging a weekend while we argued, we agreed to compromise because the goat we'd bought was due to kid the last week in May and we had to get the barn done so she could freshen in it—a goat is supposed to "take to" a place after she has had her kids there. We compromised by splitting the difference—only I still dug through the root.

In laying out the barn, which was to be 16 x 30 feet, I measured 16 feet one way, then 30 feet along the South side, 16 along the West end, and 30 feet along



How to make a building square: measure 6 feet on the end sill and 8 feet on the side—if a cross piece then measures 10 feet (from outer edges) the building is square. This is often called "the rule of 6, 8, and 10."

the back. I connected the stakes with string and started to dig. That, it turned out later, was where I made my first mistake. I forgot, or rather didn't know, one important thing. I should have measured diagonally across corners to see if the measurements were the same. By not doing so, I wound up with a parallelogram instead of a rectangle. Not a noticeable one, but I was off about eight inches.

The foot-wide ditch I dug through stone and roots—there was very little soil as I well remember—to a depth of about two feet which is below frost level in our part of the country.

The next step was building the wooden forms into which concrete for the footing and the foundation wall was poured.

Cement—Ready-Mixed!

We ducked the laborious job of mixing gravel and cement and water to make the concrete; we simply ordered the cement ready-mixed just as a professional builder does. Ready-mixed cement delivered to the job costs little more than the materials and this is the best way to buy it when you are using a yard or more—this is the minimum amount usually delivered.

Before the cement stiffened in the forms we sunk about a dozen half-inch, foot-long iron bolts upright to use later to anchor the 4 x 4 sill to the foundation. If you have the bolts on hand it is a simple matter for the man who brings your cement to place these for you.

In two days the cement had hardened so we could take off the forms, but inasmuch as we couldn't do any more cement pouring until the next Saturday, we spent evenings tossing in stones to bring the ground inside the foundation up to within 6 inches of where the top of the floor was to be. Three of the six inches were filled with cinders.

On Saturday we were ready for the floor. The cinders were raked level and the sloping form for the dairy gutter was braced in place. The concrete floor was poured in three sections. The fellow who brought the concrete showed us how to lay two 12 foot 2 x 4's just inside the concrete foundation but three inches down from the top. Concrete was poured and the top of these 2 x 4's used as a guide for another 15 foot 2 x 4 which we sawed back and forth leveling the cement. This is not nearly as complicated as it sounds. We used wooden trowels to smooth off the top surface because we didn't want it as slick as you can make cement with a steel trowel.

The next step, according to the good book on carpentry we were reading, was to "lay the sills." This highly technical sounding procedure simply meant to take a piece of timber, in this case we used 4 x 4's from the old barn, and lay them lengthwise along the top of the concrete foundation. Where necessary, holes were bored in this sill to let the anchor bolts come through; the

washers and nuts were not screwed on for a few more days just to be absolutely certain that the bolts had hardened into the cement. The sills were set all around the foundation except where the doors were to go.

Next, at the four corners, 4 x 4 uprights (7½ feet at front, 4½ feet at back) were set in place, leveled so they would stand absolutely perpendicular by tacking a pair of braces from about half-way up each post down to the sill at either side. Then the corner posts were spiked to the sills. The 7½ foot 2 x 4's were cut and nailed up. The 2 x 4 plate, the piece that goes across the top of the studs, was leveled and nailed. Next the two end rafters were notched and fitted. The end studs cut and fitted under the end rafters . . . then all the rest of the rafters were put in place, we started boarding the sides and roof.

None of this was complicated, but it did take a good deal of time because we had to figure each step out as we went along. In fact, I would like to say right here, that there is nothing complicated about building a chicken house, a barn, or even the traditional country house. And now that the prefabricators are offering complete heating, plumbing, cooking, freezing, and laundry facilities built in one compact unit, building your own house has become about as easy as building a log cabin.

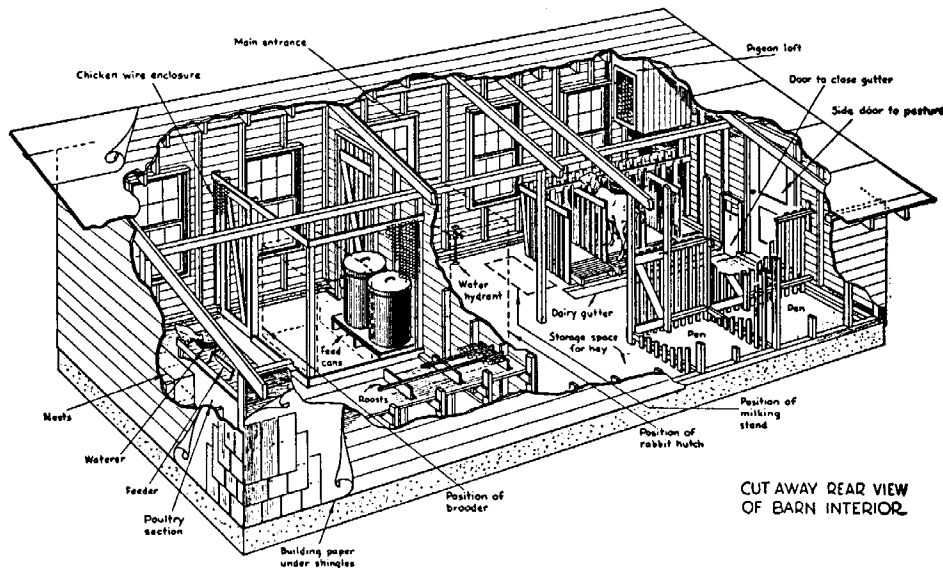
If a person has just a little manual dexterity, say the ability to drive a car, then he will have no difficulty in doing practically all the building that has to be done on a homestead. Carpenters, masons, plumbers, electricians love to make a great mystery of things—and the building codes, the building supply people, the utilities and appliance manufacturers do their best to keep the average householder from doing any building on his own. But the truth of the matter is that most of the skills of

the average mechanic are pretty simple to master. Naturally, their speed and accuracy is based on years of practice. But just as anybody who can read music can play all the notes in a difficult piano piece, anybody can build a barn or a house if he'll get some good manuals on building and good plans for what he wants to build—the difference is that in the case of the amateur at the piano, the piece won't sound right played so slowly, whereas when the building is finished, no one will ever know whether it took a day or a year to build.

Race Against Time

To return to our barn, a couple of rainy weekends, a garden waiting to be planted, plus the inescapable fact that Cassandra, the goat we'd bought but hadn't brought home yet, was due to kid in two weeks, made us call a carpenter to help finish our barn. I am not going to take time to describe in detail just how the interior of our barn was finished—you can get a good idea of that from the sketch shown below. If you want to build a small barn, we've had a draftsman work out complete details with a number of variations.

In the years that we've used our barn, we've found little that we've wanted to change. The only addition we are planning is to extend the barn another 10 feet in length to the West; this will give us more storage space which we will need when we begin harvesting our own hay. Of course, we could change the shed-roof to a gable or gambrel roof and store the hay there, but it is just as cheap to extend the length and eliminate hoisting hay into the loft and climbing up to throw it down.



This "breakaway" drawing shows interior of our small barn. We found that this 16 x 30 foot barn efficiently houses 30 hens, 60 broilers, 20 or more rabbits, 4 goats or a cow and calf, 3 or 4 sheep, and a dozen squab. Barn cost \$200 to \$400. Bill of materials, plus complete building plans including 10 large detail drawings of front, ends, interior layout, goat stalls and milking stand, cow stalls, chicken section, squab loft, also a turkey sunporch are available.

The Importance of Raising Part of Your Food

WHY do we put so much emphasis on home food production? *In the first place, the health of millions of Americans would be far better if every family raised part of the food it eats.*

And when we say *every family*, we really mean *every family*. No man, no matter who he is, can break the rules of health and escape suffering the consequences. Even the Presidents of the United States, we honestly believe, would be healthier individuals if they tended their own gardens and milked a family cow. Let us explain.

There are two basic reasons for raising part of your own food. First, only by so doing can you be perfectly fed. Secondly, physical contact with the good earth and livestock are the best known antidotes to the mad, hustle and bustle of our present work-a-day world.

There are many lesser reasons for owning your own home and raising part of your own food. There is the basic security of this way of life, an opportunity for the productive use of your spare time, cooperation of the family and the greater enjoyment of family life, the benefits of fresh air, sunshine, outdoor exercise, an opportunity to be creative, the independence and responsibility of land ownership, all in addition to the direct economic benefits.

3 Square Meals and Starve!

A doctor friend who read our Plan said, "Ed, you don't make clear in your Plan how important living-in-the-country and raising-your-food is from the health standpoint."

"Well, we meant to—we sure believe that country living can be healthier. . ."

I replied.

"What I mean," he explained, "is the

belief of so many physicians today that too much time is being spent diagnosing illness and patching up the sick without doing much about the cause. We're finding that *basically* much disease is caused by the food we didn't eat—and because the food we *did* eat lacked vital elements."

He spoke of how a millionaire in Manhattan could suffer from hunger as much as a share cropper. This hunger he talked about he called a "hidden hunger"—a lack of minerals and vitamins in food. Of course, he went on, we all know how a lack of iron causes anemia, a lack of calcium causes rickets, goiter is caused by insufficient iodine, night blindness by insufficient Vitamin A, tooth decay by a lack of fluorine, calcium and phosphorus. The thing, he said, doctors now worried about was *how many more* diseases of civilization were caused by year-in-year-out deficiencies in the food we eat. The unfortunate aspect of all this is the fact that vitamin and mineral deficient spinach looks about the same as spinach right out of a good garden!

Are You Growing Old Too Fast?

My doctor friend stimulated our interest. He opened our eyes to the vast amount of evidence appearing day-by-day on the subject of being healthy by eating properly.

For example, Army doctors found in their young patients symptoms that looked like those of old age. In the early New Guinea campaign young soldiers suffered from dejected appetites, physical and mental fatigue, reduced resistance to infection. Analyses of tinned food showed only slight deficiencies, but when supply ships came with fresh vegetables, fruit and meat,

these minor symptoms of old age disappeared.

And what about the major degenerative diseases of old age? Of middle age, rather—high blood pressure, hardening of the arteries, wearing out the heart, the kidneys, the brain?

Dr. N. Philip Norman, in a Friends of the Land Food Conference in Ohio, pointed out the harm that has been done and is being done to the health of our people by commercial food processing and by our food habits.

He told how all this stuff about vitamin pills had grown as a parasite on the nutrition-for-war-and-defense program—from a little over a million dollars in advertising to two hundred fifty million dollars a year in just four years shows what modern advertising can do with part of the truth. How much good has been done by this? Dr. Norman believes that had we eaten whole-grain cereals in our bread and breakfast food, unprocessed, untouched by the kiln drying, unexploded and not devitalized grain, forage fresh from the vine, tree, and garden—and if we had eaten the meat of animals that had been fed on whole cereals, forage rich with nutrients, especially the internal organs of these animals, and if we had drunk plenty of milk that has been not too badly abused, we would avoid most of these degenerative diseases. There is much evidence to back up Dr. Norman.

3 Ways Food Goes Wrong

Evidence is beginning to appear showing that soil and freshness all effect the mineral and vitamin content of the food we eat. Carrots raised in a mineral-rich soil are more healthful than those raised in poor soil. Hot-house tomatoes, the kind you buy in the store, have but half the Vitamin C content of tomatoes fresh from the garden. Steam-table restaurant fare has a fraction of the value of properly home-cooked foods.

Many of the so-called "fresh" vegetables you buy in the store haven't nearly the value of these same foods out of your garden. Out at Ohio State experiments show that about 43% of the "fresh" vegetables sold in stores have lost the biggest part of their vitamin content. Oranges and grapefruit lose around 30% of their Vitamin C 30 days after picking I've heard.

Now, if you will get yourself a productive home in the country, if you will take a real interest in the fertility of your soil, if you eat plenty of your own home-raised fresh vegetables and fruits, your own fresh eggs, fresh meat, use honey instead of sugar, drink lots of raw whole milk and eat whole grain bread, all the evidence says you and your family will be far healthier and live longer, more active lives *as well!*

Protective Foods You Should Eat Daily

FOODS	BABY 1 YR.	CHILDREN			ADULTS
		Preschool	Early School	Adolescent	
MILK, whole	1 qt	1 qt	1 qt	½ qt	½-1 qt
VEGETABLES and FRUITS					
Green, leafy, or yellow	¾ Tb	½-¾ c	¾-1 c	1 c	1 c
Tomatoes*	6-7 Tb	⅝ c	¾ c	1 c	¾ c
Other vegetables	¾ Tb	½-¾ c	1-1½ c	1½-2 c	1½-2 c
Other fruits	¾ Tb	½-¾ c	¾-1 c	1-1½ c	1-1½ c
MEATS	½ Tb	1 small serving	1 serving	2 servings	1 large serving
EGGS	1	1	1	1	1

*Half as much orange as tomato. Tb = tablespoon; c = cup.

MILK, VEGETABLES (particularly FRESH green leafy ones), MEAT, EGGS and FRUIT are called the "protective" foods because they safeguard the body from a variety of diseases.

These foods are needed at all ages—not only by children and adults, but elderly people.

If you raise them on your homestead, you can eat them generously. Most of us need more calories—potatoes, wholegrain bread and cereals, butter, sorghum, and dried beans are good suppliers of calories. Eat sparingly of sugar and other refined foods!

A Good Garden With a Lot Less Work

EVEN before the victory garden boom there were so many books, articles, pamphlets on gardening that garden writers seemed to be having quite a time of it trying to be original. For example, I have in front of me a cute article in one of the "garden and home" magazines explaining how you can have cucumbers climb a fence, use carrots for borders, and make a tepee for the children by planting pole beans.

Well, maybe garden articles like that appeal to some folks, but what we wanted at our place was somebody to tell us how to raise a lot of vegetables with as little work as possible.

We weren't interested in gardening as a hobby. We wanted to make it pay and believed we could. We knew that out of every dollar's worth of vegetables my wife bought at the store 60 cents went for marketing and handling.

Our first garden was small—about 30 by 40 feet. We simply dug up the ground, mixed in a little all-purpose commercial fertilizer, bought some seeds at "the corner drug store"—and, needless to say, our garden was pretty much of a flop. Some vegetables grew fairly well, but most didn't. And the insects got more out of it than we did.

We were discouraged. Like many city people we thought a garden was "duck soup". But we've found out that

our garden is our most exacting and complex project. Producing eggs, or chickens, or milk, or honey, or pork requires less knowledge than having a good garden. The one especially attractive point about a garden is that even though it is complicated and considerable work, it does not have to be tended every day or twice a day as do livestock. At any rate I wanted to say, don't let your gardening difficulties discourage you from considering livestock projects—it's easier to produce a dozen eggs than a bunch of carrots.

Before we planted our second garden we made up our minds to find out how to do it. I guess maybe we studied a hundred books and pamphlets. Or rather, after reading the first dozen, we skimmed through the rest. We found ourselves reading and rereading the same basic facts.

After our reading, we went ahead with a much larger garden. We planted according to plan and beginning in May had all the fresh vegetables we could eat. In addition, we canned and froze about 275 quarts for winter use. According to Carolyn's figures, our garden saved about \$200—that's \$200 over the \$22.50 we spent for plowing, seeds, fertilizer, and spray.

Looking back over our experience, we have singled out certain fundamentals and ideas we would like to pass along because we believe they will be helpful to anyone interested in having a good garden with less work.

First, we are living in an exciting, revolutionary era—not the least important is the revolution that is taking place in agriculture—particularly in soil conservation. Louis Bromfield summarizes it thus: "The American farmer has largely worked against Nature. Our new agriculture will be based on the principle of working with Nature".

Probably you've read reviews of Edward Faulkner's startling book *Plowman's Folly*. If you haven't read it, do by all means. Briefly, from the Homesteader's standpoint, the implications of Faulkner's theory mean that by more natural care of garden soil—the incorporation of humus and manure into the top soil instead of plowing it ten inches underground—phenomenally more productive crops can be grown. Moreover, these healthy crops need less cultivating, watering (and stand up against attack by disease and insects.) *In short, better gardens with a lot less work!*

Of course, Mr. Faulkner's theories are not entirely proven as yet nor are they entirely new. Many government, state and independent agriculturists have been experimenting along the same lines for a long time. However, his ideas are stimulating and we think you'll profit by reading about them.

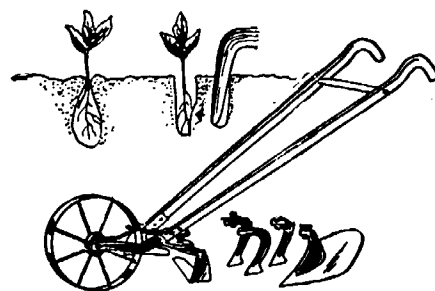
Then, too, the new plant hormones

and insecticides are evidently going to make gardening more scientific.

SEVEN FUNDAMENTALS

1. Get Your Soil in Shape

Almost any soil can be made to produce lavishly. But poor soil takes money and time—perhaps hundreds of dollars and years—to put in first-rate shape. For this reason before you buy a place it's a good plan to have



Plant at upper left improperly set out. Soil should have been pressed tightly about roots. Use dibble as shown. WHEEL HOE and attachments make planting and cultivating a lot easier.

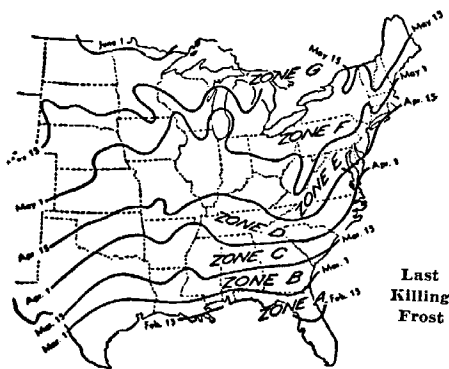
soil analyzed; check for hardpan, excessive sand or clay condition.

Even if your soil looks good—have it analyzed. You may buy a soil test kit—they sell for as little as \$2.00. Or you can send it to your State Agricultural Experiment Station for a free analysis. For the address, ask your local paper or seed store.

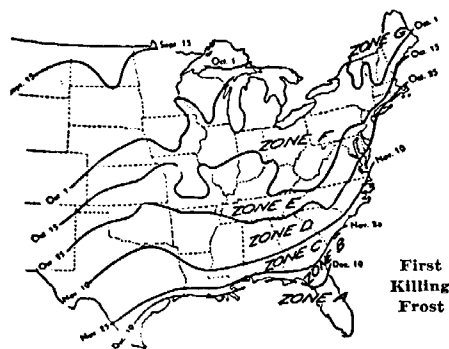
Organic substance is the primary means of building good soil. The best source for this substance is barnyard manure. Goat manure is excellent. So, too, is cow manure. Poultry manure is extremely rich in nitrogen. Barnyard manure is usually difficult to obtain—but you will have plenty if you carry out the well-rounded livestock operation suggested in this Plan.

Barnyard manure increases the ability of the soil to hold moisture, keeps the soil loose and promotes root development. The best way to handle manure so it won't lose its value is to compost it as shown in the accompanying diagram. Ideally each year a plot 30 x 60 feet should receive a ton of stable manure.

In the summer when the garden is planted, manure can be used mixed with straw or bedding, etc., as a mulch. But take care not to let it come in direct contact with plants. Leaves, straw, hay, garbage—anything that will decompose should be dumped onto the compost heap and after ripening worked into the top soil. Don't bury this humus material by too deep plowing. If you are making a garden in sod land and must plow deep—then plow twice—once in the fall, then in the

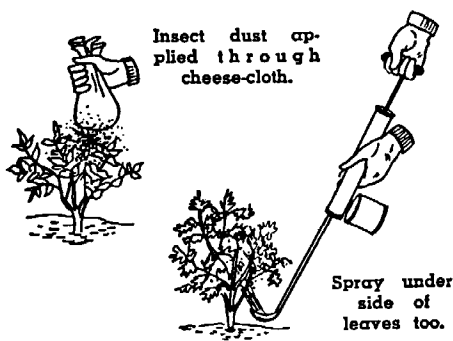


Last Killing Frost



First Killing Frost

Frost dates for western states vary according to elevation as well as latitude. Accurate dates can be had by writing your State College of Agriculture or Weather Bureau.



Insect dust applied through cheese-cloth.

Spray under side of leaves too.

spring plow again and bring your valuable top soil back to the surface.

Your soil test will undoubtedly show a deficiency in one of the three basic fertilizers—nitrogen, phosphoric acid, potash. The relationship of these has been worked out for the requirements of various types of vegetables. You can buy various combinations of these three elements—called commercial fertilizers—and work into your ground as you plant. A small application of commercial fertilizer usually brings a greater percentage gain in your harvests than a large application. Remember, commercial fertilizer is only a supplement to barnyard manure. Your soil test will supply you with directions as to the amount of commercial fertilizer you should use. Oftentimes, only superphosphate is needed when you use barnyard manure. Incidentally, hardwood ashes contain potash; up to 50 pounds per 30 x 60 plot should be mixed into soil annually.

On richly fertilized land plants grow faster and are superior; incredible as it sounds, production of a given amount of vegetables may then take 1/5 as much land—likewise the time required may be cut to 1/5. Insects, too, find it more difficult to ruin healthy plants grown in rich soil.

2. Buy Suitable Varieties of Seeds and Plant According to Specifications

This needs no further explanation. Get seed catalogues in the winter—plan exactly what you want. (See chart on page 24). You can start some seeds, requiring an early start, growing in February or March, either indoors, or in a hot frame. Originally, we found spring so busy with our baby chickens, kids, geese, and young pigs arriving, that we bought tomato, cabbage, peppers, etc., from our local nurseryman as plants. Plants, of course, cost more than seeds. Now we are growing our own plants in our "Harvest Kitchen" greenhouse window.

Most vegetables require warm weather to grow. Don't be in too much of a hurry to plant early; once a seedling is stunted it will never attain normal growth.

Mark rows with a string to get them straight. Make a shallow trench—depth according to seeds—with a hoe. Scatter seeds evenly, cover with fine soil, pat down firmly with back of hoe.

When plants are up to a height of 2 or 3 inches, thin according to seed

man's directions. Even if this seems to leave too few in a row—do it, *don't crowd plants*. Beets, carrots, greens can be grown large enough so plants pulled in thinning can be eaten.

3. Cultivate, Weed, Mulch

Cultivate between rows with a hoe or wheelhoe often—after every rain—at least once a week during early growing season. Hand-weed along the row as necessary. Be careful not to cultivate so deep you disturb roots. As soon as plants are large enough we find a mulch of bedding from the barn laid between the rows keeps down weeds and holds moisture. This is a real labor-saver.

4. Spray or Dust on Schedule

Garden insects need not cause undue damage if you are ready for them with an insecticide and your garden sprays. Walk through the garden *daily* to inspect for insects. Read up on insects before they hit you.

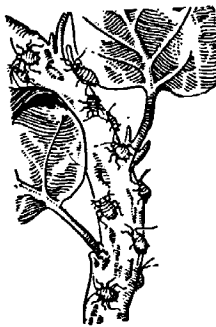
One of the most discouraging things to the novice reading about garden insects is their great variety. But classi-



Mexican Bean Beetle



Green Cabbage Worm and Loper



Aphids



Flea Beetle and Injured Leaf

fied according to method of control, the whole question of what to do about garden pests becomes simple.

By far the greatest majority of insects and fungus diseases fall into four classifications according to their method of control:

Type 1. Sucking insects, such as aphids (plant lice), thrip, leaf hopper, and scale. This class of insects feeds by inserting their sharp slender beaks into the leaf stem or blossom, drawing forth the sap which is the vitality of the plant. Contact insecticides applied to this class of insect enter the body by penetrating the skin or pores, causing death by corrosion of the tissues or suffocation. Thorough spraying giving complete coverage on both upper and lower surfaces of the leaves, important.

Type 2. Leaf-eating insects, such as beetles, slugs, worms, caterpillars that eat holes in leaves, are effectively controlled by a stomach poison. Insect eats spray or dust that is on the leaf, the poison becoming effective when mixed with the digestive juices in the stomach.

Type 3. Certain blight and fungus diseases, including leaf-spot, rust, mildew, and anthracnose are satisfactorily controlled by a preventive with copper or sulphur the active ingredient. The tiny disease seeds (spores) ever present in the air are prevented from gaining a foothold on vegetation where a copper or sulphur fungicide has previously been applied. Even after fungus has gained a start, spraying with fungicides will retard and, in some cases, eliminate the disease.

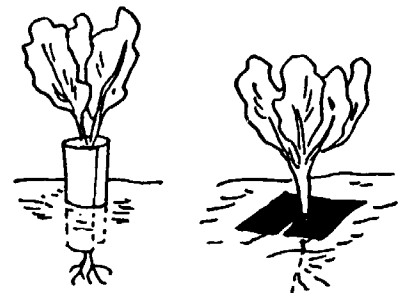
Type 4. Migratory insects (leaf chewers) such as grasshoppers, ants, cutworms, sow bugs, also slugs or snails, don't live on plants but crawl along the ground, generally at night, destroying much vegetation. These crawling types of insects can be controlled by the use of poison baits, poison syrups, or under certain conditions, a sticky substance easily applied which will act like fly paper. (See chart page 24).

5. Irrigation

Probably more harm than good is done by water applied to home gardens. In arid and semi-arid localities watering is, of course, not only necessary, but a whole subject in itself. However, in most sections of the country, except for occasional droughts, a good rain every ten days is all any garden needs. Light sprinkling is bad. If rain does not come, one of the best and easiest ways to water is a rotary sprinkler attached to end of your garden hose and held in one spot for at least an hour. The ground thus soaked needs no more water for ten days to two weeks of dry weather. Cultivate soil after rain but not until surface dries out.

6. Harvest When Tender

Vegetables don't grow evenly from day to day—a warm day following a good rain may push vegetables ahead as much as a number of days not suited to growth. You must inspect the garden every day as vegetables begin to ripen. Pick most on the tender side—they'll taste even better if they're not quite as large as the longer, older, heavy type you are accustomed to buying in the store. Particularly when canning, choose the tender. Never pick ahead of time—wait until just before



Cardboard or stiff paper wrapped around plants protects them from cutworms. Slit tarpaper (about 4 inches square) protects against maggots.



Succession planting

you're going to use them before bringing fresh vegetables from the garden. Try putting the water on to boil before you pick sweet corn—and cook it only 7-8 minutes for one of nature's most tasty feasts!

7. Keep Your Ground Planted in Green

As soon as your last vegetables are out of the ground in the fall, roughen up the soil and plant rye. This will get a good start before winter and grow again in early spring. When you are ready to plant in spring, incorporate this green manure into the top surface of the soil by disc harrow, or by fork and hoe. This green manure will decay fast when left in top soil and provide natural plant food for your seeds.

Hints for Easier Gardening

New land almost always requires lime to alkaliize the acid content resulting from leaf decay, etc. Your soil test will show whether or not your soil is acid or alkaline and tell you specifically how much lime or possibly its opposite, aluminum sulphate it needs.

An easy way to see that plants get proper amounts of lime is to divide the garden into four sections and lime one section heavily for vegetables in the first group, lime second section moderately, etc.

These require heavy Liming

(3-5 lbs. on 22 foot row every 3-4 yrs.)

Alfalfa	Cabbage	Lettuce
Asparagus	Carrots	Onions
Barley	Cauliflower	Parsley
Beets	Celery	Wheat
Blue Grass	Clover	

These need moderate Liming

(2½-3 lbs. on 22 ft. row every 3-4 yrs.)

Broccoli	Endive	Radish
Chicory	Kale	Raspberries
Corn	Leek	Red Clover
Cucumber	Melons	Rhubarb
Eggplant	Peas	Spinach

These need small amount Lime

(1-2 lbs. on 22 foot row every 3-4 yrs.)

Beans	Pepper	Turnip
Cowpeas	Rye	Rutabaga
Gooseberries	Squash	
Oats	Tomato	

No Lime for these—

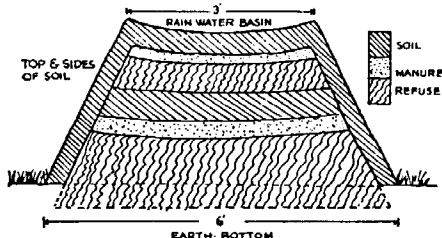
injury will result from Lime

Blueberries	Grapes	Pumpkin
Cranberries	Plums	
Parsnips	Potatoes	

Natural or Artificial Manure? There is, as probably many of you know, practically a pitched battle going on

amongst two groups of Agricultural Experts as to whether or not fertility is best kept up by use of artificial (chemical) fertilizers or organic substances. The "organic" group ask, "Are Chemical Fertilizers Ruining our Health?" They believe that only properly composted organic matter and barnyard manure should be used to preserve the soil's fertility. On the other hand, certain advocates of chemical fertilizers advocate "soil-less culture"—or growing vegetables solely in chemical solutions. The extreme in either method is costly. Generally, as far as we can judge, soil-less culture certainly seems a passing fad; and more and more attention seems to be given to methods of keeping the soil fertile by putting back manure and humus.

The poor "backyard gardener" is, however, in a tough spot if he is not willing to keep some animals. Right now, he has a hard enough time to gather leaves, garbage, etc., etc., to make his compost and with the new "electric garbage disposal sinks" which chew up garbage and send it down the drain, he's still harder pressed.



How to make a compost heap

Almost all garden books go into great detail explaining how to build a compost heap—a method of turning waste foods, leaves, inedible garden produce, kitchen parings into humus. Building a compost heap takes a lot of time. First, you choose a shady place for the compost pile. . . build pile in 6 inch layers, keep level, wet it down if necessary every week for 8 to 12 weeks, and then cut through the pile with a sharp spade . . . build it up again, keep watering for 8 to 12 weeks more, then it should be ready to use. . . but it's better after two years. Even then, when you're all done, you have an inferior substitute for barnyard manure. At our place, we don't bother much with a compost heap in the sense that we gather leaves, etc., etc. We feed surplus kitchen parings, vegetable husks, lawn clippings, etc., to the goats, chickens and geese, and in about 24 hours we have excellent manure.

However, to keep manure from losing its value as it will do if exposed to sun and rain, we pile alternate layers of manure and bedding, as shown, and cover with dirt. If this is turned once or twice during a good solid rain it will make excellent humus in six months, winter excepted.

Stake Tomatoes? Peas? In the garden books, you'll find all sorts of flossy ways to stake up tomatoes. Commer-

cial growers rarely bother with staking. And at our place we save a lot of effort by cultivating tomatoes only once, then *mulching* with 3 inches of poultry litter. Tomatoes then grow beautifully, don't require weeding, cultivating or watering. A few will rot on the ground, but simply plant a few extra.

Intercropping? This is the practice of growing 2, 3, even 4 crops on the same area at one time. Quick maturing crops like radishes, lettuce, beans, spinach may be between rows, or in rows of eggplant, tomatoes, melon, okra, or other crops which utilize ground for a complete season. This is all right where your garden is small—but it's lots easier planting, fertilizing, cultivating, spraying, not to do this.

All Purpose Sprays. There are on the market a number of "all purpose" sprays which attack many types of chewing as well as sucking insects. Obviously, these save effort.

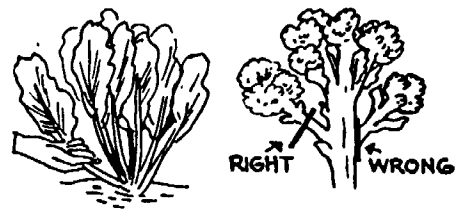
Perennials. Asparagus, rhubarb, Jerusalem artichoke and horse-radish may be left in the garden all-year and are practically self-perpetuating.

Leave Ground Rough. Some gardeners are forever worrying their soil: trenching, raking, plowing. Faulkner shows that land apparently produces much better when supplied with plenty of humus which is worked into the top of the soil by disc harrow and left rough. In fact, he points out that the ideal is to make your whole garden a sort of compost heap.

Plant Late. Usually garden writers say take a chance on losing some seed—plant as early as possible. We find it easier to plant a little late. We don't waste effort and seed this way. Anyway, with our well supplied freezer, plus Jerusalem artichoke, parsnip, and asparagus as early vegetables what do we gain by chancing early planting?

Transplanting. Transplant only when you must. Most transplanted plants get a set-back from which they take time to recover and resume growth. And, of course, unnecessary transplanting is wasted effort.

Easy to Grow Vegetables. Beans, beets, broccoli, cabbage, Chinese cabbage, carrots, celtuce, chard, corn, endive, kale, lettuce, okra, onions, parsley, parsnips, peas, potatoes, radishes, rhubarb, spinach, squash, tomato, turnips, Jerusalem artichokes.



Harvesting swiss chard and broccoli

Vegetable Planting Chart

VEGETABLE	Roots apart in feet	Plants apart in row, inches	Planting depth, inches	Seed for 50 feet	Days to germination	Days to yield	Buy plants or seeds	Possible yield per 50 feet of row	For a family of five, Summer and Winter Supplies		Common Insect Pests and Suggested Control
									Row Length	No. of Plantings	
Artichoke, Jerusalem	3	20	3	½ peck 30 plants	8-12	120-140	P	1½ bu.	100	1	Seldom bothered.
Asparagus	2½	20	6	1 pkt. 10 plants	8-10	2 yrs.	P	25 bunches of 1 dz. each 150 roots 180 stalks	100	....	Asparagus beetle. Rotenone.
Parsnip	1½	4	½	½ oz.	15-20	80-100	S	150 roots	50	1	Seldom bothered.
Rhubarb	4	48	¼	1 pkt.	.....	2-3 Yrs.	P	180 stalks	50	....	Seldom bothered.
Beet	1½-2	3-4	½	1½ oz.	7-10	60-75	S	150 roots	100	3	Seldom bothered.
Chard, Swiss	2	15	½	1½ oz.	7-10	50-75	S	15 plants	20	1	Blister beetle. Rotenone or hand pick.
Broccoli	2	18	¼	1 pkt.	6-9	70-80	P	30 heads	50	1	Same as cabbage.
Brussels Sprouts	2	18	¼	1 pkt.	6-9	70-80	P	30 qts.	30	1	Same as cabbage.
Cabbage, early	2	12	¼	1 pkt.	6-9	70-80	P	35 heads	50	1	{ Green Cabbage Worm. Rotenone.
Cabbage, late	2	18	¼	1 pkt.	6-9	80-100	P	35 heads	50	1	{ Aphid. Nicotine dust or spray.
Chinese Cabbage	2	12	¼	1 pkt.	6-9	75-85	S	50 heads	50	2	Same as cabbage.
Carrot	1½	3	¼	1 pkt.	12-18	60-75	S	200 roots	100	3	Seldom bothered.
Cauliflower	2	18	¼	1 pkt.	5-10	55-65	P	35 heads	50	2	Same as cabbage.
Celeriac	2	4	¼	1 pkt.	15-20	90-120	S	150 bulbs	25	2	Same as celery.
Celery	2-3	5	1/8	1 pkt.	15-20	120-150	S	120 plants	50	2	Aphid. Nicotine dust or spray, Celery Leaf Flyer-Pyrethrum.
Chicory, Witloof	2	10	¼	1 pkt.	8-12	for winter	S	60 roots	50	1	Green Caterpillar. Pyrethrum or hand pick.
Collard	2½	24	¼	1 pkt.	6-9	90 & on	S	25 plants	50	2	Same as cabbage.
Endive	1½	9	¼	1 pkt.	10-14	70-80	S	60 plants	30	1	Seldom bothered.
Kale	2½	24	¼	1 pkt.	6-9	70-80	S	25 plants	25	1	Same as cabbage.
Kohlrabi	2	8	¼	1 pkt.	6-9	55-65	S	70 bulbs	50	2	Same as cabbage.
Leek	1½	6	½	1 pkt.	7-10	120-150	S	100 stems	30	1	Onion Thrip. Nicotine sulphate and soap solution or tartar emetic.
Lettuce, leaf	2	12	¼	1 pkt.	6-8	45-50	S	50 heads	50	1	Cut Worm. Poison bait on ground.
Lettuce, head	2	12	¼	1 pkt.	6-8	50-75	S	50 heads	50	1	Aphid. Nicotine dust or spray.
Mustard	2	9	¼	1 pkt.	5-8	60-75	P	50 plants	20	2	Birds. Cover with screen or open-meshed cloth.
Onion	1½	3-4	½	1 pkt. or 1 pint sets	7-10	90-110	S or P	150-200 bulbs	50	1	Same as cabbage.
Parsley	1½	4	¼	1 pkt.	15-20	85-100	S	150 bunches	30	1	Onion Thrip. Nicotine sulphate and soap solution or tartar emetic.
Peas	2-3	1-2	1	½ lb.	7-10	60-80	S	25-50 quarts	100	3	Seldom bothered.
Potato, white	3	12	4	3 lbs.	8-12	80-120	P	60-80 lbs.	100	2	Aphid. Rotenone, pyrethrum, or nicotine dust or spray.
Radish	1	1-2	½	1 pkt.	3-6	25-60	S	300-600	25	2	Same as tomato.
Spinach	1½	6	¼	1 pkt.	7-12	40-50	S	100 plants	50	4	Cabbage Maggot. Avoid by quick root growth.
Turnip	1½	4-6	¼	1 pkt.	5-10	50-80	S	100-150 roots	50	2	Aphid. Nicotine dust or spray.
Turnip, Rutabaga	2	6	¼	1 pkt.	5-10	80-90	S	100 roots	50	1	Seldom bothered.
Beans, bush	2-2½	3-4	1½	4 oz.	5-8	50-70	S	20 qts.	100	4	{ Mexican Bean Beetle, Rotenone, pyrethrum, or cryolite. Flea beetle, red spiders
Beans, pole	3-4	9, or hills	1½	4 oz.	5-8	65-80	S	30 qts.	50	1	{ Corn borer. Apply rotenone dust just before ear forms, then 4 times more 5 days apart.
Corn, early	2½	9	1	1 oz.	5-8	70-80	S	50 ears	80	1	Corn Ear Worm. Smp off tips of ears after silk dries or apply mineral oil to ear tips.
Corn, main crop	3	12	1	1 oz.	5-8	80-95	S	50 ears	100	1	Striped Cucumber Beetle. Rotenone.
Cucumber	4	24	¾	1 pkt.	7-10	60-70	S	150-200 pickles	50	1	Aphid. Nicotine dust or spray.
Pumpkin	8	60	1	¼ oz.	7-12	110-130	S	25-30 fruits	25	1	Squash Bug. Rotenone or hand pick.
Squash, bush	4	36	1	1 pkt.	7-10	55-65	S	75-100 fruits	50	1	Same as pumpkin.
Squash, vining	6	60	1	1 pkt.	7-10	65-120	S	40-80 fruits	25	1	Other Pests. Same as cucumber.
Tomato	3-4	36	½	1 pkt.	7-12	75-90	P	175-200 lbs.	75	2	Cut Worm. Paper collar around each plant when set out.
Lima beans, bush	2-2½	3-4	1½	4 oz.	5-8	65-75	S	15 qts.	100	2	Green Tomato Worm. Dust with rotenone or hand pick. Aphid. Nicotine dust or spray.
Lima beans, pole	3-4	9, or hills	1½	4 oz.	5-8	80-90	S	20 qts.	50	2	See beans above.
Egg plant	3	30	½	1 pkt.	12-15	70-85	P	50-75 fruits	50	1	See beans above.
Muskmelon	5	48	1	1 pkt.	7-12	80-100	S	75 fruits	50	1	Colorado Potato Beetle. Arsenate of lead or Paris green.
Okra	3	15	1	½ oz.	8-12	50-60	S	250 pods	50	1	Flea Beetle. Dust with arsenate of lead.
Pepper	2½	24	....	1 pkt.	10-14	65-80	P	200 fruits	50	1	Seldom bothered.

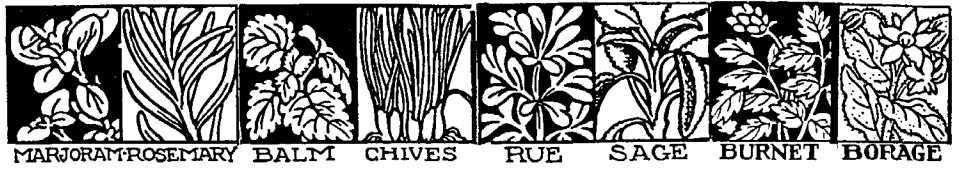
Very hardy. Not injured by winter freezing.

Hardy. Withstand light frost but not freezing. Plant when ground is easily prepared.

Tender. Frost injures until over. Don't plant until all danger of late frost is over.

Very tender. Plant late, may be injured by cool weather. Don't plant until all danger of frost is over.

Herbs



ED used to be a little sarcastic about my herbs—referring to my herb garden as “the weed patch.” He claimed he couldn’t tell seedlings from weeds.

But since he’s seen to what good use I put my few herbs and how little trouble they are, he has a new appreciation of them. Herbs really fall into the woman’s department. For although herbs offer a fascinating and learned hobby and can be grown as flowers for beauty, for fragrance, for dyes, vinegars, tea and incense-making, the main use on a homestead is in cooking.

Although I’ve heard a number of women say their husbands didn’t like herbs in cooking, I’m inclined to think that this is one of those preconceived notions that men have about food and ought not to be taken too seriously—especially when they say it after a dinner they’ve relished where herbs have perhaps been used without their knowledge in poultry stuffing, soup, tomato cocktail, iced tea, and fruit cup!

I think the reason more of us don’t use herbs regularly is because there is so much mumbo-jumbo mixed up in most herb literature just as there used to be about serving wines. Once people discover, as they have about wine, that you can use any herb you like in cooking, then a lot more of us will use herbs. Of course, certain herbs seem to be “just right” with certain foods.

Any cookbook worth owning, even conservative Fannie Farmer, has something on herb cooking. Usually for the beginner it’s too much to take in all at once. So, unless you’re an accomplished herb-cook, I suggest you start your herb cooking from the angle of what’s easy to grow in a small herb garden.

Herbs take practically no space, and, because most herbs don’t need any complicated soil preparation, you can grow them without even bothering your husband by asking him to prepare the ground. Because you need only about a dozen plants altogether; you can probably plant your herb garden and dig it up yourself. Herbs shouldn’t be planted in a wet place. A good mix for the soil for herbs is equal parts of compost and loam and double parts of sand—all sifted.

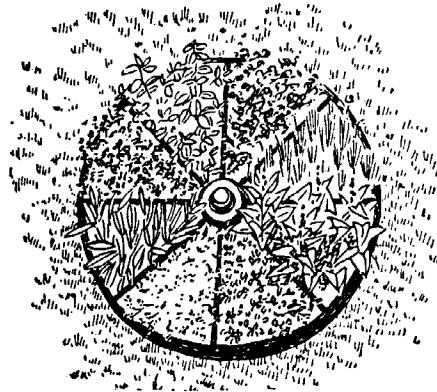
There is little reason for starting herbs indoors. After all, herbs are dried, and when drying is done carefully and the herbs put in screw top jars, they will keep easily from one season to the next. So there’s no special need for an early start.

Herbs are propagated from seed, by cuttings or “layering,” and by root divi-

sion. All annual herbs are best grown from seed . . . many perennials too.

Herbs are best in their own garden. The closer you can locate this to the kitchen the better—when you want a sprig of mint or couple of herbs for a “rainy day stew,” you’ll find you just won’t want to bother getting in the herbs if they’re located too far away.

The wheel garden is made with a heavy wagon wheel. The herbs planted in it should not be too tall growing or the effect of the division by the spokes will be lost. After obtaining a suitable



wheel, select a sunny spot on level ground or a gentle slope. Mark around wheel, then dig out the center for hub—the rim should set on the ground. Fill spaces between herbs with sandy loam. If any of the spaces are to be filled with mints, stick plates of metal—old license plates or sheet iron—around the boundary of the mint to prevent it creeping into adjacent beds. Although you can plant most any herbs in this wheel bed, the lower growing varieties make an especially pleasant pattern: parsley, chives, garden thyme, orange or apple mints, lungwort, dietary of crete, thrift, dead nettle—and such annuals as dwarf basil, sweet marjoram, chervil, summer savory, coriander.

Some Easy-to-Grow Herbs

ANISE: 75 days. Annual. 8 inches. Always grow from seed, don’t transplant. Uses: fresh leaves in salad and as a garnish. Good with fish. Seeds: in bread, cake, stew, soups, candy. Medicinal: tea.

BASIL: Sweet: 85 days. Annual 1 to 1½ feet. Germinates easily in 4 or 5 days—if tops are pinched off plants will bush. Spacing: 15 inches for regular—6 inches dwarf varieties. In harvesting, when buds appear use both leaves and buds, cut part way to ground for a second crop. Uses: in soups, meat, some salads. Tie in bunches, dry in sun, store.

BORAGE: 80 days. Annual (self-sowing).

1½ feet. Blue flowers attract bees. Should not be transplanted. Uses: tender leaves are used in salads and to flavor lemonade and other cool drinks, cooked, in pickles. Flower is candied for confection.

CARAWAY: 70 days. 1½ to 2 feet. Biennial seed; planted one year for harvest the next. Plants to stand 8 inches apart. Cultivate first year. When seed clusters ripen second year, snip plants a foot above ground, dry on old cloth a few days, then thresh seeds by slapping with a small stick. Blow off chaff and store in a tight jar. Early ripening seeds may be planted to give a crop the next year. Uses: in breads, cakes, candies—cabbage, soup and salads, in sauerkraut, goulash, baked apple.

CHIVES: Perennial. 6 inches. Seeds germinate slowly. Clumps may be divided in Spring. Uses: leaves give mild, onion-like flavor to soft cheese, vegetable cocktail, soup. Bulbs are chopped and added to sausage to give delicate onion flavor.

CORIANDER: 75 days. Annual 1 to 2 feet. Hardy, slow germination, but easy-culture. Can be grown with caraway. Plants should be thinned to stand 6 to 8 inches. Odor and flavor of growing foliage is unpleasant. As soon as seed tops are ripe, they’re cut off (heavy seeds easily fall to ground if this isn’t done), spread to dry, threshed, and stored in tight glass containers. Uses: in bread, cookies, baked apple, stuffing, sausage.

DILL: 70 days. Annual. 2 to 2½ feet. Easy germination and self-sowing. 10 inches between plants. Don’t transplant. Stake. Uses: for flavoring pickles; also in soups, stews, cream sauce, potato salad.

FENNEL: 60 days. Annual. 1 to 2 feet. Sow in moderately rich soil. Don’t transplant. 8 inches between plants. Uses: Stalks can be eaten like celery. Nutmeg-like seeds used on bread, cakes, sauces, in wine.

MINT: Perennial. 2 feet. Spearmint is ordinary garden variety. Best grown from a few plants. Spreads rapidly in medium rich soil. Uses: in lamb and fish sauces, iced-beverages, fruit cup, in currant and mint jelly, in French dressing for salads. Orange and apple mint not as strong as spearmint.

SAGE: 75 days. Perennial. 1 to 2 feet. 8 inch spacing. Plant seeds; choose “Garden” variety. Uses: as sage tea, in poultry dressing, sausage, soft cheese. Leaves can be smoked as tobacco.

SUMMER SAVORY: 60 days. Annual 1 foot. Seed germinates easily. Spacing 6 inches. Uses: for flavoring gravies, salads, dressings, stews, scrambled eggs and sausage.

SWEET MARJORAM: 70 days. Annual. Slow germination. Spacing 10 inches (requires shade until well started). Many uses either fresh or dried: in sausage, meat pies, roast lamb, cheese and egg dishes, peas, beans, and tomatoes, in vegetable cocktails.

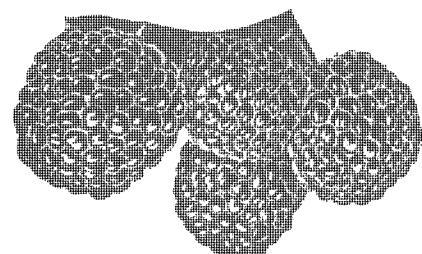
THYME: 85 days. Perennial. 6 to 12 inches. Plant seeds—thin to about 4 inches. Plants may be divided and reset second Spring. When in full bloom, cut, dry, powder by rubbing and store in glass. Uses: green or dried in soups, stews, sausage, gravies, stuffings, with pork, veal, chipped beef, and especially good on lamb or chevon and chicken.



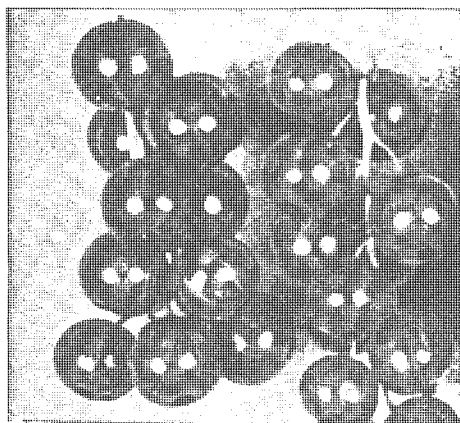
The Kind of Berries and Grapes Money Can't Buy...



Strawberries



Black Raspberries



Currants

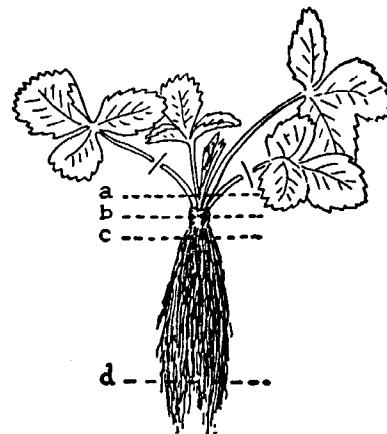


Gooseberries

BERRIES and grapes are one of the best investments you can make. Here it is early December and this morning for breakfast we had some of our own delicious raspberries and cream. When some friends came to dinner a few days ago we had strawberry shortcake made with our own strawberries. Soon we hope to have currant jelly and our own grapes and lots of delicious fruit juices—perhaps some home-made wine.

Even the smallest place can provide an abundance of mouth-watering small fruits and berries with only a few hours work a year. Home-grown fruits, especially blackberries, gooseberries and currants (all of which are almost too fragile to be handled commercially) offer a family delicacies they'd never otherwise have. Few people, according to government studies, get enough of the so-called "protective" fruits rich in vitamins needed for good health. And most city people never have the chance to indulge in all the fun of growing these fruits on a place of their own.

You can plan your garden so you'll have a succession of fresh fruits ripening from June to October. And all winter you can eat berries you've canned or frozen. Strawberries, raspberries, currants, and grapes are the best known favorites. If you prefer something a little different, you can choose gooseberries, dewberries, or mulberries. (Edible mulberries are delicious fresh, canned or for wine. They grow on a bushy tree.) If space is limited, the bushes make fine hedges and shrubbery. Probably nothing you do will give you more for less cost. By all means choose the better varieties that are too tender and delicate to be found in prime condition in the store. Your local nurseryman can advise you on this and supply plants best adapted to your climate. Before you decide on your planting of grapes and berries, you should learn when each has to be sprayed, pruned and mulched and figure out a schedule for doing this. It's worthwhile to read up on this. Meanwhile, here are some things we learned about growing these fruits that may help you.



Strawberry plant showing trimming and depths of planting: (a) planted too deep. (b) planted correct depth. (c) not deep enough. (d) pruning of roots.

Strawberries

There's a big difference between strawberries you buy in the stores and those you pick sweet and fully ripe on your own place. Growing them is not difficult. You have a choice of planting them in hills, in matted rows or in spaced-rows. We used the spaced-row system and we think it's easier because it requires less pruning and makes weeding and picking the berries simpler. We planted 100 plants in the Spring and got 55 quarts the next year. Plants usually bear for two or three years, after which they need replacing.

Raspberries

We like raspberries so much we planted 100 bushes—cost \$8.00. This planting should bear for at least 7 years. Perhaps we made a mistake when we chose the *Latham* for our garden because this is really a commercial berry, but it is hardy and we did get wonderful berries. We also planted some *Indian Summer* because this is an everbearing type which means you get berries in the early Summer and another crop in the Fall. The raspberries planted in the Spring gave berries the following year. We learned

Small Fruit Planting Table

	Distance between rows (feet)	Distance between plants (feet)	Estimated Yield per plant	Age of Bearing (in years)
Raspberries	6-8	2-3	1 quart	2
Strawberries	3½	2	¾ pint	2
Blackberries	6-8	2-3	1¼ quart	2
Dewberries	6	6	1 quart	2
Gooseberries	8	3	2¼ quarts	3
Currants	8	3	2 quarts	3
Grapes	8	8	6 pounds	3-4
Blueberries	5'	5'	5-6 pounds	1-2

you shouldn't mulch raspberries with poultry litter in the Spring because it makes the shoots grow too fast. When this happens too many become "Winter killed." Raspberries are pruned early in the Spring, and sprayed 3 or 4 times. Any diseased canes should be removed immediately after crop is over. And that's all we've had to do to get 75 or more quarts of raspberries a year!

Currants

You can't beat currants for jelly. They are hardy, easy to grow. A half-dozen bushes are well worth considering. Some states ban currants and gooseberries because certain varieties supposedly carry white pine blister rust, a disease that destroys white pine trees. Cool moist climates are ideal for currants.

Gooseberries

I hope some of you people who are already living in a "Have-More" home-stead will want to try gooseberries. They make good pies, tarts and jams and the fresh ripe fruit makes a delicious dessert. Even in Canada they can be grown; in cool, moist climates they flourish. (In England they grow so well that the berries are often as large as eggs!) Experts say this fruit has been pretty much neglected in this country—it ought to make an interesting experiment.

Grapes

We planted 10 vines—4 Concord, old-standard, for jelly and jam . . . 2 Caco, a red grape ripening in early September . . . 2 Niagara, white grape which ripens in mid season . . . and 2 Portland, another white grape, which ripens early. Grapes really don't bear heavily until the fourth season, so we haven't actually had any from our vines as yet. All 10 grape vines cost only \$5.00.

Blueberries

Blueberries are rather expensive—\$1.00 per plant, we paid. But four to six are supposed to be enough for an average family. One interesting thing about blueberries—they often fruit the first year and will keep bearing for fifty years. Unhappily, out of our six bushes we lost four last year—the goats ate one and a bulldozer we had ripping

out stumps in our back yard chewed three more.

Blackberries

This fruit makes wonderful jam and jelly. We put in about 15 bushes as a hedge. Blackberries have a reputation for being sour. This is because often times the berries you buy are picked as soon as they turn black—actually they are best when left on the bush until dead ripe. As in the case of other berries, it is important to mulch blackberries. The best time to do this seems to be directly after the berries have been picked. Blackberries don't need commercial fertilizer, but the soil should be kept moist and provided with humus. Thus the mulch.

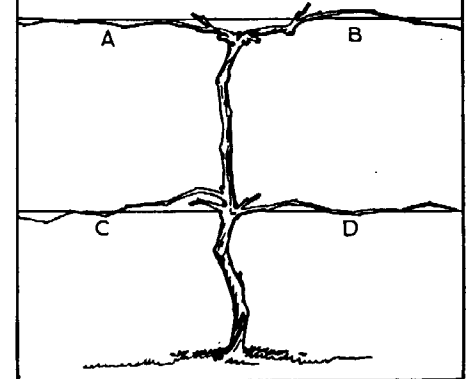
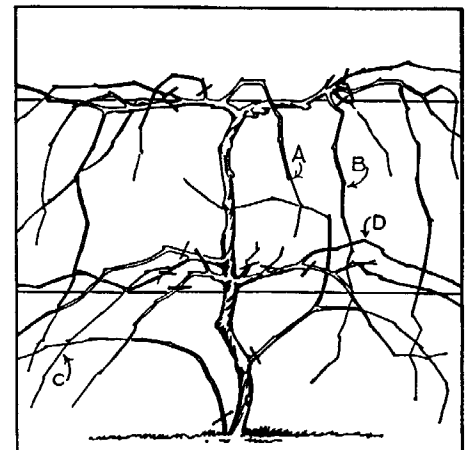
Dewberries

This is really a blackberry. It is often called "creeping blackberry," the main difference being that it grows on a vine instead of a bramble. The dewberry is sensitive to frost and will not bear good yields unless you plant several varieties to insure cross pollination.

Home Wine-Making

Although the wines we've tried to make have been pretty terrible so far, there's no reason you can't make excellent wines at home. In fact Fortune Magazine says 30 million gallons of wine are made in American homes every year.

Our mistake was in trying to make wine on the basis of "heresay" instead of getting good, clear, authoritative information. If you'd like to make wine from grapes, the main point is to get the *right* grapes. This isn't difficult because every state produces wine grapes. (See Farmers' Bulletin No. 1689). Or you can make delicious "wines" from blackberries, raspberries, elderberries, currants, gooseberries, dandelions, rhubarb, almonds, apples, apricots, barley, cherries, pears, oranges, pea pods, potatoes, tomatoes, rice—recipes for all of these and many more are in "Home-Made Wine Secrets".



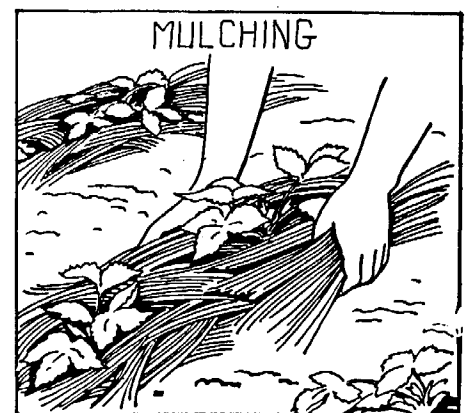
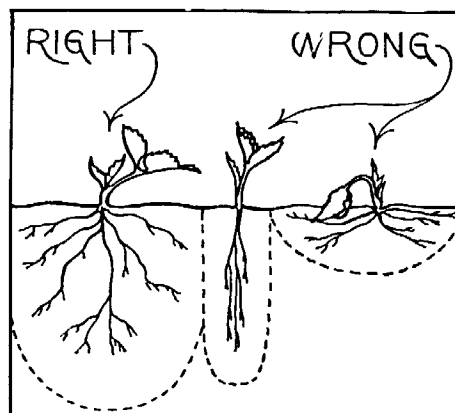
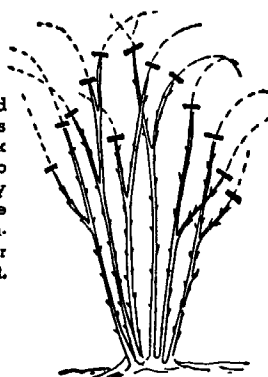
PRUNING—THE SECRET OF SUCCESS: Pruning can become a complicated subject. The main point is that all grapes are borne on branches (called canes) developed from previous year's growth. A little study of grape care and pruning pays high dividends.



(Above) After a raspberry cane has borne fruit it should be cut near the ground. Pruning is simple if you learn what to prune and when.

(Below) If strawberries are mulched as shown less cultivating is needed and you obtain better fruit.

In the Spring red raspberry canes should be cut back to a height of 4 to 5 feet as shown by dotted line. Remove weak canes completely. Leave 5 or 6 canes per plant.



Two Ways to Have Tree Fruits on a Small Place

IF the Ed Robinsons of five years ago could have talked with the Ed Robinsons of today about home orchards, the Ed Robinsons of five years ago would have been saved a lot of trouble. Now perhaps we can save *you* that trouble!

Soon after we first moved to our place we became excited about dwarf fruit trees—pigmy trees that produce delicious, normal size fruit in only 2 or 3 years. But when we went to order some our local nurseryman didn't have the right kind of dwarfs and he advised us to buy standard trees instead.

"But we haven't enough space in our back lot for many big trees," we protested.

"Then why don't you plant your orchard in front of the house?" he suggested.

"Well, we planned to landscape the front with pretty trees."

"Haven't you ever seen an apple tree in blossom?" he asked. Of course we had—so we planted our 18 fruit trees around the house and front lawn. We landscaped with *fruit trees instead of shade trees*. (Later we discovered that the back of our acre was too swampy for fruit trees anyway. If the roots of young trees stand in water they don't do well.) So we've never regretted our decision to plant fruit trees in front of the house.

We feel that the very first thing people should do when they buy a piece of land—even before the house is built, when possible—is plant a small orchard. The sooner planted, the sooner you will get fruit. The length of time you have to wait before your fruit trees bear seems to discourage a lot of people. But even if you should move before your fruit trees do bear, they'll increase the value of your place many times beyond their cost.

As for the care of fruit trees, our

nurseryman gave us a lecture before he would take our order. He said, "Now remember, you can't simply plant fruit trees and forget about them. You have to spray them—just as you do garden plants—and prune them once a year in addition." It wasn't until after we assured him we would do this, that he would take our order.

More likely than not your own local nurseryman will take a real interest in your fruit growing project. It is a good idea to buy from him rather than a far away nursery selling by mail because not only will you get some good advice from your local nurseryman from time to time, but he knows which varieties do best in your particular locality. Many local nurserymen today buy their young stock from famous nurseries all over the country, so if you want something special he'll get it for you.

We had a lot of fun considering what and how many trees to plant. Before we decided which variety of apples, we visited a commercial apple orchard, bought four or five varieties, tasted them and cooked them.

We learned that commercial growers give the appearance of an apple—or any fruit—undue importance. With them looks seem to rate as high as taste. Probably because appearance sells the apple at the fruit stand. Obviously, the first thing we were interested in was taste . . . next came keeping qualities . . . looks was last on our list.

In selecting the varieties we kept in mind the fact that certain apples ripen in July, others in August, September and October. By planting five apple trees, we would have apples summer and fall—and also a late apple which would keep over the winter.

After considerable reading and a lot of talks with our local nurseryman, the following is a list of the standard fruit

trees we believe sufficient to furnish a large family with enough produce for eating, canning and storage: 3 apple; 4 peach; 3 pear; 2 sour cherry; 1 sweet cherry; 2 plum. In Southern latitudes you can have citrus, apricot, nectarines, fig. Be sure not to plant your young trees too close to the house or to other trees. (See chart.)

The following table will give you an idea about yields and age of bearing:

Kind	Yield, When Full		Age When You May Get Fruit*
	Bushels	per plant	
Apple	6		6-8
Pear	1		5-7
Peach	1		3
Plum	1		4-5
Cherry (sour)	1		4
Cherry (sweet)	1		6-7
Quince	1/2		5-6

*Based on planting 1 or 2 year-old standard trees—older trees usually don't fruit any sooner.

Even though all the fruit catalogues tell you that you can plant in either spring or fall, spring is preferred in most sections. Planting should be done as early as the ground can be worked and before growth has started in the plants. Don't use fertilizer when planting. Use fine earth and tramp earth solidly about the roots with your feet, shovel by shovel. Set trees about an inch deeper than they were in the nursery.

Keep a three foot circle cultivated around the tree trunk. In the fall mulch them with poultry house litter. From the second year on, cultivate regularly and fertilize at end of June by using a barnyard manure mulch. This serves to keep in moisture during hot dry spells in July and August and provides additional food. You will be surprised at how much faster this will bring your trees to bearing.

Some state agriculture departments will send you postcards throughout the year telling you with what and when to spray your fruit trees. Needless to say, this is an invaluable service and you should get your name on your state's list of fruit growers so you can more easily take care of spraying. Ask your County Agricultural Agent about this service.

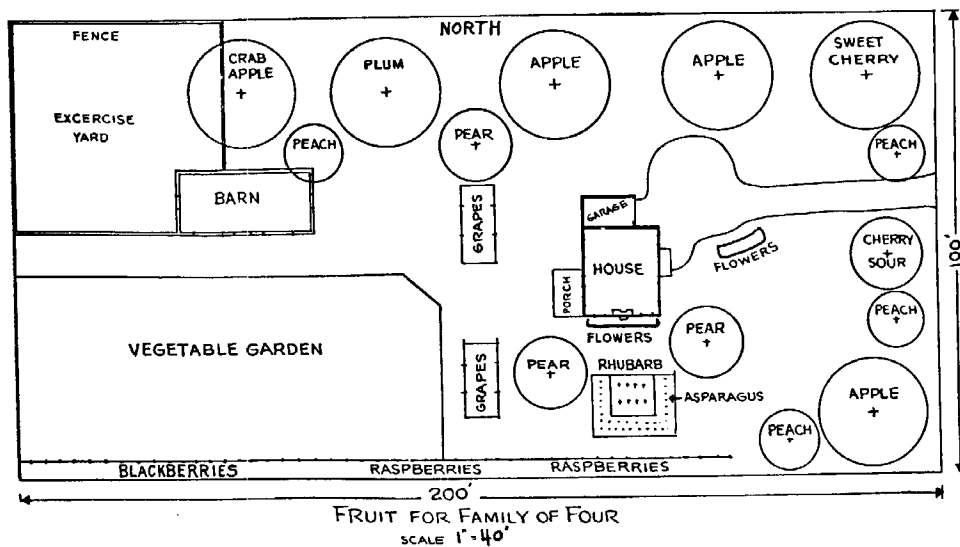
Dwarf Fruit Trees

Now, after many years of experimental work really good dwarf fruit trees are available. The two exciting things about dwarf fruit trees is that they take very little space and they bear fruit a year or two after you plant them whereas with standard trees you have to wait four to eight years!

Take a look at the comparison chart on the next page. It will help you decide which type of trees to plant.

Dwarf trees have many advantages, and a few disadvantages, when a detailed comparison is made with standard trees. Let's look at the advantages:

Dwarf trees take less space. In the



Here is one plan for less than a half-acre homestead showing how you can attractively landscape your grounds with fruit trees. Note that tall trees are generally planted on North boundary. In this plan trees are planted as close as is practical and size (spread) at maturity indicated—scale 1" equals 40'.

space required by 4 standard apple trees, 80 x 80 feet, you can plant as many as 64 dwarf apple trees! Even the ordinary suburban "house and lot" has space for a few dwarfs.

Dwarf trees are easier to spray or dust. All fruit trees must be sprayed or dusted. Dwarf trees, particularly the "little" dwarf or "semi-dwarf" can be sprayed or dusted with an efficient garden sprayer or duster. This is most desirable because the expensive, bulky spraying equipment for standard trees is not needed. Spraying is much easier, and consequently it gets done.

Dwarf trees bear fruit sooner. A "standard" apple tree usually does not produce fruit for 5-10 years after it has been planted. A dwarf tree will often bear fruit in two years!

Dwarf trees are easier to prune. Obviously a tree 5 to 10 feet tall is much easier to prune than a tree 25 to 30 feet tall.

Dwarf trees grow large fruit. Fruit buds, like turnips for instance, need to be thinned if the biggest fruit is to be grown. Dwarf trees, where the tiny fruit can be thinned easily, often produce bigger fruit.

Dwarf trees make possible more variety. Naturally if you can plant 10 to 15 dwarfs in the space required by a single standard tree, you can have 10 or more various kinds or varieties of fruit, instead of one. This has another advantage: you can have early, mid-season and late fruit by selecting varieties that ripen at different times.

Dwarf trees are easier to harvest. Fruit from the smaller dwarfs may be picked from the ground without the bother and danger of climbing a ladder.

Dwarf trees mean less damaged fruit. Fruit dropping from the small dwarfs, particularly when the ground under the trees is mulched with straw, hay or sawdust, is often undamaged.

Dwarf trees produce top-quality fruit. Fruit produced on a dwarf tree not only tastes as good as fruit from a standard tree, but because it is easier to give dwarfs better care, the fruit often surpasses that from large, and particularly old commercial trees.

As for the disadvantages, here are several you should know about:

Dwarf trees are more expensive. Of course prices vary in different localities, but a New York State nurseryman lists

2 year dwarfs at \$3.50 and his standard trees at \$1.75. When the supply catches up with the demand, this difference won't be as great.

Dwarf trees are shorter lived. However, this is not too serious a drawback. A dwarf apple tree will bear for 25 to 30 years compared to say 40 years for a standard tree.

The fruit you get from dwarf trees is full-sized. All standard varieties of fruit are available on dwarf trees; that is you can buy dwarf McIntosh, Baldwin, Northern Spy apples . . . Bartlett, Clapp's Favorite, Duchess, Seckel pears . . . Elberta, Hale-Haven peaches, and so on.

The fact that dwarf trees are easier to care for doesn't mean you can grow them without knowing a few of their peculiarities, however. Certain things about dwarf management are different. They must be planted correctly or they may grow into large trees. Pruning and thinning, though more simplified, is different. You'll find it really fascinating to read up on dwarf trees—also this will insure you against buying the older kind of dwarfs which nurseries used to carry and which weren't always reliable. We recommend you seriously consider planting dwarf apple, pear and possibly sweet cherry trees as these three have been developed the most successfully. Dwarf fruit trees, one of the biggest horticultural advances in years, mean a lot for the small place.

\$50 From a Single Nut Tree!

One day Carolyn and I received this letter:

Dear Ed & Carolyn:

"Here in Georgia a great many pecans are raised commercially and many farmers have a side line grove of the nuts which add considerably to their income. The trees make beautiful ornaments as shade trees besides the crop they bear. One suburban home I know of has two trees that brought in a total of \$84 cash this year. Another single tree I know of bore over \$50 worth of nuts."

Sgt. Herbert P. Keene

This was only one of the letters friends have written us to say that we should include mention of nut trees in our "Have-More" Plan. They pointed out that nut trees are unbelievably



The little girl is four years old—but the dwarf fruit tree has been planted only two years. And just look at the apples!

easy-to-grow, make beautiful shade trees, require less spraying and pruning than fruit trees, and supply the table with a nutritious, easy-to-keep food.

Well, I will say truthfully that about all that I know about nut trees is what I've read about them. We do have on our place one big, old butternut tree that has born huge crops; the nuts have a heavy husk and thick shell, but are mild and good-tasting after you get them cracked.

But Carroll D. Bush, in the *Nut Grower's Handbook* points out that here in America in the past thirty years, more has been accomplished with nut trees than millions of people in the old world accomplished in centuries. Better varieties of both European-Asiatic, and American nuts have been selected and bred for improvement and hardiness.

Today there are nut trees suitable for growing in every state. Of course, nearly everyone is familiar with the great almond and English walnut groves on the Pacific Coast and the pecans in the south. But do you realize the many varieties that have proven successful in the north and eastern states? Here are some of them: Im-great almond and English walnut pecan, hickory, hican (a cross between a hickory and pecan), filbert, almond, Chinese and Japanese chestnuts, heart-nut, and many varieties of hazel nuts.

Although nut growing is by no stretch of the imagination a "get rich quick idea," it does have a definite commercial side. For the homesteader, nut trees do have a good deal to offer.

Fruit Tree Comparison Chart

	Years After Planting To First Fruiting		Orchard Spacing	
	Standard	Dwarf	Standard	Dwarf
Apple	6-8	2-4	40' x 40'	8' x 10'
Pear	5-7	2	20' x 20'	10' x 10'
Sweet Cherry	6-7	4-5	25' x 25'	12' x 12'
Sour Cherry	4	3	20' x 20'	12' x 12'
Plum (Japanese)	4-5	3	20' x 20'	12' x 12'
Plum (European)	4-5	4	20' x 20'	12' x 12'
Quince	5-6	4	15' x 15'	10' x 10'
Nectarine	3	2	20' x 20'	12' x 12'
Apricot	3	3	20' x 20'	12' x 12'
Peach	3	2	20' x 20'	12' x 12'

Fresh Eggs From Your Own Hens

PERHAPS this sounds fantastic but we find that it's not much more work producing our own eggs than it is to make a weekly trip to a poultry farm to be sure we actually do have strictly fresh eggs. Our laying flock of 20 R.O.P. New Hampshires requires about 7 minutes care a day—and gives us on the average 11 eggs daily, year around.

Twenty hens require an 8 x 10 foot house which costs new about \$75. But if your family uses only four eggs a day a house for eight hens can be bought or made for as little as \$30.

Eggs were the first project we attempted when we moved out of the city. We estimated how many eggs we'd like to eat. With three in the family we thought we wouldn't need more than two dozen a week—3½ a day.

In estimating year around egg production, figure a hen will lay an egg every other day—if you can use six eggs a day, then plan on having a dozen hens. So, we bought a ready-made poultry house for \$28., 7 pullets for \$11.00; plus a water pan for 50 cents, a feeder, 69 cents.

If you can drive a nail and cut a straight line with a saw, you can build your own poultry house. If you want to, you can buy a "knock-down" poultry house and assemble it. You'll find them advertised in poultry magazines—be sure to write for catalogues and compare prices—they vary quite widely.

For the first week our 7 pullets (young hens beginning to lay for the first time) didn't lay an egg. One evening when I came from work, I found my wife all excited—our flock had produced an egg! That egg, counting the feed we had on hand cost us \$45.89.

But during the next eight fall and winter months those 7 hens laid 646 eggs—nearly 54 dozen—6½ dozen a month.

During that time we spent \$14.30 on feed—an average of 26 cents per dozen eggs. In our locality eggs sold for 60 cents a dozen. In short, we had saved \$32.40 on eggs and at any time could have sold our hens as fowl for 25 cents a pound or \$11.20.

But with our eggs only costing us 26 cents a dozen instead of 60, we began using more. That's why we have increased our flock. The next spring we raised 25 of the finest R.O.P. (Record of Performance) New Hampshire pullets (cost: 50 cents apiece as day old chicks), culled them down to 20, and began getting more eggs than we could use. With these better laying birds our eggs cost only 16-18 cents a dozen for feed costs. We sell the surplus at 60 or 65 cents a dozen—and right where I work I have more customers than we can supply.

How to Start

When we began studying up on chickens we found that there were many books on how to make a success of poultry commercially, but little information on raising a barnyard flock efficiently. Now, however, there are a number of good books—for example, G. T. Klein's "Starting Right With Poultry."

Many writers tell you any old building is suitable for poultry. But any old building and any old kind of equipment often result in a damp, drafty henhouse—probably ending up with your flock not laying and possibly getting sick.

A separate henhouse, or space in your small all-purpose barn, or a re-

modelled shed which gives 4-5 square feet of floor area per bird is needed. For a dozen hens a house 7' x 8' or thereabouts is satisfactory. The building should face south and permit plenty of sun deep into the building during winter. The house should be well-ventilated, but not drafty. Recent experiments show that it is better to give hens almost no air at all than have them exposed to a draft. Twenty hens give off a gallon of water per day—draft-free ventilation will keep this moisture from being absorbed in litter, doing away with frequent removal of same. With proper draft-free ventilation, you can put litter down in the fall, add more as needed during the winter, fork over weekly, and you should not have to change litter until spring. Then, old litter is used on the garden. But if litter becomes damp, change it right away.

Crushed sugar cane is excellent litter, deep straw or peanut shells are also good—all make good garden mulches. To obtain draft-free ventilation have windows in south only, and have them open in from the top, or hang regular double-window sash that can be regulated top and bottom.

The foundation of the house can be of concrete, which is best, or double-wooden floor with building paper and rat-proof wire between floors.

Interior

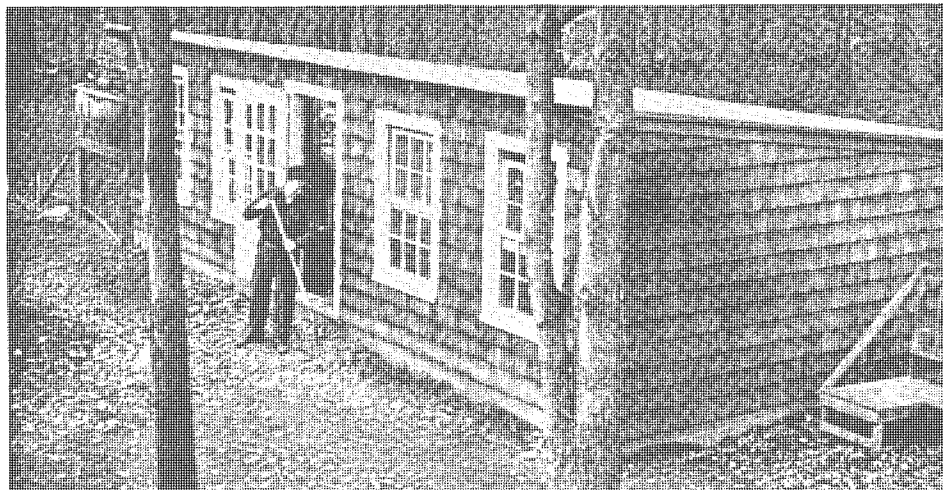
As for the interior of the chicken house, at the rear provide a dropping board 3 to 4 feet off the floor perhaps across the width of the house. Six to eight inches above the dropping board on supports, run a one-inch mesh wire. Provide roosts above wire, a foot apart. Allow 10 inches of roost per bird. The wire between roost and dropping board keeps hens clean and saves the eggs laid from the roost.

Nests—while they can be orange crates set a foot or so off the floor at the side of the house—should have a piece of ordinary corrugated carton cut to cover the bottom, then straw or excelsior for nesting material. The corrugated cardboard saves many an egg from breaking, and if an egg should become broken or the nest become messy cleaning is simply a matter of removing the cardboard. Provide a nest for each 5 hens.

Also buy a good waterer—preferably one that has a kerosene or electric heater to keep water from freezing in winter. Get one large enough—our 20 hens drink about two gallons of water a day.

Your State Agricultural College will send you free building plans for a backyard laying house. You can get plans to build a mash and feed hopper from your local lumber man. But it's practically as

See next page

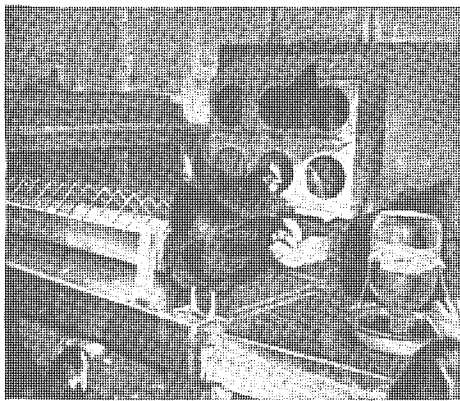


Our small all-purpose barn is 16 x 30 feet. Run at capacity this efficient little building houses up to 30 laying hens and a battery broiler in one section; in the other, 4 milk goats and in two pens up to 6 kids or lambs, plus a six compartment metal rabbit hutch, squab loft, milking stand, also feed and hay.

No-draft ventilation with plenty of sunlight is provided by four windows facing south. A second door at the far end (not visible) opens from the goat dairy section into the fenced pasture. Small hen door on the north side lets hens out into the yard.

Floor is concrete. Building is regular frame and sheathing construction with cedar shingles—roof of heavy green mineral surface roofing. Water is piped from the house.

Cost including equipment: materials \$285, labor \$240.



One-third of our barn is a laying pen. Simple and cheap feed and water equipment on a sturdy home-made stand keeps feed and water clean. Also, although it doesn't show up in this snapshot, wire is stretched between roosts and dropping board for sanitation.

cheap to buy a hopper from Sears Roebuck or Montgomery Ward or one of the poultry supply companies. The hopper should be well off the floor with a feeding platform that keeps feed clean and saves waste. Set the hopper and the water in the middle of the floor so that the birds can get the feed easily. (See diagram).

How to Feed

There are more different theories on feeding hens than feeding babies. Here is a simple, satisfactory way. In one large mash hopper (one foot long for each six hens) place a good egg mash in one half—and in the other scratch feed. Keep plenty of mash and scratch before the hens at all times. At first your hens will eat more scratch than mash, then gradually eat half mash, half scratch, which is what they should be eating for best results. (Hang an automatic feeder for oyster shells and grit from a side-wall).

Buy your feed from a hay and feed dealer with a good reputation. Keep a supply of feed on hand—don't let your feed get too low because feed deliveries are unpredictable. You can keep laying hens inside the poultry house all year around—they will lay as well as hens that have a yard. In winter an electric light with an inexpensive automatic switch which turns it on at 4 a.m. will increase your production—not because you're fooling the hens into thinking it's daylight, but because they can see to eat more egg-producing mash.

Mash means eggs—as they say. So keep your birds eating mash. If they drop off, moisten mash (in winter use hot water) and you'll be surprised how your hens will gobble it up.

Culling

"Cull" simply means to eliminate birds that seem sick, weak, or non-layers. Time was when characteristics showing good layers were not widely known, but today almost anyone can

cull their flock by checking these characteristics:

Judging Production

	Laying Hen	Non-Laying Hen
Vent	White, large oblong, moist	Small, round yellow, dry
Comb	Large, red, full, silky	Small, pale, scaly
Pelvic bones	Wide apart, pliable	Close together, rigid
Wattles & Earlobes	Prominent soft	Shrunken rough, dry
Eyes	Prominent sparkling	Listless, sunken, dull

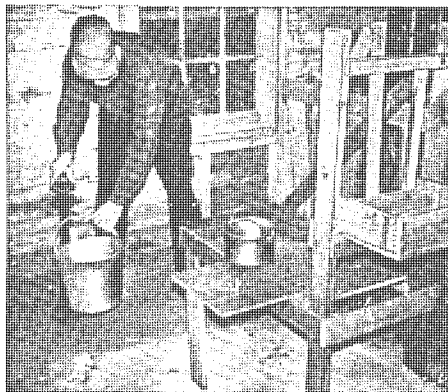
Cull birds after dark. Take out of pen for table use those showing non-laying characteristics. Probably, at first, you won't trust your ability to cull. We were afraid we might "liquidate" a couple of valuable layers—so we kept the "cullers" in a small chicken house for two weeks to see if they were layers. They weren't.

If over 50% appear to be non-layers, probably, the trouble is with you. Exert every effort—feed hot mash, check for lice, mites—for four to six weeks to bring them back into production.

What Breed?

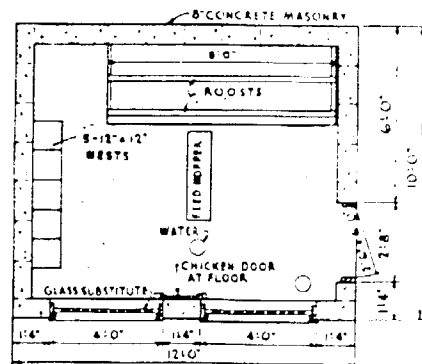
There is no best breed. All fall into three general classifications: egg machines (Leghorns), meat birds (Jersey Giants), all purpose birds (New Hampshire, Plymouth Rocks, R. I. Reds, Wyandottes.) By all means choose one of the all purpose birds—preferably the one your wife likes the looks of best. She'll be collecting the eggs and keeping an eye on the flock while you're away.

You can raise your own laying hens from chicks, particularly if you buy the battery brooder described in the section on broilers. Buy "straight-run" baby chicks using poultrymen's rule of three chicks for every pullet wanted in the fall. When they are six weeks old take out pullets (they'll be smaller, have less comb development) and raise them on range during warm months. (See page 33). Never put young growing chicks with older chickens or hens.



Almost one-half of daily chore time is taken up by watering stock. Running water in barn is easiest single way to save work.

Secondly, if you don't have a brooder, then buy 6 to 14 week pullets from a good breeder. These will begin laying at 20 to 24 weeks. Here you must be careful to buy from a poultry man



SHED TYPE POULTRY HOUSE CAPACITY 24 HENS

Diagram of interior of a laying house. Feed and water are placed prominently in the middle of pen to get hens to eat often — "the handier the mash . . . the more eggs."

who is in the business of raising pullets to sell. Be wary of buying from a poultry man who is primarily producing eggs—he usually keeps his best pullets, sells his culls. Only buy 6 week old pullet in the spring or summer when there's plenty of grass range for you to raise them into strong birds.

Thirdly, you can buy 20 week old pullets which are about ready to lay. These will cost \$1.50 to \$2.50 apiece. Buy only pullets—birds less than six month old. And remember, you don't need a rooster to produce eggs.

Prevention of Disease

It has been said that something like 300,000 people go into the poultry business each year to make their fortune—and about 289,000 give up because they couldn't make a go of it commercially. One reason for this bad showing is loss from disease. A backyard poultry raiser should have little trouble on this score if he has disease free birds to begin with and keeps sanitary conditions in the house. We know of any number of people who have been keeping poultry for years without serious loss from disease.

Main points to bear in mind:

1. Keep poultry house clean.
2. Avoid drafts.
3. Don't overcrowd birds.
4. Paint roost once a year or oftener with Carbolinum to get rid of mites. Disinfect water and feed equipment—do this monthly anyway.
5. Isolate any sick bird immediately.
6. If any contagious disease occurs, kill affected birds and bury them immediately.
7. Dust with lice powder if birds are lousy.
8. Feed properly, watch for mouldy feed.

New, Easy Way to Raise Tender Chicken

ONE of the most successful projects we've undertaken is raising chickens to eat—broilers and fryers, in what is called a "broiler battery". This efficient new way of raising eating chickens has become increasingly popular among the large commercial poultrymen during the past few years, but only recently have small broiler batteries been made for family use.

Directly below is a picture of our "home-size" broiler battery. Here is the way it works: In the top deck we place "30 day-old" chicks, dipping their beaks in the water tray (and the mash) as we take them out of the shipping carton. Dipping their beaks once or twice teaches them where to drink and eat. At the rear of the top deck is a heated chamber with a drape at the front. This is the brooder. It's heated automatically by an electric heat-unit. When the brooder drops below a certain temperature, the heat automatically goes on together with a small light. The light attracts the chicks and they duck under the drape into the warm brooder.

As they get hungry they come out to eat and drink from the feed and water trays. Once or twice a day—and it doesn't have to be done at a definite time—we change the water and add feed, a specially prepared battery-broiler mash (be sure to get a vitamin fortified battery feed). The chickens live on wire and are kept sanitary at all times. A few sheets of newspaper spread out in the dropping tray makes

the daily cleaning easy—simply pull out tray and roll up newspaper.

At the end of 4 weeks, the baby chicks are divided into two equal groups—half go into the second deck, half into the lower deck. At the same time, another batch of 30 baby chicks may be added to the top deck.

In another 4 weeks, and each succeeding 4-week period, if you keep your battery running at capacity, you have 30 two-pound broilers.

Feed Cost — 16¢ a Pound

Even with today's expensive feed, our chicken costs us only 16¢ a pound. What's more, our battery takes less than 10 minutes a day to operate and it is truly "so simple a child can run it". Moreover, you can set it up in the basement, garage or shed—provided that, if you run the brooder during the winter, you have enough heat in any of these places to keep room temperature at 50° or above.

If you want to keep for your own use 15 broilers a month, then the other 15 can be sold to friends. By selling them at market prices you ought to earn enough to pay all your feed costs thereby having all the chicken you can eat at no cost.

The brooder is about 4½ feet high, 3 feet wide, and 3½ feet long. This size is made by a number of companies. They range in price from \$23-\$30. Names and addresses of Manufacturers are given at the end of this chapter.

One of the great things about these batteries is that they eliminate practically all chance of your losing your chicks by disease. At this writing I should say we've put over 800 baby chicks through our brooder. The hatchery from which we order our baby chicks—incidentally, we buy all males (cockerels) for they are cheaper and grow faster—sends us 32 chicks but charges for only 30. We have never lost more than these two extra chicks in any batch we've raised. And that isn't because we've been especially lucky, because four different friends of ours have bought broiler batteries—3 of them didn't know enough to tell a hen from a rooster—and all have done well.

Mind These A B C's

If you will remember the following points, I'm sure you will have no trouble in raising chicks in a battery:

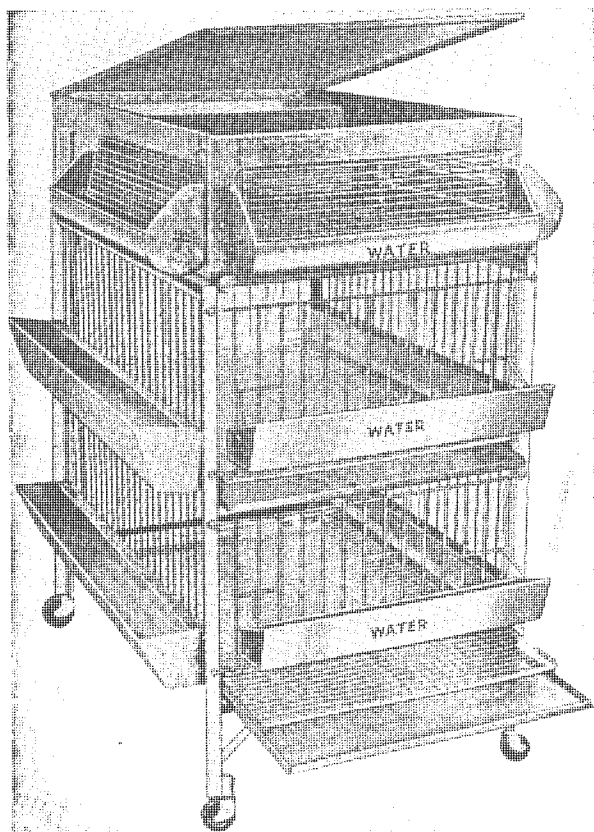
- A) Buy good baby chicks—the best cockerels cost only 7 to 13¢ each, depending on the season. You can run the brooder any time of year. Buy chicks of heavy breeds—Hampshires, R. I. Reds, Barred Rocks, White Wyandottes and White Rocks (easiest to dress), or any of these cross bred. Don't buy Leghorns—they are a poor meat bird.
- B) Make sure your feed dealer supplies you with *broiler-battery feed*. This feed is fortified with minerals and vitamins necessary because your chicks won't get sunshine.
- C) Brooder should be started a day before chicks arrive. The room temperature kept at 65°-75°, if possible. Set your brooder so that a thermometer 1" above wire floor inside registers 85°-90°. Fill water troughs with warm water. Let chicks feed upon arrival—unless they're under 36 hours old. Daily feeding period should be 12 to 14 hours. Temperature in brooder is gradually reduced each week until at end of 4 weeks it is down to 70°.
- D) Wash water pans in hot water every other day—see that chicks always have mash, and water and chick grit.
- E) Let chicks have plenty of fresh air—no drafts and don't let temperature in room drop below 50°.

A Few Tips on Dressing Chicken

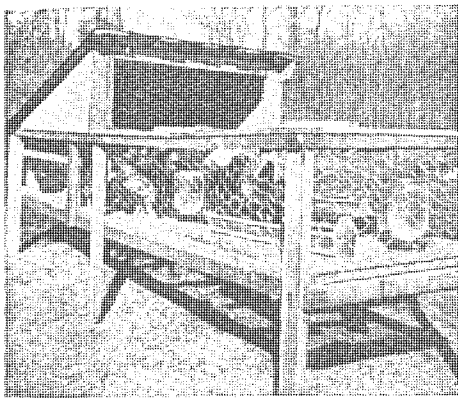
The first chickens we dressed took about an hour a bird—the other day we did seven in about an hour.

We never particularly liked this phase of our farm activities and have spent a lot of time making it as efficient and simple as possible.

First, instead of using a chopping



A complete chicken raising plant. With this broiler battery in your basement, garage or shed, and with no other equipment, you can raise baby chicks to 2 or 2½ pound broilers in 8 to 10 weeks. Not more than 10 minutes a day care will give you 30 broilers a month at a feed cost of 16 cents a pound or less, depending on feed prices.



This outside sun porch is a convenient place to transfer 8 to 10 week old broilers and raise them to 3 to 7 pound fryers or roasters. Raising in confinement makes for tenderness and rapid weight gains. Sanitary floor is $\frac{1}{8}$ " wire mesh. Allow one square foot of floor space per bird at 10 weeks — two square feet at 20 weeks.

block and axe or the more expert commercial poultryman's method of sticking through the roof of the mouth, we use a gadget which looks like a miniature guillotine. This extremely humane device makes killing easy, sure and not messy.

Secondly, after dipping the chicken into hot water—not hot enough to burn chicken's skin—for about 30 seconds and plucking the feathers clean, we split the broiler down the back. This makes the intestines easy to remove in a mass. The bird can then be cut completely in half, washed, quartered, and it's done in much less time.

Tenderest Chicken

Battery broilers, fryers, or even roasters—and we've raised and eaten all three—are more tender than chicken grown on range. The reason for this is



One of the simplest most humane ways to kill poultry. A light blow of the hand and blade, held steady in the slot, punctures spinal cord leaving outlet for blood. Blade springs back, chicken is dropped into barrel.

immediately apparent—broilers raised in confinement do not toughen their muscles as do birds grown on range. Battery broilers and fryers, in fact, are usually so tender that the wholesale buyer of live poultry often will not buy them to dress and market, because battery broilers picked up alive at the farm and trucked even 10 to 20 miles, often lose up to 25% of their weight they are so tender. However, this commercial disadvantage is a distinct plus when you are raising chicken for your own use.

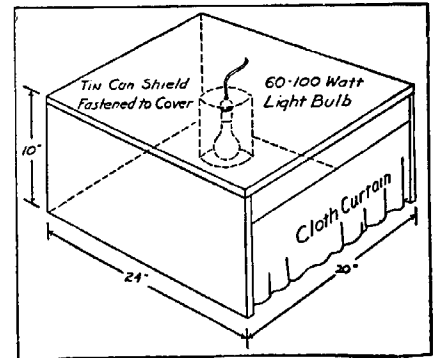
Home Made Brooder

If you do not have or buy the battery brooder pictured on the opposite page, you can easily set up a simple brooding outfit as shown. (Or you can buy a simple brooder like this at very small expense.) You can vary size of light bulb, get approximately right temperature under brooder—about 90 degrees one inch from floor, reducing gradually to room temperature in about 4 weeks. Then remove brooder.

Floor space required for each bird is about 7 to 10 square inches under brooder and about $\frac{1}{2}$ square foot outside brooder. Fine meshed wire or tar paper 12" high should be used to confine chicks close to brooder for first week.

Room or building used must be clean, fairly warm (70 degrees desirable—must not be less than 50), well ventilated, preferably with windows facing south for maximum sunlight. Your feed and grain dealer will have litter for floor, inexpensive feeding and watering pamphlets; perhaps free, detailed pamphlets on this phase of poultry raising.

Get your day-old chicks, either from



From Washington State College

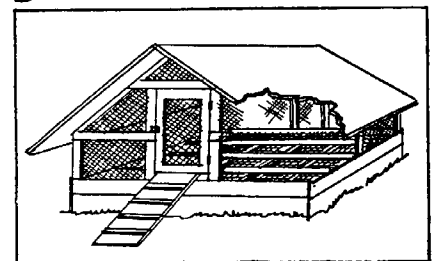
feed dealer or by mail late in March or April. When six or seven weeks old, along in May (neck and head should be well feathered), birds can be transferred to summer range shelter unless house where started is designed for and has outside yards suitable for their growth to maturity. Cockerels and pullets should be separated at about 8 to 10 weeks of age, depending on the breed—in some breeds they are easier to tell apart than in others.

Summer Range Shelter

Putting pullets "on range" at 6 to 8 weeks old, with simple, shelter-type housing, as illustrated, is probably the best way to get healthy, sturdy birds. You can also raise broilers, fryers and roasters this way, but we think the battery-confinement method described and illustrated elsewhere on these two pages is preferable. You get better eating chicken in shorter time that way.

The shelters can be used in the North from May through October. Allowing the correct amount of floor space per bird—one square foot or more—a shelter 6 feet square would be large enough for 20 to 25 birds. (One of the most important things to remember about keeping any kind of livestock is *never* overcrowd).

Shelter design can be varied, but is based on these elements: a weather-tight roof; a wire mesh floor eight or more inches off the ground; roosts above this (one-by-two strips nailed flat on top of wire are suitable—allow 10" of roost space per bird); boards or wire all around bottom to keep birds



from droppings under floor; wire around sides from floor to roof to allow good ventilation; a door to shut chickens in at night and to keep rodents out.

Range can be any grassy piece of land, clover being particularly good. Allow 100 square feet per bird—the more range and the better the grass, the less boughten feed the birds will need, and the healthier they will be. Fence in to keep chickens away from garden and to keep dogs out. Covered feed trough and water fountain are placed near shelter and should be moved every week or so to assure clean footing for the birds.

Geese Grow on Grass

IN raising poultry, Ed and I believe chickens are fundamental—they furnish both meat and eggs. But after you are producing broilers in your battery and have a flock of laying hens, you ought to consider raising at least one other kind of poultry for variety's sake.

It is up to you to choose geese, ducks, turkeys, squabs—or something fancy like guinea hens or pheasants. You can easily handle one or maybe two of these in addition to your garden, fruits, chickens, goats and bees. You've probably eaten duck and turkey recently, maybe goose and squab. If you haven't eaten these latter two recently, do so—and then plan on raising what ever you like the best.

We Robinsons believe the goose is tops—best-tasting. Yet it seems to be the forgotten fowl in America. The most common objection we hear is that goose is too greasy. But you don't have to eat all the grease any more than you eat all the excess fat on the best cuts of beef. The first Christmas we were married I roasted a goose (at Ed's in-

sistence!) even though I had never tasted it. I used a prune and apple stuffing to offset the richness and pricked the skin to release fat which could then be poured out of the pan. I have been an ardent goose fan ever since. If you like dark meat, which we think more succulent and tasty than white, you should like goose.

Geese are the cheapest and easiest of all poultry to raise. Extremely hardy, they are rarely affected by any disease or insect pests. After they are two weeks old all they need is plenty of water and grass and they will gain a pound a week until they are about 12 weeks old. They may be eaten at this age and are called "green geese". Geese have no use for fancy housing—a simple 3 sided shed where they can keep dry in the severest winter weather is all they want for they prefer to stay in the open even at night. As for fencing, any low wall or fence 36 inches high holds them. At breeding time geese make their own nests, hatch their own eggs.

In Europe and Asia geese have been

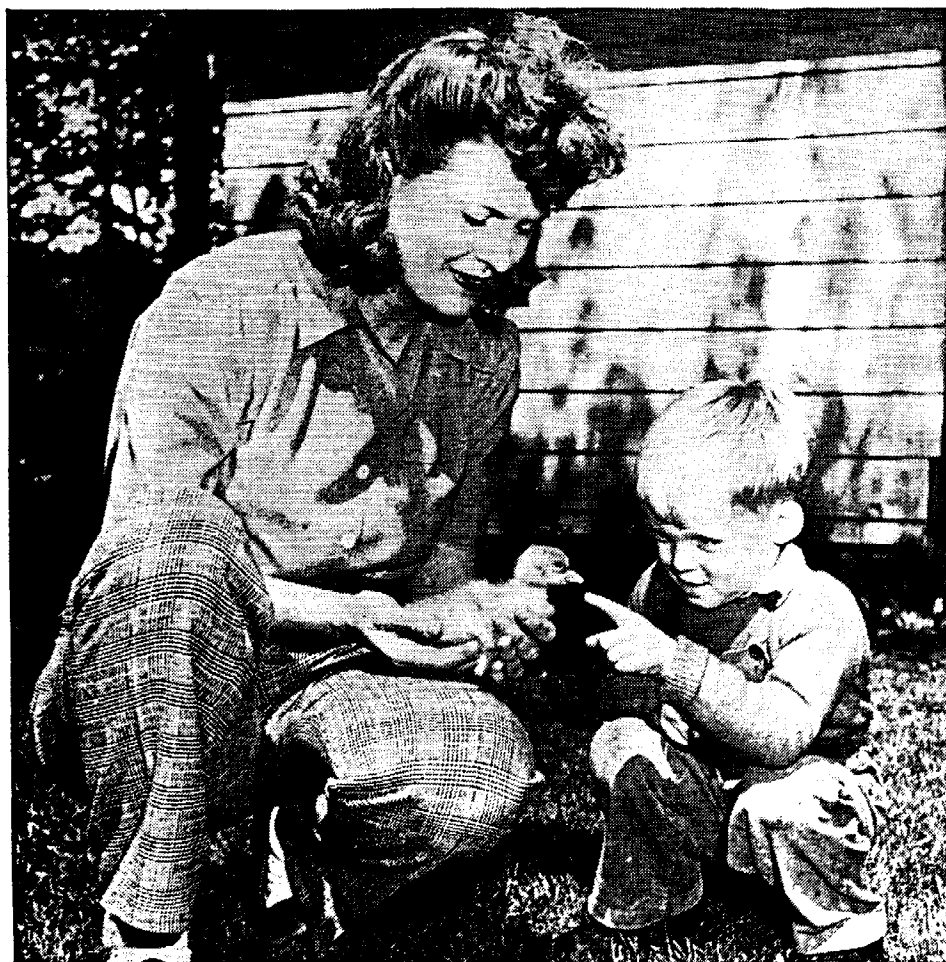
highly valued for centuries. As far back as 4000 years ago the Egyptians used goose liver to cure night blindness—and they were right, for scientists now know goose liver is exceptionally rich in Vitamin A because geese eat such large quantities of green grass. Before the war Europeans raised more than 100 million geese a year.

If you live in a closely populated section you will not find geese desirable as their call is a noisy one and they are easily disturbed. In fact, they make good "watch dogs". If you want to keep feed at a minimum, ½ acre of good grass will support 8 to 10 large geese. Of course, you can keep them in smaller areas and supplement their grass with waste greens, vegetables or fruit and a little grain. Oats make a good grain. Geese need sand, grit and oyster shell for egg laying and digestion's sake. But from early spring till winter, it is grass and water than they prefer. If you supply those two things, your geese will virtually raise themselves.

You can start having geese by buying fertile eggs, day-old goslings, "started" goslings, or a matured pair or trio at least two years old. We could find no geese true-to-breed in our section so we bought eggs (35¢ to \$1.00 each) and hatched them under setting hens. It was one of the biggest thrills we have ever had—to see those little goslings hatch out. Here are the rules we would suggest after our experience:

1. Don't pay too much attention to all the free advice you'll get unless it comes from someone who has successfully handled geese for several years or from the Department of Agriculture or State Experiment Station.
2. Order your eggs from a reputable dealer suggested by your county farm agent or one who advertises in a good farm magazine.
3. Get your broody hens promised to you ahead of time by a large poultry keeper if you don't have any of your own. You may buy or borrow them. One hen covers 4 to 5 goose eggs. Move and place the hens on their new nests at night and keep the nest darkened.
4. When you make up the nests, dust them thoroughly with insect powder. Also dust the hens well a day or two before the eggs hatch. (You may use an orange crate on its side for 2 nests if you place a narrow board across the front to keep the eggs from rolling out).
5. Goose eggs, contrary to the usual practice, may be washed before setting. Turn the eggs once a day (when the hen is off her nest) as they are too large for hens to manage.
6. Take good care of your hen and her eggs. It takes from 28 to 35 days for eggs to hatch—a long setting for a hen. Take her off her nest once a day and give her grain and water. Be sure food and water is close so she won't wander off and forget her nest. A hen on goose eggs should not be off nest long enough for eggs to chill.

During the last week sprinkle the eggs with lukewarm water each day. The day before hatching place the eggs in a pan of warm water to cover eggs well and watch your live goslings bob. After a few bobs replace eggs in nest



Carolyn and Jackie get a close-up of a new member of the "family" — a day-old gosling. He came out of the shell yesterday. Today he is able to shift for himself quite well. A setting hen hatched him. Four or five goose eggs can be hatched (in 28-35 days) under a hen while your goose goes on laying more eggs.

and nature does the rest. (You furnish water to duplicate what occurs when a goose returns to her nest with her feathers a little wet.) If the egg should show the first crack of hatching, don't submerge the broken part. It can take a gosling as long as 24 hours to hatch after the first tiny crack in the shell, so don't be worried. Even if a gosling's head has emerged, the European custom is to push the head back into the shell so the gosling can obtain leverage to extricate himself. Take goslings from nest as soon as they hatch; place in a box and keep in a warm place until the hen completes her hatch. It is best to remove goslings because the hen is apt to get excited at the first hatch, leave the rest of the eggs unhatched.

After you have hatched the goslings or if you buy them, keep them in a box with a few cloths in it in the house or some other warm place. A few hours after they are born feed them some chopped green feed—grass, lettuce, etc.—natural food for geese. Stale bread soaked in milk and sprinkled with a little sand, or a warm mash or chick starter may be fed. After the first day or so when they learn to manage their legs, put them out on the grass during the day—provided the weather is warm. But be sure to keep them in a warm dry shelter at night and don't let them out until the dew is off the ground. It is wise to let them have their box or shelter at night until they are well-feathered—at least 3 weeks old.

Care of Mature Geese

Buying matured geese ready for breeding is the most expensive way to start your flock, a good trio costing \$25-\$35. However, if you decide to do this, it's best to mate just a pair, even though it is common to have a trio of 1 gander and 2 geese. Geese prefer to live a monogamous life, in contrast to other birds. After they once mate, they are faithful to each other for years so don't break up their happy union. Buy your geese and pair them in the fall so they will be settled and ready to lay in February (the usual time in mild climates.) Your goose and gander should both be 2 years old to be fully matured and to produce fertile eggs.

The difficult aspects of raising geese are to get fertile eggs and proceed properly with the hatching. Your success or failure begins with the gander. He prefers living with but one female—although sometimes he'll take up with two. But the gander and goose usually must live together some months before they will mate. Although water isn't absolutely necessary, some kind of a little pool (see Chapter on Ducks for making pool) or stream is good because geese breed more easily in water. Once you have fertile eggs, be sure that the hen or goose you set them under is really broody. Start her setting on some hen eggs for a couple of days to make sure she's really serious about hatching

The young geese are 8 weeks old — half-grown and weigh about 9 pounds. The pair of breeders (at left) are two years old. Geese are extremely healthy, eat grass, and practically raise themselves.



a family before trusting your geese eggs to her.

All the laying goose needs is a barrel or box on its side or some simple shelter and the goose will fashion her nest out of straw, twigs and her own goose down. The average goose of the heavy breeds can lay about 20 eggs, but is able to cover only 12 to 15, so remove the first eggs if you want her to continue laying more than she can set on. After she stops laying and becomes really broody see that she has as many eggs as she can cover well. Then, provided she has water (say, a large pond) so eggs will receive proper moisture, you can relax and let her hatch her own eggs. She'll turn them and do everything necessary.

We find geese are friendly and like to follow us around the yard, except during the mating and hatching season when it's best to stay away from the gander. Geese are fearless and will attack anything—you needn't worry about a rat, cat or dog bothering them.

Choosing a Breed

Every small flock we have seen seemed to be some kind of mixture stemming mostly from the gray and white Toulouse goose. We chose the Embden because my wife wanted all white Toulouse goose. The other two best known breeds in this country are the African and Chinese. Both have distinctive knobs on their heads. The African is brown, apt to be noisy. Chinese geese may be white or fawn, weigh from 10 to 12 lbs., are apt to be noisy. They belong to the exhibition breeds.

Though we don't expect you to go into the business of raising geese we thought you might like to know that the commercial by-products of the

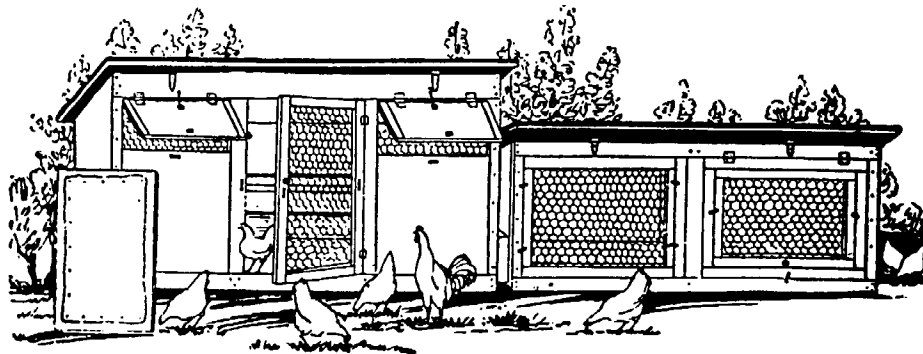
goose are exceptional. When geese are specially fattened they develop large livers which can be made into the famous "pâté de foie gras" which means "patty of fattened goose liver".

You know how goose feathers are valued in pillows and upholstery, but did you know they are widely used in artificial flowers, Christmas tree decorations, fish lures, powder puffs, and many other things? And goose skins are also used in one kind of powder puff besides their more familiar use as cracklings. And that "awful goose fat" we hear about so much is known to many people as "schmaltz"—is exquisite in taste and highly regarded by knowing cooks for pastry shortening, bread spread and other cooking.

Some people like "schmaltz" plain as a bread spread—or if that is too fat, you can make a Swedish bread spread. Cover bottom of skillet with goose fat, add finely chopped onion (1 large) and unpeeled apple (about 3 medium), brown slightly. Add ½ cup goose fat and simmer over very low flame until onion and apple are soft. Then place in container and in refrigerator where it will keep a long time. Use cool.

To make plucking easier dissolve 2 cakes of paraffin (poultry plucking wax obtainable from a poultry supply house is better than ordinary paraffin) in a large kettle of boiling water. Dunk the goose thoroughly in this mixture immediately after it is killed and bled. Then start plucking right away. The paraffin ruins the feathers for future use, but if you really want the down you can dry pick.

Despite the difficulty of picking, we think the goose is a wonderful bird!



We bought this little poultry house and the scratch shed (at right) for our original backyard flock of 7 laying hens. It cost \$28.00. Since then we've used it as a coop to fatten broilers and as a shelter for our geese.

Turkeys

Can Be a Profitable Sideline

WHEN you start producing food for your family, money will begin to lose its importance. You won't be digging into your pockets every time you turn around. First, you yourself will be producing a good part of your food and secondly, you'll be trading your surplus with your neighbors.

For example, we trade geese for turkeys with one of our neighbors, Tyler Long. Ty and his father have always had a hankering to raise turkeys. For a long time they just talked about it, then a couple of years ago they started in doing it.

Unlike a lot of people, including a few farmers I've met, they were frank with themselves in admitting to begin with that they didn't *really* know much about turkey raising. They determined to find out all about the newest and best ways of going ahead, start on a small scale. So they talked to any number of commercial turkey men, our county agent, and read everything they could get their hands on about turkeys.

Just to give you an idea of how well they've done, in 1942 the national turkey mortality rate from all causes was reported to be 28%. In 1943, when feed conditions were at their worst in 20 years, Ty kept his mortality rate down to 15%.

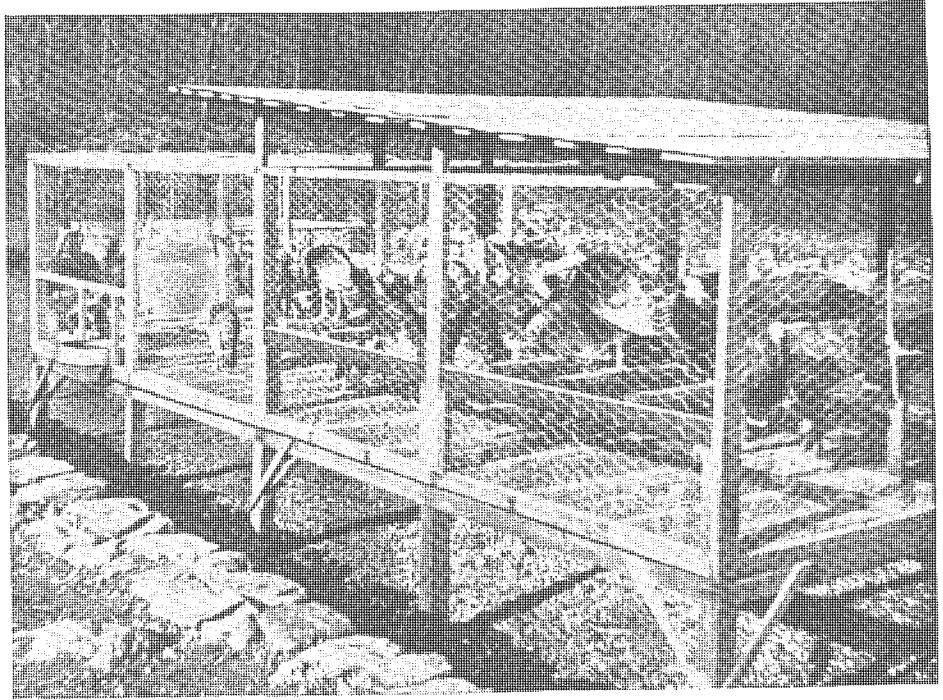
While it's true that scientific turkey raising requires certain precautions not always necessary in chicken raising, if a few general principles are followed with care, turkeys can be a surprisingly easy, inexpensive and interesting way of increasing your food supply. Turkeys, incidentally, produce more meat per pound of feed than almost any other kind of poultry.

We say this after observing Ty Long's experience raising turkeys. In fact, we have gotten him to give detailed, week by week, instructions, explaining exactly how a family can scientifically raise a dozen or so turkeys.

What Breed?

By no means try to hatch out turkeys from eggs—buy day-old chicks or poults as they are actually called. Place your order early, sometime between December and March. The importance of good breeding in the day-old poults cannot be stressed too much.

Ty recommends buying them from a well-recommended breeder rather than from a hatchery. You can get names from the magazine, *Turkey World*, (Mount Morris, Ill., 15c a copy) or consult your county agent. Don't decide on a breeder farther away than



Twelve or thirteen turkeys should have a cage at least 10' by 12' with 12' of feed hoppers running along the outside. Roosts should be built in the sheltered end of the cage, using 2-by-4's with wide side as the roosting surface and allowing 14" space per bird. Top of roosts should be 20" from the wire floor and a space of 24" should separate one roost from another. Allow the birds complete access to the floor under the roosts, otherwise you cut their exercise area to the bone. A slanting roof of very heavy roofing paper and three sides of the same material (removed in above photo) should protect the roosting section.

300 miles, preferably closer. Specify shipment by Railway Express.

Most breeders specialize in Broad Breasted Bronzes—they give more meat per pound of frame. This is a good breed to start with, unless you want one of the smaller breeds. If, for your family use, you'd like to wind up with eight or ten fully grown turkeys, you'd best order 15 poults. Poults sell for from \$.50 to \$.75 apiece. These 15 will probably narrow down to twelve for the cage and eight or ten for your family and friends. You may, of course, do much better than this, in which case you can easily sell your surplus at a nice little profit.

Poor sanitation and dampness, huddling caused by improper heat control, and failure to start eating are the greatest causes of death in young poults. Because a battery brooder provides a maximum of sanitation and dryness, practically eliminates huddling, and its confined quarters are a big help in starting poults eating, we believe a battery is the easiest and safest way to raise your turkeys for the first four weeks. Equally important, a battery brooder reduces labor to a minimum. (See article on broiler battery, page 32).

Here are Tyler Long's week-by-week instructions. Don't let their seemingly lengthy detail discourage you. It's really easier than it sounds, and, besides, Ty is more of a "perfectionist" than most of us are likely to be.

Week-By-Week Instructions

These instructions are not intended to be absolute. We feel that reasonable appli-

cation of them plus common sense circumstances not discussed in this short article will result in your successfully raising your turkeys.

From First Day To Fourth Week

At least 2 days before the poults come, *completely* scrub battery, inside and out, feeders and waterers with hot soapy water. Rinse with hot water. Spray with a warm 4% solution of any reliable coal-tar disinfectant. Only then will your poults be reasonably safe from germs left by the battery's former inmates. Be sure all surfaces are thoroughly dry before the poults come in contact with them. Cover dropping board with newspaper to facilitate *daily* removal of droppings.

At least 4 hours before poults' arrival regulate temperature under hover (using brooder thermometer or thermostat) to between 95° and 105°. Reduce to 90° the third day. Thereafter a drop of 5° per week is usually advisable. However, behaviour of birds themselves is best barometer of their comfort. Cold poults usually huddle (their most dangerous habit), peep loudly and protestingly. Overheated poults act drugged and listless. Comfortable poults either sleep quietly or peep in a low, contented voice. Above all guard against huddling. More poults die in the first four weeks from smothering caused by huddling than from any other single cause.

On the other hand, it's just as important to remember that over-heating the birds at any stage of the game tends to produce a delicate, over-sensitive turkey. It is usually best for the first two or three nights to wake up at 1 or 2 a.m. to see that turkeys are comfortable. This is a chore, but a necessary one, since as many as 50% of your poults can be killed in one night by huddling.

Before placing your poults in their new quarters, fill the hoppers almost to overflowing with a turkey starter mash from a reputable feed concern. (If the mash is not Vitamin D fortified, add and mix thoroughly 1% Cod Liver oil until the birds are out in the sun.) Sprinkle about one teaspoonful

of fine hard chick grit to each three poult on top of the mash, so that they will get their "teeth" with their first meal. Continue giving this grit twice weekly until the tenth week. Fill the waterers with water the temperature of your hand. Continue for two weeks, then change to tap water. Keep both feeders and waterers filled to this level until poults can reach down into them.

Some of your poults may refuse to eat when you first get them. Put down a newspaper and scatter on it some chick scratch. Usually they will peck at this. Next day put chick scratch on top of mash in feeders.

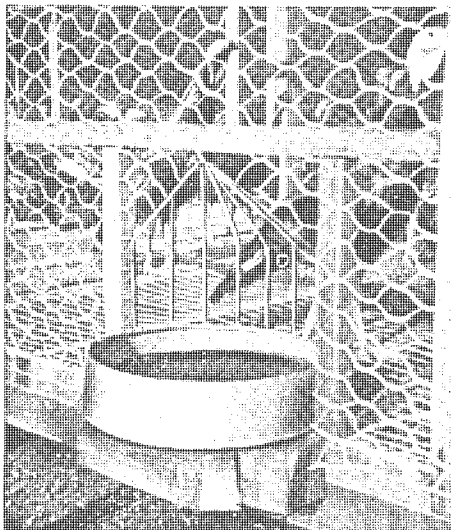
Wash the waterer every day in hot soapy water. Keep it filled with fresh, clean water. Wash feeders every ten days. Stir old feed in with new to prevent any becoming stale.

Inspect your poults upon arrival, culling out any malformed, injured, or dying ones. The simplest, most humane method is to snap the neck with a quick, strong twist of the hand. The same treatment should always be accorded any deathly sick or badly injured birds as a protective measure for the rest of your flock. However, like chickens, no disease or injury to which a turkey is susceptible can in any way render the flesh unfit for human consumption. But any birds that are to be eaten should be killed so that they will bleed.

Disease Control

Baby turkeys are subject to a number of diseases, the most prevalent of which are coccidiosis and brooder pneumonia. The former is usually recognizable by bloody droppings and a general washed-out look to the bird. Pneumonia can sometimes be detected by the presence of phlegm in the nasal passage and some shivering. In each case the poult must be segregated from the others, kept warm and dry and fed warm milk, with an eye-dropper, if necessary. Nothing more can be done in the case of brooder pneumonia. The development of coccidiosis is sometimes arrested by administering a 1% solution of Epsom salts. This must be followed in six hours by dried skim milk mixed with the mash or water. Commercial anti-coccidiosis agents are sometimes found helpful. Never return the sick bird to its regular quarters until you are fairly certain a cure has been effected—you must not risk infecting the others. (Lederle's Sulfaguanidine, a new "sulfa" drug, has frequently halted rampages of coccidiosis when other measures failed.)

Keep a weather eye out for the condition known as "pasting-up", when the poult's droppings remain stuck to his backside. This is serious, as a poult (or chick) can die very quickly from the poisons caused



Detail of waterer: pan is protected by a wire guard. Construction prevents birds from contaminating water and enables you to water birds from outside.

by a clogged-up intestinal tract. Treatment we found safest: With a medicine dropper apply several drops of inexpensive mineral oil on and around the drooping, which will soon be worked off. Do not try to remove it; the poult's sensitive skin is easily injured.

From Fifth To Tenth Week

The advantages of raising turkeys in battery brooders will turn into serious disadvantages if the birds are kept in them after the four week period. Many growers leave poults in batteries only 15 days. The fact that the birds are allowed to develop neither immunity to disease-bearing bacteria nor resistance to less favorable climatic conditions in its protecting confines is responsible for this. Therefore, at least at the start of the fifth week the poults should be moved to a clean, dry, thoroughly disinfected floor covered with at least an inch of good quality shredded litter, preferably sugar cane shavings. The average temperature, at the floor, of their new quarters (section of garage, barn, enclosed porch, small brooder house, etc), should be somewhere between a minimum of 65° and a maximum of 75°. If it is not possible to use the top-section of your battery as their hover (in which case you would remove the dropping board, floor grid, removable sides, feeders and waterer, using it only as a source of heat and shelter on top of the litter), build or buy a small auxiliary hover. (See Chapter on Broilers).

Such a hover, which can be quite simply constructed of insulation board with either 2 or 3 25-watt bulbs or a commercial heating element installed in the roof, must be large enough and adjustable in height so as to accommodate all the birds when they are ten weeks old, at which time they should be more than twice the size they were at four. The temperature should be gradually reduced (if necessary, vary the number and size of the bulbs) so that the birds get little artificial heat for the next to the last two weeks and none whatever during the last two weeks. Important considerations in selecting the poults' new quarters are adequate ventilation facilities and a good supply of sunlight, at times directly on the birds, if possible. Be careful about direct drafts on the birds for the first 3 weeks in new quarters. It would be much to your advantage if you could provide the turkeys with direct access to the air and sun in a small, fine gravel-covered yard or wire-covered cage connected with their new quarters. To accustom the poults to outside temperatures and breezes, be sure to leave all ventilation facilities wide open for the last ten days and nights.

Litter should be thoroughly stirred every other day and completely changed weekly. This is necessary both to combat germs and to keep their walking surface dry, a point of great importance. It is also important to keep the waterers on three-inch high wire platforms to prevent contamination.

Mash should now be fed in a regular chick hopper, water in a one or two quart glass or metal chick waterer. Finely chopped tender green-stuff (lettuce, spinach, orange, cabbage, grass, clover, etc.) can now be fed the poults to great advantage. Scatter moderate amounts each day on top of their mash. Otherwise, feed, grit and water conditions remain as before. (8th week—start to mix growing mash with starter. Gradually increase to all growing, 10th week)

From the sixth week on, a careful watch must be kept for the most dread of all turkey illness, "blackhead." (For identification and treatment of this and other turkey diseases get the Dept. of Agriculture's Bulletin 1652 *Diseases and Parasites of Poultry*.) Sanitation and segregation of infected birds is your best weapon in fighting both blackhead and coccidiosis. Lederle's Phenothiazine has arrested many epidemics of blackheads, but cannot be guaranteed as a positive cure. If any signs of lice are detected a very light sprinkling of drops of "Black Leaf 40" wherever the birds bed down, be

it litter or roost, will rid them of the torments and dangers of lice.

From Tenth Week To Maturity

By the tenth week, under normal conditions, your poults should move to their permanent outside quarters. However, if poor feed or other circumstances prevent normal development or if the weather is unfavorable, it would be best to delay the transfer for a short time. These permanent quarters should consist of a solidly built wire-floored four foot high cage, with its base thirty inches off the ground and supported by pine or fir 4 x 4's whose bases have been dipped in creosote.



Ty Long feeding his turkeys. He says feeding time takes only a few minutes when hoppers are conveniently placed outside cage and adequate to hold a week's supply of feed. Good size for hoppers—8" deep, 8" wide, covered by 12" slanting roof.

If possible, open face of roost enclosure should face south. Sides and top of the cage may be constructed with lath or 2" poultry netting. Great caution should be exercised in eliminating all possible surfaces on the floor where droppings can collect. Bevel 2" x 3" (on the top) so that they will just hold staples 18" apart for the 1" by 2" flooring. A door should be placed on any side of the cage not taken up by the feed hoppers. Eliminate all sharp points or surfaces where the turkeys might injure themselves.

By this time a complete change from starting to growing mash should take place. Continue feeding chopped greens whenever possible. The grit, still lightly sprinkled on top of the mash twice weekly, should now be changed to broiler size. Starting with the 12th week broiler scratch, consisting preferably, of cracked corn, oats and wheat, should be fed in approximately one-quarter of the hopper space, boxed off from the rest. By the 20th week this should have been gradually increased to half the hopper space. Also near the 20th week the grit should be changed to full-sized and the scratch, consisting of the same ingredients, to full-size. Gradually increase the percentage of grain to mash until by the 20th week the birds are eating 50% of each. At this time it would make for a better finished turkey if you can make the scratch mixture 70% to 80% corn. It is possible, the last few weeks, to increase the consumption of feed by feeding a moist mash, made by mixing hot water on top of the dry mash in hoppers. However, care should be taken that none of the dry feed becomes sour. Remember the principle of finishing turkeys is to stuff them with as much feed of high caloric value as is possible.

An ailment known as perosis or "slipped tendon" is more prevalent in turkeys from the tenth week on, but it sometimes occurs earlier. Usually hereditary or nutritional in origin, perosis is sometimes introduced through infection. The trouble is easily recognized by the severe lameness and crookedness of one or both of the victim's legs. For treatment see the Farmer's Bulletin of poultry disease, No. 1652.

(Continued on next page)

Turkeys (Continued)

Your turkeys are ready to kill when they have a fine layer of fat covering the entire body (shown by a white or yellowish appearance of the skin, rather than the purple tint of the muscle tissue) and when at least 95% of the pinfeathers have disappeared. This usually takes from 24 to 28 weeks, but any number of circumstances can delay the finishing. If you want your turkeys to be the best you ever tasted, you'll just have to be patient. A well finished Broad Breasted Bronze tom should weigh a minimum of 18 pounds and often as high as 26 and 28. The hen (whose flesh is not of a quality superior to the tom's) should weigh from 12 to 16 or 17 pounds. A smaller breed will weigh proportionately less.

During starving time, 18 hours before killing, provide plenty of fresh water.

Killing and Picking

For a turkey slaughterer or amateur standing, decapitation with a sharp axe or machete is quickest, easiest. Immediately after the head has been severed, the bird should be elevated so blood is allowed to drip for about ten minutes. The plucking should take place immediately after the blood has stopped dripping. Again, the simplest method of plucking for amateurs is the semi-scald dip. Using a large vessel similar to a wash tub and a cooking thermometer to assure a temperature about 175°, the entire body of the turkey should be immersed for about 40-50 seconds. The feathers should come out with great ease; if not, dip again. It may be necessary to use gloves or pliers on certain of the wing and tail feathers. After the bird has been completely plucked, it should be hung by feet in a room with a temperature from 30° to 40°, and preferably, a relatively high humidity. If there is any food in the crop, the entire crop should be removed through a neat 3" incision in the front of the neck. Sew this up to prevent drying out and squeeze the vent to remove any droppings that may be there.

The turkey may be cleaned and roasted at any time after two days of chilling have passed; if the temperature and humidity are correct he may be kept up to 10 days. We recommend that you take your first bird to be cleaned to the butcher in order that you may learn the tricks of the trade directly from him.

Points To Remember

In conclusion, here is a digest of the cardinal principles of scientific turkey raising. 1) Sanitation and dryness are your most efficient weapons against disease. 2) Never overcrowd your birds at any stage of their development. Always provide more space rather than less. 3) Never allow your turkeys to come in contact with chickens or any other poultry. Keep them as far from other fowl as possible. If the turkeys are to live in any shelter formerly used by other poultry always thoroughly disinfect those quarters. If there has been any disease there, always fumigate with formaldehyde and potassium permanganate. 4) Always allow adequate space at the feeders and waterers. This means that every bird should be able to eat at the same time and four birds should be able to drink at the same time. 5) Remember that turkeys are but recently descended from their parental wild stock—avoid all unnecessary loud noises, sudden movements and other disquieting influences, since they are much more timid and easily frightened than other poultry. 6) Always slip on rubbers or different shoes when going into the turkey shelter, so as to reduce the possibilities of infection from your chickens. Do not allow any visitors into area where turkeys walk.

Ducks are Easy to Raise

P EOPLE are always giving us something. We got our trio of Muscovy ducks one day when a lady who lives near our Country Bookstore in Noroton, Connecticut, moved. They were breeders and she didn't want to have them killed. Knowing that we had a small farm, she thought we might like them.

There is a good deal to be said for making ducks your second poultry project, particularly if you have any kind of small stream or pond on your place, although neither is necessary. One of the unusual things about ducks is that they are well adapted to either a small place or to large-scale commercial production.

Don't start a duck project unless your family is fond of duck. If you're anywhere near as successful as we've been, you'll have a lot of duck. The trio that was given to us has produced over 25 ducklings in the first six months. Incidentally, Muscovy ducks are better eating, we think, than the ordinary Pekin variety that you get in the market.

Anyway, ducks do furnish delicious variety for the table. Many people like duck eggs, too, especially for cooking. Ducks require relatively little care and are practically free of disease problems. They are efficient and economical meat producers, gaining weight rapidly even when allowed to forage for much of their food.

You have three choices as to how to plan your duck raising program. You can keep a small flock of breeders the year around. You can buy day-old ducklings and brood them like baby chicks, but with less heat and care. Or you can buy duck eggs and hatch them out under hens.

Keeping A Small Flock Of Breeders

If you just plain like ducks and like having them around; if you would like having some duck eggs for eating or

cooking in addition to having duck meat; if you have some grass forage land; if you have a stream or pond—then keep a small flock of breeders.

You don't have to qualify on all these points to keep a flock of breeders, but if you do, then your flock will practically keep themselves, providing you with plenty of tasty meals from spring until late fall.

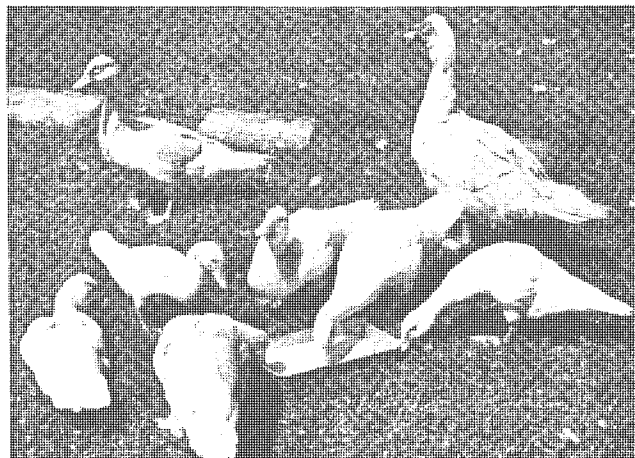
If you don't have forage, ducks can be fenced in, but will require more feed. If you don't have the stream or pond, you can provide a sunken trough, half-barrel or pan. You can raise ducks successfully without any water, but they like water to wash themselves in and it is said to be best if the eggs are moistened regularly during the setting. This moistening occurs naturally whenever the ducks return to the nest with wet feathers from bathing.

For housing almost any kind of shelter will do. A small coop with a door like that on page 39 would be ideal, because if you want to gather eggs it is a good idea to keep ducks shut in until 9 or 10 a. m. Supply litter on floor for warmth and dryness.

Your ducks will build their own nests in the shelter or around the place and will each hatch twelve to fifteen or even more ducklings at a sitting, and they will probably do it at least twice a year. They may produce eggs the year around, heavily from early spring through July. The number of ducklings you let them hatch will be determined by how many eggs they lay and how many you take to eat.

One drake for up to five or six ducks is a workable arrangement, but you will probably want to start with a "trio" of one drake and two ducks. A small flock will give you all the ducks that you want.

Ducks of most breeds are ready to eat from the age of about 10 weeks on. The commercial raisers force their flocks to a peak of growth and fatness at about nine weeks and then market the whole flock at one time. After that



Here are our quackless Muscovy ducks. We chose this breed because they aren't noisy; they have a better flavor, we think; they're very hardy and free from disease. Our trio of drake and two ducks produced 18 young ducks on their first hatchings. These ducklings are about 6 weeks old.



age the ducks will go into a moult and gain weight very slowly no matter how much they are fed. This is no great disadvantage in the small home-size flock which is foraging for much of its food anyway, and the usual practice is simply to start eating the ducks when they are big enough, and to go on eating them as needed until they are all gone, saving only the breeders chosen to be carried over to the next year.

Your original trio of breeders may be kept for two or three years or even longer, but more probably you will select from your whole flock a new drake and new ducks for breeders every year or two. You will probably want to buy or "swap" in new blood occasionally. There are many breeds of ducks, but the three breeds most suitable for the home flock are probably the Pekin, the Muscovy and the Indian Runner. The Muscovy is the largest, the Pekin next. The Runner lays the most eggs. Neither the Pekin nor the Runner is a good "sitter," and you would probably have to hatch their eggs under hens.

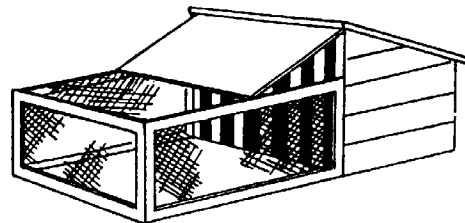
The Muscovy is a good big duck, the mature drake weighing 10 pounds and the duck 7 pounds, and they are a very hardy, self-reliant breed. The Indian Runners weigh only 4 to 4½ pounds at maturity. One important advantage of the Muscovy is that it is quackless and won't bother your neighbors. Muscovies are fliers, though, and if your fencing isn't pretty high, you may have to clip the outermost feathers from one wing.

A trio of one or two year old Muscovy ducks, of good healthy stock, will cost you about \$10.00, and you can obtain them by mail from breeders who advertise or perhaps you know some

one who raises them near you. Day-old Muscovies will probably cost from 40¢ to 60¢ apiece.

If you can't get the duck pellets, the simplest thing to do is to feed the same mash and grains you feed your chickens. A wet mash is sometimes fed, but this is an extra "wrinkle." When growing ducks are not able to forage, keep feed before them most of the time as you would for chickens.

If your ducks have a stream, pond or fairly large, clean bathing trough, you don't need to provide other drinking facilities. If they don't, you should



Coop and wire run suitable for hatching and brooding of ducklings with a hen. The bars keep hen confined, but let ducklings get sunlight and fresh air safe from dogs, cats, rats, etc. Top lifts up to allow cleaning, feeding, watering.

provide a reasonably deep (4 inches anyway and at least 12 to 15 inches across) supply of water. This is because of the peculiar nasal construction of ducks. They need to be able to get most of their bill in water when drinking.

Buying Day-Old Ducklings

You can get day-old ducklings through your feed dealer, from a neighbor who raises ducks, or by mail from people who advertise in farm journals.

The season when they are easiest to get runs from April through July.

By starting a dozen ducklings two or three times during the season, the first batch early in April, you can have a steady supply of eating ducks coming along from mid-June until late fall. And again, of course, if you have a quick freezer, you can have roast duck any day of the year you choose.

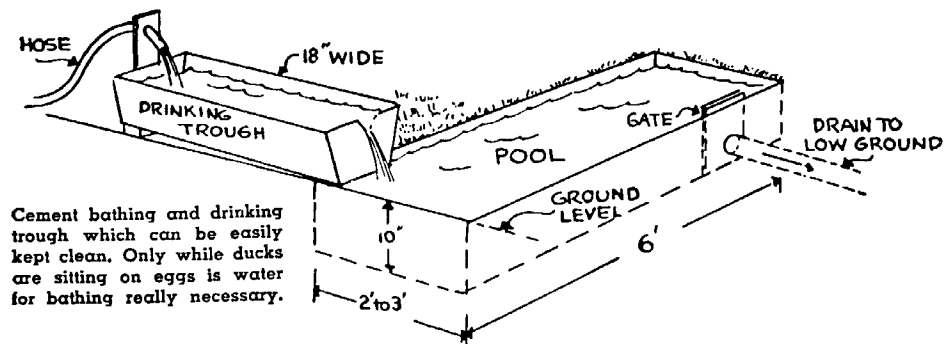
You can brood your ducklings in the same way you brood chicks, except that they require artificial heat for only three weeks—a shorter time than chicks do.

Setting Duck Eggs Under A Broody Hen

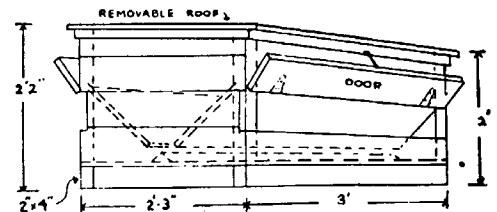
There are points to watch carefully in this method. One is that you obtain the broody hen at just the right time. She should be in the first week of her broodiness because duck eggs take about 4 weeks (a week longer than chicken eggs) to hatch, and she may tire of the job unless you get her when she has just gone broody. (Muscovies take 5 weeks to hatch.)

You should also care for the hen faithfully during the period of incubation. Take hen off nest daily, feed and water her. Usually she will stay off only five minutes to eat and drink, then get back on eggs herself. If she doesn't, put her back before eggs cool. Dust her well with insect powder at the beginning. You must also be sure the eggs are moistened (sprinkled with water) the last few days of the period.

A hen can usually hatch only seven to nine duck eggs, because they are so much bigger than chicken eggs. A rat-proof coop with wire run, as illustrated, is advisable for the hatching period of about 4 weeks and also for the brooding period of about 3 weeks.



Cement bathing and drinking trough which can be easily kept clean. Only while ducks are sitting on eggs is water for bathing really necessary.



Ducks are messy feeders and will waste less if pellets instead of mash are used. Here is cross section of pellet hopper used by commercial duck raisers. It can be made any size to hold from one to several hundred pounds of pellets, thus saving much labor. "Flaps" can be closed to cut down time pellets are available to the ducks, thus forcing them to forage.

Squabs . . .

AS we've said we chose geese as our secondary poultry project, and we don't go in seriously for squabs. We thought we should include squab raising in the Plan, however, for those people who would want to raise them, particularly folks who live in the more crowded areas where there are city zoning regulations against chickens and other poultry. There are very few cities or towns that have strict ordinances against keeping pigeons.

In preparing this section about squabs we've visited a number of squab raisers and we've done a good deal of studying and reading. What we tell here is what we'd want to know before we started a new project.

Squab is one of those dishes that are usually thought of as being expensive, delicious and reserved for epicures. You can't even buy squab at most meat markets. Many people haven't so much as tasted this mouth-watering treat.

And yet, if you decide to have another poultry project in addition to chickens, you'll find squabs to be both interesting and delicious. Also, pigeons are among the easiest kinds of poultry to raise, among the surest of success.

They are not really cheap, though, even when you raise your own. They will cost you about half as much to raise as to buy, which means they will cost you about 35¢ to 50¢ apiece, depending on the price of feed at the time and other factors. Still, when you consider that one squab is about all one person can eat at a sitting, and that they are such a treat, the cost isn't so high at that.

Another point to remember is that it is just about as easy to raise twice the number of squab you will want for your own family, as it is to raise barely

enough. You can then easily sell the surplus to cover *all* your costs (first class hotels and restaurants are always in the market for squabs), or you can swap the surplus with neighbors for things they raise and you don't or you can make presents of squabs to friends.

What Size Flock?

First, taking into account the size of your family, decide how many squabs you will probably want in the course of a year. (Squab, incidentally, is defined by the U. S. Dept. of Agriculture as "a young pigeon which is marketed just before it is ready to leave the nest, usually at from 25 to 28 days of age, when it weighs from 12 to 24 ounces.")

One good pair of breeder pigeons should raise 12 to 14 squabs in the course of one year. They may do this at a more or less even production rate throughout the year, but more probably production will be greater in spring and summer than in fall or winter. If you have a quick freezer you can, of course, "even out" production by freezing when there is a surplus.

If you don't have a freezer, then you will probably want to plan to have enough breeders to produce all the squabs you'll need even during the poorer months.

Figuring in this way it will be found that a "loft" of 12 pairs of breeders will probably produce an abundance of squabs for your family.

Housing

Pictured on this page is the type of housing we would suggest. For 12 pairs of breeders the dimensions of the house should be about 6 feet wide and 8 feet deep (48 square feet to allow the 4 square feet of floor space per pair that is needed). It is important that the house should be as rat proof as possible, and, as in the case of chicken housing,

that it be dry, well ventilated and facing south for maximum sunlight. Open or semi-closed front may be used, but, as you would expect, the warmer the house in winter the better. A maximum temperature of 40 degrees F. in winter will tend to increase squab production, but you can get along fine without artificial heat.

There should be a double nest for each pair of breeders. Orange crates, with three inch board nailed across front at bottom and a six inch hinged landing board, piled one on top of another will serve for this purpose. Twelve such crates would be needed for a 12 pair house. If you build your own nests, each one should be about 12 inches square and 15 inches high.

Long leaf pine needles, straw, hay and tobacco stems are all used for nesting material. If nest bowls (which can be purchased from supply houses) are used, nesting material is not so necessary but some material is generally provided. The nesting material may be kept in a crate or rack in one corner of the pen to prevent waste. The pigeons will carry the material to build their own nests.

On the south side of the house there should be a wire-covered yard or "fly" as it is called. It can be approximately the same size and shape as the house. One-inch-mesh wire is good to use as it keeps out sparrows and rats. This wire should extend 12 inches into the ground, making a right angle bend at the bottom and extending 12" to 18" away from the pen to keep rats out.

Three to four inches of sand or gravel makes an ideal floor as this drains freely and is cleaned easily. A cement yard sloped to drain well and with one inch of sand is even better. "Running boards" about 8 inches wide should be placed on sides of pen, as illustrated.

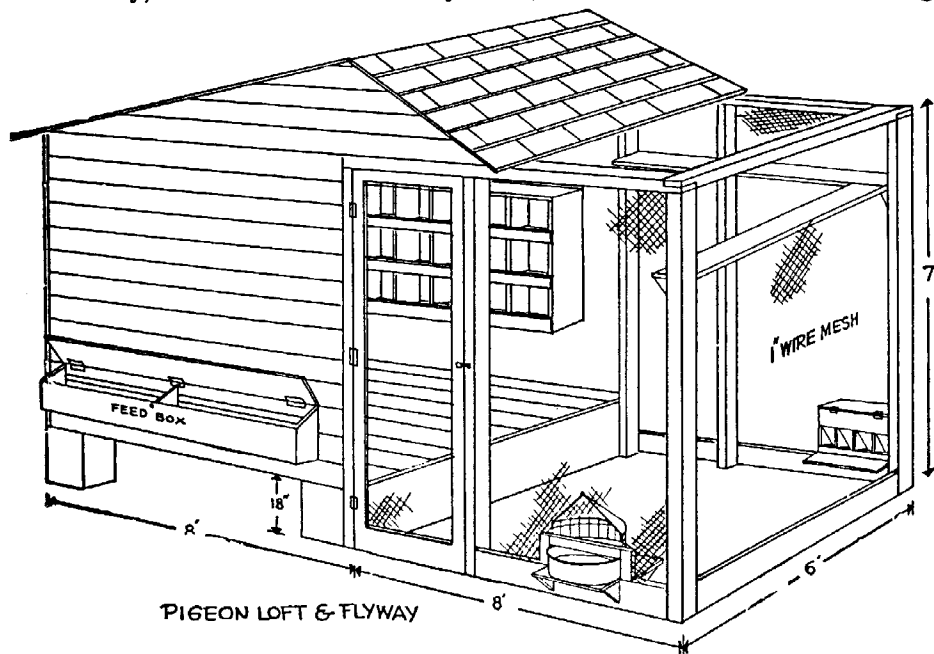
Water, Feed and Health

Bathing in addition to drinking water must be provided for pigeons. An ordinary dishpan will serve for bathing and should be filled with water and left in the yard (except on cold winter days) for not over one hour or two a day. Then empty the pan and turn over so that pigeons cannot soil it.

For drinking water, use a regular chicken fountain. The water should be changed daily and the fountain kept clean. Obviously, running water handy to pen is a desirable convenience.

The young squabs are fed by the parents. The pigeons themselves should be fed a ration of whole grains—no mash or green feed. Minerals are fed in a separate mixture. Ordinary chicken feed will not do.

The simplest procedure is to buy a prepared pigeon ration from your grain dealer—and be willing to pay considerably more per pound for it than for chicken feed. It usually pays to buy the better grades offered, because they contain more of the ingredients the pigeons



House is shown with open front. Wood or cardboard partition can be used to close two thirds of opening for winter months. Note that feed trough, water fountain and grit hopper can all be "serviced" without entering pen.

like and which are particularly good for them, such as peas.

A good pigeon feed will contain from 13 to 15 percent protein, 60 to 70 percent carbohydrates, 2 to 5 percent fat, and not over 5 percent fiber. You will find an analysis of the feed you buy tagged to the bag. One pair of breeders will probably eat about 90 to 100 pounds of grain per year.

Use a self-feeder hopper of type illustrated—one that holds feed waste to a minimum. Since pigeons will pick out certain favorite grains it is advisable to put only about one day's supply of grain in the hopper at one time.

At your feed dealer's you can also obtain a prepared pigeon grit, mineral mixture. This should be fed in an open pan or hopper, slightly moist, and kept before the pigeons at all times.

Pigeons are subject to many of the diseases which affect other poultry. However, in a small flock founded on healthy stock and with reasonably careful management, you should have little trouble. The floor of the house should have one inch of sand or gravel, droppings should be raked from house and yard once a week.

Nests and nest bowls should be cleaned whenever squabs are "harvested"—and nests containing eggs or squabs should not be disturbed. Twice a year house and pen should be thoroughly cleaned and disinfected.

Getting Started

You can purchase foundation stock from a pigeon breeder in your community, or order by mail from anywhere in the country. The magazine *American Pigeon Journal* (15¢ a copy, \$1.50 a year, address: Warrenton, Mo.) carries ads of breeders, or consult your county agent or grain dealer.

There are many breeds of pigeons, but the following are the best suited to squab production: *King*, *Carneaux*, *Swiss Mondaine*, *Homer*, *Runt* (the largest of all breeds). You can't go wrong by choosing *King* or *Carneaux*, because they are both among the most popular breeds and you will probably find it easier to connect with a good breeder, possibly one near you.

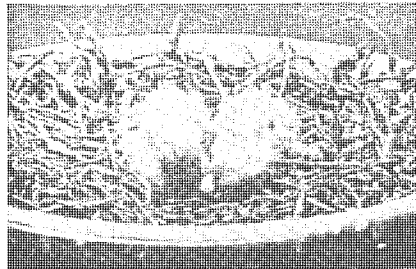
It is as important to get good pigeon stock as it is to get good stock for all your other poultry and animal projects. Get your pigeons from a careful breeder who keeps accurate records of the production and weight of his squabs and who guarantees both age and sex.

You will want mated pairs, at least 6 to 8 months old, and yet not too old—not more than two years old. As a rule, it rarely pays to keep breeders more than 5 years. (You can eat your old pigeons, but they aren't as good as the squabs. An old pigeon is worth about 25¢ and can be eaten in pigeon pie.)

After you get your flock established you can raise your own breeders. During April, May and June you will perhaps have more squabs than you need

for the table. You can raise some of these and when they are 6 to 8 months old they can be mated. One advantage in raising your own breeders is that they produce better at home where hatched.

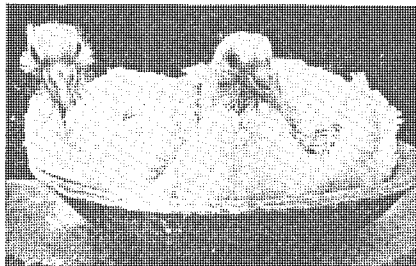
But to begin with, you can expect to pay about \$3.00 to \$5.00 per pair of good breeders. Your best plan for getting good stock at a fair price is



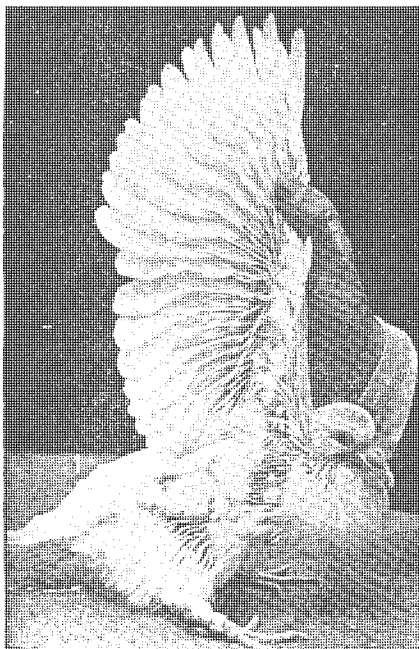
Squabs 24 hours old.



2 weeks old.



3 weeks old.



3½ weeks old—will be ready to eat when fully feathered underwing in another week. (Courtesy U. S. Dept. Agr.)

to deal with the most reliable breeder you can find. The wise procedure is probably to start with two or three or four pairs of breeders, and then to increase your flock as you go along.

Pigeons usually remain with the same mate for life. Together they rear and feed the squabs. The hen pigeon will lay one egg, skip a day, and lay again. If more than two eggs are laid, remove the extra ones, because a pair of breeders can tend no more than two squabs properly at one time. The incubation period of the eggs is 17 days. Both parents build the nest and take turns sitting on the eggs.

The hen often lays another setting of eggs when the squabs are two or three weeks old and leaves the feeding of the first pair of squabs largely to the male. This is the principal reason why double nests are provided for each pair of breeders.

The parent birds feed the squabs on a thick, creamy mixture called pigeon milk, produced in their crops. Care should always be taken not to frighten pigeons, especially while feeding their young, and squabs should not ever be disturbed more than is necessary.

In case a squab dies during the first week or ten days, another single squab may be placed in the nest, provided the two are about the same size. This gives the pigeons without squabs the opportunity to begin producing again sooner than they would otherwise.

If the parent birds become sick or die, the young birds may be fed by hand if they are at least a week old. They should be fed at least 2 and preferably 3 times a day on grain that has been soaked for about 8 hours. Drop into the squab's mouth—feed enough to fill but not stuff crop.

Harvesting

Squabs grow rapidly and are ready to eat about 26 days old or when fully feathered under the wings. Don't delay in eating them when ready because they will soon lose their baby fat and the flesh will begin to get hard.

To kill, hang squabs by the feet on a hook or nail and cut jugular vein in neck. (The professional way is to cut the vein, with a long, slender-bladed knife, inside the mouth just below base of skull). Lock the wings to keep from flapping, twist one behind the other.

Dry - pick the squabs immediately after killing because the feathers are very hard to pull out if the birds get cold. Pick the squabs on a bench or in your lap—do not hang on a wire. Pick clean and remove pin feathers. Skin is very tender, tears and bruises easily.

As soon as picked, cool for an hour or so in ice water, but not more than three hours. Clean as you would a young chicken. Cooking the squabs may sound like a problem but it isn't. All cook books give recipes.

Rabbit—8 to 14 Cents a Pound

ONE of the first projects I wanted when we moved to our place in the country was rabbits. I had read many times that they produced excellent tasting meat at little cost. Carolyn, however, was sort of skeptical of the project because she thought that she she might not be able to eat the rabbits—they looked so cute.

One pay-day when I happened to read an advertisement offering a six compartment, all-metal wire hutch for sale for less than \$20 I couldn't resist this good buy. The hutch eventually came, but Carolyn was still skeptical and, anyway, we were up to our necks getting our barn finished up, learning to milk, running our broiler battery, our bees, goats, and setting the geese. It wasn't hard to put off getting the rabbits for a while.

Then, a friend of mine, Wally Boren noticed I hadn't done anything with my rabbit hutch and he asked if he couldn't use it until I got ready. That was all right with me. He borrowed the hutch, set it up in his garage and began reading up on the subject of rabbits.

Choosing a Breed

Wally picked a variety called the Chinchilla. You can take your pick of several good meat breeds. Wally favored the medium sized breeds—weighing around 8 to 10 pounds grown. You could go in for the Flemish Giants, for instance, that sometimes weigh 20 pounds. They eat a lot more, of course, and their fryers, at 7 to 9 weeks, weigh not too much more than do those of

the medium breeds at the same age. The New Zealand Whites are another popular medium weight breed—their white fur is worth more than the Chinchilla...and there are a number of other good medium weight breeds.

Of course, there are Angoras (with their beautiful, white, long fur) and other "fancy" breeds. But these are not meat rabbits. In ordinary times many of the small rabbit raisers don't bother to save the skins, but they do have some value. Right now, for example, buyers are offering from 30 cents a pound to 90 cents apiece. You can obtain names of buyers from one of the rabbit magazines.

Wally started with a "trio"—a young buck nine months old and two does of the same age. He bred the does shortly after he got them. The following month he had 17 bunnies. Seven is a big enough litter, according to the experts, for one doe to raise. So Wally destroyed four from one litter of 12 and gave the other doe an extra to bring her litter of 6 up to 7. Wally rubbed a little Mentholatum on her nose so she couldn't smell the difference between her own and the young one from the other litter.

At seven weeks all 14 of the young rabbits were alive and frisky. At this age they weighed 44 pounds. The two does were bred again.

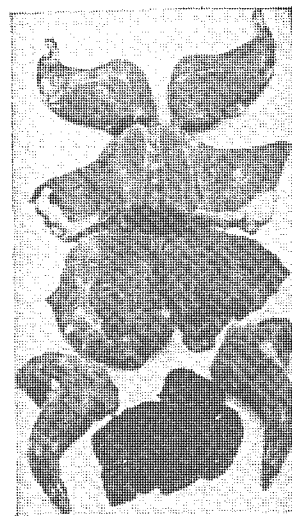
8c to 14c A Pound

Wally kept some careful records. Here's what he learned from them. A Chinchilla weighing 3 pounds, live weight will cost you from 25c to 35c or a little more to raise. You'd pay a dollar, at least, in the market for him.

Wally figured out how much time it took him to raise one 3 pound fryer. It took *one hour flat*. That is, he explained, "I spent 14 hours actual chore time—as a dub beginner—raising 14 meat-meals for the family. I could cut that in half, but I like puttering around them."

Wally had such good luck with the rabbits that, of course, I wanted to see what I could do. Wally, who is a most generous-minded fellow, kept us supplied with rabbit—he kept saying that after all he had to pay "rent" in some form or other for the hutch. Carolyn and I both liked rabbit very much; it tastes something like chicken but has a "firmness" that chicken doesn't have. I guess it was a year before I got my hutch back and got to keeping rabbits myself.

Incidentally, after we did get the rabbits we didn't mind the idea of raising them to eat—I guess after eating some rabbits raised by somebody else it's easier to go into rabbit raising strictly from the standpoint of raising



U. S. Rabbit Exp. Sta.

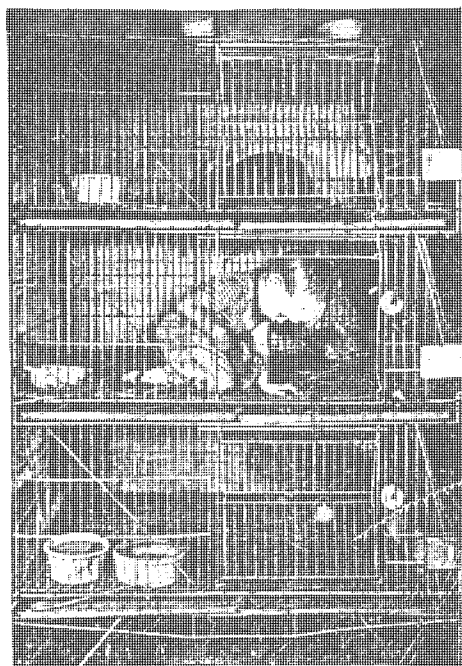
Here is how to cut up a rabbit. He makes six generous pieces, plus the liver — as good as chicken liver.

them for meat and not let yourself make pets of them. Of course, when you can put rabbits or chicken or anything else in a freezer and leave them there for a few weeks or months you'll find that you think of them as "meat"—not "cute animals."

What To Feed Rabbits

You'll see in the diagram on Page 43 a hayrack indicated for each hutch. This you keep full of hay—the rabbit experts, because the industry is located in California where Alfalfa is easily obtainable, recommend Alfalfa. But a good, leafy clover hay is all right. Timothy isn't as high in protein as clover, but if it's properly cured it's better than a poorly cured clover or Alfalfa. The rabbits can manage the hay better if it is cut up in 3 or 4 inch lengths. (Take a handful, squeeze it into a bundle and saw it off into a box with an ordinary hand saw.) You can also feed vetch, cow peas, and other rich hays. You can give your rabbits dried scraps of bread and crusts; also any kind of vegetable parings and tops they'll eat. You can feed them lawn trimmings and weeds. But don't leave what they fail to eat in the pen. Take it out next day and pretty soon you'll find what they like best and how much to feed. Rabbits relish carrots and other root vegetables. Feed green feeds sparingly at first if your rabbits aren't used to them. Sometimes they over-eat and bloat or get diarrhea.

You also feed them one of the prepared rabbit pellet foods or whole grain—they don't seem to like any grain that's ground up too fine. You can ask the man you buy your rabbits from for directions as to what he's found the best methods of feeding.



When Jackie, three years old in this picture disappears we look in the rabbit hutch. Country raised, he's independent and fearless.

How Fast Do Rabbits Multiply?

Everybody has a story about how fast rabbits multiply. I remember a friend of mine who had a small family and worried about this when getting his rabbits. In fact, he decided that he'd start with the minimum a single doe and a single buck. He was a salesman and everytime I'd see him I'd ask, "Well, how many rabbits have you now." The first month it was just two. The second month it was two. The third month it was still two. About this time my friend began to worry about his rabbits *not* multiplying. And when, at the end of the fourth month, he still had only two, I began to get a little suspicious. Sure enough, he didn't have a doe and a buck—he had two bucks!

Determining the sex of a rabbit is easy. Get the man you buy your rabbits from to show you.

I find that two does and a buck produce 40 or 50 rabbits a year to eat. At three pounds or more that is all our family needs.

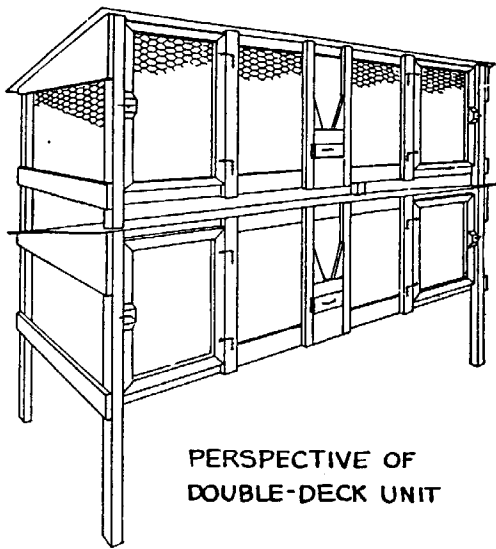
You breed about every 90 days. Gestation only takes 30 to 32 days. The young nurse for five or six weeks, learning to eat as they go along. At six or seven weeks you put the young fryers in another hutch or two and eat them between then and ten or twelve weeks. Or you process the whole tender crop at 8 or 9 weeks and quick-freeze all except the one you want for dinner then.

You can eat them as fryers until they're seven or eight months old—full grown. But by that time they've eaten a great deal of fairly high priced food and therefore aren't so much of a bargain, cost-wise. Better separate the young bucks from the does at 3 months.

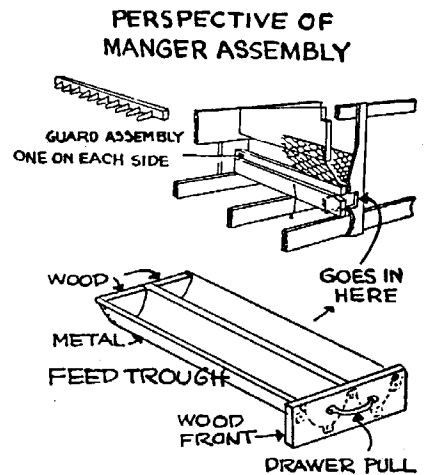
You can kill off old rabbits at the end of a couple or even three years and make a stew out of them. The skin from a mature rabbit is worth considerably more than from "fryers."

You can "inbreed" with no harm. Just keep a young doe or two out of a litter and breed her to your same buck when she's about 7 to 9 months' old. You can stagger your breeding times, having one fresh litter coming in every 6 weeks from one doe or the other. But if you adopt this system, you can't exchange the young between the does. Every 3 or 4 years buy or trade for a new buck.

And while we're on the subject of buying, try to get good, healthy and strong animals. You don't care about a "show" rabbit but do get good blood. They may even cost you from \$10 to \$25 a trio; you aren't likely to save money by starting out with \$3 worth of scrubs. However, don't worry about pedigree or perfect markings or blue ribbon winners.



PERSPECTIVE OF
DOUBLE-DECK UNIT



Here is a good wood-and-wire type of hutch.

Building the Hutch

Rabbits are very hardy animals, easy to raise and extremely clean. They can stand a lot of *cold* weather. They can't stand very much of a *wetting* and *hot* weather gets 'em down. They wear fur coats in *summer* remember. They have to have clean feed trays and clean water. They need a cool, shady summer place with lots of ventilation, *some* sunshine occasionally and a good roof. We keep our metal hutch in the barn. We clean it out once a week, keep plenty of straw on the floor and in the nest box (a nail keg with a strip across it—see illustration) and, in winter we water the rabbits night and morning, taking the water out before it freezes. In summer we keep the water trays always full. They drink a lot.

Hasenpfeffer

Here is a recipe for the famous German way of preparing rabbit. Cut up your rabbit meat and put it into a jar. Cover with vinegar or wine and water, equal parts. Add one sliced onion, salt, peppers, few cloves, bay leaves.

Let this soak in a cool place for two days. Then remove and wipe the meat dry and brown it *thoroughly* in a frying pan, in hot butter, turning it often. Gradually add the sauce or juice you pickled it in, and let simmer about half an hour, until tender. Before serving stir in one cupful of thick sour cream.

There's a lot more you ought to know about raising rabbits before you go ahead. But I've tried to give you an idea of what's involved. There are one or two good books on rabbits that you'll find worth while reading. You ought to have more detailed information about hutch building, about dressing a rabbit, about keeping records, etc. "See Country Bookstore Catalog."

All in all the impression I'd like to leave is that rabbits are one of the first projects any one interested in home food production should investigate.

The space required by my rabbits is only 3 x 10 feet—and rabbits can be started any time of year.

Easterners are behind the times in discovering how delicious rabbit tastes. In California, where rabbit is king, many prefer it to chicken which it resembles.

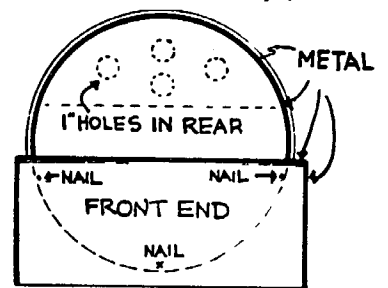
No other meat is easier, quicker, as inexpensive for the homesteader to produce as rabbit ... and it's easier to dress than chicken.

Two good does and a buck will give a family easily 180 pounds of good-tasting meat per year.

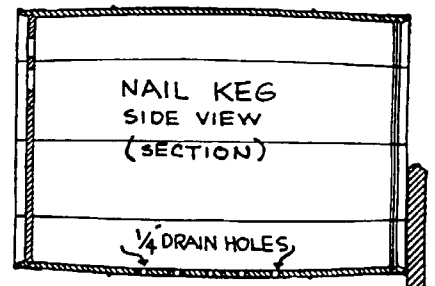
A modern, self-cleaning hutch fitted with the new automatic watering, requires less than 5 minutes attention a day.

Suggested Reading:

Rabbits For Food and Fur, \$3.00.



NEST BOX



Here's a dandy nest box, made from a nail keg. The doe pulls hair and makes a warm fur-lined nest for the young before their birth. You keep the nest box in the doe's hutch from a couple of days before the young arrive until they are ready to leave the nest.

Ham, Bacon, Pork, Lard

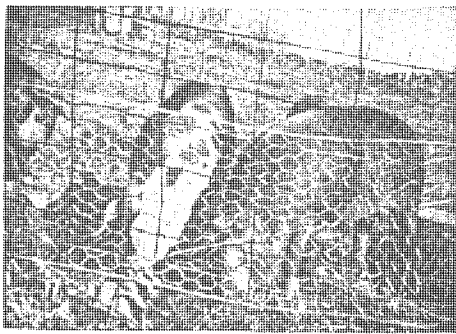
*"You can breed the pigs and buy the corn and get on;
You can raise the corn and buy the pigs and get on;
If you buy the corn and buy the pigs to feed, you haven't got a chance;
But if you breed the pigs and raise the corn you'll make money."*

—Louis Bromfield

EVEN though this pessimistic little poem's about raising pigs commercially, it has a point that the backyard farmer shouldn't forget. The really profitable way to raise your own pork is to raise and fatten your pigs chiefly with surplus garden products, table scraps, home-grown corn.

The first year we started our plan, we raised two pigs. Because we didn't have many surplus vegetables, we bought about \$35 worth of grain per pig. We paid \$12.50 for inoculated 7 week-old pigs in April, had them slaughtered in December when they weighed 285 pounds. The dressed weight (per pig) was 230 pounds. In short, our pork cost 22¢ a pound. Last year it cost around 18¢.

From this experience we learned a few important points: For a family of three or four one pig will give quite a bit of meat. Even a 200 pound pig (live



Our ¼ ton of pork! When we bought young pigs the chicken-wire netting was necessary to keep pigs in. Incidentally, have you heard the old farmer's definition of a good fence: "Hog tight at the bottom—goat high—and sturdy enough to hold a bull".

weight) will give about 55 pounds of hams and shoulder, 40 pounds of bacon and loin, plus lard, sausage, pigs feet, etc. Two pigs are sufficient for a family of 6 to 8.

With only three in our family we made a mistake keeping our pigs until they weighed 300 pounds. After pigs go over 225 pounds their ratio of weight gained to food consumed drops.

We found that if you buy a 7 to 10 weeks old pig, innoculated, properly weaned, fed and cared for, you shouldn't have any trouble raising it.

With only 3 in the family, the amount of table scraps and surplus garden vegetables we had was discouragingly small when fed to two pigs. Incidentally, a pig will do well even if it doesn't get much grain. To keep feed bills down, you should plant a patch of corn or supply extra food scraps or garden or orchard produce. In fact, good pasture, fenced into three lots for rotating will supply 10 to 15 percent of the total food for a couple of pigs.

A single pig, unlike a single goat, doesn't get lonely.

From weaning time (6 to 8 weeks) a pig should put on about a pound a day. If fed grain entirely it will eat nearly ½ ton from April to December. But with pasture and surplus produce—vegetables, corn stalks, fruit, skim milk, acorns, and table scraps, even 200 pounds of grain will produce a good sized pig.

The backyard farmer shouldn't try to keep a sow, breed her, and produce young pigs. This requires a lot of time, trouble, experience and feed.

A young pig (or two) should be bought in the Spring—a March or April born pig is best. Such an animal costs at 6 to 8 weeks of age \$5 to \$12. Buy either a young sow pig or a barrow (castrated male). Be sure the pig is inoculated against cholera. This usually costs 50 cents. The young pig should also be wormed before you buy it.

It has often been pointed out that the day you buy your pig is the day you'll make or lose the most money. In short, buy from a good breeder or farmer with clean, disease-free stock. Be careful you don't get a runt. Choose a young pig that's long—a chunky one will make too much lard. The breed is not important—all breeds have been developed to produce meat.

Easiest Way to Feed

The simplest way to feed a pig is to provide grain, (corn-on-cob, wheat or barley), a protein supplement (alfalfa leaf left from the hay fed goats for example), and a mineral mixture or a complete hog ration in separate compartments of an automatic hog feeder. This feeder plus an automatic waterer cuts chore time to the bone. Automatic feeders, which let animals eat as much and whenever they like, work best of all with pigs. No matter how much food you put before a pig it will eat only until full—never overeat.

Feeders and waterers are sold by Sears and Montgomery Ward.

Feed garbage, surplus garden produce etc. in a trough. This you can easily make, especially if you buy iron trough

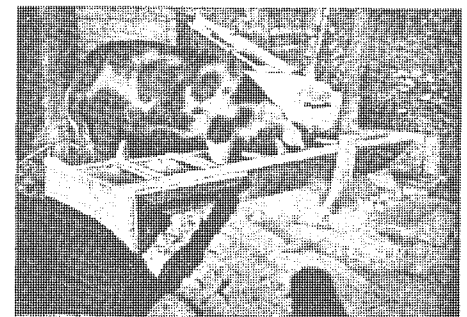


Six-week old pigs, already weaned, can be bought by mail. By feeding surplus garden vegetables, table scraps, and some grain they'll grow to 175—200 pounds in 20 weeks.

ends. Save garbage in separate can and keep free from paper, soap, glass, dishwasher, etc. Don't feed garbage older than 3 days.

Housing

Housing for a pig or two from April to December can be of the simplest. The standard portable A-type hog house is satisfactory and can be bought knock-down for around \$35. However, the backyard farmer probably hasn't enough land to require a portable house. A simple shed structure, 8 x 6 feet, 5 feet high in front, 3 in the rear, is most satisfactory. The front is open and the sun, which is the best disinfectant of all, can penetrate to the rear of the house. The roof is tar-paper, the rest of the shed is made of wood, including the floor which is set well off



Simple hog feed trough for garbage. Note braces which give each pig a chance to eat. Wide end boards keep pigs from upsetting trough.

Building A Sanitary Pig Pen

the ground to keep the pigs dry. In the fall we keep the floor bedded with straw.

New Method of Raising Pigs

Of special interest to the backyard farmer are the experiments sponsored by the Portland Cement Association, Chicago, Illinois. These experiments have to do with the confinement system of raising pigs on concrete. Like the battery-broiler system, instead of permitting animals to range, all food is brought to the pigs. Less than 15 square feet of pen is allowed per pig, obviously a system which requires so little land is of interest to the backyard farmer.

Inasmuch as pigs spend their whole life on concrete this makes possible maximum sanitation. Concrete floors are swept or flushed with a garden hose daily. A pit provides a sanitary, easy method of holding manure until it can be spread over the garden.

Confinement on cement eliminates "rooting" and racing about. This results in unbelievably fast growth. John Hendricks, who is given credit for developing this method of growing hogs, reports average growth of a hog to be:

Age	Weight
67 days	82 lbs.
132 days	195 lbs.
200 days	325 lbs.

The photos at right are our adaptation of the commercial hog raisers' confinement-on-concrete system which we have scaled down to a size suitable for 1 to 4 pigs. The confinement pen has worked out fine.

Watering is done automatically by attaching a Montgomery Ward double-drinking cup to the bottom of a barrel. This barrel can be filled once or twice weekly with a garden hose.

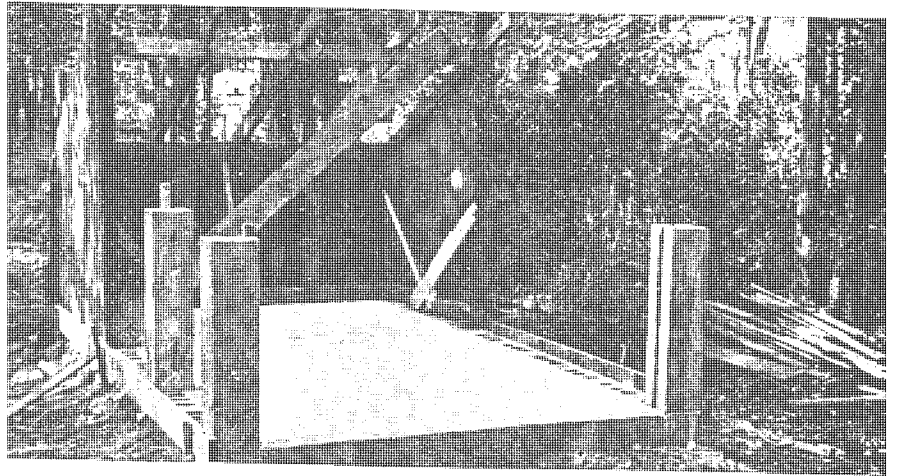
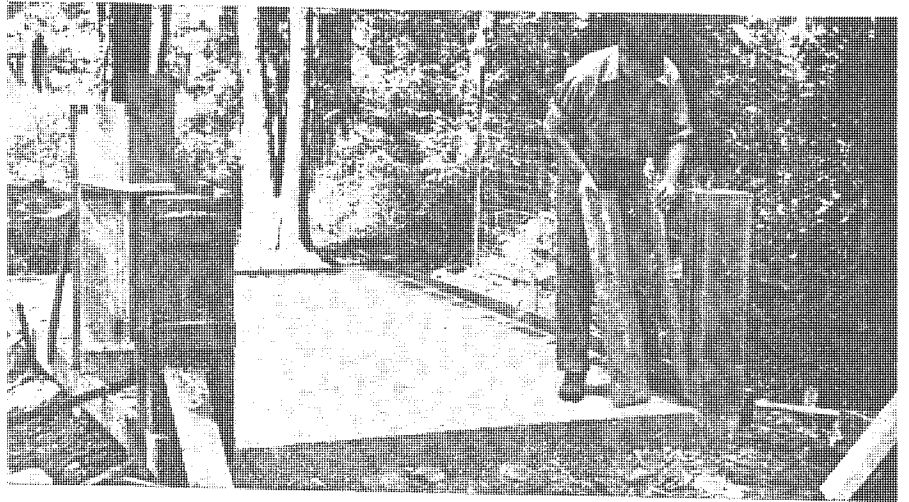
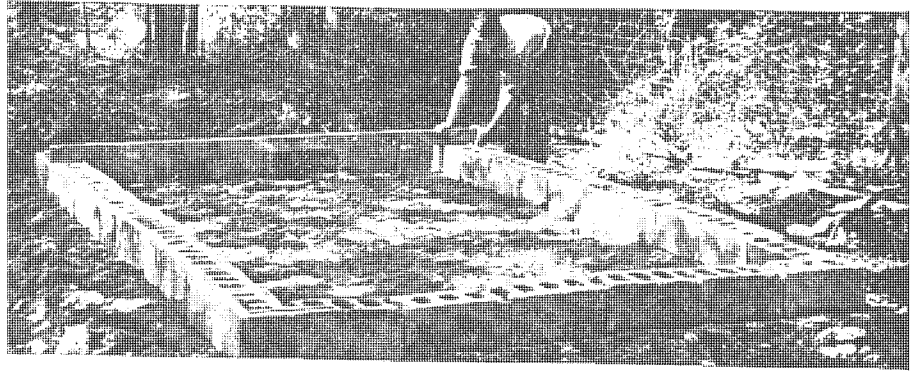
Slaughtering

There is no need for the novice to do his own slaughtering. Your feed dealer will put you in touch with a man who will dress your pigs, smoke the hams, bacon, make sausage, hog's head cheese, liverwurst.

Or you can have your pigs slaughtered and dressed and do your own curing and smoking.

And boy—wait until you taste your own bacon and ham smoked country style—and that wonderful, honest-to-goodness all pork sausage—and fresh roast pork! If yours is as good as ours turned out you'll say you've never tasted any so delicious ever before.

With a proper set-up, fattening a pig will return more for the time spent than most any other project.



The Miniature Dairy

"A small, well balanced collection of livestock can contribute forty to forty-five per cent of the average family food budget. Contrast this to the fifteen to twenty per cent that the home garden and orchard can supply. . ." HOW TO LIVE IN THE COUNTRY WITHOUT FARMING.

SURPRISING as it seems there are in this country about 5 million families keeping a family cow or goats. Yet I don't believe there is \$100 a year spent by anybody promoting the idea of keeping a cow or goats for the family's own milk supply.

Obviously, if over 5 million families in this country are producing their own milk (this figure does not include any commercial dairy with more than three cows) it must be a sound practice.

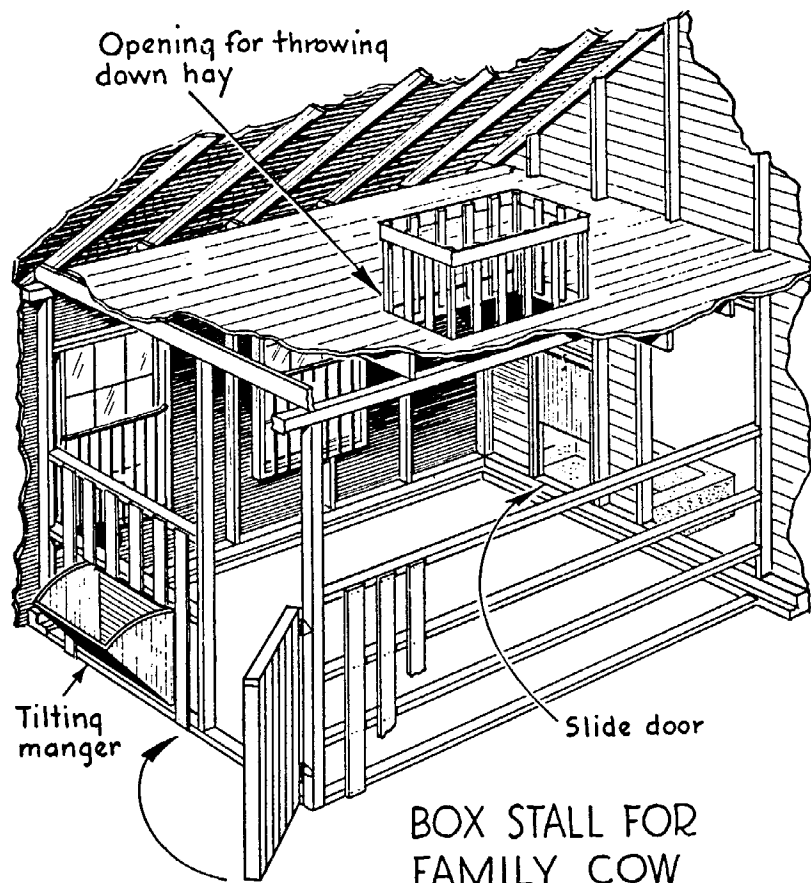
As a matter of fact producing your own milk is actually so economically sound, so basic in good times or bad, so widespread a practice across the width and breath of our country, and so simple to do that until recently there has been no book available to tell a city man moving to the country the few things he ought to know to supply his family with milk and dairy produce successfully.

There are in the United States a total of over 27 million milking cows and goats—approximately one per family. Your family, if "well-nourished", is already using the complete milk supply of at least one cow. One of the first things a family should decide when it moves to the country is whether it is going to take over the care of a cow or goats or continue to go on paying somebody else to do this.

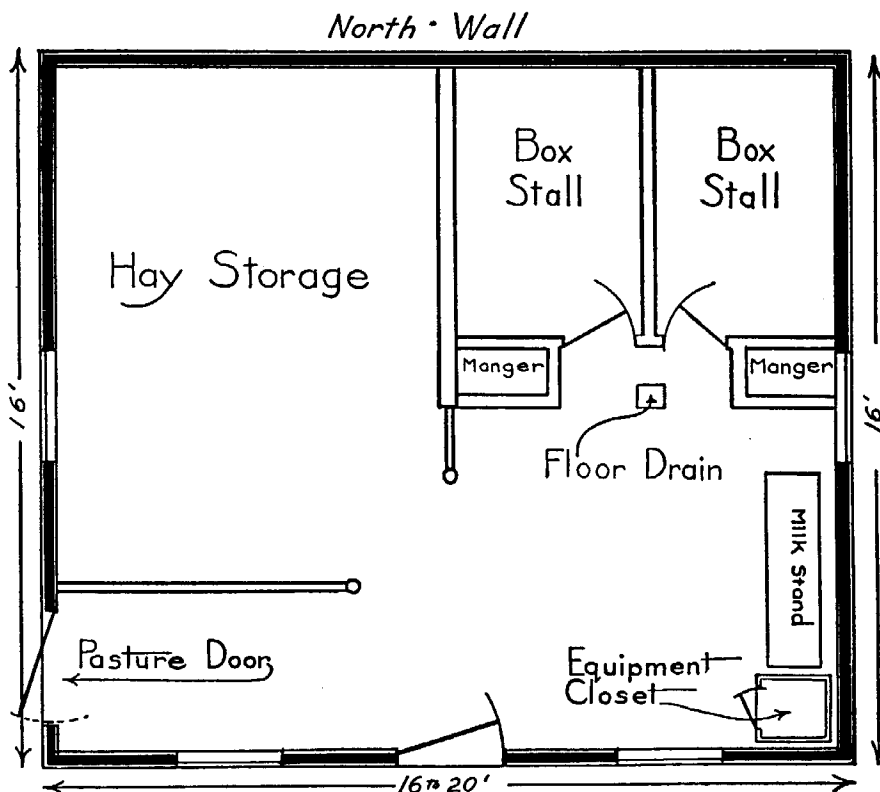
Cow and goat milk differ in many minor respects but in only this one *important* aspect: goat milk is naturally homogenized—the cream does not rise. But the cream can be extracted with a separator. A minor difference is in color; goat milk is whiter than cow milk. Butter and cheese can be produced from goat milk just as from cow milk.

Whether you choose to keep a cow or a couple of goats should be decided on the basis of how much milk your family can use, how much time your family can make available for milking, feeding, caring for your dairy—that includes butter, cheese, and ice-cream making if you keep a cow—and how much and what type of land you have available.

The following two chapters on goats and a family cow will, we hope, help you decide whether or not you'd like to produce the dairy products your own family needs.



BOX STALL FOR FAMILY COW



Two-Goat Barn

The Modern Dairy Goat

Of all our farm animals the least appreciated by city friends who visit us are our goats. "Goats! You don't actually keep goats, My goodness, why?"

"Have you ever tasted goat milk?" we ask.

"No—and I don't want to!" is the answer more often than not. But, possibly at lunch time, we serve them two half-filled glasses of milk. "One is goat milk—one is cow milk . . . Just for fun, tell us which is which," we say.

Almost invariably our city guests can't tell them apart. Sometimes, if they've read that goat milk is whiter they can guess. But they always are amazed that our goat milk has no "strong" taste.

In the face of the public's misunderstanding of the dairy goat it takes courage to decide to keep them. Here's how we happened to do so.

One day when we sat down and figured what our milk, butter and cheese cost we found we were spending about 25% of our food budget in the dairy department. This was in line with what nutritional experts recommended. It was obvious then that production of our own milk ranked with raising our own fruits and vegetables from an economic as well as a nutritional standpoint. We figured on a garden and fruit trees plus a cow or goat to supply milk, cream, butter and cheese and we'd have one-half of all our family's food requirements.

Of course, either a cow or a goat can be stall fed and be given only a small exercise yard. But, ideally, a cow requires 1 to 2 acres of good pasture, an hour a day of care, and supplies 10 to 20 quarts of milk a day. Ideally two

goats require less than an acre of pasture (brush, fern and shrubbery are their favorites), 30 minutes a day, and provide 3 to 7 quarts of milk daily, the year round. A goat eats only 1/16 of what a cow needs. Goats are freer from disease so that both animal and milk are safer.

For the small place everything is in favor of the goat except a goat's reputation. Believe it or not, the modern dairy goat is almost the exact opposite of what the American public believes she is. As we have already said, the prejudice against goat milk is unfounded as far as our experience is concerned

What the Goat Gives You

Let's make a list of all the products the dairy goat can furnish you:

1. *Milk*, not just ordinary stuff, but a rich, full-bodied milk. Goat's milk is naturally homogenized, small fat globules make it easier to digest. Frequently, it's used for invalids and children allergic to cow's milk. It's fine in coffee and makes a delicious, smooth ice cream. Also, goats are easier to milk.

2. *Cream*. Goat's milk has lots of cream, but it rises very slowly. Consequently, it is best to have a small cream separator. The cream may be whipped or used in any of your customary ways.

3. *Butter*, unusually smooth in texture, pure white, easily colored just as cow butter is colored.

4. *Cheese*. You have probably already enjoyed goat's cheese as millions of pounds are imported from Europe besides the domestic supply.

5. *Meat*, or chevon, as goat's meat is correctly named. Young buck kids 4 or 5 months old provide 35-45 pounds of dressed meat. Chevon makes many succulent dishes, and in the South particularly is considered a great delicacy.

Most likely you have eaten chevon without knowing it—thousands of pounds are sold each year as lamb. We think it is tastier than lamb, but Mrs. R. found it should be cooked a little longer.

6. *Furs and Skins*. Furs from newborn kids are beautiful and may be made into coats, jackets. A tannery or furrier can prepare the hides for you.

7. *Fertilizer*. Goat manure is one of the richest, most valuable manures—excellent enough to be in demand by greenhouses and fruit growers. You, however, will want to use it liberally yourself, for it will help you "have more" vegetables, fruits and flowers. Of all manures, it's the most inoffensive. You can see why from children's name for it, "nanny goat berries."

Considering all the products, the modern dairy goat is a valuable asset. Because of a goat's size a small barn is satisfactory. Also when it comes time each year to breed a goat you can hoist her into your car easily and get her to a buck. Goats are so easily handled that women frequently run large dairies.

Perhaps we seem unduly enamoured of our goats so we include this letter sent to the "Dairy Goat Journal," a magazine, (October, 1943). We quote: *I purchased a grade doe for \$15 which is giving me 3½ quarts a day of excellent quality milk. Two quarts of cow milk had been costing me \$8 per month. A grade cow would cost me \$75 to \$125 so I am somewhat amazed when people speak of milk being expensive and hard to obtain. I had a laugh when the editor of a farm magazine said that something should be done about it when an old stinky goat beat an honest dairyman out of \$7 or \$8 a month.*

My goat is giving \$13.65 worth of milk a month and her feed costs about 10 cents a day. She doesn't stink either!

This checks with our own experience—except our goats cost more than \$15.

Cost of a Goat

A good goat now costs considerable since their value is being recognized rapidly. Our first goat, a grade Nubian doe, with her two kids cost us \$40. Our second goat (a young doe) was given to us by a friend who has a 20-goat dairy. Our third which was shipped to us 2,000 miles from one of America's best goat breeders cost us \$49, including shipping.

We now have two milking does. When they first freshen they produce



Milking a goat is far easier than milking a cow. Notice 4-quart milk pail partially covered to help keep milk clean.

a total of eight quarts a day. Eight or nine months later, before we dry them up, they are producing 1½ to 2 quarts a day. A goat generally gives more milk on her second and subsequent freshenings than on her first. Five to seven quarts of milk are easily used by a family of three. It takes about 8 or 9 quarts to make a quart of cream or a pound of butter.

Goats are sensitive to changes of ownership and home. It takes them several months to adjust themselves completely. In fact, they become so closely attached to individuals that they give more milk to the person who stands by them at kidding time and handles their new-born young.

We believe the perfect solution to the family milk supply is two milk goats. Two grade goats are better than one purebred for several reasons. You can arrange to have milk all year round by breeding one goat in September, the other in January. Two "three-quart" grade does cost less than one fancy six-quart doe as six-quart does are rare and cost \$100 to \$200. Goats also love companionship and will give better results when they have company instead of being kept in solitary confinement.

There are three ways of starting your miniature goat dairy economically:

1. You may buy four month old kids for about \$15 or \$20 and raise them to breeding age (about 15 to 18 months). They'll cost \$10-\$15 a year to keep.
2. You may buy a purebred goat past her prime, breed her to give you good young stock. Goats reach their peak at about 6 years, but live to be about 12 years old.
3. Or you may buy a good common doe, breed her to a purebred buck and improve your stock while getting milk at the same time.

We are working on the third plan ourselves and think it's the best. Kids from a good doe pay for her upkeep. The only drawback to raising your new kids (the doelings for future milk stock and bucks for slaughter) is their need for part of your milk supply. A kid should have a quart of milk daily for at least 2 months but we find we can substitute skim milk we have left after separating the cream, or substitute cheaper evaporated or powdered cow's milk after kids are a few weeks old.

Goat Breeds

If you decide to buy a dairy goat you will find there are three popular breeds—Nubian, Saanen and Toggenburg. Keep away from the ordinary, short-haired American goat, commonly known as the old "alley goat." Goat breeders as a whole will not recommend one breed above another.

We chose the Nubian because it gives the richest milk rather than large quantity and because of the popularity of the breed in our section (an important consideration when breeding

time comes). It is not profitable for the small goat owner to keep a buck—a registered purebred buck is expensive, must be housed separately from the does as he is responsible for the unpleasant odor. Nubians range from cream to black in color, have long drooping ears and distinctive Roman shaped noses.

The Saanens are white or light cream and are the heaviest milk producers. The two goat dairies we know best have both Saanen and Nubian goats—thus combining the highest in quality with quantity.

Toggenburgs are brown with two white stripes down the face and white hocks. Toggenburgs are a popular breed. French Alpines and Rock Alpines are two other breeds relatively new in the United States.



Wilhelmina at 1 month.



Wilhelmina at 22 months.

Guides to Buying

1. Visit several goat dairies. To locate dairies subscribe to one of the four dairy goat magazines, (\$1 per year) and look at ads. Or contact your County Agricultural Agent.
2. See the goat that interests you milked. Ask for her milk record if the dairy keeps records. Milk is measured in pounds. One pint equals one pound. A good goat gives 3 to 6 pounds a day.
3. Look for a goat with depth of body

and well-sprung ribs—points which indicate good food capacity.

The udder should be large and even, carried well under the body and with good-sized teats for easy milking.

5. Get a hornless doe or one disbudded. Horns are dangerous to other goats, children and the milker.

6. If the goat is registered get her papers at the time you buy—proof of registered stock means the doe's value and her kids will be higher if you wish to sell.

Housing

A home for your dairy goats may be as simple or expensive as you wish as long as it keeps goats, feed and living quarters clean and dry. Whatever housing you do provide, plan the arrangements well. Place your pens, stalls and feed so that you take as few steps as necessary. Each minute saved on twice-a-day chores means 12 hours less work a year.

If you are just starting the "Have-More" Plan and cannot afford to build a miniature barn you may use any small, draft-free building you have or can buy secondhand. A shed 6' x 10' can accommodate two does. At kidding time, divide the pen into two smaller pens by use of a hurdle. A wire floor of ¾" heavy gauge mesh, held off the pen floor by a lumber frame keeps bedding dry and goats clean. A feed rack of wood slats will keep goats from wasting hay. (The grain ration should be fed in heavy, hard to tip-over, individual pans which can be bought for about 50c each.)

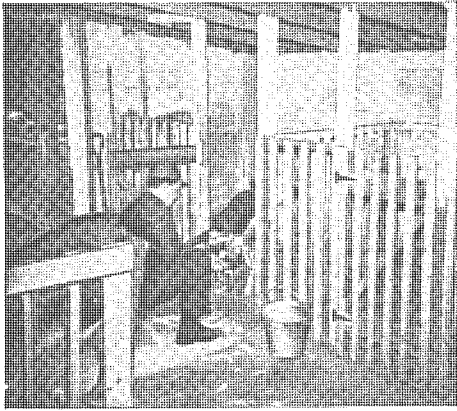
If you can build or develop part of your barn especially for the goats, you will find a miniature dairy attractive and easy to keep clean. We built our small barn to house laying chickens and our broiler battery in one part, goats, rabbits, sheep, and pigeons in the other. The floor is of cement which is easy to wash, especially with its small dairy gutter, running behind goat stalls. The 18" wide gutter is on a slight slope toward the wall with its own small opening to the outside. Thus dirt, manure and other trash may be swept into the gutter and outside into an iron wheelbarrow.

Our goat stalls are built of wood, on a wooden platform 8 inches off the floor. Each stall is 24" wide and 35" long and divided from the next by a partition 32" high. In front of all the stalls runs a long feed manger. Stalls are separated from the feed rack by slats or solid walling with keyhole opening for goats' heads—this keeps them from wasting hay. A feature we developed to keep a milking goat clean is a removable individual stall floor, the front solid, the rear slatted. Manure falls through the slats into the gutter and also doesn't get tramped down so it's hard to remove. Each stall's floor can be lifted out, cleaned easily and dried in the sun.

The goat barn should open directly to the pasture enclosed by a sturdy wire fence 4' high—goats are agile jumpers. Goats may be tethered on chains or ropes with swivels at both ends to prevent tangling—but tethering takes too much time.

Feed and Health

It costs about 10¢ a day to feed a producing doe when you buy all the feed. Goats relish stale bread and other kitchen scraps providing these are clean and free from mold. Contrary to popular opinion, we found goats meti-



Two pens for kids or maternity ward. A ¼" wire mesh floor tacked to 1" x 2" wooden frame and laid over cement floor keeps bedding in kid pens fresh longer.

culous in their food habits—they won't touch food dropped on the floor or contaminated in any way. And they dote on variety—my wife says they take after me (or vice versa).

During the winter a milking doe should have about 2 lbs. of alfalfa or clover hay (750 pounds yearly which you can raise on ¼ of an acre), 1½ lbs., when possible, of corn 'silage or roots (turnips, carrots, etc.) and 1 to 2 lbs. of grain ration. When on pasture, we feed less grain, only a little hay, no 'silage. The mixing of grains is too complicated for us—it's best to buy a prepared ration sold by a reputable hay and feed dealer. Clean warm water should be supplied at least in the morning and night and goats encouraged to drink (a few drops of molasses in the water makes it appealing.) Salt bricks should be accessible at all times.

Goats are naturally healthy, hardy animals and if they are well cared for you should have no trouble. They rarely get tuberculosis (as cows do) or Bang's disease, one cause of undulant fever in humans. We are following the rule required of dairies—having a veterinarian test the goats twice a year.

As a final precaution, you can pasteurize your milk by heating it to 142° F and holding it at this temperature or slightly higher for 30 minutes—or raise to 160° F for 15 seconds. In either case milk should be cooled rapidly by putting container in ice water. Also, we suggest you have a vet the first time

your goat kids—just for your peace of mind, as goats seldom have any trouble giving birth. You can expect 2 kids at the second kidding and you may get 3.

How to Milk

"How did you learn to milk?" is one of the most frequent questions our city friends ask. We truthfully answer, "by reading how." So can you. Here's how:

Sit with your right side next to the doe's right side, your shoulder close to her shoulder. Hold the teats, thumbs outside fingers. Close your grasp, beginning at the top (thumb and index finger) and successively close the other fingers, thus forcing the milk down the teat and out. Milk firmly but gently until milk stops flowing. Then strip the teats by running the thumb and first finger from the top of each teat to the bottom until the last drop is out. Gently nudging the bag encourages the milk flow. You will be slow and awkward at first as you will have to think about each step but it won't be long until you'll be doing it so casually you'll be surprised at people asking you where you learned.

We warn you that the first few milkings may seem like desperate events in your life—we laugh and laugh now when we look back at our struggles. Don't try to learn with just one hand. Use both hands from the beginning and keep a firm hold even if the doe tries to move around. She will test you out a time or two but you can keep her right front leg in place with your right shoulder and her right rear foot in place with your left wrist. Once you show her you won't let her go she will be quite patient with your efforts.

You will want a small milk stand which you can easily build yourself. It is simply a small stand about 1½' off the floor—40" long and 22" wide. At the front end you place posts 55" high and slats 4½" apart with one slat movable so that the goat's head can go through before you straighten the slat up to hold her in place. A rail on the side opposite the milker keeps the goat from moving too freely. See picture of our homemade milking stand.

When it comes to handling your milk I think you'd better do what my wife tries to do—follow dairy rules as well as you can. She insists on using a disinfectant (planned for milking equipment) on the milk pail, milk jars (we use canning jars because of their wide mouths) and in water used to wash the udder. The teats and the milker's hands must be dried thoroughly before milking, the first stream of milk from each teat thrown away. We strain the milk through filters, discarded after use, then set the jars of milk in ice water as rapid cooling creates a healthier, better-tasting milk.

Pasteurization with a tested goat is up to you. Raw milk certainly tastes

better and some experts say it has more food value.

When it comes to feeding milk to your kids, by all means pan feed them. If you let them nurse, you lose control of your milk supply. Bottle feeding is a messy affair. After the kids are born place them in a box or basket so they cannot get out to their mother. After you pan feed them a few days they will not try to nurse and can run with the mother. Dip your finger in the milk, let them lick it and get them to follow your finger into the pan. After a time or two your only trouble will be keeping the milk from being spilled as the kids dash for it. Feeding the kids is fun even though commonly called a "chore."

Time Savers

1. Try to have running water in the barn or as close as possible.
2. Store feed close to feed racks to save time and mess.
3. If you build, plan a dairy gutter sloping to an outside opening of its own.
4. In the pens build racks of slats or heavy wire mesh to stand an inch or so off the floor to keep bedding cleaner and drier.
5. In the stalls place removable wooden racks for ease in cleaning.
6. Fence in a pasture if possible—the initial work is easier than continuous tethering.



Even a Crosley is big enough to carry your goat. Mimi is on her way to visit Ptolemy, a prize Nubian buck.

A Family Cow

KEEPING a cow, like marriage, is a confining and responsible relationship not to be entered into lightly. Flirtation, study, an engagement, even trial marriage are advocated, for dairymen, like fond parents, are unduly enamoured of their heifers.

Like marriage, too, keeping a family cow is a great institution. In fact, American agricultural writers often refer to the cow as "The Foster Mother of the Human Race." This is undoubtedly a little over-enthusiastic for in many parts of Europe 80% of the milk is goat milk.

The first time you squat on your brand-new, insignificant three-legged milk stool and your new cow towers above you, a thousand pounds of the Lord-Only-Knows-What combination of unknown evil, wickedness, and danger and you see her big, horned head turn at the fumbling indignities you are attempting under her hind-quarters, you're bound to experience a sinking in the pit of your stomach and an intense feeling that a cow is too gigantic an undertaking for you. Anyway, if this feeling doesn't come over you at the beginning of your first milking, then it will unquestionably at the end when it dawns on you that all that milk, that big pail of milk, is going to be duplicated night and morning every day for the next ten months.

Actually, a cow isn't large or dangerous. In fact, compared with your car she's less than one-third the weight—and when you realize that the auto is responsible for some 30,000 deaths a year, not including some hundreds of thousand injuries, then you'll have to agree that a cow isn't dangerous. A family cow, particularly a Jersey, becomes the gentlest of pets.

As for the superabundance of milk—it's none too much when translated into terms of milk for the family, cream, skim-milk for chickens, pigs, and a calf, and particularly if you want to make ice cream, butter and cheese. If yours is an average, decently fed family, you are already using one cow's entire milk supply. There are in the United States, according to the census, something like 26,000,000 producing cows. That is *at least one cow for each American family* enjoying a sufficient amount of milk and milk products. In short, the point is: Are you going to keep a cow or go on paying somebody else to do it for you?

I know it's hard to believe that a family accustomed to buying one or a couple of quarts of milk a day can easily use 10 or 12 quarts. It was that way with us when we started getting 6 or 7 quarts of milk from our two milking goats. Honest, though, if you're going to have a productive homestead, you'll find it simple to use the milk effectively without setting up a milk

route. For example, you'll be able to have plenty of real, heavy cream—for coffee, for cereal, for berries, for ice-cream, for cooking, for butter-making. Remember, it takes 10 quarts of milk to produce one quart of cream. And a quart of cream makes only a pound of butter . . . or a quart-and-a-half of ice cream . . . and just ask your wife how much butter and cream she'd like to



Isn't she lovely . . .

use in cooking if she could use all she wanted!

For every quart of cream you produce, you'll have about 9 quarts of skim milk. This is the finest food you can feed pigs, chickens and other poultry. If you still think you'll have too much milk, there's the annual calf that your cow will produce. If you raise the calf to veal size, about 180 pounds, the calf will consume daily a pint of milk for each ten pounds it weighs.

Another thing to bear in mind is that although a cow isn't by any means something you can turn on or shut off like a faucet, you can to a certain extent control the amount of milk she produces; she can be just as efficient producing less milk, strange as this might seem. The efficiency of a cow is simply a comparison between what she costs to keep and how much she produces. During the course of a year a commercial dairy cow will consume about 2 tons of hay, require one to two acres of good pasture, and eat 2,000 pounds of grain or other concentrates. A homesteader interested in self-sufficiency usually has the pasture land and can make the hay, but has to buy the grain. A cow, however, doesn't need grain. Professor Carl Bender, of Rutgers, explained to me how a cow could be kept in perfectly good health on a diet of good hay, good pasture and *in winter succulents such as beet pulp or the sugar beets themselves*. Obviously, a cow that isn't fed grain won't give as much milk—probably it'll give only 70% of what it would give when fed grain to supplement pasture and hay. But to the homesteader considering what to do with a cow's full production of milk, a cow that will give 7

quarts of milk a day instead of 10 quarts might be preferable, particularly when she can also eliminate a grain bill.

Less than an eighth of an acre will provide the 25 pounds of sugar beets a day necessary to feed your cow during the months when pasture is not good. Beets or mangels can be stored in a root-cellar. They are simply washed and sliced before feeding.

The more the countryman looks into the business of keeping a cow, the more practical it seems. Your first cost, buying the cow and fixing up to keep her, is figuratively speaking your last cost. For if you have some suitable pasture and raise your own hay and succulents, then the only other regular cash outlay should be about \$15 dollars a year breeding and veterinary fees. On the credit side you should get at least 5,000 pounds of milk (about 2,500 quarts), a calf which will give you 90 pounds of veal, and 12 tons of good manure. If you've had to buy manure, then you'll appreciate how valuable 12 tons is.

All this sounds pretty rosy. But there is the other side, too. Although neither an elaborate nor expensive building is required, you'll need a barn of some sort. It should be draft-free, have a decent sized window to let in plenty of sun and fresh air.

Also, you'll need a place to store two tons of hay. Hay can be stacked outside the barn and covered with canvas, but this should be considered only an emergency measure. Of course, if you're going to buy your hay, you can buy it by the bale and then you'll need very little space. Eventually, you'll want to make your own hay, and you'll need storage space of at least 10 x 10 x 10, or the equivalent, to store two tons of loose hay. Incidentally, the rule for finding the number of tons in a mow is: Multiply length x width x height (in feet) and divide by 400 to 500 depending on the length of time the hay has been in—there's also a slight variation depending on the type hay.

Another thing you'll want is between one and two acres of good pasture. The pasture should be fenced into three small pastures to let you rotate the cow. Although many people stake out their cows, this is needless trouble compared to fencing a pasture so the cow can simply be turned loose into the pasture from the barn.

You'll need some equipment: milk pail, water pail, milking stool, square manure shovel, 6 prong manure fork with tines not over 1 $\frac{3}{4}$ " apart—wider tines allow droppings to fall through—cow halter and rope, curry comb and brush, barn thermometer, udder wash cloths, milk scale, milk production record chart, insect spray gun, hay forks—one in loft, one in barn level—and a metal wheelbarrow. Total cost—about \$30.

You should also run water to the barn. And you'll want to work out a manure pit or compost system for easy handling of manure.

Then there are certain items needed to handle the milk efficiently. Milk setting cans . . . milk strainer and filter discs . . . an inexpensive butter churn and, if you can afford it, a small separator.

That'll be most everything—except for the cow.

What Breed To Select?

There is no best breed. Oftentimes a Jersey is the first choice for a family cow because its milk is richer and it is a smaller cow. A few people find a Jersey's milk too rich. (See table.)

One thing to determine before selecting a particular breed is how you're going to get your cow bred each year. Find out from your County Agent about the availability of artificial insemination. If this isn't possible, then you'll be better off by getting a cow of the same breed as the most convenient bull, if you intend to raise any heifers.

Buying a Cow

When you set out to buy a cow the most important thing to do is to be sure that you buy a healthy one. Have her tested for both tuberculosis and Bang's disease, and see that her udder is free of mastitis. Your veterinarian will check up on these.

If the seller hasn't kept accurate milking records, and only about one in ten dairymen do, then be present at two—or better three—successive milkings. Or ask for a written guarantee of the cow's milk production.

Buy from a reliable man. Remember, in spite of all the to-do about judging cattle at the shows by external appearance nobody can honestly tell how good a milker a cow is by looking at her. If that were possible there wouldn't be the thousands of dollars spent on record-keeping by the big milk producers.

A young cow is worth more than an old cow. Although, if you get an especially good buy in an old cow with an outstanding milk record, you might consider buying her and replacing her as soon as possible with her heifer. Naturally, this is something of a gamble. She may have a couple of bull calves before a female—and when she

does have a heifer, it'll be almost 2½ years before the heifer will be milking. A cow reaches its prime at about 7 years of age; if healthy and well-cared for she will produce well to 10 or more years.

How Much Time Does a Cow Take?

For 10 months of the year the family cow must be milked twice a day. Milking should be regular, but can be done at any two periods 12 hours apart. There is absolutely no reason to milk a cow at such an ungodly hour as 5 or 6 A. M.—that is, not a family cow. A cow will do as well milked at noon and again at midnight. Or a cow can be milked on a 10-14 hour schedule—say 8 in the morning and 6 in the evening. But milk her regularly—at least within ½ an hour of her scheduled time.

Feeding will take about 10 minutes and needs to be done morning and night.

Pasturing shouldn't take but a minute or two if you have wired runs from barn down to pastures. (See "Layout for a Productive Homestead.")

Caring for milk—straining, cooling, washing utensils 5 to 10 minutes.

Separating, every other day, about 10-15 minutes to run through 25 quarts or so: about 8-10 minutes to clean separator.

Butter making from cream takes about 30 minutes.

A small cheese takes about 3 hours to make, spread over about 6 weeks time.

In addition, a certain amount of time will be needed to make a couple of tons of hay a year and produce the sugar beets or other ensilage.

This sounds like quite an undertaking when you add it all up. But compare keeping a cow with a family garden. The dairy products consumed will exceed in retail value the total possible saving from the operation of a well-run vegetable garden including canned and stored vegetables.

Milking will take about 20 minutes—morning and night. Cleaning barn and removal of manure about 15 minutes. Grooming cow—about 5 minutes.

Watering should be made automatic. If by hand it will take 5 to 10 minutes.

Raising a calf calls for teaching the calf to drink and then pan feeding three times a day for 4 to 6 weeks.

Specific Costs and Returns

Too often the benefits of productive country living have been interpreted solely in economic terms. How much more valuable is fresh milk with a 5% fat content as compared with the two or three day old store milk of only about 3% butter fat? To some people milk is milk—but to others fresh, rich milk and heavy cream from a Jersey cow is worth twice what ordinary milk costs.

Anyway, here are two sets of returns on keeping a cow. Neither take into account that fresh milk is usually preferable.

The first figures are from a state bulletin and are averages:

"Actual costs, on the average, for first year if pasture, housing, and bedding are available without monetary expenses are shown in the paragraph that follows:

Cow purchase price \$100 to \$200 (average usefulness of young cow five years) . . .	\$150
10 pounds grain (mixed ration) daily multiplied by 200 (days) equals 2000 pounds @ \$30 to \$50 per ton	40
15 to 20 pounds hay (alfalfa, clover, or mixed clover and timothy) multiplied by 200 (days) equals 2 tons @ \$20-\$40	60
(Amount depends on size of cow and her appetite. Plenty of hay is absolutely essential.)	
Breeding and Veterinary fees	15

\$265

Returns from a good cow per year are: 3,000 to 5,000 quarts of milk @ 10¢ equal to \$300 to \$500."

Now for some specific figures from the book, *The Family Cow*.

"Jeanne is an ordinary crossbred Jersey-Guernsey purchased for \$85. Her record of 1943 may be of interest even if the costs and prices may not apply elsewhere or at other times. She freshened in May and was milked for 318 days. She produced 8337 pounds of milk, ranging from a peak of 42 lbs. to a minimum of 12 lbs. This amounted to 3877 quarts of milk, an average of 12.2 qts. per day. Butterfat ranged up to 5.35% so she probably produced around 420 pounds of fat. This is equivalent to 462 pounds of 90% butter or an average of 1.45 lbs. of butter a day if all the milk had been thus used.

"Dairy products were consumed and sold as follows:

	Consumed	Saved	Sold	Cash Income
Milk	1200 qts. @ 15¢	\$180.00	250 qts.	\$35.46
Cream	90 pts. @ 35	31.50	70 pts.	27.26
Butter	90 lbs. @ 50	45.00	135 lbs.	67.31
Cheese	50 lbs. @ 12	6.25	32 lbs.	4.00
Skim	300 gal. @ 15	45.00	236 gal.	39.42
Buttermilk	70 qts. @ 9	6.30	30 qts.	2.70
		\$314.05		\$176.15

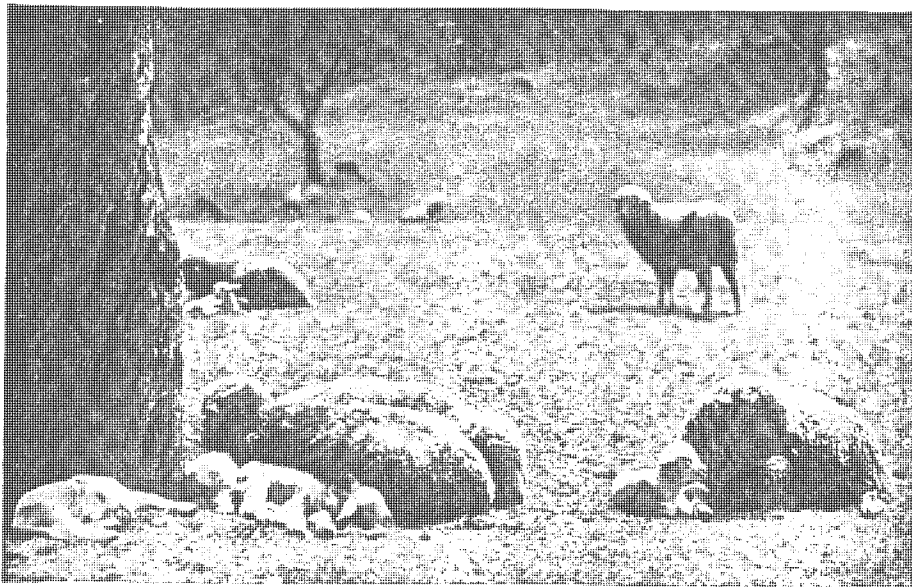
There are several bookkeeping approaches to these figures but they all show one thing clearly—that the family cow is a pretty good investment!

Cows Have Character

	Ayrshire	Brown Swiss	Guernsey	Holstein	Jersey
Average size at maturity (pounds)	1200	1350	1100	1300	1000
Color	Red and White	Dark Brown	Yellow	Black and White	Fawn
Butter test (per cent)	4	4	5	3.45	5.3
Disposition	Nervous	Docile	Active	Docile	Nervous
Maturity (months)	28	34	27	29	25
Adaptability for beef	High	High	Low	High	Low

From "A Practical Guide to Successful Farming."

A Few Sheep For The Small Place



CITY people who take up country living are generally amazed at the bounty of the land and are always giving something to friends. I guess that's why Carolyn's aunt, who'd recently bought a farm in Alabama, sent us one of her home-grown lambs. And that's how we learned a little about sheep.

A single lamb, like a single goat, is a lonesome creature. We tried using him as a "lawn-mower" on the front lawn but he bleated half the time. Finally, although we knew it wasn't the best practice we turned him out to pasture with our goats.

The goats had never before seen a lamb—and I guess the lamb had never seen goats. Goats and lamb eyed each other suspiciously. The ridges of the goats' backs bristled. Then the lonesome lamb, in a friendly fashion, ran toward the goats. Frightened, the goats scampered away and it was a couple of hours before they would let the lamb get near them. Finally, they sniffed him over and philosophically accepted this "ugly duckling". Our lamb was no longer lonesome.

This lamb proved so little trouble that the following year we bought two, fattened them, and had them butchered just as with our first. In many parts of the country I'm told the sheep's skin pays the cost of the butchering, but our butcher didn't seem to want the skin. For \$3.50 we had it made into a rug—they sell for \$7.50 to \$20.00. Buying one or two lambs, fattening them for 30 to 60 days, and then having them slaughtered is *not* the most economical way to produce your own lamb, however.

Often times, a weaned lamb when moved will lose weight for awhile and consequently require more grass and grain before they "make" 90 to 100 pounds, the customary weight at which

they are slaughtered. Then again a young lamb is apt to cost \$7.00 to \$20.00. The one point in favor of buying and fattening a lamb is that this is an easy way to gain experience.

Before we discuss a better way to get started, let's take a look at what is necessary in the way of pasture, grain, equipment, time, and money to economically produce your own lamb.

Good Pasture Essential

The first thing you should be able to supply is good grass. You don't need much grass pasture—it takes about a quarter-acre of grass, 750 pounds of hay, and 100 pounds of grain yearly to support one sheep. Remember, though, you should have at least two sheep.

As for the hay, alfalfa is best. In fact, you can raise and fatten your lambs solely on good grass and good alfalfa. Clover and soybean are good hays also.

Many different grain combinations are suitable for feeding sheep. The easiest plan for the homesteader with goats is to buy "sheep and goat" ration. In *Starting Right With Sheep* a mixture of two parts oats to one part bran is recommended as the best all-around sheep feed. For fattening use five parts wheat, two parts corn, two parts oats, one part linseed-oil meal. Sheep must have plenty of water.

Now the most economical way of getting started with sheep is to buy a couple of bred ewes in the winter. Ewes should be vigorous and in good flesh, but never fat. Also make sure they are free of external and internal parasites (notice droppings) otherwise the new born lambs will become infested. Bred ewes sell from \$10.00 to \$50.00 depending on whether they are scrubs, grades or registered purebreds, the reputation of the seller, age and merit of the animals. Fleece, conforma-

tion, age and udders should receive close inspection.

Housing and Equipment

Housing for sheep can be simple, a three-sided shed with roof and a dry dirt floor is satisfactory. Two sheep need an 8 by 10 foot pen or building. A wood or wire rack is necessary for feeding hay and a trough or manger for grain. Salt and phenothiazine mixed according to directions you get with the phenothiazine, plus water are kept available at all times.

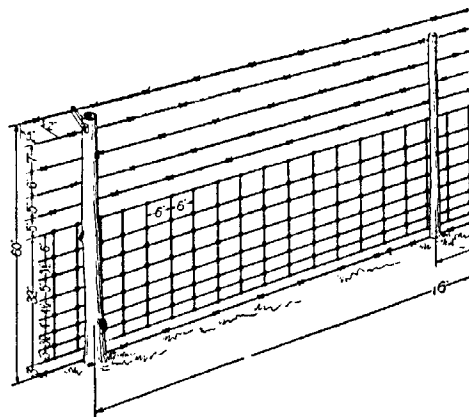
Fencing

While it is true that sheep may be tethered by a chain and swivel, this is not practical. Sheep are not good lawn-mowers—they'll eat the grass too close. Tethered sheep cannot be left out all night, and they are easy prey for dogs. *Dogs are sheep's worst enemy! In fact, the primary purpose of fencing for sheep is to keep a stray sheep-killing dog out rather than the sheep in.*

Choosing A Breed

In general there are two types of sheep—the wool and the meat variety. The homesteader should choose a meat variety. The breeds differ a great deal according to various sections and systems of management, but the part-time farmer should choose from the meat or so-called medium wool class—Southdowns, Shropshires, Hampshires, Ox-fords, Dorsets, Cheviots. Unless you're going to keep a ram, it's a good idea to find out which breed of ram is available in your neighborhood. When your first lambing time comes (about 145 days after breeding) you might have to have a veterinary present. The simplicity of the whole thing will give you confidence to handle subsequent lambings yourself.

All in all, sheep are easier to handle than cows, goats, horses, or poultry.



A Good Fence For Keeping Your Sheep Safe From Dogs

Veal and Beef on the Homestead

A FRIEND of mine who likes to eat once chose to spend his vacation at a Western Dude Ranch. He figured that for once he'd get all the tender juicy steaks and roast beef he could eat.

When he came back I asked, "How were the steaks?"

"Oh, good . . . good," he answered—but I detected an odd note in his voice.

He explained. "Funny thing about that ranch—even though they had a couple of hundred steers on the place they got their beef from Chicago. . ."

If a Western Ranch specializing in the production of beef cattle doesn't even raise beef for its own use then what right has a homesteader to think that he can profitably do so?

On one or two acres you probably won't go very deeply into beef production. But even on two acres if you are keeping a cow you'll find yourself raising beef in the shape of veal. Veal, as you know, is calf meat.

Once a year your family cow, like all dairy cows, has a calf. In the ordinary dairy, bull calves and heifer calves from low producing cows generally are slaughtered as veal at an early age. Often, before they are two weeks old because the dairyman does not want to bother feeding them or providing the milk they need. This early butchering is one reason why more people don't like veal. Early butchered veal hasn't anywhere near the quality of eight week veal. The best veal is from milk fed calves about eight weeks old. And this top-quality veal is the kind that the part-time farmer can easily produce because when the family cow freshens and starts producing 12, 14 or 16 quarts of milk a day a few quarts can be fed to the calf and the family still will have enough for drinking, cream, butter—and enough for cheese and chickens too.

Feeding The Calf For Veal

The calf should either stay with the cow for the first three or four days to suckle the first milk, the *colostrum*, or the cow should be milked and the milk given to the calf. If the latter procedure is followed, I think you will find that the calf will learn to drink from a pail more easily. We find it very difficult, for instance, to let a young goat kid nurse and then attempt to teach it to drink from a pan.

The weight of the calf will determine how much he should be fed. If allowed to stay with his dam, he will consume small amounts frequently. This is ideal, but you cannot favor him in this way if he is separated from the cow. On the average, feed eight to ten pounds (4 to 5 qts.) of milk per day, generally one-half in the morning, one-half in the evening. Milk should be at body temperature, and pails kept very clean. Give the calf a dry pen, free from

drafts. If he is not hungry, miss a feed rather try to make him eat. As age increases, gradually increase the amount.

If some skim milk is to be used, decrease the amount of whole milk gradually (one pint or less at a feed) and add equal amounts of skim. Warm the skim milk. Do not boil.

Raising A Steer

During the meat shortage there was a great revival of interest among small farmers, estate owners, and homesteaders in beef for home use.

If your place has enough good pasture (1 acre per steer) and enough good quality hay (2 acres of clover or alfalfa would be ideal), then you might consider raising a steer. Shelter can be simply a three sided shed; if you don't have to carry water, then a steer won't take much time.

A fellow down the road from me who has just about two acres has a steer project underway with a minimum of trouble and investment. He simply went to a dairy with a herd of Holsteins (Brown Swiss and Ayrshires make good beef too; Jersey and Guernsey not so good), bought himself a young male calf, weaned him, and tethered him out in the orchard. He kept the calf on grass all spring, summer, and fall. In October he started feeding some corn he'd grown and at the end of November he had the fatted calf slaughtered. Naturally, if he were going to sell this young steer (he had the vet castrate it) he'd have had to hold the animal for another 9 months or even a year. But for home use this baby steer provided some excellent eating.

What Is "Baby Beef?"

A number of people with small country places have an idea that because their place is small "baby" beef would be just the thing. "Baby" beef are young, well-bred, good quality cattle, often Angus, which are slaughtered at the tender weights of 700 to 1,200 pounds. BUT they are fed grain just as soon as they will take it—the idea being to keep them from losing their baby fat. The part-time farmer who probably doesn't grow much grain, won't find them economical, but of course they do make delicious beef.

How To Put On Fat

Is it practical for the part-time farmer or small farmer to raise an honest-to-goodness beef steer?

From what I've seen in the Northern part of our county I say yes—but he would go at it quite differently than the usual commercial operator.

The whole object in fattening a steer is to make it put on weight. Well-larded beef is the kind that has fine flavor, tenderness, and is good and

juicy. Incidentally, the next time a butcher shows you a steak look to see if it has streaks of white running through the red beef. This is fat—and the steak should be good and tasty.

Ordinarily, beef cattle are shipped off the ranches in the West to the Corn Belt where they are put in feeding lots and fed corn and other grains until they are fat enough to slaughter.

A Mid-west farmer buys beef cattle to fatten for market. You can do the same. Usually, for example, a couple of car-loads of Western steers are brought into our County Seat each spring to be sold to local farmers and estate owners. These "feeder" steers are usually from 6 to 12 months old and ordinarily sell for \$8 to \$12 a hundred pounds. Obviously, they're not a cheap investment and you'd do well to fatten a few pigs or some sheep before you try a steer.

In place of the intensive grain feeding program of the Midwest, there is another method that is probably more suitable for the small or part-time farmer. This is the "pasture method." It can be undertaken in two ways:

- 1.) *High-quality pasture may furnish the sole feed.*
- 2.) *Pasture during the grass season and then hay and grain for 6 or 8 weeks to finish off.*

Pasture doesn't make as finished a steer nor is it as fast as dry-lot grain feeding, but it is much cheaper and oftentimes more profitable even though the final beef doesn't bring so high a price. In addition the steer should have plenty of fresh water and a salt lick.

A new device that has made fattening a steer or two more interesting to the small farmer is the electric fence. A single strand of electric fencing is adequate to hold a steer and it is, of course, easy and inexpensive to put up.

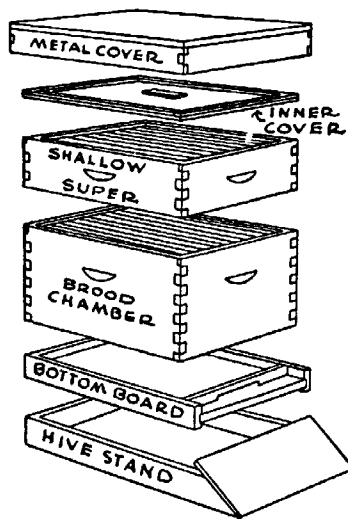
Perhaps, however, the quick-freezer is doing still more to stimulate interest in home production of beef. The home freezer and freezer lockers mean that it is entirely possible for a single family to utilize the 500 pounds of dressed meat obtained from a good-sized steer. Five hundred pounds is not nearly as much as it sounds when you remember that the average annual consumption of beef is 65 pounds per person. If freezer space is limited remember that some cuts can be hung for weeks before cooking. Also you can make some corned beef, smoked beef, dried beef, or use the chuck in delicious canned stews. Another good plan is to divide your beef 50-50 with a neighbor slaughtering his steer one year and yours the next.

Our Little Sugar Factory

WE didn't decide to have bees until we had laying hens, chickens to eat, goats, pigs,, and, of course, our garden all producing.

As I look back I believe it was my father who got us interested in the idea of keeping bees. Actually, he didn't know anything about bee-keeping, but every time he visited us he brought along a jar of honey. He liked

Parts of a Modern Beehive



honey so much and believed it so much more healthful than sugar, he got us interested in producing our own.

We've found out that doctors do recognize that honey is the perfect sweet—it's easier to digest, furnishes a quick source of energy, and, unlike sugar, contains minerals.

Also about this time we were reading a book called *The Farm Primer* in which the author says that a hive or two of bees will increase the fruit yield by 30 percent and even make the fruit taste better. Moreover, he pointed out that a hive of bees requires only 8 hours of care per year and gives about 75 pounds of honey. Seventy-five pounds per hive seemed a lot but I've since heard of single hives producing as high as 500 pounds. Of course, it's unlikely a novice will get as much as that.

One lunch hour in New York, I went down to a bee equipment place. All I meant to do was buy a booklet called "Starting Right with Bees" I was going to read first—and get the bees later. I asked them how much the equipment necessary to have one bee hive would cost. They said, "About \$20—including a queen and three pounds of bees—but right now we have only one complete amateur outfit left."

It seems they were having trouble getting zinc to make bee smokers. This is no longer true. Obviously, if I were

going to have bees, then I'd best sign up for them right then and there. So I made out a check for the works.

Incidentally, somewhat later on in talking to Mr. C. C. Whitehead, one of the best amateur bee-keepers in Connecticut, I found it was his opinion that the only way to learn about bees is to get up your courage and order a complete beginner's outfit as I did and then you'll just have to learn or else—

One of the nice things about bees is that if you sign up for a beginner's outfit in January to March, you'll learn a good deal before the bees arrive.

That's because your outfit arrives in two shipments. The first shipment is equipment—later, sometime in April, depending on the weather, the queen and three pounds of bees—about 15,000 of them—arrive.

In the first shipment, you get a smoker, bee feeder, hive tool, bee veil, a booklet of directions, a year's subscription to a bee magazine, wax foundation; plus a hive, a deep super and two shallow supers, knockdown.

We spent about three evenings assembling the bee hive and supers—unassembled, 200 odd pieces look like a jig-saw puzzle. Each piece is so perfectly cut, it's fun putting them together.

The hive is simply a box-like structure. At the bottom is a stand with an alighting platform. Set on top of this is the bottom of the hive—3 or 4 boards cleated together to make a floor. Upon this rests a large oblong box without top or bottom. This is called the hive body or brood chamber. In it are hung ten wooden frames each one holding a patterned sheet of wax. The bees draw these sheets of wax into cells. In the cells the young bees are hatched.

On top of this large box you eventually place a shallow box, maybe two or three. These are called supers and like the hive body each hold ten frames. The honey stored by the bees in the hive body must be left with the bees for winter food. But the honey stored in the supers can be taken away and extracted. A queen excluder is placed between the hive body and the supers to keep the queen from laying eggs in the supers. On top of the super—or supers—for they may be piled one on top of the other—is an inside cover. Then over all is the tin-topped wooden cover which telescopes down over inner cover and top super to make the hive waterproof.

All the above—hive, supers, bottom, inner cover, frames and sheets of wax are sent you in pieces—and you put them together. Very complete directions (printed in about seven languages for a bee hive is standard throughout the world) are provided. We had a little difficulty putting the hive to-

gether because our playful kitten chewed up the directions, but we still made out all right.

By the time you get the hive together and painted, you'll understand a little something about the art of bee-keeping. You'll also have a chance to study up on what to do when the bees arrive.

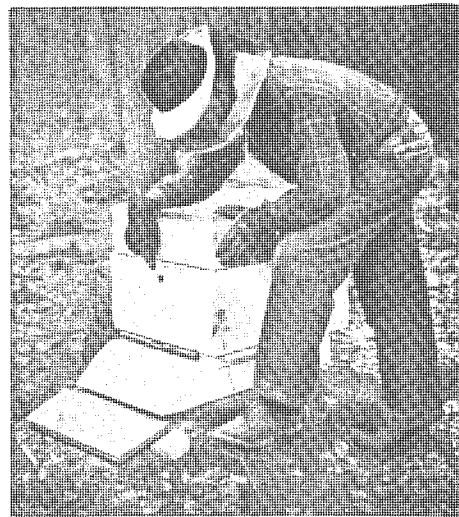
Let me tell you, you'll get a real thrill when you come home some day and find the second part of your order—a screened box about a foot square crammed full of 15,000 buzzing bees.

I'd read that anyone can handle bees—if they do it properly—and not get stung. But I'll admit I had my doubts the evening Carolyn took me into the garage, pointed to the cage of buzzing bees the expressman had brought and said, "Well, do you want to put the bees in the hive now or after supper—remember, that's your department!"

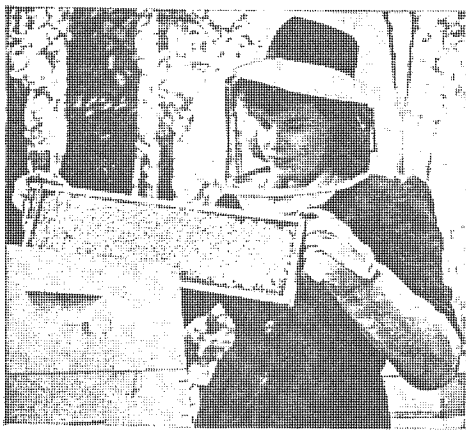
I confess I postponed putting the bees into the hives until after supper. I also sneaked upstairs for a last reading of the chapter "How to Install Bees in a Hive".

Well, after supper I set up the hive and carried the caged bees out to the uncovered hive. I wore the bee-veil, but no gloves. It wasn't that I was being brave, I just couldn't find a pair of leather ones.

In opening the cage, I spilled the syrup can that goes along with the bees—spilled it all over my hand and about 3,000 bees tumbled out after it. Before I knew it my hand was covered with crawling bees. For about ten seconds I stood perfectly still. Then, suddenly I realized I was *not* being stung!



Pointing to the top entrance. In late years this second entrance, especially in the north, has demonstrated its advantages. It saves the bees from death in case bottom entrance gets clogged with snow or dead leaves. Also provides better ventilation.



At first Carolyn would have no part of the bees. Later, she learned you can handle bees without getting stung. Note "frame" of honey.

The bees were happily lapping the sugar syrup off my hand—that is, the two or three thousand that could get a lick in. I began to think again and remembered to put the opened cage inside the hive. Then, somehow, I brushed the bees off my hand into the hive, released the queen, put the cover over the hive, and went to the house.

Mrs. R. had been watching me from the kitchen window. I came in, undid my veil and tossed it onto a chair.

"Didn't you get stung?" she asked.

"Of course not—why should I?" I replied, shrugging my shoulders.

Right then and there I *did* get stung. It seems that one lone bee had crawled from my hand, up my arm, and when I shrugged my shoulders, I pinched her—and she let me have it.

I've dwelt at some length on the way I felt handling bees for the first time because so many people are missing the very real benefits they can have keeping bees because they are afraid of being stung.

All the rest of the year I was stung only twice. Both stings were due to my own carelessness. For example, one day I had been working hard in the garden in the hot sun. In fact, it was so hot that I wore only dungarees. Suddenly, I remembered I should feed the bees some sugar water. I carried it over to the hive, not stopping to put my veil on—or even a shirt. I opened the hive, flipped off the cover, bent over to pick up the Boardman bee feeder and had no sooner straightened up when I was stung by three bees. That was my fault for being so brisk and blowing my hot breath on the bees.

One other time I pinched a bee and she stung me. But by then I'd learned to rub, *not pull* the stinger out. And by getting the stinger out *fast* the sting was hardly more than a mosquito bite. With my veil, and gloves and handling the bees properly, I don't get stung.

For quite some time—from the middle of April when the bees arrived until the first honey flow in June—I fed the bees a mixture of sugar and water. This is fed by the bee feeder which

holds an inverted Mason jar with its zinc top perforated.

After the clover blossoms, the first real honey flow is on and the bees make their own honey. You'd think it might be smart not to get your bees until the honey flow started so you wouldn't need to feed them sugar-water. But the reverse is true. Although 15,000 bees sound like a lot of bees, they're just the nucleus of the hive. A strong hive builds up to three or four times this size. A few days after your bees arrive, the queen should begin producing eggs—at the rate of 2,000-3,000 a day. These eggs are attended by the 15,000 bees and the eggs begin to hatch 16 to 18 days later. So if you get your bees in April your colony should be built up to a fair size when the first honey flow starts in June.

For the first two or three months after our bees arrived the only help we had was from our books. I well remember one line in a book that proved comforting again and again—"The amateur is apt to err by giving the bees too much attention." So whenever I was in doubt about doing this or that I didn't do it.

This system worked fine until one evening when I arrived on the 6:42, Mrs. R. said, "Well, a phenomenon of nature took place today—"

I didn't like the way she said it. "What do you mean?"

"You guess," she replied.

"Jackie has started to talk."

"No."

"One of the geese laid a golden egg."

"No—your bees have swarmed."

Sure enough, in our back yard way at the top of the highest tree was a huge swarm of bees. My wife said she'd heard them come out of the hive around noon—they sounded like a squadron of high-flying airplanes, and after flying around a bit they'd clustered at the top of the tree.

It so happened that very morning a fellow commuter had told me about a neighbor of his, a Mr. Whitehead, who was an expert bee-keeper. All I knew about swarming was that bees don't usually stay around long after they swarm—sometimes only a half-hour. So I telephoned Mr. Whitehead.

Mr. Whitehead calmed me down—told me he'd lend me another hive. Then said that I should take a ladder, climb the tree, cut the branch on which the bees clustered, take it down and hang the bees on a clothes-line overnight. All this I did—incidentally without getting stung. The cluster was a foot in diameter and three feet long.

The next morning I got up at 5:30 A.M., spread a sheet on the ground in front of the newly set up hive, shook the bees off the branch and watched them stream into the new hive. Two hours later the last of them were marching into the hive—and I now had two hives of bees, for there was quite

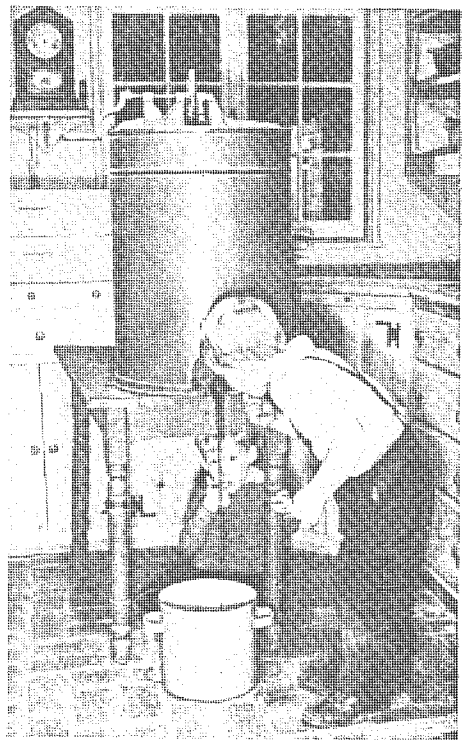
a colony still left in my original hive.

Right here I'd like to say that Mr. Whitehead has since taught me a lot about bees. Incidentally, one of the real pleasures of bee-keeping is getting acquainted with other folks who keep bees—they are a fine bunch of people.

If you're really interested in starting in with bees, visit a beekeeper in your locality—tell him you're thinking of getting a hive of bees and see if he won't invite you over to his place to watch him open his hives. If you can, spend a few hours with a beekeeper and if you will read *First Lessons in Beekeeping* you should get along fine.

It wasn't until some time after we got our bees that we found out that we could not expect much honey from them the first year particularly because we let them swarm. The reason for this is simply that the bees have all they can do to draw the wax foundation into cells plus raising the young bees and storing enough honey for themselves. Our bees had stored up over 60 pounds of honey their first year which we left them to eat over the winter. We took only four or five pounds for our own use. The second year we had about 60 pounds of honey for our own use.

Bees are one of the most fascinating things you can have. They require only a few feet of space, gather their own food, and need only 8 hours care per hive a year. You can have bees even if you live in the city. I know of a beekeeper who lives in Brooklyn.



A honey "extractor" is used to whirl the honey out of the comb. Jackie and his friend were glad to sample each batch.

Have More In Winter, Too!

NOW we come to a part of the "Have-More" Plan that probably gives Ed and me the most satisfaction of all—preserving food in various ways so that we "live off the fat of the land" all year round.

Food preservation also has very practical compensations. Vegetables cleaned and prepared in the summer or fall save hours of shopping and of preparation in the kitchen during months to come. Furthermore, home preserved food costs less. For example, our home preserved tomatoes cost us about 5¢ per quart.

Folks today are lucky to have two wonderful modern ways of conserving food: quick freezing and pressure canning—besides that dependable old stand-by, the root cellar. One obvious rule applies to them all: use only the best of your fruits and vegetables, those just ripe and free from blemishes. If you take tough old string beans and freeze or can them, you're still going to have tough old beans. At first it hurts to throw away even one bean you've raised. But it isn't long before you realize you have plenty of the best and you can afford to give the few tough ones to the pigs or chickens.

If you want to keep your preserving to a minimum, enjoy your food to the fullest extent while it is at the height of its season instead of trying to have something different every day of the week. We certainly do not get tired of eating sweet corn nearly every day for weeks when it comes fresh from our own garden.

To show you how we have a lot of variety in our home-grown food with the least effort, here is a list of foods we emphasized, each in season. We

don't claim we ate only these items at these times, but we used them primarily—we supplement our home-grown list with things we don't grow, for instance, seafood, beef, etc.)

SUMMER (July-September)

Fresh garden vegetables—tomatoes, peas, string beans, lima beans, beets, corn, cucumbers, lettuce, summer squash, egg-plant, new potatoes, etc. Fresh fruits, raspberries, strawberries, blackberries, etc. Broilers, roasters, rabbit. All kinds of frozen meat (from winter killing). Milk, butter, cottage cheese, eggs.

FALL (October-December)

Root cellar vegetables—cabbage, beets, carrots, turnips, Hubbard and acorn squash, potatoes, Jerusalem artichokes (leave in ground). Greens still in garden: kale, broccoli, chinese cabbage, collards. Stored fruits—apples and pears. Baked beans and stews. Chicken, fricassee or pies (culled hens), broilers and roasters. Other fowl—(geese, turkeys, ducks). Lamb, chevon, rabbit. Milk, eggs, cheese.

WINTER (January-March)

Vegetables and fruits—rest of those stored in the root cellar—some canned and frozen vegetables, fruits. Fresh pork or chevon, smoked hams and shoulders, sausage, bacon. Frozen or fresh chicken. Other fowl (as you cull). Rabbit.

SPRING (April-June)

Vegetables and fruits—canned or

frozen. Spring garden greens, such as dandelions, beet tops, asparagus. Fresh rhubarb. Jerusalem artichokes, and parsnips left in garden over winter. Radishes, lettuce. Hams and bacon (cured in winter). Baked beans. Broilers, frozen or fresh. Other meats from freezer. Milk and eggs.

While we're making lists, here's one you'll find helpful in deciding whether to store, can, freeze or dehydrate the various vegetables from your garden.

Easy Storage: potatoes, carrots, beets, onions, winter squash, turnips.

Best for Freezing: all meats and poultry, snap beans, shell beans, lima beans, asparagus, peas, corn, all greens and berries.

Best to Can: tomatoes, snap beans, shell beans, soy beans, peas, corn and some fruits depending on your own likes.

Most Successfully Dried: soy beans, lima beans, kidney beans, peas, corn, onions, some fruits.

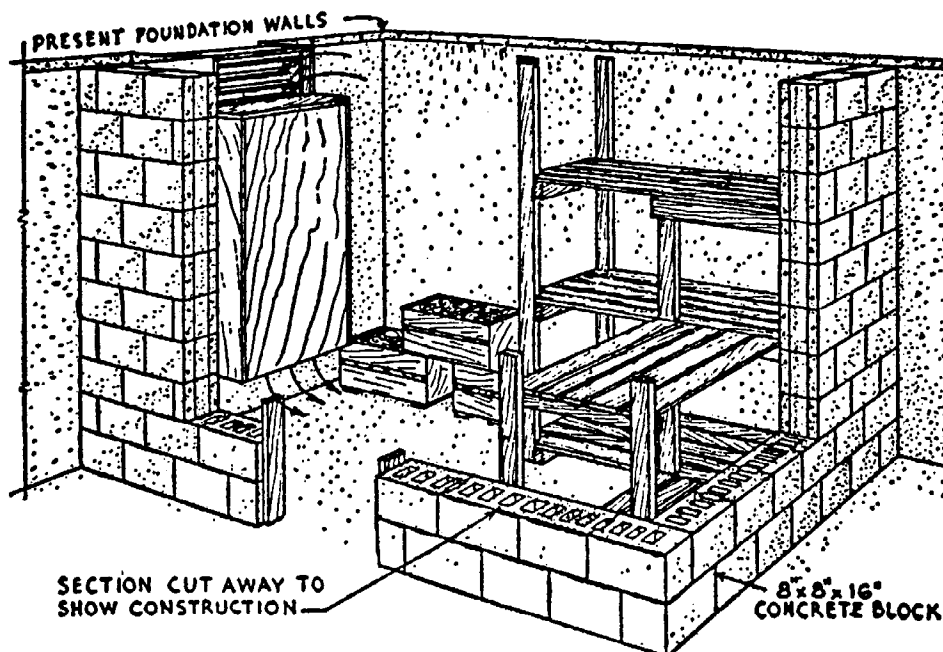
Cold Storage or Root Cellar

It so happens that the old trick of putting away root vegetables and some fruits in a cool, moist place is both easy and cheap and for certain things the best way to store.

The necessary conditions are a cool, moist atmosphere (temperature 35° up to 45°), darkness, and protection from rats and mice.

We are unfortunate in having a very small basement. What we would have liked is a cellar storage section about 10' x 6' and at least 6' high, for standing room and plenty of shelf space. A section of the basement can be walled off with economical concrete blocks or insulating board. Good insulation and a close-fitted insulated door are most important, especially if you have a furnace in the basement. A small window is also necessary in order to control the temperature within the storage unit. An earthen floor is best—it gives your storage the proper humidity. If you have a cement floor you must sprinkle it with water every day or two, or keep a bucket of water in the room. In basement storage it is also best to pack carrots, beets, and other root vegetables (except potatoes) in a barrel or crock with damp leaves or sand.

But don't hurry your harvesting to put the vegetables in storage. It is the early part of the storage period that is most dangerous. It's hard to get the temperature down to 40° or less when the weather is still warm so leave root crops in the soil until the ground is almost ready to freeze. Tomatoes, onions,



A Good Storage Cellar for Vegetables and Fruit.

squash and pumpkins, of course, have to come in before the first killing frost.

Squash, pumpkins and dry beans keep best in the attic, if you're lucky enough to have one that's *warm* and dry. Onions should be kept *cool* and dry.

Lettuce, spinach, broccoli, cauliflower, brussel sprouts, collards, kale and Chinese cabbage are hardy enough to survive light frosts and can even be left in the garden long after frosts if they are given protection with straw. We have been surprised how long you can eat right out of your garden, even in our cold New England climate. At times we have had some of these hardy vegetables in the garden until December. We've found, too, you can save your full-sized green tomatoes — just pull up the whole vine before the first frost and hang, or store the tomatoes in small baskets. They will gradually ripen if kept in a warm (not hot!) place.

But don't make one mistake we did! We didn't weed out the poor specimens at first and we lost a lot of our precious vegetables.

Bank storage space—if you have a hill handy—can be made with concrete or heavy lumber walls and ceiling. It should be at least 6' x 5' x 5' high and covered with 3 feet of dirt. No extra moisture or damp packing is necessary. In fact, getting plenty of drainage is the main problem along with keeping out vermin.

There are other methods of storage: sinking a barrel upright in the ground which is not too satisfactory because it holds so little. Another is the trench method which is simply digging a trench below frost and lining with straw; vegetables are then added, and all is covered. Obviously, it's not easy digging vegetables out and you can't check up on them easily.

For people with small cellars like us or for those of you who are planning new houses with radiant heating (which doesn't require expensive cellar space), it might be possible to have shed-type storage space attached to the garage. Of course, the walls would have to be insulated, as with the other methods, and the thickness would have to be determined by the material you used. We have not tested out this idea but it would seem to be a workable plan.

Obviously, cold storage is such an easy way to conserve food that it is probably the first method you will want to take advantage of.

Hub of The Homestead THE FREEZER

If you could take a peek in our freezer today, or any day, you would see an amazing, wonderful assortment of delicious foods. For on our miniature farm, nearly all activities lead to the freezer. Into it goes almost any-

thing and everything we can raise, plus items we buy. And the food comes out fresh whenever we want it—summer or winter. No other method of preserving food has ever made such a happy situation possible.

From the standpoint of abundance, we have eaten better on our homestead than we ever have before — and that includes the war years of scarcity and rationing. The chicken we take out of our freezer is tender, delicious. Yes, we have corn-on-the-cob and lush raspberries in January, and goodtasting greens as well as lots of other things from our past year's garden . . . and it tastes as good as it did fresh out of the garden.

Ed and I both believe the quick-freezer is one answer to man's long search for a way to harness the bounty



of nature. At any rate, we know it's a way ordinary people like us can have more security and independence than we ever thought possible.

The freezer was one of the first big capital investments we made and after using it, it would still be the first if we were starting over again. Ed loves to say that if you want to get your wife interested in homesteading, just get her a freezer. I must admit it helped intrigue me with country living and now I'm glad it did, for I would never go back to the city.

A freezing cabinet cuts your cost of living and at the same time raises your standard of living. Even if you did not raise any of your own food you could buy fresh vegetables, fruits or meat in quantities at wholesale or seasonal prices and store them away. The cabinet should eventually pay for itself from your savings in such buying. It costs

very little to run a freezer—about the same as an electric refrigerator.

Of course, if you raise your own food the savings are even greater. If you hunt or fish, you can put away some of your favorite wild duck or fresh trout for the time you couldn't otherwise enjoy such delicacies. Or you can even make some good trades with your friends—we have swapped some of our home grown fowl and meat for such tasty things as newly dug clams, fresh fish and that rare treat, venison.

You already know that in comparison with canned foods, many frozen foods taste better, look better and have more food value. We have even found that vegetables and fruits frozen immediately after picking are better than the so-called "fresh" stuff you buy in the market. When you stop to think how many hundreds or thousands of miles an out-of-season tomato or cauliflower travels to meet you you realize that the word "fresh" may mean a variety of things.

As a home-maker I have found there are many, many pleasures connected with our freezer besides its unequalled service in preserving foods. A freezer saves a tremendous amount of shopping time because you have your own little storehouse of vegetables, fruits and meats, ready to use. If you find you need a lot of fresh bread and don't make your own, you simply buy a large quantity and freeze it. What's more, you can freeze stale bread and when it defrosts, it's fresh again. Practically a miracle, isn't it?

A freezer has fascinating possibilities. Every fall we freeze lots of sweet apple cider at a cost of 2¢ a quart for morning fruit juice, or it's elegant for hot, mulled cider on a winter's evening. Also when I make stews, soups or home-baked beans, it's just about as easy to cook double or triple the amount needed and freeze some for future use. You can also freeze cakes and pies—or the dough to be used for pies and cookies. There seems to be no limit as to what a freezer can do.

If you are preserving your own foods, you'll find that freezing is far easier than canning. To show you how simple it is, here are the steps involved in freezing green peas:

1. Pick the peas from your garden.
2. Shell and wash the peas, discarding old or imperfect ones.
3. Blanch peas. That simply means placing peas in a colander or wire basket and immersing them in rapidly boiling water (at least a gallon to a pound of peas) for one minute.
4. Then immediately immerse peas in cold running water.
5. Drain and pour peas in to a moisture-vapor-proof bag or container and seal.
6. Place package in freezer.

Quick freezing fruits is absurdly simple. Take strawberries for instance. Remove stems, wash, cover with sugar-



When guests come in unexpectedly for meals, Mrs. R. can serve a wonderful dinner on short order, complete with half-a-dozen meat choices, corn-on-the-cob, and fresh strawberry shortcake. If you want to interest your wife in home food production, plan to get her a quick freezer.

ers widely distributed will make as phenomenal a change in this country as did low priced cars. With a good freezer and a little piece of land you can be just about as independent and as secure as you wish. The freezer can be the secret of one goal all we Americans constantly work for—freedom from want. Anyhow, that's what our freezer means to us.

Home Canning

There was a time when practically every article written on canning started out with the old saw—"Eat what you can—and can what you can't."

Today, that's so far from reality it isn't even funny. Of course, you eat all you want during July, August, September and October directly from the garden. Then, as we've pointed out, it's easiest to utilize a root cellar. Next is preservation by freezing—if you're lucky enough to be able to use this wonderful new method. Then comes canning.

In all frankness, it is best to preserve certain things in glass jars—tomatoes, sauerkraut, pickles, stewed fruits, preserves and jelly. But canning, even with a pressure cooker, is more difficult than freezing and the results, minus the exceptions noted, are, we think, inferior to freezing.

I will say that the savings in canning your own fruits and vegetables instead of buying them is tremendous. I know that's contrary to what we've been told, but it's true because you do it all on your own place—you don't pay for all the traveling raw vegetables do to get to a factory and back in cans to grocery shelves. Take the popular tomato as an example—here is the cost of our 75 quarts of home canned tomatoes the best we can figure it:

Plants	\$1.00
Spray .....	.25
Jar tops .....	.75
Jars (amortized on 10 yr. basis)...	.45
Cooking (coal stove) estimated ....	.25
Spices .....	.05
	<hr/>
	\$3.25

75 quart: commercially sell at 22¢ each—\$16.50
Our Savings: 80%.

And we do not blush at saying our tomatoes are superior to what you can buy in taste, color and texture!

Prejudice had been built up against home canning by making it appear to be a back-breaking complicated chore. But we have found it fun by doing only a few jars each day in the summer instead of trying to do it all in a few days. It is pretty simple, especially with the help of the booklets put out by the canning jar companies. We happen to have a Kerr booklet (Kerr Glass Manufacturing Co., Huntington, W. Va.) which cost 10¢ and which led us successfully through all our canning, though neither Ed nor I had ever canned before.

Canning is not complicated but it

syrup, package, freeze. When it comes to meats, it's nothing at all once the meat is cleaned and cut, ready for cooking. Just wrap and freeze.

There is a wide assortment of containers made especially for freezing—that is, vapor and moisture proof. I won't describe these here, for you will have to get a bulletin or book with complete directions if you are going to freeze foods.

We bought our freezer shortly before Pearl Harbor and paid \$440 for it. It is a 13 cubic foot cabinet and holds approximately 700 pounds of food. The price we paid was high, but few freezers had been made at the time we bought ours. Now, many large companies are building them, with mass production the price is lower; \$230 for one similar to ours.

Many people have been using frozen food lockers which have rented for \$6-\$15 a year. If the locker plant is situated conveniently to your home, you may prefer this method of having a frozen food supply. A locker plant usually offers the convenience of packaging and cutting meat for you and also provides a place to hang and cool meat before freezing.

However, I personally prefer a quick-freezer at home where I can tuck away a few boxes of fruits or vegetables or a small quantity of meat as I find time to prepare them. When you are raising large quantities of your own food, it

may become practical to use both a home freezer and a locker, as you would then have the convenience of both arrangements. Or another plan would be to build (or have built) your own freezer room and cool room.

From our own experience we have learned several things about buying and running a freezer. We made a serious mistake in placing our freezing cabinet in our garage where the temperature drops below freezing in the winter. We discovered that such low temperatures prevent the motor from operating properly, so we now have it in our "Harvest Room." After having our freezer break down once and losing some of our hard-earned foods, we know now that there should be some signal to warn you when the temperature rises above the danger point. There should also be instructions fastened on the freezer to tell you when and where to oil the motor. These things we learned from our one bitter lesson and we wanted to pass them along. It pays to buy a good cabinet from a reputable dealer and with so many new designs developed during the war years it will be wise to look over a number of freezers before choosing yours. Whatever your intentions are on using a freezer, we would certainly recommend getting one with a special compartment for quick-freezing your own food.

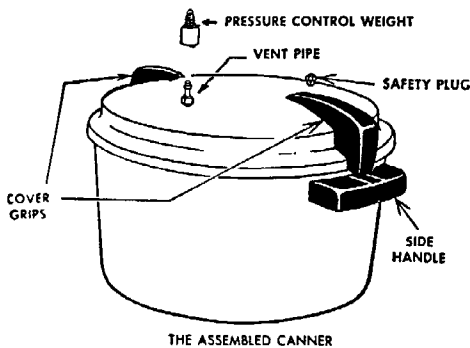
We certainly believe that food freez-

does require accuracy. To make the work easier, get all your equipment ready to use before you actually prepare the food. And by all means do your preparatory work in a pleasant place. At first we did ours on our back terrace, but now we have our delightful "Harvest Room."

It is usually suggested that you plan 100 quarts of fruit and vegetables for each member of your family, but if you are seriously trying to be self-sufficient and are preserving food only by canning we believe you would want somewhat more. However, the first year aim for the 100 and the next year you'll be able to adjust the amount to your own needs. The 100 quarts should be approximately divided into one-third fruits, one-third vegetables and one-third tomatoes or tomato juice.

That figure sounds rather forbidding doesn't it, from the standpoint of quantity and time to preserve? Let's take up the question of quantity. In the case of apples, one bushel produces about 20 quarts; cherries, 24 quarts; peaches, 25 quarts, plums, 30 quarts; berries, 24 quarts. That is a good deal more of each fruit than any one person will eat during the non-productive season. So

Pressure Canner.



to achieve your goal you would only have to can a few quarts of each fruit as it came in season. The same principle applies to vegetables.

As for canning equipment, by all means try to get a pressure canner. It is recommended by all authorities as the safest way to can your vegetables properly and it saves time, fuel and work.

Still unknown to thousands of families the pressure canner is also a miraculous cooker. It will cook a complete meal in 10 to 15 minutes, including soup, roast and vegetables! Using little water, it saves valuable vitamins and minerals. It tenderizes cheaper cuts of meat. It can preserve surplus meat, poultry or fish, although we believe that the quick-frozen method is best.

As for pressure cooker size you will want an 18 quart canner (holds 5 quart jars) or a 25 quart size (7 jars). With the canner you will receive a booklet giving you a time table for processing and general directions for canning.

Even if you don't go in for all the "Have-More" Plan, we believe in "canning all you can" anyway—and that goes for peace time as well as during a war or a depression. Believe me, it will give you a tremendous feeling of satisfaction and security when you begin to line up the jars on your shelves. Ed is just as proud as I am to point to the canning shelf and say, "I canned those bread and butter pickles." Such bragging is good for the soul—it's one of those intangible satisfactions you get from homesteading.

Salt Some Away

Another easy way to keep certain vegetables is to salt them down. The one big fault with this method is that it destroys a lot of the vitamins and minerals. For this reason we have not done any brining (except to make sauerkraut, ham and salt pork).

Everybody knows about salting cabbage to make sauerkraut. I put mine up in jars as I have found this even easier than the crock method. It is also possible to salt away corn, beans, cauliflower, turnips and peppers.

Alternate layers of washed vegetables and salt are packed into earthen crocks and weighted down. If enough brine to cover vegetables completely is not formed, a concentrated brine made with boiling water may be added. Use $3\frac{1}{4}$ cups of salt (common or coarse salt is better than fine table salt) to 6 quarts of water. Keep in a cool place—the vegetables are ready to use at any time.

To desalt for use, put salted vegetables in a big pan, cover with cold water, heat to luke warm, stir and pour off water. Repeat until vegetables are only slightly salty. Then you can cook in regular manner.

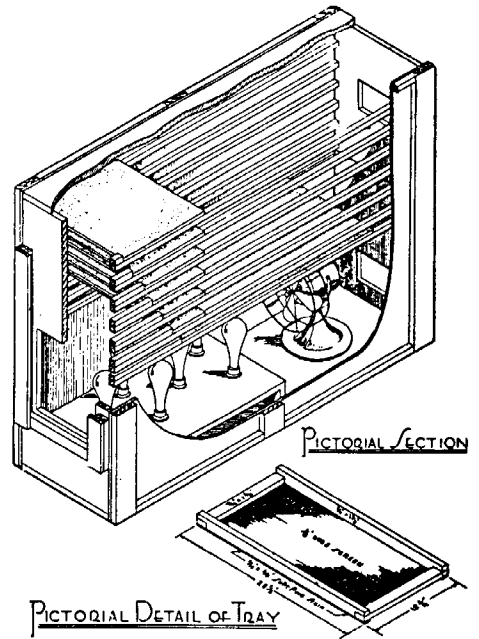
Dehydration

During the early part of the war I read a lot of articles telling how wonderfully easy it was to dry your vegetables and fruits at home. Well—in our attempt to carry out miniature farming in the easiest, most modern way, we borrowed one of the very best home model dehydrators which set back one of our neighbors about \$40.

We soon found that proper dehydration is not so terribly simple after all. It takes as much preparatory work as canning and it is more difficult than freezing foods. We think its worst feature is the long drawn out drying process. It takes 10 hours just to *dry* the food thoroughly; you can scarcely complete the project in one day.

In our section of the country where there is much moisture in the air, dehydrated food should be packed in tightly sealed jars so it won't absorb water again until you use it. And when you do, dried food takes pre-soaking to return it to its normal state.

We do not believe home dehydra-



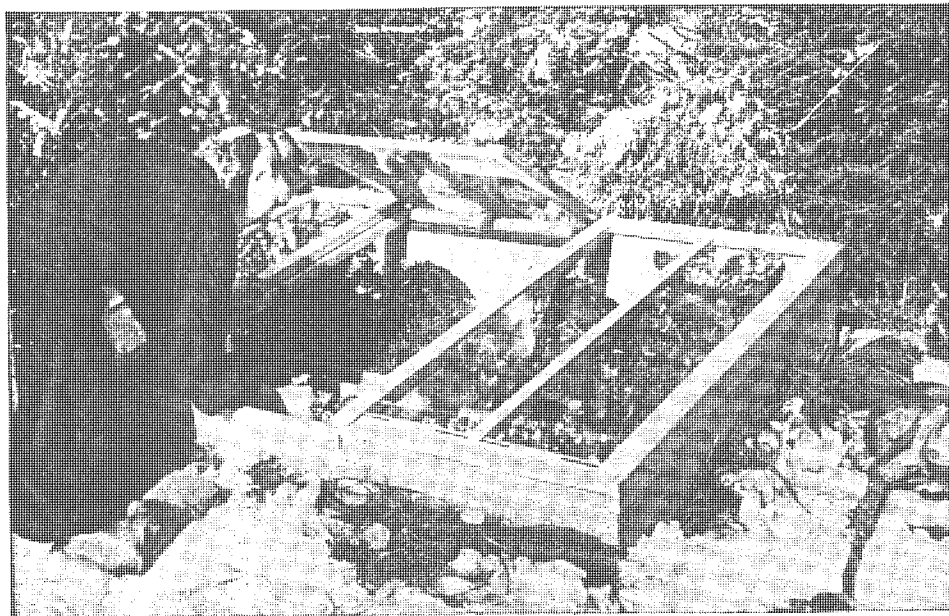
tion will ever be widely used in America except where it is specifically desirable for reasons of taste, geography or space. Frankly, we couldn't stand the taste of the three things we tried—snap beans, spinach and broccoli. But if your family is extremely fond of dried beans and peas then it would be worthwhile to dry them. Also, we all know that certain fruits are splendid dried.

If you are interested in drying foods, we suggest you try it out in your cooking oven first and see if you like the idea. You'll get about the same results you'd get with a special machine. Place oven door open and set the temperature at 165°. You'll have to get the length of time for drying your specific vegetable or fruit from an instruction booklet. Then freshen up the dried samples, cook them and see if you like them. If you do approve, you can either buy or build a dehydrator.

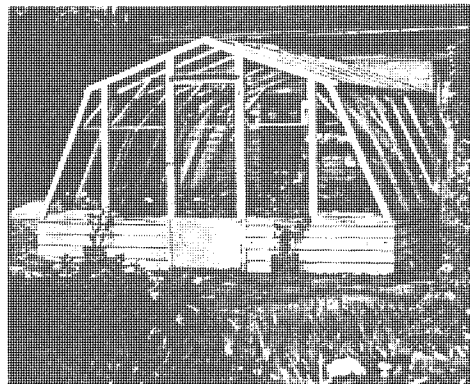
You can build a dehydrator using a small electric fan and a bathroom heater but the thermostat is quite important. It is probably just as well to buy the whole dehydrator or else use your oven. Detailed building plans may be obtained from your County Farm Agent.

We'd suggest you read a little booklet called "Dehydrating Fruits and Vegetables," put out by General Electric Company, Schenectady, N. Y. It costs 10¢ but it is well worth reading before you decide to go in for dehydration.

WINTER GARDEN—Cold Frame, Hot Bed, Small Greenhouse



Hot bed made with new-type, small-size, putty-less sash. A hotbed is simply a cold frame heated by a bottom layer of manure or an electric heating unit.



(Left) A small greenhouse may be attached to the house and heated by the house furnace.

(Below) Interior of a small greenhouse that can be bought for \$300. This new Lord & Burnham greenhouse has automatic temperature control and automatic watering.



WHEN we first produced our own vegetables, we looked into starting plants under glass. Because this seemed complicated and because we had only about an hour or so of spare time a day to devote to our food-raising activities, we decided we'd buy our plants from a good local greenhouse.

The main reason for growing plants under glass in all of the U. S. (except for the extreme Northern States with their exceptionally short growing season) is to spread the products of your garden over as long a period as possible. Once you have a freezer, glass gardening isn't nearly as vital.

Probably you've read about the new small greenhouses with automatic watering and temperature control that sell in the neighborhood of \$300. We talked to the manufacturer, the Lord & Burnham people at Irvington-on-Hudson, N. Y., to find out if these were economical and practical. Here's their answer:

"Frankly, from a straight economic point of view we cannot justify a greenhouse in a 'Have-More' project—we would not attempt to, any more than you can justify the purchase of any luxury on straight economic grounds.

"For an ardent amateur gardener, a greenhouse has a different appeal. It permits him to keep his hands in the soil all winter; it permits him to have the satisfaction and pleasure of growing plants and flowers. The best satisfaction comes to those specializing in bringing in unusually fine quality of some particular specie or variety. Then the greenhouse owner can raise plants for setting out in the spring and do it easier and more satisfactorily than in a hotbed or cold frame."

I do think it was pretty fine of these people who sell greenhouses to give us such an honest estimate. They just don't believe a small greenhouse will "pay for itself" on the average homestead. It seems that the value of a greenhouse depends largely on how far north you live. If you live where the grocery stores carry most summer vegetables all winter it probably won't pay you to grow vegetables in a greenhouse.

Commercial growers north of New Haven and especially up past Springfield, Massachusetts into Vermont and New Hampshire can make a greenhouse pay on just one tomato crop. Further north, in Ontario, Canada, it is easier for a commercial grower to make a sure success with winter vegetables.

If you think you'd like to have a greenhouse you might consider attaching it to your house. This lowers the heating cost considerably. I know that Fred Rockwell, editor of *Home Garden*, has a greenhouse hitched to the southeast corner of his house. The greenhouse is heated by the same furnace that heats the house. This is an economical arrangement because on sunny winter days the greenhouse absorbs a lot of heat and contributes this extra heat to the house. Fred says this system works so well his fuel bills are no higher than before he had his greenhouse.

Grow Your Own Fish

HAVING a fish pond in your back yard seems almost too good to be true. But Government experts say you can easily build a pond for as little as \$100, and that a one-acre fertilized pond will normally yield by hook and line "something like 40 or 50 one-pound bass and about 600 to 800 quarter-pound sunfish each year".

We were surprised to learn that *you don't need a stream or brook* to have a fish pond. In fact, experts say it's better not to build your pond by damming a brook because the pond is too easily destroyed by floods. They recommend excavating a naturally low area using the run-off from the surrounding terrain as the source of water. Or you can use a spring or well. The pond should be 6 to 12 feet deep to protect the fish from freezing and possible drought.

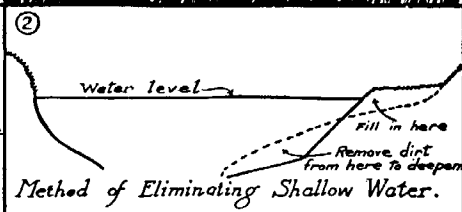
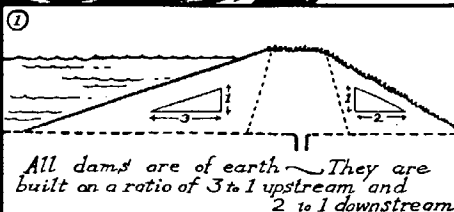
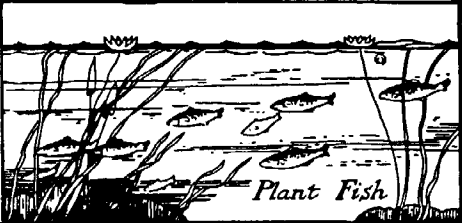
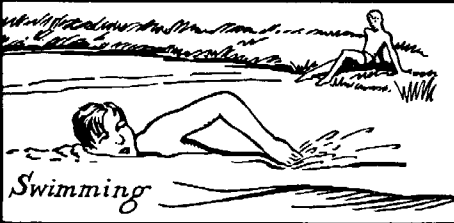
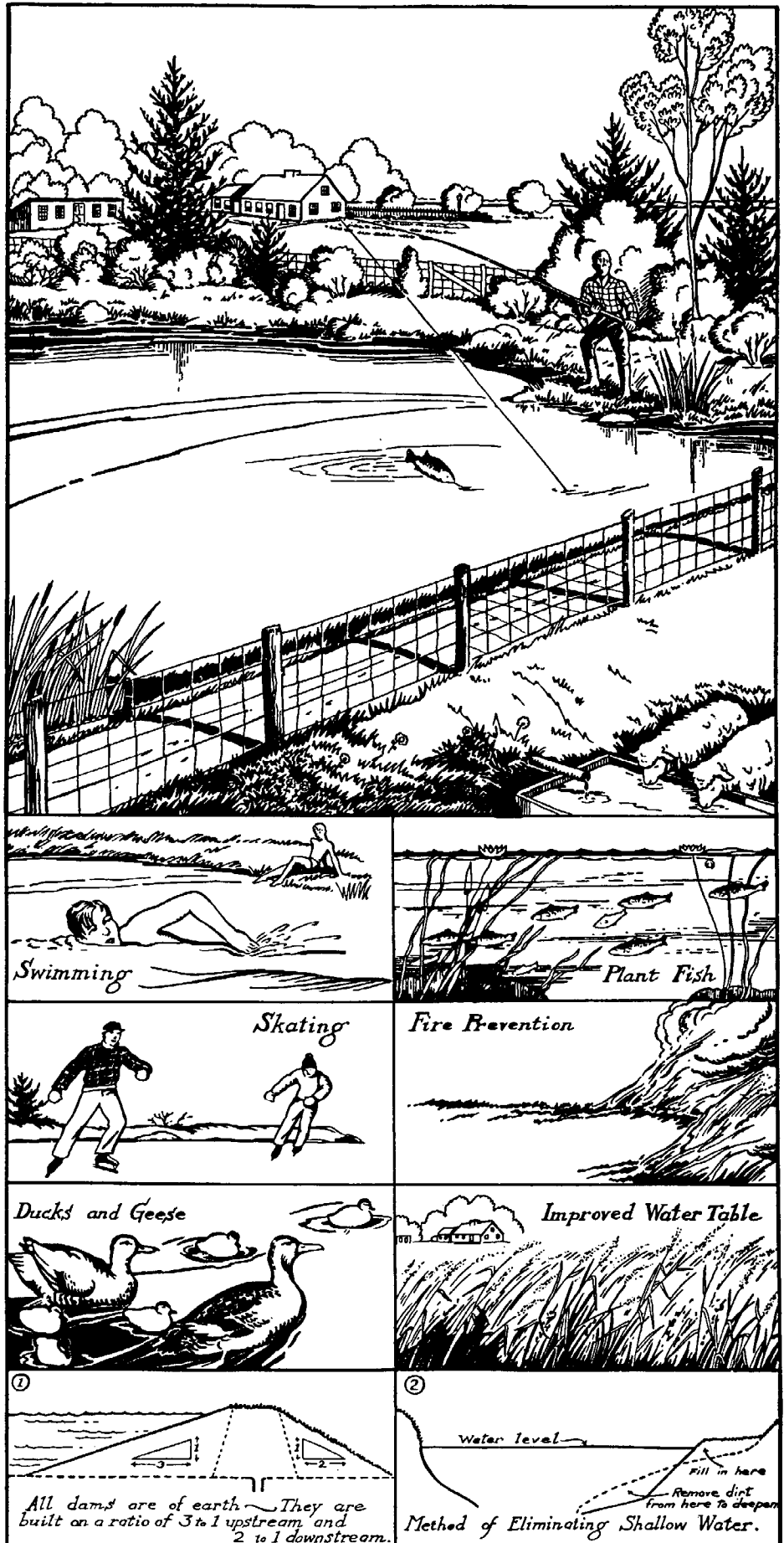
Over 7,000 farmers grow fish in their own ponds. You stock a fertilized pond in Spring or Fall with fingerlings of bluegill sunfish and large-mouth bass and you can fish them out after 4 to 12 months. The fingerlings are obtained free or at a small cost from State Hatcheries or from the U. S. Fish and Wildlife Service. Some states, Ohio for one, will practically build the pond for you.

To keep plenty of fish growing in the pond the experts have worked out a fascinating "food chain". First you distribute about 100 pounds of regular 8-8-4 crop fertilizer in the water. After a few days the water will take on a brown or greenish tinge which means the fertilizer has caused the growth of microscopic plants called algae on which young sunfish thrive. Then (in Spring or Fall) stock a one-acre pond with about 800 fingerlings of sunfish and 100 of bass. The sunfish live on the algae and the bass live on young sunfish. This food chain will continue producing fish year after year so long as you keep the pond sufficiently fertilized and *do plenty of fishing!* It's impossible to catch too many fish by hook and line. In fact not fishing out enough sunfish may result in too many for the amount of algae and the sunfish won't grow to eating size. The same will happen if there aren't enough bass to eat the young sunfish. For more variety you can also grow bullheads, pickerel, and other fish, but stocking must not be done indiscriminately or it may upset the whole balance in the food chain.

A permanent drainpipe in the dam facilitates draining; if pipe is large enough fish pass through so you can catch them the "easy way." Young trees, shrubs and grass planted around the pond make cover for wild life.

P. S. from Carolyn R.

Personally I don't want to go swimming in any old brown water full of algae, but as a fish pond it sounds wonderful and I hope we can build one!



The Woodlot

ORIGINALLY our house was located in the midst of two acres of woods. As we've cleared our land, we've had plenty of firewood.

It's a good idea to have an acre or so of woods. Just the dead and fallen timber will give you about a cord of wood per acre each year for your fireplace—and some fence posts too. Maybe you can harvest some lumber—it's much cheaper to haul it to a local sawmill than it is to buy lumber these days. About 6 months of exposure to sun and air is necessary to dry green lumber.

A woodlot is little trouble. Here is a simple program that will help you keep your woods in good condition and at the same time provide you with firewood and some lumber:

- 1.) Fence out livestock. They eat saplings, injure young roots, cause erosion, and in time can ruin a woodlot.
- 2.) Take all diseased or down trees for firewood.
- 3.) Practice *thinning*. This simply means cutting out the weed trees and "crowders" so the good lumber trees will grow faster. It should be done about every two years. Save what you cut out for fenceposts, bean poles, etc.
- 4.) Prune off excess branches on lumber trees to prevent knots. Save these branches for firewood. Learn to recognize your valuable lumber trees, and mark them with a band of white paint.
- 5.) Harvest every lumber tree before it becomes over-age. You should learn the proper size tree to cut. Government studies show a 9 inch maple will bring only 1/36 of the price paid for a 26 inch maple. The profitable way to sell is to make the cutting yourself and haul the logs to the mill.
- 6.) Plant seedlings in any bare patches you find in your woodlot. Trees will grow in the poorest possible soil where no crops can be grown.
- 7.) If your trees are attacked by blight, disease, or insects, ask advice from your State Forester, or County Agricultural Agent.
- 8.) Protect your woods from fire!

For construction on your place you can hire (or borrow) a portable sawmill to come to your woodlot and saw up lumber trees there. This will be a lot cheaper than buying lumber. Whatever you do, never cut an entire stand of trees. Leave at least 5 large seed-producing trees per acre, and plenty of saplings and younger trees.

Fence Posts

Soft woods such as willow, soft maple, beech, and box elder will last only 3 to 5 years in the ground as fence posts. But you can make them last 20 to 25 years by boiling the lower ends in a steel drum of creosote. Let them cool in a second drum of creosote for best results.

How Much Is A "Cord"?

A standard cord is a stack of 4-foot lengths 4 feet high and 8 feet long. However, firewood is usually cut in shorter lengths so a "cord" of firewood

may not be a standard cord. If you have occasion to compare different prices for a "cord" of firewood, it's a good idea to get the measurements, so there is no misunderstanding.

Clearing

By all means don't try to save money by buying wooded land and clearing it to make your garden or pasture. Clearing is really tough work and it's expensive no matter what method you use. You have a choice of four methods of removing stumps (after you've cut down the trees) and you'll probably have to use *all four* ways on some of the big stumps before getting them out! The most primitive is to dig and grub the stump out with a pickaxe and axe. It's a long tough job. Allow at least 1/2 a day to dig out a 6 inch stump this way. A quicker way is to burn them out, using a portable burner which you may be able to borrow from a neighbor. We burn out small stumps this way in less than 2 hours. The burner has a strong forced draught which produces intense heat. However, it doesn't burn all the roots—you have to chop them out. Blasting is another way. Small stumps can be blasted entirely out of the ground and large stumps can be loosened up this way and then pulled out with a block and tackle or a patented pulling device hitched to a team or tractor. For details and safety precautions on blasting write to the Superintendent of Documents, Washington, D. C. for U.S.D.A. Bul. #191.

All in all, I really believe the best method of clearing is to hire a bulldozer. It's amazing how much damage a bulldozer can do in a short time. In just eight hours the bulldozer we hired (at \$5.00 an hour) cleared about 20 stumps, 2 big boulders, and did all the grading and filling necessary to give us a good level half-acre garden plot.

Erosion Control

If you have waste land where the soil is too poor for crops, you can grow trees there. They'll take many years to grow to maturity but meanwhile they prevent erosion, add beauty to your homestead, and increase its value. (In some localities you will be assessed slightly higher taxes for the acres you plant to forest, but they're worth it.) Your State Forestry Department may provide free seedling trees.

HEATING VALUE TABLE

GOOD	FAIR	POOR
Hickory	Chestnut	White Pine
Beech	Hemlock	Cottonwood
Locust	Catalpa	Aspen
White Oak	Box Elder	White Spruce
Ash	Butternut	White Fir
Birch	Soft Maple	
Sugar Maple		
Elm		
Black Walnut		
Apple		



The spirit is willing...

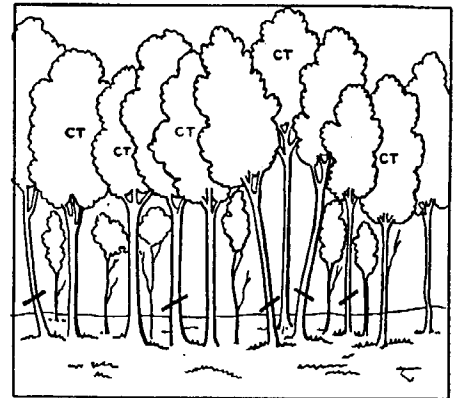
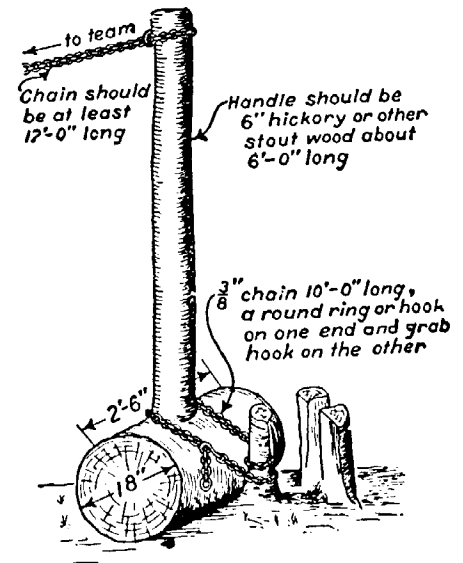


Diagram of a typical group of trees showing which trees to cut and which to save. Trees marked CT are the crop trees you are saving till ready for harvest. Notice you cut some large trees to allow younger trees to grow.



A simple stump puller like this can easily be made. It increases the pulling power of a team, car, or tractor about 6 times.

Transportation and Power

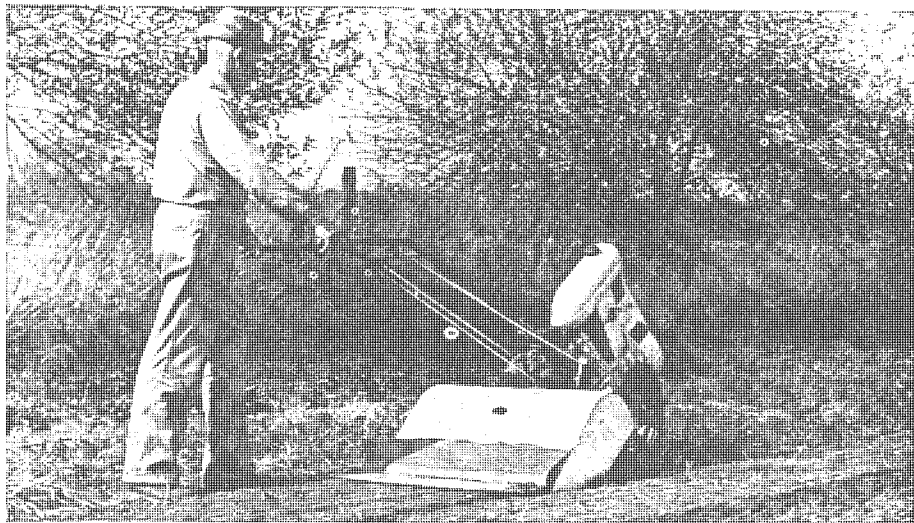
SOME kind of car is almost a necessity in the country. Even so, present day cars are not very satisfactory for productive country living.

Today cars are made primarily for city dwellers. That is they are made to transport people—and only people. In the country on a small farm there's a lot of other things *in addition to people* that you want to move. To name a few: lumber, hay, grain, livestock, poultry, firewood, gravel, cement, earth, produce. On a large farm a truck is probably a worthwhile investment but on a small place there is not enough work for a truck and there's many a need that a truck won't solve.

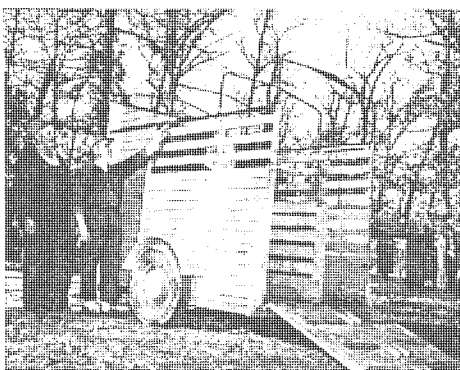
There are countless jobs around a small place that you can get done a lot easier with some power equipment. Until recently, the manufacturers more or less turned their backs on the small farmer. Now they realize the terrific potentiality in supplying the small land-owner and a number of power units for the small place are coming on the market.

In trying to decide how best to solve our Transportation and Power needs we made up the table below. Perhaps this will help you solve your problems. All prices are estimated for new equipment; obviously good second-hand equipment may be bought cheaper.

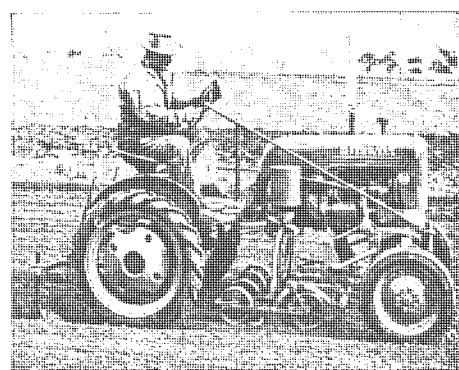
For example, in place of the 9,000 "garden type tractors" manufactured yearly before the war, over 100,000 are expected to be sold post-war. The "garden tractor" people are trying to put out better and more powerful machines. At the same time the manufacturers of large-scale tractors are developing smaller models for use on farms of 40 acres or less. All this can only result in better and cheaper power equipment for the small land-owner.



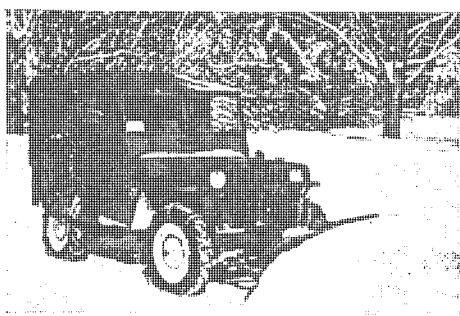
A Walking Tractor that plows, disks, and harrows in one combined operation—a "new" principle of cultivation ideal for some small areas.



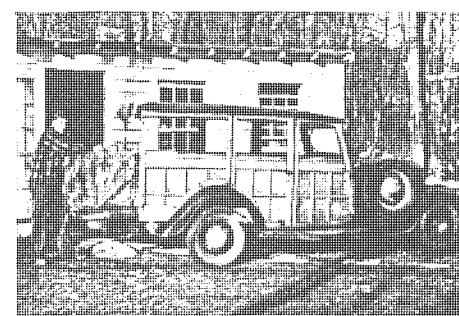
A Utility Trailer plus the family car is worth consideration. This home-made trailer is built low to facilitate loading . . . carries 2 animals . . . has many other uses.



A Baby Tractor with the full complement of attachments offers the small-acreage farmer low cost power for all field and garden operations.

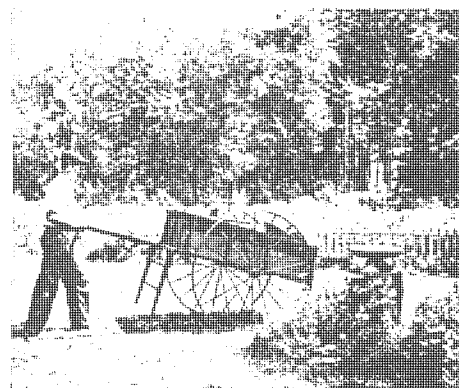


A Civilian Jeep works as tractor, passenger car or small truck and as auxiliary power plant for running all sorts of machinery from saws to your freezer in an emergency.



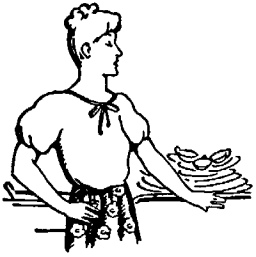
A Station Wagon is an all-purpose car for country homes. Unfortunately its cost is high and the wood construction needs yearly paint or varnish.

The Needs	Possible Solutions			
	Civilian Jeep	Car & Trailer	Station Wagon	Walking Tractor
Getting to work	Yes	Yes	Yes	No
Shopping	Yes	Yes	Yes	No
Social Life	?	Yes	Yes	No
Long Trips	?	Yes	Yes	No
Heavy Loads	Yes	Yes	Yes	(short distances (with trailer))
Moving Livestock	(with trailer)	Yes	(not large animals)	No
Snow Plowing	(with attachment)	(with attachment)	(with attachment)	(with attachment)
Power "take-off" for Sawing Wood, etc.	Yes	No	No	Yes
Cutting Lawn	?	No	No	Yes
Cutting Hay	Yes	No	No	Yes
Cultivating & Plowing	Yes	No	No	Yes
Cost (New)	\$1,500	\$1,150	\$1,350	\$500.



An Army Cart holds about four times the load of an ordinary wheelbarrow and is still easy to manage.

Housekeeping on a Homestead



HOUSE-keeping should be a challenging subject to us American women. Instead, many of us consider it with boredom, or

with resentment that we have to do it at all—and if our husbands try to talk over our methods, we are likely to fly off the handle and wind up with the old come-back, “Well, I’d just like to see you take care of the house for a while!” I’m afraid I have to admit to just such arguments with Ed in the past, and to be honest, there is something to be said on both sides.

I do believe that there have been several things outstandingly wrong with modern housekeeping and that homesteading can answer some of our problems. The more important drawbacks I’ve found are:

(1) *Our own attitude toward housekeeping* is probably the key. I’m afraid that many of us look down our noses at it—we consider most any other job but homemaking glamorous. What we forget is that every job, whether it’s a man’s job or a career woman’s job in office or factory, has its own monotonous routines, too.

(2) *Lack of creative work in modern housekeeping.* Women really can’t be blamed for considering “housekeeping” a routine bore—that’s about all that’s left of homemaking in the city or suburbs. I don’t know how you classify your jobs, but, outside of raising children, I consider cooking about the only creative work left in most city and suburban homes today. The current trend seems to be for more and more of the family work, recreation and even child raising to be handled outside the home. All that will be left is vacuuming, washing dishes, and dusting—all negative and unstimulating.

(3) *Lack of economic satisfaction.* Since today’s woman has been brought up to be independent, it’s no wonder she’s not satisfied with the eternal routine left in the home. She’s not increasing her family’s security unless it’s in the negative way of cutting down expenses. Since the urban custom is to buy everything eaten, worn or used, it’s no wonder urban women have begun to feel their best contribution to their families would be jobs outside the home.

(4) *Lack of housekeeping efficiency.* Manufacturers have done much to make housekeeping efficient and easy,

but keeping house still needs a thorough engineering job done on it. The amount of your daily work is determined the minute you choose your house, the type of furnishings you put in it, the way you arrange your storage space and the type of clothes you buy. If we women want to contribute more to our families we will have to make routine work as efficient as possible.

What Does A Homestead Do To Housekeeping?

It makes a big difference in your housekeeping when you have a homestead. When I lived in the city I had no interest whatsoever in housework except for learning to cook elegant meals. I became so bored with apartment housekeeping I found a job in a large New York City department store. And did I add anything to Ed’s and my security? I did not—for it took practically all my salary to provide adequate clothes for my job, lunches, bus fares, a part-time maid and other incidentals. Now that I am a partner on a homestead, housekeeping is just the routine part of a bigger job—not the be-all, end-all of my existence.

Of course you have much more to do on a country place than in the city. But these new jobs are stimulating, creative and varied. Think of the satisfaction of having a freezer stuffed with luscious food you helped raise yourself. Imagine your canning shelves laden with full, glistening jars—your handiwork.

And you can do all sorts of other things: separate milk to get heavy cream, make scrapple, make cheese, extract honey from the combs, (this is a 3-ring circus of fun!) and serve dinners of “home-raised” products that guests really appreciate!

There are also many pleasurable activities outdoors. The pigeons, geese and ducks, and all the new born goats can be your special projects. You’ll help with the garden, have herbs and all the beautiful flowers you want. Someone has said, “He who lives with the land has innumerable professions.” He is, for example veterinarian, farmer, gardener, animal husbandman, chemist, accountant, manager, weatherman, machinist and so on. That is equally true for the wife who shares homesteading activities.

Once you get started doing and making things for yourself you’ll probably want to do even more—do more sewing for your house—make your own Christmas presents (we’re raising popcorn this year for little remembrances)—maybe even make some rugs or do weaving. You can also raise or make

things for sale. Life will become a question of how can you do all that you want to do.

Because a homestead offers a woman an unlimited field of creative activities, it removes the complaints against housekeeping.

First, your own attitude is brighter and more interested.

Second, your work gives you pleasure and satisfaction because it is creative.

Third, you have that fine independent feeling of holding your security in your own hands, and you’ll take great pleasure in knowing your children are being well-fed and growing up in the most wholesome of surroundings.

Fourth, you are more of an executive and have more interest in increasing your efficiency.

In the book “Zero Storage” Mr. Sparkes, the author, describes the Fylers, a family of seven who have been homesteading and he sums up the economic point with this sentence. “For Mr. Fyler, one fact must be crystal-clear: by reason of the land and the freezer, instead of one Fyler, seven are now helping to make the family living.”

When Jackie gets a little older, there will be three Robinsons instead of two “bringing home the bacon.” Before we started homesteading it was just *Father!*

Now For The Housekeeping Itself

It has taken me three years of “homesteading” to realize how ridiculous it is to judge a woman’s housekeeping ability by whether or not her country house is spotless, with dishes and beds attended to by 10 a. m. Instead of ironing or dusting, you will want to pick strawberries that are just ripe, wrap a chilled lamb for the freezer or go fishing with your children. But your very annoyance with the routine tasks will give you the incentive to cut down the time they take. And when you tackle them with this sort of outlook, they



immediately become more interesting! It seems to me, proficiency in housekeeping falls into three main divisions:

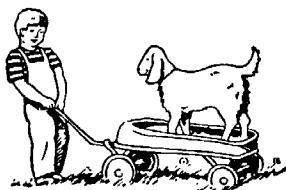
- (1) Layout and furnishing of your house.
- (2) Equipment.
- (3) Management and organization.

The House And What You Put In It

Architects are now beginning to realize that a woman's working areas should be laid out in an orderly, convenient way. I have begun to see more plans recently where washing, ironing, sewing, cooking and children's play areas are correlated instead of being scattered all over the house from attic to basement. Also on a homestead you will want to consider whether the bathroom is handy to the outdoors, whether there is plenty of space for outdoor clothes where you usually enter and whether there is sufficient place for country tools and equipment. The amount of your routine work is somewhat determined the minute you choose a house. If you should build a new house, there will be many new designs and ideas to choose from. For instance, new radiant heating (hot water pipes under the floor) not only provides a healthier heating plan, but it will mean less work for Mama—no dusting and no painting those unsightly dust catchers called radiators. Also floors over the heating pipes may well be tile—warmer in winter, cooler in summer. And if the floors are pretty and warm—why, fewer rugs to pay for or to clean.

If you already have a conventional house there are still plenty of things you can do to make housekeeping easier. On your floor you can use patterned or neutral colored rugs which don't show dirt quickly, or scatter rugs which can be picked up and washed. The floor itself is easier to clean if it's waxed and a vacuum cleaner can often be used on it to more advantage than a dust mop. Or if you have an old unsightly floor, spatter painting might be the answer to simple care. Wooden furniture collects less dust if it's waxed instead of polished with oil.

When it comes to upholstered furniture most of us know how much simpler it is to have slipcovers which can be removed and washed easily. And if you buy or make slipcovers, bedspreads and draperies out of material that doesn't have to be ironed, (say seersucker, monkscloth—rubber or aluminum cloth that can be washed with a hose) then you've saved yourself even more work. These are just a few samples of what you can do if you look at your work with a mental question mark.



Equipment

I remember a city husband saying, "I don't want my wife to have any more gadgets to make her apartment keeping easier—she'll just spend more money shopping!" I guess it's true in the city that the more spare time you have the more money you spend. There's not much else to do.



On a homestead, however, spare time is time to use productively. Of course you can run into town but you don't want to go when you've got a garden to plant or the bees are getting ready to swarm or a new lamb is expected.

So machinery for housekeeping and homesteading jobs is a good investment, for you use this equipment to create more for your family. One homestead husband told me he would rather have an electric mixer with all its extra parts in his home than an automobile (granting that a car wasn't a vital necessity to his job).

Here are some specific ways to use equipment on a homestead like ours:

a) *Cooking.* The freezer is one of the greatest aids to cooking. While its primary function is to preserve raw food, it is a boon to better cooking management. While you're cooking stews, soups, beans, creamed foods, cakes, cookies or breads, it is easy to make double or triple batches and put part of them in the freezer for another meal. You can assemble a variety of dinners from soup to dessert, place each dinner in one bag or box and freeze it for future quick delivery. Lunches too can be prepared for the week and frozen each complete in a separate lunch box. I should mention that "a grocery store in your home" also saves a surprising amount of shopping time.

The electric mixer with all its parts is another wonderful aid to better and speedier cooking. Besides whipping up cakes, milk shakes, cream and meringues, the mixer can be used to squeeze oranges, grind coffee, peel potatoes and shell peas and beans.

The pressure cooker is a splendid contrivance. Ed discovered ours at the N. Y. World's Fair and considered it the most wonderful thing at the whole fair. The actual cooking time for a stew is just 15 minutes!

b) *Dishwashing.* The electric dish-

washer not only saves labor but also time because you store the dishes in the washer and run the machine once a day. But if you don't have a dishwasher, you can approach this chore somewhat as if you did have the appliance. In other words, washing the dishes after each meal is another one of those silly standards we have set up for ourselves. If you rinse the dishes, stack them, wash them once or twice a day, rinse with boiling water and towel-dry only the silver, you will save yourself almost as much time as the machine can save.

c) *House cleaning.* The vacuum cleaner can often be used to good advantage on the floors themselves and for more of the dusting jobs. However, cleaning can chiefly be simplified by the furnishings you choose and your own good management.

d) *Washing And Ironing Clothes.* Of course, we all know that washing is being reduced to the minimum by certain types of machines which wash, rinse, and even dry for you. As for ironing if you hang flat things like sheets and towels very smooth and straight, there's really no reason for ironing them at all. I have heard any number of men and women say they loved to sleep between sheets fresh from the country-scented breezes. Such clothing as seersucker dresses and cotton knit shirts also need no ironing (or the very slightest touch) if they are hung carefully on the line. Those fabrics which insist on being ironed (and how many we can do without!) should be taken down while damp to save the sprinkling job. Notice how your ironing depends on your washing routine and both depend even more on how you shop. As one clever homesteader wife in Ohio wrote, "I begin my ironing when I do my shopping"

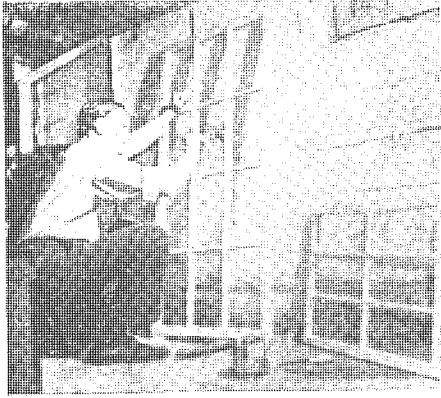


All in all I've found that housekeeping in the country can be run a little more like a business. Each housewife, as an executive (when the Boss is away) will want to do her own planning, adapting the schedule to the weather vane—whether there are raspberries just ready to pick or whether it's high time for a relaxing swim.

The women I've met who are interested in homesteading in the modern way are smart—they know that they will have a big job to do.

But they also know the rewards are tremendous.

Homestead Mechanics



WHEN we lived in a city apartment we didn't even want to know how to fix a dripping faucet or repair a sagging door or paint our storm windows.

It's different when you have a place in the country of your own—you want to learn how to maintain your homestead. You also want to utilize all the labor-saving equipment that is practical. It doesn't seem right not to understand the workings of machines and devices we have to depend on every single day. And what a difference between the resentment you sometimes feel when you have to pay big repair bills and the feeling of real satisfaction you get from making repairs yourself. Even if you've never done more than stand by and watch a carpenter or a painter or a plumber at work there are a few simple repair jobs you can learn to do that will mean a big cash saving and a very pleasant form of recreation. Of course some jobs are frankly annoying, but I do think many are relaxing and fun to do. On days when other things don't go just right you come home from work mentally tired. Then your workshop can be a welcome refuge and little constructive jobs you do will reward you with a sense of accomplishment.

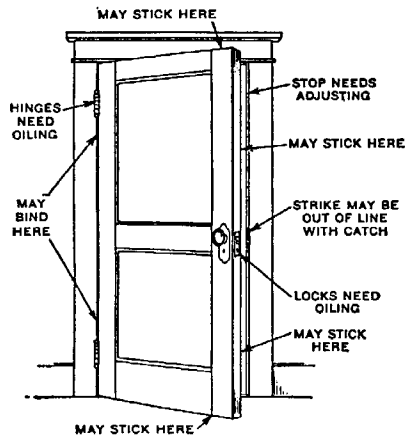
One morning last February the sink in our kitchen refused to drain properly and when I tried to clear it with the rubber plunger the water only backed up more. Finally, I sent for the plumber and after looking over the situation he dug to our septic tank and removed the lid. By this time I felt pretty helpless because I knew so little about plumbing and hadn't properly understood the trouble at first. This sense of helplessness is something that repair people are quick to notice. It is their cue to be mysterious about whatever repairs are needed and to encourage you to feel more helpless and more completely dependent on their superior knowledge. But I asked the plumber a few questions and he finally broke down and told me that the trouble was simply a blockage of the pipe and that I could

have saved about \$25 if I had known enough to prevent it!

Insurance underwriters say the majority of all accidents occur at home—accidents that can often be prevented just by replacing a loose board or repairing an electric fixture, or attending to the furnace properly. For this reason alone it's more than worthwhile to learn a few practical fundamentals of painting, carpentry, masonry, plumbing, electricity and last, but not least, simple auto maintenance.

Painting

The outside of a building is best painted at least once every four years. This is because wood deteriorates rapidly when there is no paint to protect it from moisture. The hardest work in painting usually is scraping off the old



9 ways a door can go wrong

paint. Correct use of paint remover, wire brush, steel wool, or a scraper can often save you hours of needless work. You should learn how to store brushes properly and also the best method of storing paint for safety from fire. The difference between flat paint, enamel, varnish, wall sizing, and water paints is basic knowledge for every homesteader. For your kitchen there is a new 25% DDT water-based paint which can be sprayed or brushed on. It is said to kill flies and insects that walk or alight on it. An application remains effective 2 to 3 months inside and 2 to 3 weeks outside.

Carpentry

If you like making things out of wood the first thing to make is a good workshop for your homestead. So many workshops I've seen are located in attics or cellars or barns where it's nearly always too cold or too hot or too damp or too dark to work. The workshop is worth the same consideration and planning as your kitchen. If it must be in the attic or cellar it should be properly heated, insulated and lighted. Once you have a good workshop you can make it pay for itself many times just

by doing simple repairing or building. I never did any building until we put up our small barn. Since then I've watched a neighbor put up an entire two-story house single-handed. He says the amount of knowledge needed to build a small house is surprisingly little if you have a good set of plans. A carpenter earns about \$15 a day, and by doing your own carpentry you can save that much while you yourself learn to master the fundamentals. Here is a check list of ten fundamentals in carpentry. See how many you know already:

1. How to lay shingles.
2. How to use the steel square.
3. How to file and set saws.
4. How to use the chalk line.
5. How to use a mitre box.
6. How to set girders and sills.
7. How to make joints.
8. How to hang doors.
9. How to lath.
10. How to lay floors.

Masonry

One of the "trickiest" masonry jobs is supposed to be building a fireplace and chimney. But two high school boys I know apparently never heard how tricky it is because they built a fireplace out of fieldstone in a little house on Owasco Lake near Auburn, N. Y. and put up a 20-foot brick chimney. They dug and laid the concrete foundations, installed the damper, the flue, and put in fireproof bricks where required for proper fire protection. I admit they had some help — they had a ten minute conversation with a mason and read about three books! I haven't ever built a fireplace myself—about all the masonry I've done so far is to put in a cement floor in our small barn and pig pen. It's really worthwhile learning how to mix and pour concrete and lay foundations — you'll use it again



Why not paint your own house? Anyone can do a good job who is willing to read up on all the little tricks of the trade. Paint prolongs the life, increases value. If you do your own you can save up to 90%.

and again. If your cellar is damp, look into the new damp-proofing paint. It's a white powder you mix with water and scrub into the concrete or brick. The tiny particles penetrate and then expand which is said to work wonders in waterproofing masonry. It was developed by the French for waterproofing the Maginot line and is now being manufactured in this country for general use under the name, *Aquella*.

Plumbing

Once you've learned how to repack a dripping faucet and replace a washer and clean out a trap below the sink or basin you know the three most common plumbing repairs a house needs. From there you can easily go on and learn how to install running water in your barn, or put in a modern hot water system, or an extra shower. Even if you don't want to do any plumbing work yourself I do think it is necessary to *understand* the operation of plumbing systems just for your own self-protection. Some people actually believe that pouring coffee grounds down the sink drain helps keep it cleaned out! You probably know others who think nothing of pouring hot grease down the sink or piling the drain full of lye indiscriminately. These people would never have a quarter of the plumbing repairs they have now if they had a better understanding of *preventive* maintenance.

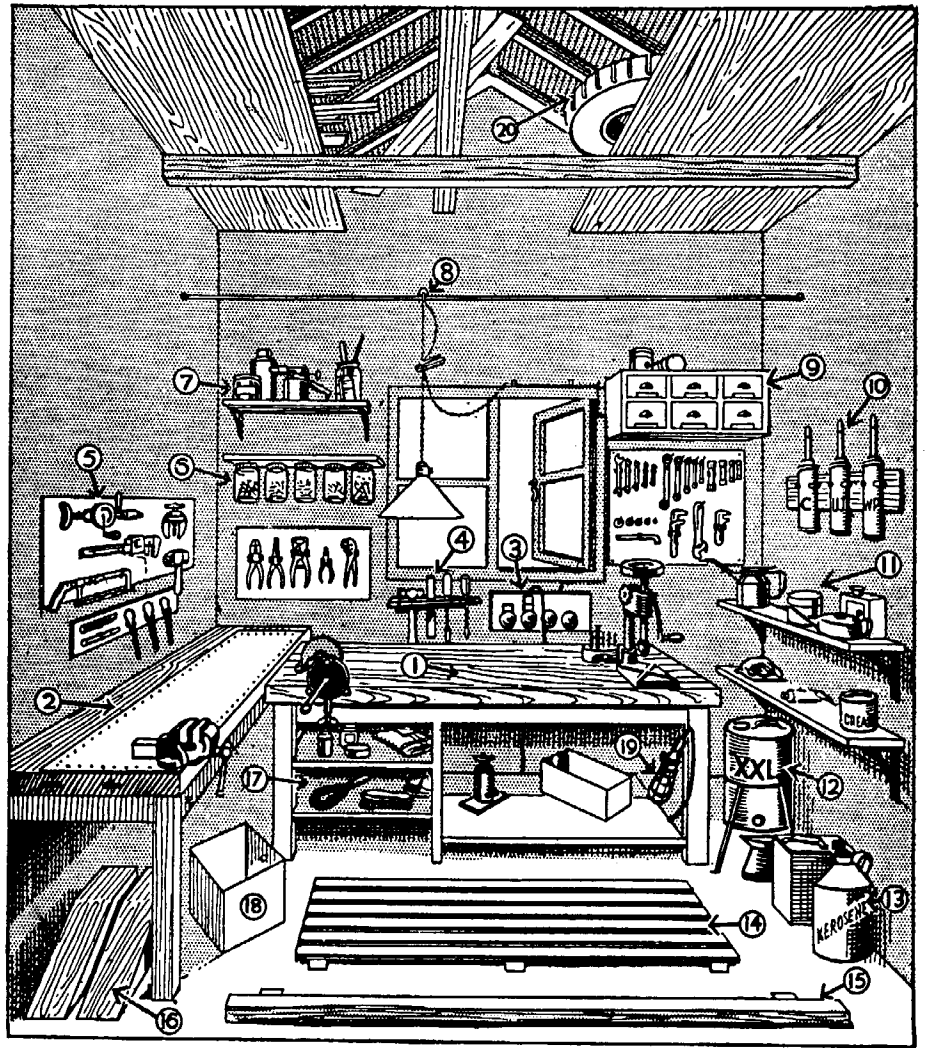
Electricity

Maybe *you* already know enough about electricity but what about your wife? So many fires are started by wives who don't understand the electrical appliances they use quite well enough for their own safety! Here is a little quiz in electrical safety facts every wife should know:

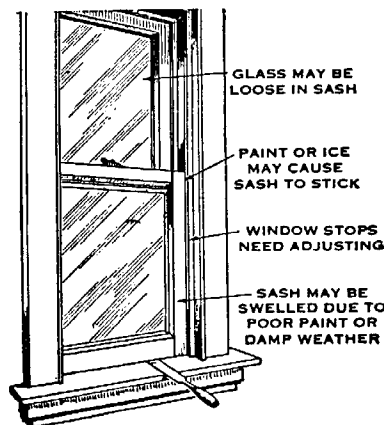
1. What is the difference between a volt, an ampere, and a watt?
2. What causes a fuse to blow?
3. Is it safe practice to replace a 20 amp. fuse with a 15 amp. fuse?
4. Is it safe practice to replace a 20 amp. fuse with a penny?
5. It doesn't matter if the insulation on a lamp cord is worn bare so long as the lamp is kept turned off?
6. Why is it dangerous to turn on any electrical appliance while you are touching a water pipe or have wet hands?
7. Is it dangerous to replace fuses while the floor beneath the fuse box is wet?
8. About how much current does a washing machine use compared to a toaster?
9. Why is it inadvisable to use a toaster, an electric heater, and a curling iron all at once?
10. Is it possible to get a fatal shock from a 110 volt socket?

Any woman who can answer all the above questions satisfactorily is pretty

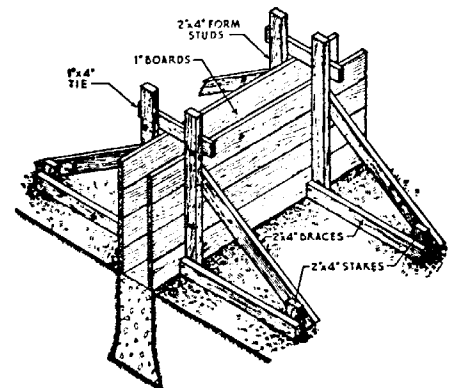
A Good Layout for a Home Workshop



- 1.) Bench for light work.
- 2.) Bench for heavy work—sheet iron protects top.
- 3.) Electric outlets and switches.
- 4.) Small tool rack made from two converging laths, spaced $1\frac{1}{2}$ in. apart at one end and $\frac{1}{2}$ in. at the other.
- 5.) Rack for heavy tools.
- 6.) Screw-topped jars for nuts and bolts.
- 7.) Shelf for painting materials.
- 8.) Trolley for light—clothespin adjusts cord length.
- 9.) Drawer for small parts.
- 10.) Three grease pumps: one for Universal joints, one for chassis bearings.
- 11.) Lubrication equipment.
- 12.) Five or ten-gallon oil drum on stand.
- 13.) Gasoline and kerosene, kept in different shaped cans to prevent error.
- 14.) Wooden platform protects feet from cold.
- 15.) Stop for front wheels of car.
- 16.) Ramps on which front or rear wheels can be run to facilitate greasing, etc.
- 17.) Shelf for washing and cleaning materials.
- 18.) Rubbish box.
- 19.) Inspection lamps.
- 20.) Storage in rafters for timber, tires, etc.



Common window troubles.



Foundation walls above grade may be formed in this manner where earth walls of the trench stand straight and true, and where a wide footing is not required.

well informed on electricity. After your wife has taken this quiz she ought to have the privilege of giving you one, so here are a few additional questions for men:

1. Explain how to read the electric meter.
2. Show how to make 3 different wire splices and explain the proper use for each.
3. If you make changes in the wiring does your fire insurance policy still cover you?
4. What guage wire is usually the legal minimum for house wiring?
5. What is the amperage of the ordinary house circuit?

Some people may not agree, but Carolyn and I feel we ought to understand the buildings and machines and devices we have to depend on . . . understand at least enough about them so we can take care of them properly and not be too easily intimidated when something goes wrong. We think this knowledge is insurance on our way of living. This is part of the security we are seeking. It is also part of the fun we are having.

Build Your Own House?

Perhaps the ultimate achievement in the field of "homestead mechanics" is to build your own house.

No doubt this may seem to you to be such a terrific undertaking that it is a laughable idea, but in the immediate neighborhood of our Homestead we know of six people who have built their own houses. They range from a G. I. who is just completing a three room bungalow, to an artist friend who has, over a period of four or five years, built a house worth over \$20,000.

Of course, in pioneer days almost everyone, with some community help, built his own house. At the turn of the century when plumbing, electricity and central heating became common, house building became more complicated and too much of a job for all but the most ambitious. Today, however, with the development of the factory-made utility unit which concentrates on the difficult-to-build bathroom, furnace room and kitchen, building your own house becomes something a handy man with sufficient spare time might consider doing.

This factory-made utility unit includes all the major mechanical components of a house. At one stroke, and for a predetermined price, the utility unit solves most of the costly and complicated installation problems involved in a conventional house. Additional factors which make house building simpler are radiant heating, which means a much simpler foundation, and new "panel type" exterior and interior walls which are simpler to erect.

Of course, a man doesn't have to build all his house—he can build as much as he wants to. But if he were

to build every bit of his house he would be able to save nearly 50% of the cost. Perhaps the most practical reason of all for building your own house is the obvious fact that today it is almost impossible to get anybody to build one for you.

What About Power Tools?

There are so many different power tools available now that it's pretty hard to decide which ones are just fascinating gadgets and which can be useful enough to justify their cost.

Maybe you'd like to have a lathe, a power saw or an electric drill in your work shop but you don't want to spend a lot of money for any one of these things unless it will more or less pay for itself.





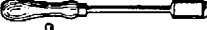
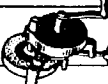




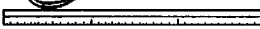











One way to figure this out is by using

a simple rule of thumb that says: "Don't buy any power equipment or machine unless the number of hours you will use it in one year equal at least ¼ the number of dollars you pay for it." This rule is based on the assumption that almost everyone's time is worth \$1.00 an hour and that the time the machine saves you will be used productively. Obviously, if this time were just wasted it couldn't contribute anything to the cost of the machine. We think you can safely apply this rule to any power tool you are thinking of buying and get a fair idea of just how much you really need it.

Suggested Reading:

- Plans For Ideal Homestead Workshop* 35¢
Carpentry Craft Problems \$2.50
Plumbing Installation and Repair \$2.00
House Wiring Made Easy \$1.65

Bare Necessities Tool Kit

	PAINT BRUSHES								✓
	TRY SQUARE							✓	✓
	JACK PLANE								✓
	CROSSCUT HAND SAW							✓	✓
	SOLDERING COPPER								✓
	HAND GRINDER								✓
	OILSTONE								✓
	FILE								✓
	SMALL TROWEL							✓	
	TIN SNIPS							✓	✓
	YARD STICK							✓	✓
	PUTTY KNIFE							✓	✓
	HAND DRILL							✓	✓
	SMALL DRILLS 1/16" to 1/4"							✓	✓
	1" WOOD CHISEL							✓	✓
	16 OZ. CLAW HAMMER							✓	✓
	KNIFE							✓	✓
	SIDE CUTTING PLIERS							✓	✓
	LONG NOSE PLIERS							✓	
	SMALL SIZE SCREWDRIVER							✓	✓
	MEDIUM SIZE SCREWDRIVER							✓	✓
	10" MONKEY WRENCH							✓	
		PLUMBING	ELECTRIC	DOORS	WINDOWS	CEMENT	SHARPENING	GENERAL	

Earning Money In The Country

MAYBE you'd like to move your job to the country? Maybe, as it happened to us and as has happened to many others, you'll find you enjoy living in the country so much you'll come to realize you'd like to *work* in the country as well as *live* there.

Perhaps if you now live or work in a big city you'll say to yourself, "But how can I earn a living in the country—I'm no farmer!"

Don't let that bother you. You may not have realized it, but most of the people who live in the country aren't farmers any more. Look at the figures:

1. According to the latest census, the farm population is 30 million.
2. The non-farm population in towns or small cities under 25,000 is 49 million.
3. In towns as small as 2,500 or less there live over 27 million non-farmers.

What's perhaps even more significant, the Census shows that while the farm population stayed at 30 million between 1930 and 1940, the non-farm population in towns of 25,000 or less increased by 5,329,432—an increase of 12%, a percentage increase nearly double that of the country as a whole!

Never before in our nation's history has there been such wonderful opportunity to earn a good living in the country as there is today. Two momentous events are taking place: cities are spreading out . . . small towns are growing. In this trend to decentralization lies the new American frontier of opportunity.

Take Your City Skill To The Country

The great movement away from the cities has been going on steadily ever since the automobiles became cheap enough for millions to own. This move is easy to see. Look at your own city or town. Aren't the better class new homes being built further away from the center of the city? Even 10 or more miles outside the city proper? Notice what this is doing to business. See the new community shopping centers . . . the so-called "service" industries are following the people.

More people are engaged in the "ser-

vice" industries than in manufacturing or farming. If you now are working in a "service" industry, you'll find—if you'll look into the matter—that there is untold opportunity in the *rural* service field. Remember, one advantage the city man moving to the country has over the country man is his more developed skill at earning a cash income.

If you're in one of the many "service" industries in the city, is there a need for your particular service in the country? Listed below is a group of services already being supplied by people in a town of 13,188 people. These are not *imagined* businesses—they're taken right out of the classified phone book for the town of Emporia, Kansas.

Abstracters
Accountants -
Adding Machines
Advertising
Airports
Ambulance Service
Architects
Attorneys
Auditors
Automobile Agencies
Automobile Repairing
Automobile Equipment
Automobile Graveyards
Awnings
Bakers -
Barbers
Batteries
Beauty Culture Schools
Beauty Shops
Beverages -
Bonds
Books -
Bottlers -
Bowling Alleys
Broadcasting Stations
Brokers, Investment
Building & Loan Assn.
Building Materials
Butane Gas
Butchers -
Cafes
Carpenters
Carpet Cleaning
Cemeteries
Chairs, Renting
Cheese
Chinaware
Chiropractors
City Offices
Cleaners
Clothing
Clubs, Country
Clubs, Night
Clubs, Social
Coal
Concrete Products
Confectioners -
Contractors
Credit Reporting Bu-
reaus
Dairies -
Dairy Products -
Dead Animal Removers
Dentists
Department Stores
Doctors
Draperies
Drayage
Druggists
Dry Goods
Electric Appliances,
Household
Electric Appliances, Re-
pairing -
Electricians
Elevators, Grain
Exterminators, Termite
Farm Implements
Feed
Filling Stations -
Film Developing
Films
Fire Insurance
Five & Ten Cent Stores -
Floor Machines, Renting
Florists
Freight Truck Lines
Fruits Retail -
Funeral Directors
Furnaces
Furniture -
Furniture Repairing -
Garages -
General Merchandise
Gift Shops
Glass, Plate
Grain
Greenhouses -
Hardware
Hatcheries, Poultry -
Hats, Cleaning
Heating Contractors
Hemstitching
Hotels
Ice Cream -
Ice Cream Manufac-
turers -
Implements
Insulation Applicators
Insulation Materials
Insurance
Investments
Jewelers
Junk
Laboratories, Medical
Ladies Ready-to-Wear
Laundries
Linoleum
Live Stock Commission
Companies
Loans
Lumber -
Lunch Rooms -
Machine Shops
Machinery Contractors
Mens Furnishings
Millinery
Monuments

Motor Trucks
Motor Repairing
Movers
Newspapers
Oil Marketers
Optometrists
Osteopathic Physicians
Packing Houses
Paint
Pharmaceutical
Photo Finishers
Photographers
Physical Therapy
Technicians
Physicians & Surgeons
Pies -
Pipe
Plumbers
Pop Corn -
Poultry -
Printers
Produce -
Publishers
Radio Broadcasting
Stations
Radio Service
Radios
Ranges, Gas
Real Estate
Refrigeration Equip-
ment
Refrigerators, Serviced
Rendering Plants
Restaurants
Roofers
Rug Cleaning -
Rugs
Salvage, Automobile
Seeds -
Service Stations
Sewing Machines
Sheet Metal Work
Shoe Repairers
Skating Rinks
Storage -
Tailors
Taxicabs
Tea Rooms
Tents
Termite Control
Theatres, Open Air
Tourist Courts
Towing, Automobile
Tractors
Transfer, Baggage
Truck Lines
Trucks, Motor
Undertakers
Upholstering
Venetian Blinds
Veterinarians
Vulcanizing
Wall Paper
Wall Paper Removing
Warehouses, Merchan-
dise
Washing Machines
Washing Machines,
Repairing
Watches, Repairing
Welding
Wrecker Service, Auto-
mobile

If you want to live in a smaller town and you find that the population is so small that the region can't support a full-time taxi service, for example, maybe you can combine your taxi service with an ambulance service, undertaking service, a car rental service and a delivery service.

Or you might combine a bookstore, newsstand, stationery store, mimeograph service, photostat service, local employment service, house rental service and travel information. Just a country store often supplies everything from shoes to meat—you can add up services until you're making the cash income you need.

Big Business Discovers The Country

You don't necessarily have to have a business of your own to work and live in the country. Big business is on the move—and you'll find new country job opportunities in-
creasing all the time.

The largest aluminum producer in the world, at Alcoa, Tennessee, is in a town of 5,000—and it isn't a suburb of a city either. The Sylvania Electric Company, one



of the largest manufacturers of lamps has found that the location of its factories in smaller towns has resulted in increased efficiency.

Ford-Ferguson and John Deere, both makers of farm equipment, have found that by locating plants in the midst of farm country instead of the heart of a big city many advantages accrue.

General Motors and General Electric both have planned programs for decentralizing. So too has International Business Machines. In fact, the atomic bomb has given decentralization such impetus that there's no telling what's going to happen.

The war showed that big business could profitably sub-contract to the small manufacturer. For example, Pratt & Whitney are said to have issued over 18,000 separate sub-contracts.

Homer Hoyt, Director of Economic Studies of the New York Regional Plan Ass'n. has pointed out some of the disabilities of the large city industry. He writes in *Civil Engineering* for August 1945:

"It is now a question not of how fast our cities will grow, but of whether they will grow at all . . . The very great advantages of New York's site have led to a higher standard of living than obtained in the Nation as a whole, and the highest cost of municipal services, which have tended to increase overhead costs of doing business and also labor rates. The congestion of a large population has likewise increased costs by the friction of traffic congestion in central areas, by the cost of subways and express highways to transport so great a population from places of work to residences, and by the extra expense of going great distances to secure an adequate water supply. In addition, in a city which has long enjoyed such great natural advantages, it was possible to succeed, even with some relatively inefficient methods on the part of labor and capital. In so rich a market, high charges could be levied for certain services, make-work policies could be adopted, and still the market would bear the burden.

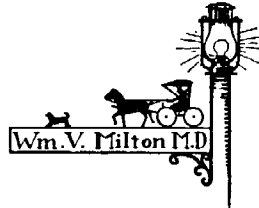


"As cities grow older, traditional and customary practices which tend to impair efficiency become embedded in their economic structure."

Another expression of the trend toward decentralization is that of L. Hilberseimer in his book *The New City* (1944):

"Resettlement in the country as the exodus from the city gather momentum has obvious and far-reaching benefits

for human beings. Gardens and small farms may give the security and the health which are lacking within the city walls. Fresh air and sunshine come once more within reach. In the future, large cities with high population density will no longer be needed. As production methods advance, it will be increasingly possible for production plants to divide into small units and be dispersed over a wide area, perhaps the entire country. Production would then become not only less expensive but also more efficient, for manufacture in the large city has come to be increasingly uneconomical and wasteful of energy and time."



Summing up these trends, Arthur E. Morgan in the excellent book "A Business Of My Own" says:

"For a long time the railroad and steam power favored centralization. Today the big city with its congestion, inefficiency, insecurity, and high cost, is a less favorable environment, while good highways, electric power, small unit machinery, and other conveniences, have greatly improved the status of the small community. In the eastern part of our country many industrial units are leaving the cities for small town locations, sometimes hundreds of miles distant."

If You Decide to Move Your Job

From the many letters we receive from folks who say, "I want a homestead like yours—and I want to work nearby so I don't have to waste any more time than necessary getting back and forth to work," we know that there is great interest in *working* as well as *living* in the country.

The fact that moving your job and setting up a homestead are both major tasks doesn't in the least effect the validity of either. But unless you're well fixed for an income to tide you over the transition period, it would be smart not to move your job and start a homestead at the same time. I don't believe it makes any difference which you do first. If you keep your present job and get your homestead all set up and running and perhaps paid for, then you'll have learned a good deal about business opportunities in your section. If on the other hand, you don't like your present job and want to find another in the country, then in getting your country job under control, you'll have



learned enough about the country to find a good site for a homestead.

And while you're riding through the country keep your eyes open for all the road signs put up by people operating little businesses of their own.

Of course, you're aware of lots of tourist camps, wayside markets, filling stations, and real estate agents. But also notice the less conspicuous signs,—the country lawyer, country doctor, country sign painter, the country tailor, the country radio repair man, the country beauty shop, the plumber, the upholsterer, the photographer. The small manufacturing plant, the craftsmen—and so on.

Often these people operate right from their own homes—and their places have enough land so they can really live. Enough so they can have a garden, fruits, berries, chickens—maybe a family cow.

There are just millions of folks in the country who've found out how to *combine* making a cash income with the home production of food.



A reference library can be most useful and important.

We have heard it said that "you can't learn to do this and that out of a book." However, judging from our own experience, we don't think this is strictly true. Here at our place we've got what you might call a reference library, with books and pamphlets on all sorts of subjects, and hardly a week goes by but what we "look up" how to do quite a lot of things.

We believe that every family who has a homestead should have a reference library—just the way all good cooks have cook books. You don't need a whole room full of books. You can get along with relatively few, if you choose them wisely.

LET'S REBUILD AMERICA . . .

FROM the day the automobile was invented there has been an ever increasing movement of families to the countryside surrounding the cities. In these post-war years this trend may become almost a stampede.

We Robinsons are only one family out of hundreds of thousands who have discovered how practical it is to hold a job in town and to go daily to it from a home and an acre or so of land.

The only thing different about us is that we wrote the "Have-More" Plan about this way of living which has meant so much to us in security, health and happiness. We wanted to tell other families about our experiences so that they could profit by what we'd learned and thus succeed more quickly at setting up homesteads of their own.

The response we've had to our "Have-More" Plan has made us very happy but it has almost snowed us under at times. Not only have we had thousands of letters from other families telling us of their plans and asking advice—but we've heard from scores of manufacturers, real estate people, insurance companies, magazine and newspaper editors, and so on.

Here are just a few examples:

Soon after the "Have-More" Plan was published, *Better Homes and Gardens* Magazine asked us to write an article for them, with pictures, about our place. *The Reader's Digest* reprinted it. Then many other magazines and newspapers ran stories about the "Have-More" Plan. We were interviewed on the radio a number of times.

Real estate firms from all over the country write to us continually about their plans for dividing land into acreage plots instead of 50 foot lots as they might have done a few years ago.

Architects and builders have told us they are going to offer homes especially designed for country living.

One of the biggest insurance companies has asked our advice in developing a special low-cost, long-term

mortgage financing plan for families who want to have homesteads.

The Macmillan Company of New York has asked us to edit a whole series of books on the subjects people need to know about to succeed at homesteading.

The men in the services showed so much interest in the "Have-More" Plan that the Army bought a special printing of 55,000 copies for libraries.

We have talked to dozens of business men and have read about scores of others, including some of the biggest in the country, who are planning to move their offices and factories out of the cities so that their employees can enjoy the advantages that go with the ownership of a home and a little land.

In other words, it has sometimes looked to us as though just about everybody in the cities of America wants to move out to the countryside to live and to work!

And why not? Why wouldn't that be a good idea? Why shouldn't we set ourselves that goal—to rebuild our country in the next twenty or thirty years so that every family that wants to can own its home and a little land?

It is entirely practical for us to do so. We certainly have the productive capacity to build a whole new highway system, to move many factories away from the crowded cities, to build the millions of new homes, the equipment and furnishings that would go in them!

There was a time when a factory had to be located near water or rail transportation. Nearness to raw materials, nearness to markets, nearness to what was called a "labor supply" were the important considerations. Hardly anybody thought about whether the location chosen would be one where the workers in the factory would enjoy living.

Today, only four out of ten families in this country own their homes. In the big cities only one out of four families owns its home. Move factories away from the big cities, give people access to lower priced land, give them half a chance to own their homes, and the ratio may be reversed. How much sounder—how much better governed—would this country be if six instead of four families out of ten owned their homes—if the sense of responsibility, the interest in public affairs, the pride and independence that go with the ownership of property were theirs?

America needs a goal. It needs something tangible to work toward. Look what this nation has accomplished when it had a clear-cut job to do—like winning a war or opening the West.

For the sake of national security itself, remembering the atom bomb; for the welfare and happiness of every family; for the sake of having a big, worthwhile job to do—so that we can unite in doing it instead of quarrelling with each other—let's rebuild America so every family that wants to can own a home and a little land!