FARM and FIRESIDE

EVERY OTHER WEEK - - THE NATIONAL FARM PAPER

SATURDAY, JUNE 20, 1914 *5 CENTS A COPY*

E

Discussing the Labor Question

LOOK FORWARD! THESE GOOD THINGS ARE COMING!

What Do You Know About Dry Farming?

Dry farming is nothing more than good farming, say many who have had experience in both humid and arid districts. But what does that mean to us? Does it mean that we can go from the humid parts of the country and farm the dry sections as we farmed "back home"? By no means. Then what does it mean? The question is not an easy one to answer in small space, but that is what H. A. Bereman will do for us in the next issue. It is an important and an interesting story he has to tell. He tells it from years of experience in the dry-farming belt. He is now working in Illinois. He brings the two sections together in a very remarkable way. Of course he could not do that if he did not know his subject. If you are now farming on the dry-farming basis write and tell us whether you think that Mr. Bereman has told the story as you would tell it.

A Potato Storage House

In 1913 Maine produced 220 bushels of potatoes per acre. That was for the whole State. Colorado was the next highest State with 115. That (either record) is an enviable situation for any State. New York, Michigan, and Wisconsin had higher records in the total yield for the State, but even then Maine produced a total of 26,840,000 bushels. Maine is a potato State and E. A. Rogers is a potato man. He lives in Maine, produces potatoes, and then stores them for seed, sale, or such use as he may desire to make of them. You may not always hear of a farmer spoken of as a "live wire," but that term would fit Mr. Rogers. He is to talk to the FARM AND FIRESIDE readers in the next issue. In his talk he will tell of the potato storage house which he has used for the past eleven years with success.

The Kicking Cow is Curable

If you can buy a hundred-dollar cow for fifty dollars because she is a kicker, and you know how to cure her, your "know-how" is worth fifty dollars to you. Or, if a gallon of milk is kicked over only once a week by all the cows in your dairy the loss in the course of a year is fifty-two gallons. At average wholesale prices this loss amounts to over seven dollars. Add to this a couple of dollars for liniment to rub on your bruises, and perhaps the fee of a veterinarian to repair your cows, if you are quick-tempered, you can see that knowing how to cure kicking cows is worth at least twenty-five dollars a year or more, besides making life a whole lot pleasanter.

Out of the splendid lot of contributions about a dozen of the very best have been selected for publication in the July 18th issue of FARM AND FIRESIDE. After that date your kicking-cow troubles will end forever. All of the methods are practical, humane, and simple, though some are more strenuous than others.

A Fourth of July Story

The insane Fourth of July has almost disappeared. There are few of us left who feel that it is necessary to show our patriotism by maiming the young citizens into whose hands the welfare of our country will pass. "It is the one day of the year," cried a mother ten years ago, "when I wish the English had conquered us!" Under the new law even mothers may be patriots on the Fourth of July. But that does not mean that we must be dull and take no account of the holiday. On the other hand, we are called upon to be specially gay and inventive. Why not organize a pageant? There is the description of a beautiful farm pageant in our story, "The Light of His Eyes."

A Fourth of July Dinner

We all find eating a delightful celebration of any festival, and FARM AND FIRESIDE has a menu to suggest which will bring joy to the diners without overtaxing the housewife.

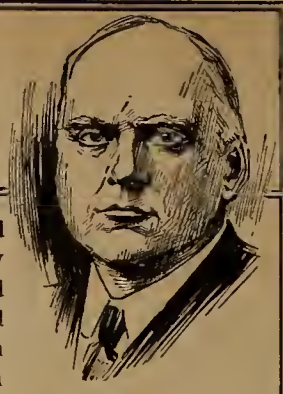
The Child at Home

The care of children's teeth and the habit of chewing gum and eating between meals will be discussed with reference to health, intelligence, and morality.

A Church That Builds a Community

Mr. McKeen in his "Community Builder" presents an almost new idea—the increased happiness and activity of his parish after the financial problem was so systematized as to remain in its own corner instead of invading every society in the church with its insistent cry for more money. The women, relieved of continuous labor to raise funds, had time to get new lights for their village, to clean away 15,000 tin cans from fields and byways, to plant three hundred shade trees, to help in the sewing of over-busy neighbors, and even to study the awakening of far-off China.

WITH THE EDITOR



THE other day,—it was early in May,—as I passed along the road a mile or so from my farm, I saw glimmering across a ravine a flash of red so vivid that I wondered what it was that was so clothed in splendor. If it had been October I should have known that it was a tuft of maple leaves or a bit of the autumn glory of the Virginia creeper, but in May—I simply had to go over and see.

The field was newly cleared, and the wild columbine was blooming all over it; so I rather expected to find a more than usually brilliant bed of that. It turned out, however, to be a cluster of the leaves of the soft maple. The sap in the roots had thrust up so quick a growth that every leaf was new, though the sprouts were two feet high. It was a spray of leaves so young that they put on all the appearance of age. Then I looked about me and saw, here and there, the babyhood of leaves counterfeiting old age. Oak leaves and maple leaves and others were masquerading in the livery of autumn. The brown tufts of bloom gave the appearance of dried leaves, and the dogwood blossoms spread over the pockets in the leafage a blanket of mimic snow.

I thought of the manner in which poets divine the deep analogies in nature which the scientist misses. Some lines passed through my mind from a poem by Henry Timrod, in which he sang the thoughts of a spring fifty years ago when his State was threatened by invasion, and I was none the less touched by the poetry on account of the fact that my kinsmen were among that invading host to repel which Timrod called his kinsmen to arms.

The lines are in the poem "Spring in Wartime":

> Yet still on every side appears the hand
> Of winter in the land,
> Save where the maple reddens on the lawn,
> Flushed by the season's dawn;
> Or where, like those strange semblances we find
> That age to childhood bind,
> The elm puts on, as if in Nature's scorn,
> The brown of autumn corn.

It takes a poet to see these "strange semblances." The scientist cannot perceive them unless he is also a poet—which a scientist may well be. Perhaps the greatest poetry we shall have in the future will be written by the poet who is also a scientist.

There may be nothing of practical value in the fact that the autumn leaf behaves as if in its second childhood. But there are more resemblances than we are likely to see at a glance, and more human interest. The glory of childhood is one glory, and the glory of age is another glory. The one carries a task before it. It has not yet developed the green coloring matter—the chlorophyll—through which it will do its work after it has been shone on by the sun of summer and has drawn nourishment by its roots from the earth. Childhood, in leaves as in boys and girls, is an idle period; a time of preparation. It is seemingly a natural and fitting thing that the baby leaf should be garbed in brightness and shall burgeon in the sun. Later, like its human brother, it will take on the regular working suit, struggle with its overshadowing fellows, and do something for the tree. The human tree is society: the forest tree is a society too—a thousand individuals organized into one.

After the work is done, another holiday sets in, and with it comes that brilliancy and glory which precedes the end of work. The leaf gropes back for the colors of its childhood, and it clothes itself with more of glory than it ever possessed in that far-off May before it had any chlorophyll or did much work. In old age it throws away the idea of ever again doing anything of a productive character. It revels in childishness. It knows that there is another crop of leaves all folded up in the buds which press at its hold on the twig of life and loosen its clutch upon earth. It cannot work, but it can illuminate and glorify. It pays no attention to anything but beauty, and finally it forgets to hold on any longer, and a puff of wind carries it away, and into the heap of its fellows which enrich the mold which makes future leaves possible.

I know of no better teacher for the old man or woman than the leaves of the forest. Why hang on to the twig overlong? Why be sad about the oncoming of that autumn when a wind will surely come which will carry us away? Away to freedom! And second childhood—is it not the most natural thing in the world? A second childhood of color, of beauty, of cessation of striving, based on the wisdom of experience and the solid character attained by a life of work, may be the fittest goal to which one can attain.

The human forest needs illumination and glorification, and the young foliage cannot give it all the tints it should have. The old should let their lights shine.

We talk of "a green old age" as a thing to be desired, and it has its uses. The Norway maple on the lawn stays green until frost nips it in its pristine verdancy, but I think the sugar maple alongside it shows the best taste. It does not quite wait for the frost; or, if it does, it takes the hint of winter gracefully and easily. Just a touch of cold and the leaves begin blushing as from the reflection of the light of Paradise, and when the great stroke comes it is scarcely altered. It meets the great change more than halfway and seems to welcome it, while the Norway maple, in its green old age, frets in the northwest wind, and passes from summer to winter with a great wrench like that of a man overwhelmed by some unexpected catastrophe. It has no second childhood to ease it gently into another and better season.

Macbeth is oftenest quoted by the pessimist who faces old age:

> I have lived long enough: my way of life
> Has fallen into the sere, the yellow leaf;
> And that which should accompany old age,
> As honor, love, obedience, troops of friends,
> I must not look to have.

But those who think that in this passage Shakespeare meant to typify old age forget that Macbeth was not old: he was only facing the fact that his way of life had made it impossible for him to become old in any normal and graceful way. He was in the prime of life, and already in the sere and yellow leaf through wickedness and horrible greed. He had been [CONTINUED ON PAGE 9]

ADVERTISEMENTS IN FARM AND FIRESIDE ARE GUARANTEED

Good Farm Books

We have been getting a good many letters with such requests as these, "Tell me how to raise alfalfa;" "I want to go into the farm cheese business; how shall I go about it?"; "I want to know about feeding and breeding farm animals." Everyone asking any question and signing his name and address is given all the information possible to get into a long personal letter. People are asking more questions than ever before because they are thinking more. That's a fine thing. But some of the questions are so wide in their scope that they cannot be fully answered in any space outside of a good-sized book.

FARM AND FIRESIDE has a complete library, and all of the books have been read by the editors. If you want a book on any subject, we'll gladly send you a list of the best ones on that subject and tell you the strongest points of each. You can then get the ones you desire from your local store, direct from the publisher, or we will get them for you. A set of reliable books in the home saves you from guessing at a lot of things. Guessing is poor policy. It's better to know. Just ask FARM AND FIRESIDE.

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BETTY BOTTER'S BITTER BUTTER

Biting Criticisms of Farm Buttermaking

By E. Pearl Brake

MY DEAR MR. QUICK: I want to talk to you a little while this morning, for the subject of my proposed discourse has been in my system too long already. It's about butter.

Some time ago you had a little article on the front page of FARM AND FIRESIDE in which you urged the farmers to put up their butter in nice packets and have a label, and thus get a name and reputation, or something to that effect. That met my approbation to a T, provided the butter so handled were gilt edge. And this last sentence brings me immediately to the particular phase of the butter question I burn to expatiate upon.

What acres upon acres of wretched butter go into the commission houses to be dumped into filthy barrels no filthier than the stuff they hold, enough to plaster this round earth several inches deep every year! (I am not positive as to the number of inches, not being much of a mathematician.) Where is the fabled "gold of Midas" turned out of the "fragrant churn" that the sentimental writers love to attribute to the country dairy, and the labor of the "red-cheeked maiden free from guile"? Echo answers, "In a very few farm dairies, and these not doing business on a large scale."

Our Experiences

Let me tell you what I found out seven years ago this coming fall; or, rather, *began* then to find out. My husband and I quit teaching then and took to the country. (I wish we had done it twenty years sooner!) Of course I knew nothing about making butter, though I did know when I tasted the genuine article. All the neighbors wondered orally what kind of work I'd make of farming. My husband had been raised on the farm and in the good old State of New York where we find ourselves to-day, so he had knowledge of some of the underlying principles of good butter. Still, that was not enough, and we sent to Uncle Sam and got the bulletins on everything pertaining to the matter of cows, feeding, milking, caring for milk, buttermaking. I studied those precious pamphlets for dear life.

We were out in that region of Nebraska where the sand alternates with clay, one side of the road being one kind of soil, the other another, or a mixture of both. Why, bless you, it was near Norfolk, and that is about eighty miles southwest of Sioux City where you wrote your fine story, "The Occultation of Florian Amidon"! You probably know all about that section. Our farm was *all* sand. There was no shade around the house, no cellar, and only a hand pump in a well of fairly cool water. The house was small, and there was a narrow pantry on the southwest corner of the house, with a window in the south end, and a door opening into the kitchen at the very north end of its east wall. This was the dairy equipment we had.

We moved there in the fall and began making butter. There was considerable to learn. I found that eternal vigilance is the price of *butter* as well as some other things. When the product of my labors was not up to standard, I studied those government bulletins again, went over in my mind every detail of my efforts to carry out instructions and "nailed" the mistake. You will admit that to keep milk free from contamination, to ripen the cream that came from the separator without letting it get bitter, all this in that little house where we cooked and lived was no small task.

Yet, just as soon as those town folks found we had butter to sell, they simply fell over themselves to get what we made. They declared it was the best butter they ever had. Meditate on that. I, a new hand at the business, an ex-schoolteacher to boot, getting the top market for my butter in less than six months! It resulted in having regular customers to whom we delivered so much butter each week, and as time went on we got 35 cents per pound, and a market we could not begin to supply. Don't let me forget in my boasting that my husband helped at every turn, working side by side with me, to make this possible. One summer we took in, on the average, 40 pounds a week, for two months. This was the hardest work I ever did for the returns in cash. I will never do it again. Meditate on that too. It's a solemn fact with me.

Bad butter? Enough to plaster this round earth every year

I forgot to state that when warm weather came on, my husband dug a hole about five feet deep, and about five by eight feet in other dimensions, walled and roofed it with boards, and there we kept the butter and cream. The water was very near the surface there, and we found by sinking a few feet we could have water to set the cans in, and this was quite an aid in keeping the milk cool.

What Is Cleanliness?

So much for what we were able to do at great disadvantage. Now for what I found out about my neighbors' methods. Separators were not washed after each separating. No matter what the weather, how sultry and close the atmosphere, they simply ran some water through after the night's run, and let it stand till the morning's separating. Plenty of people let the washing of the machine go even longer, the only reason for washing being that the machine had to be cleaned out so often in order to run. Did you ever see what comes out of the machine after but one run of milk? Imagine that festering during a sultry summer night, though I beg your pardon for asking you to so demean one of your most valuable mental faculties. Facts is facts, just as much as "Pigs is pigs," and this is what I discovered.

And when they did wash the machine! If there were children large enough to perform the task they did it. How do you suppose they proceeded? I'll tell you how several I know did it. They took the parts out to the bench under the tree or on the porch and began with a rag that "smelled to heaven" as my mother used to say of offensive things, and dabbled it over the disks in lukewarm water. Then they went in and got the teakettle, which might contain hot water or not, just as it happened, and poured a wabbly and ineffective stream, helter-skelter, over the contents of the dishpan. The next step was the drying. I never happened to see a fresh, entirely clean dish towel used, though I presume it did happen occasionally. Usually it was one which had already served for the tableware. This is no fanciful sketch, neither is it an account of some unusual occurrence. It is happening all over the State of Nebraska, for I have talked this matter over with numerous rural teachers. One girl told me she always washed the separator in self-defense as long as she boarded in one very pleasant farm home; and a number of town girls who went to the country to teach asked me why so few country people know how to wash dishes. The facts are that town folks are just as remiss in matters of real cleanliness in proportion to their advantages, but slackness shows more in the country, where modern houses are so rare.

Good Country Butter Hard to Get

I have thought and thought on the matters I have confided to you. I have wondered how the popular idea that country butter is so good got started. When I lived in town we had to hunt and hunt and taste and taste till we got a product that we could eat. It was country butter we were sampling. I know we had no fallacy concerning the matter. To get good butter was an occasion for jubilee. It must be the story writers are to blame. But, come to think about it, one person told me (I had asked her if she would like to have me bring her butter in the event of a former customer's removal from the town) that she really could not tell what was good butter and what was not. She was perfectly sincere and felt a trifle ashamed as she told me, for she remarked her friends made "such a fuss over butter" when she could not see anything the matter with it. I presume there are plenty of people, brought up all their lives on vile stuff, who do not know any better, and so country butter goes on enjoying a reputation for excellence.

My experience in buttermaking has shown me that few people will ever make *good* butter because it is such *hard work*.

We are selling our milk, getting our butter from the firm we sell to, and enjoying life free from separators and churns. We know we can beat the creamery butter all hollow if we try; but, with Franklin, it would be paying too much for the whistle.

Now my dear friend Herbert, what do you think about it? I should like to know. I read all your editorials, and wish to suggest that you should never omit your name from the bottom of any of them, as you sometimes do. I don't like to be in doubt of the author. I always look for your signature.

One more paragraph about butter. I do not believe one can afford to make butter for 35 cents. I have not figured it out, but that is my firm conviction. Being a woman who is not yet emancipated, I do not have to prove any statement I make. I have often seriously meditated writing a booklet on "The Gospel of Good Butter," only I do not believe any of the Nebraska women I know would read it. They will not read the bulletins. My book would deal with conditions as they are in the average farmhouse.

I have a suspicion that most of the New York State women have made up their minds that buttermaking is not what the poets sing. Nearly everyone here sells milk and buys butter of the creameries.

E-W

A Home Water and Sewer System

One That Was Installed in an Iowa Farm Home and Is Now in Successful Operation

By James A. King, Agricultural Engineer

A FARM HOME offers advantages that cannot be had in town or city at any price. They are advantages that go far toward making a wholesome and a happy life. Until recently town and city life afforded certain physical comforts which were not to be had in the farm home, and the absence of which detracted greatly from the attractiveness of farm life. These were the advantages and comforts that go with furnace heat, water works, and sewer systems. But recent developments now make it possible to have these advantages in the country home at no greater expense than in the city home. So now country life holds out all of the advantages, with none of the disadvantages, of city and town life.

It is not necessary to dwell on the desirability of these things. We all know the comfort and pleasure there is in having cold and hot water always on tap; the comfort there is to be had in a completely equipped bathroom which takes the place of the washtub bath, the tin-basin wash, and the outdoor privy. It is not necessary to convince anyone that they want these things, their own desires have already convinced them of that. So I confine myself to discussing some of the problems and methods involved in providing such a system in a home already established.

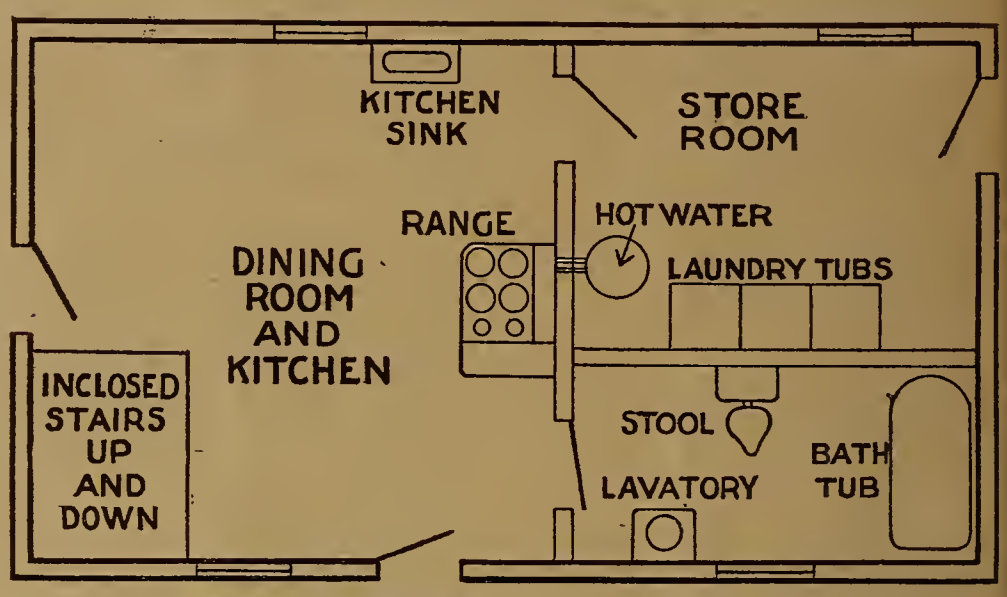
The discussion will be further confined to the water and sewer system, leaving out entirely the subject of lighting and heating.

The Work With Which I Was Familiar

The home adjoining my own will serve as a good example, for such a system has been installed in it within the past nine months. This is a two-story house with ten rooms. Under it is a large basement and a cistern which were already there, so their cost is not included in the price mentioned below. In fact, no alterations were made in the house; no doors or windows were cut; no partitions were moved or put in. The functions of each room are still much as they were in former years: it is simply that the equipment of them has been improved. It is not described with the idea of showing an elaborate or ideal equipment, or anything remarkable: it is simply an instance with which I happen to be thoroughly familiar; an instance where these improvements, which transform a house from a dwelling place into a home, were installed at a moderate cost.

The equipment placed in this house includes a pressure tank in the basement, which tank is filled from the cistern with a hand pump; a hot water tank on the ground floor, the water of which is heated in a coil in the firebox of the kitchen range; a large sink in the kitchen, with faucets for both hot and cold water; a bathroom containing a stool, a tub, and a lavatory, with hot and cold water faucets for both. The accompanying drawing shows the relative location of these in the south wing of the house. Just under the bathroom window, and a safe distance from the basement wall, is the septic tank, located underground. All equipment and materials were furnished, and all work done, at a contract price of $175. At this price the merchant guaranteed to the customer full satisfaction in every feature of the equipment.

One can add to or subtract from the equipment shown here, so as to meet his own individual conditions and tastes. There is a wide range of things available from which one can choose what is best suited to himself. The choice of equipment, its arrangement and that of the house as a whole are individual problems which each family must meet for itself. Most of us are bound by the plan and arrangement of the house as it already exists; changing walls so as to alter the size of a room and make it more ideal for its new use is an expensive and generally an unsatisfactory proposition. If one is planning a house not yet built he can build it so as to give the most desirable location and arrangement for this equipment. Under such conditions a bathroom 5 by 7 feet is quite large enough, though I would prefer one 7 by 9, so as to give ample room for a bathtub large enough for my 6 feet of height and 200 pounds of weight. Here again one's own tastes must decide the matter; for instance, do the women want a large linen closet built into one wall of the bathroom? But such questions as this more properly belong in discussing the plans for a house to be built at some time in the future rather than adapting a house already existing and in use. I have one criticism to offer regarding the equipment in the house under discussion. Had I been doing it I should have put a set of stationary laundry tubs in the large storeroom which contains the hot-water tank. (I have indicated these tubs in my drawing, though they are not there in reality.) The laundrying is done there anyway, and such a set of tubs would have done away with the lifting and carrying of water which still must be done on washday. This carrying of water and emptying of tubs is one of the greatest bugaboos of washday. In my drawing I have indicated these tubs, one for suds, one for rinsewater, and one for bluing water.



The arrangement that makes this particular house more convenient

When a plumbing equipment in an isolated home, such as a farm home, includes a stool, a septic tank is a necessity in order to properly treat and dispose of the solid matter in the sewage to prevent any danger of contaminating the well water, which danger always exists in connection with a cesspool or an ordinary pit privy.

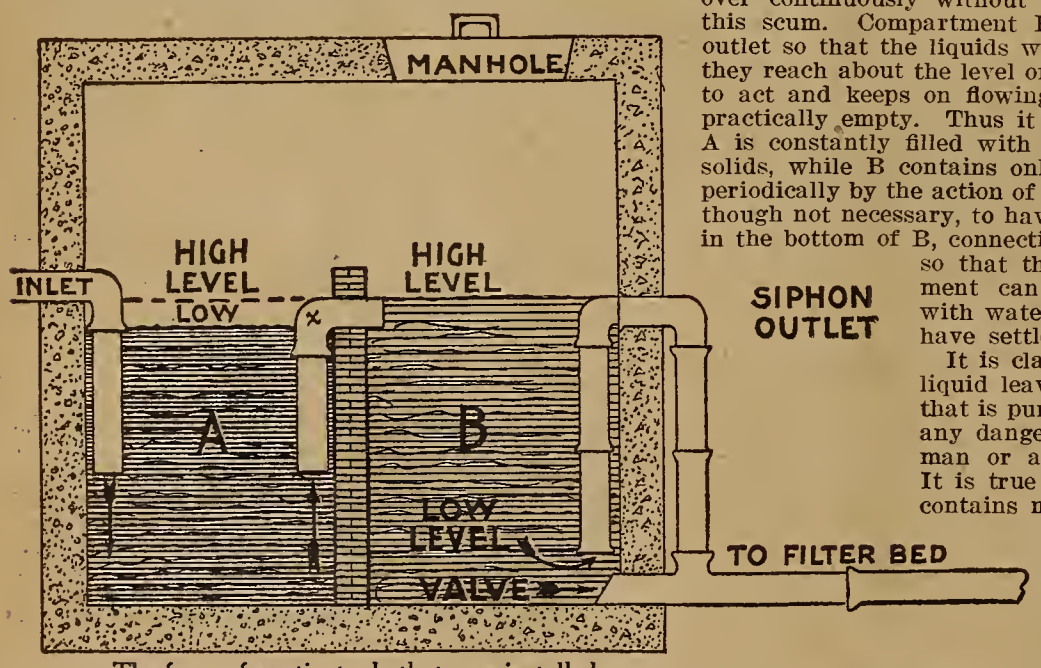
The cost of a septic tank for sewage disposal will vary a great deal according to local conditions.. These will be those conditions which affect the carrying away and disposition of the discharge from the tank. To properly illustrate this statement it will be necessary to explain at least briefly how a septic tank acts and what is necessary to make a complete and a successful one. The one installed in the house mentioned cost $25, included in the contract price of $175.

In its simplest form a septic tank consists of a two-compartment reservoir that is gas and liquid tight. This particular one is of concrete placed underground; is 6 feet long, 4 feet wide, and 6 feet deep. Across the middle of it is a brick partition 4 feet high. Brick was convenient; no other reason for its use. The sewage in both compartments of the tank is never more than 3½ feet deep.

All waste water and sewage from the entire system empties into compartment A. Here a certain class of bacteria act on all solid matter in the sewage. They are already in the sewage in comparatively small numbers, and here in the tank, away from light and air, they thrive best and quickly increase to countless millions of millions, and form a reserve army that is ready to leap upon and devour any new sewage that comes into the compartment. They feed on the solid matter of the sewage and quickly change it to a liquid. It must be remembered that this particular kind of bacteria thrive only away from the air and light.

How the Septic Tank Works

When compartment A has become filled up to a level with the opening *x* in the partition, its liquid contents begin to drain over into compartment B, and keep on draining over as long as the level stands high enough. It is best to have *x* in the shape of an inverted elbow, because in time a thick scum will form on the surface of the sewage in compartment A, and by having *x* in the form of an inverted elbow the liquids will drain over continuously without *x* becoming clogged with this scum. Compartment B is fitted with a siphon outlet so that the liquids will not drain from it until they reach about the level of *x*, then the siphon begins to act and keeps on flowing until compartment B is practically empty. Thus it is seen that compartment A is constantly filled with a mixture of liquids and solids, while B contains only liquids, and is emptied periodically by the action of the siphon. It is desirable, though not necessary, to have a "clapper valve" outlet in the bottom of B, connecting directly into the drain so that the bottom of the compartment can be cleaned, by flushing with water, of any sludge that may have settled into it.



The form of septic tank that was installed

It is claimed by some that as the liquid leaves chamber B it is water that is pure enough to drink without any danger to the drinker, whether man or animal. This is not true. It is true that it is a liquid, but it contains many impurities, and even some poisonous substances. In case of a diseased person in the home it is almost certain that the germs of their disease will be found in this discharge. For these reasons the place and the method of discharging the contents of compartment B are of great importance and must be given careful consideration. It is in providing for this proper discharge that one finds the principal variation in the cost of properly installing a septic tank.

In the particular instance cited in this article the overflow is discharged into an open fissure in the rock within a few feet of where the tank is located. In such a method there is always more or less danger of contaminating the well water, for these open fissures in the rock generally connect quickly with the water-bearing strata below. But in this particular case no contamination has yet been discovered. This is probably due to the fact that the well is some distance away, and that the fissure and rock strata in general slope away from the well toward the septic tank. Such a method as this gives thought only to getting rid of the discharge and no thought to its previous purification.

The most effective method of purifying this discharge so there is no danger of it contaminating the well water or the water in the streams is to discharge it onto, or just below, the surface of a porous, sandy soil. Here there lives another kind of bacteria, one that must have at least air to live. These bacteria act very quickly upon this overflow liquid, and destroy all impurities, poisons, and disease germs contained in it. When discharged onto a properly acting and properly constructed filter bed of this kind this overflow liquid will be purified in a very few hours under ordinary conditions.

The best method is to discharge it into a series of lines of tile placed far enough below the surface of the ground not to freeze in winter. If not over 8 to 12 inches deep in porous open soil they may be laid the same as drain tile. But where you have to go 3 and 4 feet deep they should be laid in a wooden trough that is open on the under side, or inside of 12 to 15 inch tile. This gives an open-air chamber surrounding the smaller discharge tile which becomes filled with air between the periodic overflows, which should be at intervals of 12 to 24 hours. This chamber furnishes the air that is absolutely necessary to the life and proper action of these soil bacteria which clarify and purify this overflow liquid.

By discharging the overflow below the surface of the ground there is absolutely no chance for unpleasant odors such as arise to a certain extent when it is discharged upon the surface of the ground. If the lines of tile are laid under a lawn or between the lines of trees in an orchard it will solve the problem of fertilizer there. In speaking of the discharge liquid I have used the word "purified." Probably I should have used the expression "rendered harmless," as that is more nearly true to the facts. The soil bacteria in these filter beds change the poisonous substances of the discharge liquid into nitrates and other harmless compounds; it is these that form the plant food found in the discharge liquid.

There are certain cautions to be observed in building a septic tank: It must be water and air tight, otherwise poisonous liquids and gases will escape, and if it is located near the house these will be a constant menace to the health of those living in the house. The joints of the main inlet pipe leading from the house to compartment A must be sealed gas and water tight for the same reason. This inlet pipe must also be connected with the ventilating pipe of the system, or else have a ventilator of its own. The inlet and discharge pipes of compartment A should extend to about two feet below the surface of the sewage. In this way the sewage in the compartment is kept as quiet and undisturbed as possible, which is necessary for the best action of the bacteria. The siphon outlet of compartment B and the line of tile leading to the filter bed should have sealed joints.

What Size Should a Septic Tank Be?

The size of the tank must be regulated according to the amount of water and other sewage discharged into it each day. It is best to have the capacity of each compartment, below its discharge openings, equal to about one half of the total amount of water that is used in a day. In this way each compartment is completely emptied at least once each day. The reasons for such a comparative capacity are these: If the capacity of compartment A is not as large as this the sewage will not stay in it long enough for the solid matter in it to be properly liquefied by the bacteria. If it is larger than this the sewage will stay in it so long that the reserve army of bacteria will be smothered and starved out. There will not be enough of them to properly liquefy the solids. If compartment B is smaller than this it will discharge so often that the liquid cannot filter away from the filter bed and the soil of the bed does not become recharged with air between the discharges. The result of such a condition would be to drown out and kill the reserve army of these bacteria which must have air in order to live and perform their manifest duty. If it is larger than this it does not discharge often enough to keep the soil in the filter bed from drying out and starving to death this reserve army of soil bacteria. You must remember that in compartment A and in the filter bed

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there develops a vast surplus army of these two kinds of bacteria, an army so vast that they do their work quickly. If this reserve army is killed off because the system is not of the proper size, their work will not be done in the required time by the normal amount of bacteria that is contained in the sewage and the soil.

When an abundant supply of water is available at all times for all purposes, the average family will use about 25 gallons a day for each person. So a family of six equipped with such a system as this would use about 150 gallons of water a day. Of course, if some of them are luxuriant in their tastes and "let every night be Saturday night" they will use close to twice that amount. But for ordinary household use, including a weekly laundrying and a weekly bath for each member of the family, this average will be found reasonably accurate. This would require a capacity of 20 cubic feet in each compartment of the tank if the tank were to discharge once a day. In those days of extra use it would probably discharge twice a day. In figuring the cubic capacity of any tank, remember that there are 231 cubic inches in a gallon, or a cubic foot equals approximately 8 gallons.

Now for some cautions about the filter bed: If the tank discharges into underground lines of tile they should be laid with a grade of not over 2 to 3 inches to the hundred feet. The joints of the tile should be 3/16 to ¼ of an inch wide. If the tile are laid in a porous, sandy soil there should be 1 foot of tile to each gallon capacity of compartment B of the tank. If they are laid in a rather tight clay soil there should be 3 feet of tile to each gallon capacity of compartment B. These tile should be ordinary 3, 4, or 5 inch drain tile. The line of tile leading from the tank to the filter bed should have sealed joints the entire length. It is not necessary to use regulation sewer tile for this; ordinary drain tile will do if you will seal the joints with a concrete consisting of one part cement to two or three parts of a coarse sand; I would not use gravel.

When the house equipment does not include a stool or water closet, a septic tank is not needed. Then all the sewage is liquid, and the only thing necessary is to discharge it into the ground somewhere below frost level and at least 100 feet from any well or cellar. Dish water, wash water, soapsuds, and such liquid waste from the house are ordinarily not poisonous; the harmless odors and impurities which they do contain will be filtered or "strained" out while the liquid is filtering or seeping through this 100 feet of ordinary soil.

Draining Away the Waste Water

A satisfactory method of getting rid of the waste water is to lay a line of 3 to 5 inch drain tile below frost line. The first 100 feet of this drain should be laid with cemented joints so there will be no seepage back into the cellar. The rest should be laid with joints open 3/16 to ¼ inch. If the drain is laid in a sandy soil this part with open joints need not be over 100 feet long for the ordinary family of six people or less. But if it is in clay it should be about three times as long; in such case it would also be well to cover the tile for six inches to a foot with gravel or coarse sand. You see the discharge tile in such a system need not be so long as those in the filter bed used in connection with a septic tank, for here the water is coming in more frequently, and no precautions are necessary to keep alive a colony of bacteria. I know of several cases where a home water-works system consisting of a kitchen sink, a lavatory, and a bathtub is simply connected up with the farm drainage system.

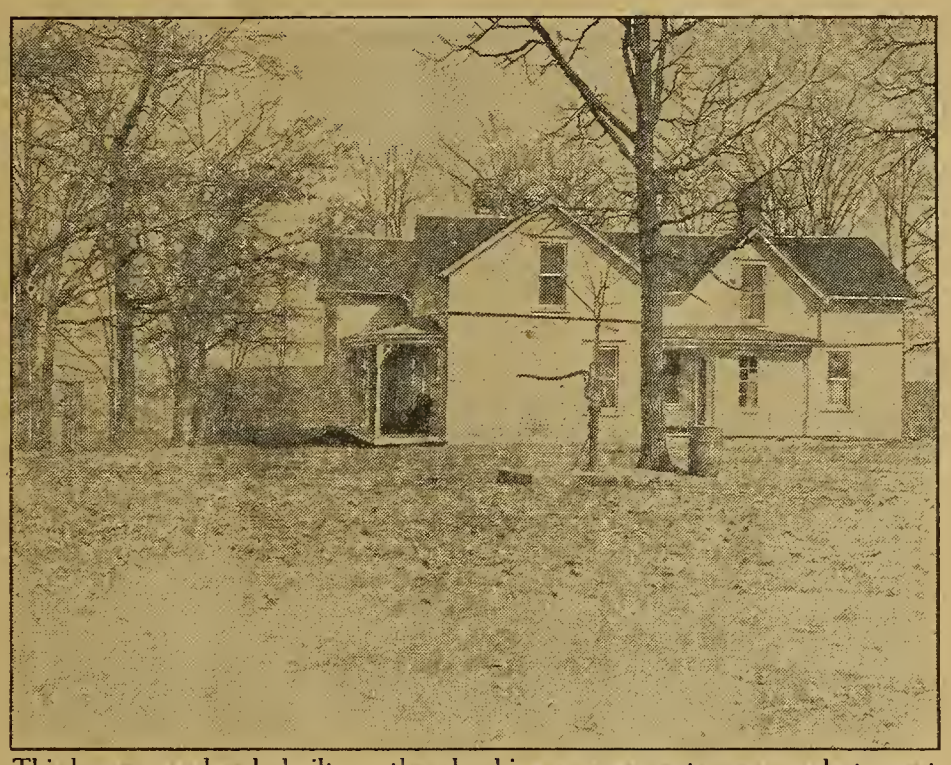
Where one has a cistern, soft water may be supplied in the system if he wishes it. If he has not, the water may be supplied from the well. The pressure necessary to supply water at the various points in the system can be had easily and cheaply in either of two ways. One is a simple pressure tank in the basement, as used in this case described. A force pump drives water into an air-tight tank, and in doing so compresses the air that is in the tank. This compressed air then in turn forces the water through the pipes to all points in the system. The other method is to store the water in an elevated tank, getting the desired pressure from the force of gravity. This may be an outside tank, such as one on the windmill tower; or a small tank may be placed in the attic of the house, or in an unused up-stairs room or large closet. There is one danger or disadvantage that goes with a tank placed up-stairs in the house; if it ever springs a leak the water will flood the house and do considerable damage to the floors, walls, and ceilings. Wherever the tank is placed, elevated or underground, it must be protected from freezing in winter, otherwise there is danger of the system being put out of business just when it is most needed and appreciated.

The Hydraulic Ram Was Used

The details of this part of the system must be worked out by everyone according to his own peculiar location and conditions. As an illustration of another and an inexpensive system of water supply I mention another scheme I know to be in prospect of installation this summer. There is a large spring located a few hundred feet from the house. It is planned to install a hydraulic ram to supply a constant flow of water. No supply tank will be installed: the ram will discharge the surplus water from the system through a spring valve. The tension on this valve will be strong enough so that the ram will have to supply more than enough pressure to deliver a strong flow of water to all parts of the system before it can force open this spring valve. This scheme has the advantage that all the cold water will be fresh at all times; it will not get warm and stale from being stored in a tank. This feature is of special value in the summertime when drinking water is drawn from the house system.

Where one uses well water and has a windmill, the mill can be made to pump the water into either an elevated or a pressure tank; or if one uses a gasoline engine for the pumping the engine can be made to do the work.

An ordinary two-way force pump will pump water for the regular farm supply and also for the house system.



This house was already built, so the plumbing arrangements were made to meet existing conditions—and they met them well

Whether one uses a pressure or an elevated tank, it should be large enough to hold a full day's supply. This size must be determined according to the number of people using it. For each person in the family a supply of 25 gallons a day is ordinarily ample. So a tank holding 150 gallons will be large enough for the ordinary family of six, with only one pumping a day, or 75 gallons with two pumpings a day. If one is using a pressure tank it should be about one half oversize to allow for the compressed air. So if one wants a pressure tank to hold 150 gallons of water at a time he should get at least a 225-gallon tank.

When thinking of putting an elevated tank in the house one should consider its weight and whether or not the house is strong enough to hold it safely. In this connection remember that water weighs approximately 8⅓ pounds to the gallon. So 300 gallons would weigh 2,500 pounds in addition to the tank itself, and 150 gallons would weigh 1,250 pounds in addition to the tank. This matter of weight is one of the arguments in favor of a pressure tank in the cellar, or an outside elevated tank. Where one has a masonry silo it is an excellent scheme to put a water tank on top of the silo. This gives an abundant supply for the house as well as for the farm use; the women do not need to skimp themselves in their use of water out of sympathy for the men in pumping it. It also furnishes sufficient pressure for fire protection, as the silo will be the tallest building on the farm.

The cost of the equipment for such a system as this we have been discussing will depend a great deal on the quality of materials which one wishes to install, and the total amount of pipe needed. As a sort of guide in this matter I quote the cost of two different grades of equipment, without piping, as listed by one supply house, f. o. b. Chicago. Your local dealer will be glad to quote you on such material, either for the material alone or including all work and expense of installation, and guarantee full satisfaction.

315-gallon pressure tank with pump	$50.50	$73.20
140-gallon pressure tank with pump	37.10	48.13
5-foot bathtub	12.30	24.20
Stool	11.80	22.50
Lavatory	3.95	14.80
Kitchen sink	.87	27.00
30-gallon hot-water tank	5.50	8.05
Heating coil for kitchen range	2.50	3.50
Laundry tubs	5.20	13.83
Total with 140-gallon pressure tank	$79.22	$162.01
Total with 315-gallon pressure tank	92.62	187.08

Certain precautions are necessary in installing the plumbing in a house. All pipe joints must be absolutely water and gas tight. One of the best methods for doing this is to smear both sets of threads of a joint with white lead and then screw in the pipe with not less than four full turns, if you can get more than four it is that much better. All places where waste water and sewage enter the system—such as the sink, tub, and stool—must be equipped with a gas trap; a simple form of a gas trap is a piece of pipe twisted into a letter S "laid on its back" so that water always stands in one loop of the pipe. These gas traps should be placed immediately below the receptacle. Their purpose is to seal the pipe with water so no odors or gas from the liquid in the pipe will come back up out of it. A ventilating pipe should be connected into the system, at least between the septic tank and the main system of waste pipes, and also into the discharge pipe of the stool.

The Ventilator and Its Work

This takes off most of the gases and odors so they will not accumulate sufficient pressure to force their way along the pipes and up through the gas traps into the house. This ventilator should never be allowed to become clogged in any way—from snow and ice in the winter or with leaves and birds' nests in the summer. There is probably nothing more dangerous or harmful to one's health than living in a house with a plumbing system that has even a slight gas leak in it. Gas traps should be provided with some means of cleaning them out when they become clogged with solid substances and grease. The traps you buy from your dealer or a supply house may be had with such a cleaning arrangement. It is desirable to attach a grease trap to the kitchen sink, for there is a great deal of grease in the water that is dumped in here, and grease offers much difficulty to the action of the bacteria in the septic tank.

Many people would prefer to have a water and sewer system put in by experienced and skilled help. This is better where one can afford the price of skilled plumbing labor. But where they cannot afford to pay 40 to 60 cents an hour to men that are not noted for the speed of their work, that fact is not an adequate excuse for their not having such an equipment. There are many instances where the entire system has been put in by the family without any help other than a little advice from the dealer who supplied the materials, and a good job was done. The important thing is to get the equipment. It is just as necessary for the women to have this equipment with which to do their work as it is for us to have improved implements with which to do our work in the fields. God knows their work is hard enough. I was my mother's hired girl much of the time during three years of my boyhood, and my work now keeps me about the house and the grounds a good deal, and I know that the woman's work on a farm is no snap. Let us lighten it.

A Little Story of Swiss Kindness—By Judson King

A TRAVELER in Switzerland cannot fail to be impressed by the kindness with which the people treat their cattle—a kindness and consideration which extends to all animal life, wild or domesticated.

One beautiful August morning when up in the Scheidegg Pass I strolled out to a pasture to get a better view of the mountains. Some kind soul had placed a good bench at a point of vantage, and I sat down to enjoy the beauty of the Jungfrau and the whole wonderful chain of which this famous peak is a part.

It was one of those high mountain pastures in which the grass lasts only seven or eight weeks in the hottest part of the summer. I had noticed a herd of cattle feeding near-by, but had paid no attention to them. After a time I began writing messages on post cards for my friends back in far-off America. Suddenly a fine young cow came up from behind and swung her head over the back of the bench in a most hospitable fashion as much as to say, "I'm very glad to have you visit us, and hope you enjoy our mountains!"

I assured her that Teddy was never more "delighted," even in campaign time, and that also I was happy to make her acquaintance. As I rested my arm upon her full, clean neck and patted her head, a bull came along, stopped close by, and gazed kindly at me. I could not understand his language, but I am sure he was saying something like this, "I'm just as glad to see you as she is; it is good we can all be happy together this fine day, and by the way (coming up closer) if it is not intruding, I'd like to have my nose patted too."

Then came another cow, and others, till finally one cow stopped directly in front of me, so close that her side rubbed against my knees and I was unable to continue my writing. Thereupon I stood up and wrote three or four postal cards on her back, using it as a sort of writing desk. She took it all in good part, chewed her cud contentedly, and never budged.

It was perfectly evident that that herd of cattle did not know what it was to be kicked or clubbed. Brutality was unknown to them, even brutal words. A human being was a friend; they knew no strangers.

The Whip Cracked Like a Pistol, But Did Not Sting

Another day when walking along a street in Bern, the capital city of Switzerland, I was startled by what I took for a pistol shot. Looking about I discovered the cause of my alarm to be the terrific crack of a whip in the hands of a teamster driving a fine pair of dapple grays.

The whip had a long savage lash attached to a short stock. As I looked he swung again, and again came the murderous crack. Instinctively I shuddered, expeeting to see the team rear and plunge under the terrible punishment. But nothing happened. The horses plodded steadily on with their heavy load in utter indifference; they did not even prick an ear. It was highly amusing.

I laughed heartily, and as the load passed me the driver scowled contemptuously, evidently thinking I was insulting him by laughing at *him*. The fact was the whip had never touched the horses. It *never had* and it never will. That team was a stranger to fear, and I afterward saw that scene repeated over and over in Switzerland. No doubt it remains a mystery to the driver why a foreigner should laugh so immoderately at him just as it remains a mystery to me why he and his fellow drivers crack such ferocious whips.

Swiss children from their earliest years are taught to be kind to all animals. It is a part of the national habit of thought. The Swiss are the best dairymen in the world. They know that it breeds not only better cattle, but it breeds better people.

I remember one night taking dinner with Professor Wuarin of Geneva University. As we sat down, his daughter came in with the evening paper, very much excited and pointed to an article. As he read he became excited, as did Mrs. Wuarin, who hastened to look over his shoulder. I thought something terrific must have happened. When the Professor turned to me he apologized, and informed me that eleven Italian laboring men had been killed in a tunnel which was being dug through the Alps. It was "very unusual," "very terrible"—and "what will the poor wives and children do?" . . . I thought to myself, "An American family would have taken that sort of an accident as a matter of course."

EDITORIAL COMMENT

FARM AND FIRESIDE
The National Farm Paper

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HERBERT QUICK, - - - - - Editor

June 20, 1914

New Medical Fakes

THE patent-medicine blood-suckers are an alert crowd of business men. A new disease appears, and they meet it with a new nostrum—worthless as the "remedies" for the old disorders. Pellagra is a new disease in this country. It is slowly spreading in various States, and because of its deadly and painful nature it is receiving the serious attention of some of our most competent scientists. As yet the cause has not been found, and the cure waits on the discovery of the cause. But the patent-medicine men are offering to the afflicted, nostrums which they call cures. The United States Government issues a warning against these medicines. They have been analyzed and found to contain nothing of any value. Those who buy them will be victims of a cruel scheme for making money out of human suffering and despair.

Not all the blame for fakery should rest on the patent-medicine men. The great success of various vaccines and serums for the cure of disease has awakened the cupidity of the manufacturing chemists who should be above such deception. They are manufacturing various serums and vaccines which they sell to druggists and certain physicians, and for which it is claimed that they will cure various diseases for which no recognized serum cure exists. It is feared that some physicians are using these injections in their practices without any scientific justification. The following human diseases are subject to control to a greater or less extent by vaccines and serums: Smallpox (preventive only), typhoid fever (preventive only), diphtheria, tetanus or lockjaw, meningitis, boils and chronic infections in various parts of the body due to bacteria which have been identified as responsible for the condition in a given case.

Whenever your physician prescribes a serum treatment for any other disease it is time to change physicians, or at least to look into the matter very carefully. We hope to keep our readers informed of any marked advance in this important line of work.

American Draft Horses

IT IS rather odd that after two centuries of teaming in the United States we have no typical American draft horse. One of the best horses of his inches ever known is an American breed—the Morgan; and the American trotter surpasses all other horses for his special purpose. We still import our drafters from Europe, however.

It is scarcely to be expected that the French, Belgian, and British drafters will be found exactly adapted to American conditions, and the statement is made that they do "run out"—that is, that the breed must be constantly maintained by imported horses. Whatever the truth may be as to this, the United States Government has thought it worth while to enter upon the task of establishing an American breed. The work is in progress at Ames, Iowa, under the management of George M. Rommel, of the United States Bureau of Animal Industry, and Dean C. F. Curtiss, of the Iowa Agricultural College. At the same time the Government is doing similar work on carriage horses at Fort Collins, Colorado; on Morgans in Vermont, their old home; and on sheep at Laramie, Wyoming.

Apple Supply and Prices

A STUDY of apple supply and apple prices has been made and the results published in a bulletin by the New York Experiment Station. The field covered has been the New York City market. The average yearly receipts of apples for the first half of the twenty-year period ending July 31, 1913, were 847,996 barrels, while for the last half they were 1,958,884 barrels per year. This seems to show that the apple crop is increasing faster than the population. The latter has increased 46 per cent in the Metropolitan district, including New York and thirty surrounding towns, while the apple supply has increased 131 per cent. The average price of apples for the first ten-year period was $2.62 a barrel, and in the second ten-year period it was $2.87. This is an increase of only 9½ per cent, while in the same time cotton has increased in price 64 per cent, corn 42 per cent, hay 33 per cent, oats 38 per cent, potatoes 28 per cent, wheat 37 per cent.

The price of apples has not increased, in all probability, nearly as much as has the cost of starting and maintaining an orchard. In fact, the prices have increased so slowly that it may almost be said that apple prices have remained stationary while all other prices have advanced.

Last year more apples went to market in New York than in any other year covered by the study, and doubtless more than ever before, and sold on the average for 28 cents a barrel below the normal. The box apples in this study were reduced to barrels, and counted in.

The facts marshaled seem to show that there is no bonanza in apples, and that the supply is greater than ever before, if the facts of the New York market may be relied upon as showing conditions generally. Just what effect the vast number of young orchards which have been planted will have on the industry is the great question before the orchardists.

The West and the East

EASTERN farmers have been inclined to think that all the Western fruit growers are organized to an extent to be contemplated with no feeling but that of envy. This judgment will be emphasized when we consider the way the Westerners act when they think they are not well organized. This condition has prevailed in the Spokane district, but when the Spokane Fruit Growers' Company met in April, disorganization seemed to disappear. They elected officers, and prepared to go after the consumer's dollar in this wise: The growers made arrangements to have their company buy all their supplies, including boxes, paper, and spraying materials; made thirty per cent of both common and temporary stock a quorum; and decided to hold all future meetings in Spokane. A resolution was passed making the reasonable cost of the company's services the cost of doing business. These growers do not propose to send their produce to market and then abandon it.

Close relations were established with the other co-operative fruit-distributing companies of the Northwest. The principle of co-operation among all the orchard regions was adopted, to the end that the different sections will not compete with each other on the Eastern markets.

Such organizations as these are needed in the East. They are the only means by which fruit can be standardized, market gluts prevented, and the consuming public be assured of a constant supply at fair prices.

The Clover-Leaf Weevil

THE clover crops in portions of the corn belt have suffered from a weevil which feeds on the leaf. It is called the clover-leaf weevil. The pests attack the plants as soon as the spring growth begins. The young grubs begin the work of destruction, boring holes through the leaf and later eating the whole leaf. Sometimes a badly infested field will come out in good shape later in the season. After spinning a cocoon which looks like lace, the weevils are hatched into small snouted beetles about the size of a pea. Cattle are sometimes poisoned by the eating of too many of the grubs. Old clover fields are more subject to the weevil than those newly sown, and about the only remedy is to shift the fields often. Have readers in other localities noticed this insect?

Public-Land Management

THERE are numerous bills pending in Congress for the management and disposal of public lands yet remaining.

The Kent bill for the leasing of grazing lands has the support of the National Live Stock Association, of the Department of Agriculture, of such well-known conservationists as Gifford Pinchot and Chief Forester Graves, and of many individual sheepmen. It seems to be a good measure, and probably ought to pass.

Congressman Fergusson of New Mexico fathers a bill for homesteads of 640 acres, on which improvements may be made to the extent of $1.25 an acre, no residence to be required. Mr. Mondell of Wyoming has a similar bill, giving the right to a homestead as large in area as 1,280 acres. These are grazing homesteads.

Why not adopt the leasing system for all the public lands? Why not charge just what the lands are worth per year, give a leasehold running forever, with proper annual dues, subject to being lowered or raised as the country develops or the range falls off in quality? Why not make the same regulation even as to the agricultural lands still owned by the Government?

Such a system should leave the farmer or stockman free to make such improvements as he desires to make, free of taxation, and relieve the Government of all the trouble of checking him up on this.

It would result in each man taking just so much land as in his judgment he could profitably use under all the circumstances.

It would give him and his children after him the assurance of a home which would never be taken away so long as the leasing charges were paid.

These charges would be based on the value of the land itself, and his improvements would not be made the pretext for more annual dues. If he took too much land the expense would be an annual hint that he could make more money by holding less, and he would relinquish some of it to someone else. In the meantime the Government would be getting a gradually increasing revenue.

The homesteaders would be able to start with small capital, and it would be a poor man's system. As the land grew more valuable the annual homestead charge would be greater, but the causes which would raise the value, would enable the farmer easily to pay them. The whole system would be based on productive uses of lands, and not on land speculation. Nobody would ever pay more for land than it would be worth, nor any less. Instead of paying the whole purchase price in advance, the user of the land would pay a small purchase price every year for that year's use. This would seem the sane and uniform system to adopt.

Crops and Soils

Insuring Against a Hay Famine

By M. Coverdell

CONSIDERING time, labor, and expense the most profitable double-cropping we practice consists of thoroughly stirring the soil early in the spring, harrowing well, and sowing to oats. Broadcasting will do well, but the grain drill will prove still better.

When the oat grains reach the stage of growth between "milk" and "dough" the oats are mown, raked, and put up in cocks to prevent overcuring, which damages them and makes them difficult to handle. They are then hauled and put in stack or mow for winter feeding. Binding makes them a little handier to store away and feed, but is apt to produce mold.

As soon as the oats can be removed from the field it is again plowed or disked thoroughly, harrowed, and sown to millet. About three pecks of seed are used to the acre. This crop is also cut before it is thoroughly ripened, which will render it more acceptable as a roughage than that which has been allowed to stand till heavily headed.

The stems of this early-cut millet are small, tender, and juicy, and the blades will all cling to the stems if properly cured. There will also be just enough light grain to make it unnecessary to feed any other grain in conjunction with it. By mixing one half oat hay with this second-crop millet we have one of the finest rations for calves. I have taken them through the winter on practically nothing else.

EDITOR'S NOTE: In northern latitudes the sowing of Canada field peas with the oats would help to make the crop more valuable and less exhausting to the soil.

Canada Thistles Again!

By S. E. Rhine

ASIDE from the growing of some root crops in succession and persistent and intensive cultivation, the mulch method is the best for destroying Canada thistle. In fact, when expense of time and labor are considered (and they should be) the mulching is the most economical method known. The remedy is simply this: Thickly cover the infected spots early in the spring with old hay, straw, manure, weeds, or leaves—in fact, fodder or anything that will exclude the sunlight and air—and the thistles simply cannot grow, they smother. The job is done.

Raising Corn in Dixie

By J. O. Claitor

IT IS very common to see fields of corn with the stalks so thick in the drill as to be badly injured by a dry season. This fact was plainly shown here last year by an unusually dry season. Those who planted properly and thinned well had good crops, while those who planted on a high ridge or left it too thick did not make normal yields. Several years preceding last year were "wet" years, and many abnormal yields were reported, but they were secured by leaving the corn thick and fertilizing heavily. The rainfall was abundant enough to support the heavy crop.

When I say "thick" I mean the stalks had a distance in the drill of 15 to 30 inches. My experience and observation show conclusively that on all ordinary soils, when the weather risk has to be considered, it is far safest to space the stalks about three feet in 3½-foot rows. This gives each stalk space for normal development. If the corn has been properly selected and moisture and plant food are plentiful each stalk should produce two good ears, or more, if it is a prolific variety. In case of a dry season the spacing mentioned should produce one or two good ears per stalk, while closer spacing will only make nubbins.

The Mississippi Experiment Station says that on land which will yield a bale of cotton per acre the stalks should be 3½x2 feet or, on poorer soil, 3½x3 feet. A bale of cotton per acre is about equal to 40 bushels of corn.

I claim that even on the good soil the stalks should be spaced 3½x3 feet, so it will be sure of a crop in a dry season, and it is better to make a large yield by the amount per stalk rather than by increasing the number of stalks. It takes less moisture and plant food for the fewer stalks. The ears should therefore receive more food and moisture. This does not apply to corn for the silo: we are talking of pounds of dry corn.

Now 3½x3 feet will give about 4,000 stalks per acre. Soil that will produce a bale of cotton per acre should make at least one pound per stalk, and more under favorable conditions. Four thousand pounds of ear corn should be about 55 bushels. The average for the country is about 26 bushels. Therefore, right spacing and proper cultivation coupled with good seed should make the average much greater: it ought to be 40 bushels. Lack of humus in the soil, due to bad methods of farming, has much to do with this low average. A soil full of humus retains moisture longer in a dry season.

We see a great deal in the papers about shallow cultivation being the proper thing, and it is in a sense; but two inches is usually the depth recommended, and that is too shallow for humid sections like this. We usually have heavy rains during the cultivating season, and if the soil is only stirred two inches the soil underneath the two inches is filled by the roots before the corn gets ready for tassel. When shoots begin to come is when the most plant food is needed.

The soil should be kept cultivated about four inches deep till the corn begins to bunch for tassel. It will then have two inches of fresh soil to feed the ear, two inches usually being required for a surface mulch. Also, if the soil is cultivated only two inches deep and a dry spell sets in, the two inches of loose dirt are not sufficient to keep the roots which have occupied the next two inches from being dried up, and then is the time the crop suffers.

What I have said refers to Southern conditions. Each farm, in fact, will present distinctive problems.

GARDENING

By T. Greiner

Curing and Shipping Onions

ROLLING down onion tops for the purpose of stopping top growth and hastening the ripening is a fad of the home grower which the professional hardly ever practices. When the bottom or bulb develops and matures naturally and perfectly the top dwindles away, leaving the bulb sound and well finished, without any green core. Such an onion will keep, and you can pack it and ship it in any kind of dry package, crate, barrel, or even sack that your commission merchant will tell you is suitable and acceptable to that particular market. It will never do to pack and ship onions known as scallions, which have a large green core and thick neck, to market with good, well-finished bulbs. When an onion once takes a notion to produce that thick neck no amount of rolling down will make a nice, well-finished, and ripened onion of it.

Renewing the Strawberry Patch

Sometimes under the matted row system of growing strawberries we keep the bed over, after the first fruiting season, for a second or even third year's fruiting. In that case, however, prompt action after the picking season is of the utmost importance, and even indispensable. One of the best ways is to mow the patch with mowing machine or scythe, allow the foliage to become thoroughly dry, perhaps even put on an additional coat of straw or other mulch, and burn the whole patch over. Then run a smoothing harrow (spike teeth slanting backward) so thoroughly and often over the patch that the ground looks as bare as a floor. It does away with the weeds, and the strawberry plants will soon come up again and make another strong, healthy growth and a lot of young plants which are always the best for fruiting the following season. For another good way throw a light furrow over each row from each side with a shallow-running one-horse plow, thus covering the center of the matted rows, tearing up the ground between these rows, killing the weeds, and narrowing the matted rows to, say, a foot in width, afterward using the smoothing harrow thoroughly, as in the other case. The matted rows will widen out again, and the weeds during the remainder of the season are kept down in the open spaces between with comparative ease. This renewal system with us is of particular value for the late Gandy strawberry, and it may be for some other varieties. We sometimes get a better crop of Gandys on the same bed the second bearing season than the first.

In localities or under conditions where the individual strawberry plants make an unusually thrifty growth, one plant covering a space of perhaps two feet or more in diameter, hill culture may safely be practiced, and the plants may be allowed to stand 20 to 30 inches apart. For renewal, then, I would allow one runner from each old plant to take root midways between each two plants in the rows, and tear out the old plants afterward, and give clean cultivation with shallow-running tools, depending altogether on the new plants for fruiting the following season.

Marketing Horseradish

I have an inquiry about literature on horseradish growing and marketing, but am not aware that there is any special treatise on this phase of market gardening. The American horseradish literature seems to be restricted to the articles found in good garden books and to the occasional ones in the agricultural papers. It is not safe for anyone, however, to engage largely in horseradish raising unless he has a deep, rich, moist, loamy soil, soil that contains very plenty of organic matter (humus). In other soils the roots are liable to grow sprangly instead of making the one well-formed, straight up and down stalk, even in size from crown down to almost the very (lowest) end. In fact, the raising of real good marketable roots is by no means the easiest task of the market gardener. Within fair limits the best way to dispose of a moderate quantity of horseradish is by grating and bottling it, and selling it in this form to local stores and private consumers. If a larger crop is grown than can be disposed of in this manner, then shipment to commission houses or sale to some of the commercial pickle manufacturers must be resorted to.

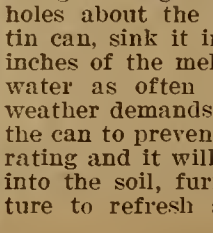
About the Horse or Broad Bean

The horse bean, so called, is a rather interesting type of bean-like plants, but very rarely seen in American gardens, simply because it does not seem to thrive under our climatic conditions, requiring a cool and long season, and being very sensitive to our hot and dry summers. It is nearly as hardy, however, as our common peas, and if tried at all here should be planted in early spring. It makes a stout upright-growing stalk, and few people unacquainted with it would recognize it as a "bean." Blossoms and pods set close to the main stalk. Various varieties are grown in northern Canada, and commonly in England, being mostly used, ground to meal, as stock food, and the larger varieties, having very large, flat, or angular seeds, in same way as we use Lima beans. These large dry beans are sometimes found in groceries and sold for table use. I prefer our own Limas. Last year my crop of horse beans was an entire failure. In some years I have succeeded in ripening good seed on my few plants. As a boy I grew the smaller varieties for my pigeons. They seemed to be very fond of the seeds which I frequently gave them.

A MARL mine is better than a gold mine—or, rather, than most gold mines. George Martz of Howard County, Michigan, found a marl deposit covering four acres to the depth of from twelve to twenty feet on his farm. It runs ninety-four per cent lime. He is said to be getting more orders for it than he can fill, and has the prospect of a good business for a long time in the future. Marl is usually made up of decomposed shells, and is a splendid form of lime for the soil. Owners of marl should awaken to its value, and that very soon.

Fountain for Melon Vines

By Donald Shepard

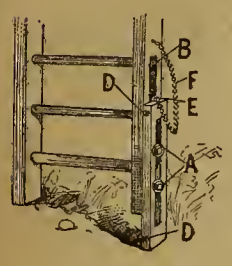


WHEN the season turns extremely dry just before or about the time watermelons begin to ripen, the drought causes the melons to become tough and sometimes unfit to eat at all. To guard against this I punch small holes about the sides and bottom of a tin can, sink it in the soil within a few inches of the melon hill, and fill it with water as often as the dryness of the weather demands. Place something over the can to prevent the water from evaporating and it will seep through the holes into the soil, furnishing plenty of moisture to refresh and develop the plant.

The Headwork Shop

Ingenious Ways of Getting More Accomplished Without Working So Hard

Side-Hill Ladder

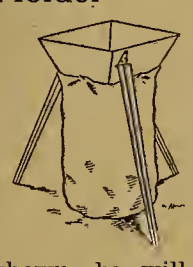


THE drawing shows an extension leg for ladder that has been in use at my home for some forty years. The ladder and attachment are both in a splendid state of preservatiou. The ground around the place is very uneveu, and I find that I seldom use the ladder but what it becomes necessary to use the extension leg.

An iron plate (B) 16 inches long, 1 iuch wide, and ¼ inch thick is embedded in the leg of the ladder, and is held in place by screws. In this iron plate ¼-inch holes are drilled oue inch apart. The holes are bored all the way through the leg of the ladder. A piece of hard wood, the ceuter of which has been chiseled out, is used for the extension leg, and splittiug is prevented by bolts (D D) through each end. A A are bolts with large heads aud washers that act as guides for the leg. E is an iron bolt which goes into the holes of the iron plate. It is held by the small chain (F) so that it cannot be misplaced or lost.

To use this ladder set it up with the extension leg on the low side. Let the leg drop to the ground and insert the peg just aboye it. The ladder is now ready for use. When you are through with it pull out peg (E). raise the extension leg, and put the peg inside of the slot so as to hold the leg up. L. C. SCHOTT.

Tripod Sack Holder



MANY farmers prefer hauling corn from the field in sacks because it is an easy and speedy way. Now if the man who wishes to sack his corn in the field will take an hour's time before he starts husking and make a sack holder like the one herewith shown, he will realize a great saving of time. If the corn is to be sorted two holders can be used. As the corn is being husked, simply throw the good corn into one hopper and the short corn into the other.

It should be made of light material, so as to be easily handled. The legs, which are attached to hopper by means of strap-iron hinges, should be about 3½ feet long. The tripod idea is to make it adjustable to any length sack, and level on hillside land. The bottom of sack should rest on the ground while being filled. Even if you do not sack your corn in the field it will pay you to make one of these sackers to use about the barn and granary. R. A. GALLIHER.

Home-Made Smoothing Harrow

THE sketch shows a combined harrow and drag which has proved to be a most useful implement. In preparing a fine seed bed it saves going over the land one or more times each with a separate harrow and drag. It pulverizes the soil and levels the surface at the same time.

The four crosspieces are oak 4x4's 6 feet long. They are placed 16 inches apart from center to center, and the strips binding all together are hardwood 2x3's 4 feet 9 inches long, bolted or spiked to the 4x4's.

The first and third 4x4's are placed with flat sides down, with eleven ⅝-inch harrow teeth in each. The second and fourth 4x4's are placed with edges down to do the crushing and leveling. The harrow teeth should extend about two inches below the pieces placed on edge.

J. B. GARVIN.

Hog Loads Hog

THE farmer who has never used a bottomless hog crate has a treat coming to him. The man who undertakes to load a 300-pound hog without help and with no regular loading chute has a big proposition on his hauds. He can do enough lifting, tugging, and pulling to insure a good view of the whole solar system. The crate without a bottom does away with all this.

The plan is simple. The crate should be made of strong, light slats and large enough to cover a full-grown hog. Sides, ends, and top should be slatted. There is no end gate, no sliding boards—nothing but a plain light crate with no bottom. Put down a few boards, about ten feet long, for a "bridge" from rear end of wagon bed to the ground.

Now we are ready to load the hog. Stand crate on end and throw a little feed down close to crate. Do not try to rush things, but allow the hog to get accustomed to the crate. As soon as the hog is in good position drop crate over him quickly and carefully to prevent him from running out backward. All there is to do now is to simply "walk" the hog up the bridge and into the wagon. This is done by taking hold of crate at one end (the end by hog's head) and walking up the bridge backwards, pulling the crate after you. No lifting; you simply slide crate, and the hog walks into the wagon.

It will be found much handier if crate is narrow enough to prevent the hog from turning around. A board at each side of "bridge" set on edge to prevent hog from rooting crate sideways will also be helpful. This plan is decidedly worth knowing. R. A. GALLIHER.

Horse Can't Bolt Feed

ONCE in a while you get a horse that bolts his feed. Some people try to cure the habit by putting stones in the feed box, but this is a dangerous practice, for the horse is almost sure to bite the stones and injure his teeth. The drawing shows just how to make a feed box that makes the horse eat slowly.

The box is built to extend through the partition. The part on the outside is made with a slanting bottom so that the feed will run through an opening in the partition, this opening being just large enough to let the feed through slowly. The horse cannot do anything to make the feed run through this slot faster, so he is forced to eat slowly.

A lid is placed on the outside of the box to keep out trash and hens. Often you throw feed into the box in the dark without knowing that you are mixing it with hen manure. It is much more convenient to feed the horses wheu the opening is on the outside, and it is a good feed box whether you have any bolters or not. D. G. BEATY.

Save Time in Watering Stock

THE usual way to water stock that must be kept in stalls is to lead them to the trough one at a time and wait while they are drinking. Here are two methods which will save a great deal of time in this operation. The first I learued from a man who owns a large livery stable.

Thirty horses were in the stalls, and fifteen wooden pails were kept near the water faucet. At watering time I filled the pails and carried them to the horses. Each pail of water was set into a feed box and left there for the horse to drink as he pleased. Instead of standing to wait for the horse to finish I went out and got two more pails and delivered them to other horses.

The number of pails was just about right to facilitate the work. There was no waiting, and the work of watering was completed in a much shorter time than if each horse was led from the stall.

If you do not care to adopt this plan, here is another: Instead of tying the halter rope to the manger in the usual way, have a snap on the end of it and snap this into a ring in the manger. This saves time because the snap can be fastened more quickly than a rope can be tied. Time is also saved when you lead the stock out for watering.

One or two animals are led out at once and their halter ropes snapped into rings at the water trough. The attendant then returns and gets one or two more animals, and by the time he gets to the water trough with these the others have finished drinking.

The animals that have finished drinkiug are returned to their stalls while the others are left at the trough. By the time another pair has been brought, the second pair is ready to go back.

By this simple method one man can attend to a much larger number of animals than if they were led out one or two at a time. Furthermore, the animals can drink at their leisure. JOHN Y. BEATY.

With the Editor

[CONTINUED FROM PAGE 2]

stricken, not by age but by disease and blight, the blight of

Curses, not loud but deep, mouth-honor, breath,
Which the poor heart would fain deny, and dare not.

This is no more the second childhood of the autumn leaf than is the sickly yellow of the foliage of the peach tree I am going to dig up next week.

Well, anyhow, I was carried back to Henry Timrod by that spray of scarlet spring leaves. I wonder how many of my readers know Timrod! He was a citizen of Charleston, South Carolina, when the war broke out, and a real and true poet. Some of his verses are in a book I love, called "Bugle Echoes," a collection of the poems of the war period. In it is the best poetry this nation has produced, and some of it by men and women who wrote the agony of their hearts and ceased to sing.

I think a Mexican poet might be struck into quick sympathy by Timrod:

Ah, who could couple thoughts of war and crime
With such a blessed time!
Who in the west-wind's aromatic breath
Could hear the call of Death!

Oh! Standing on this desecrated mold,
Methinks that I behold.
Lifting her bloody daisies up to God,
Spring kneeling on the sod,
And calling with the voice of all her rills
Upon the ancient hills
To fall and crush the tyrants and the slaves
Who turn her meads to graves.

For that is the way the man feels whose native land is iuvaded, no matter by whom or for what.

Herbert Quick

Poultry-Raising

Heat Kills Late-Hatched Chicks

By F. W. Kazmeier

THE greatest cause of such a large mortality in late-hatched chicks is lack of shade and too high a temperature.

We provide artificial shade for our chicks if they cannot have natural shade. We have additional ventilators in the tops of our hovers to make it possible to keep down the temperature in the same.

If you have made no provisions for summer ventilation in the rear of the coops and houses, do so at once, cover with screen, hinge windows at the top, open about halfway, and leave open day and night.

Keep windows and doors open.

Do anything to keep down the temperature and you will find that your large mortality in late-hatched chicks is overcome to a large exteut.

The best possible place for raising late-hatched chicks is in an orchard with the grass cut short. Try it and see. Next to this we like the corn lot.

Just an Old Black Hen

MR. ROBERT BENTLEY of Madison County, Alabama, sends us the story of a hen which contributed to the welfare of his family for thirteen years. We publish his letter because of its interest to all poultry raisers, and on accouut of the important lesson it carries as an instance of a breeding opportunity lost. There are more of these unnoticed hen prodigies than we are aware of.

She was evidently a bird of wonderful vigor. Mr. Bentley feels sure that she laid 200 eggs or more between molting periods for several years of her long life. She never was broody or hatched a chick. Here is her story:

This hen was thirteen years old when she died. She was a black hen with a gray neck, and wore a thick and glossy suit of feathers. She was quite fat and healthy-looking, and her death was rather unexpected, even considering her age.

This old hen was very faithful to her duties, and continued to lay up to the time of molting last fall. For about a year previous to her death she was almost blind, and was not able to gather as much food for herself as hens that can see. Every morning as soon as she left her roost in a peach tree she would appear at the kitchen door to be fed. And just before going to her perch in the evening she would do the same thing. And whenever we would speak to her kindly she would begin to sing. One morning the old faithful hen failed to come down from her roost, and someone took her down and tried to prevail on her to eat, but she refused. She was then placed in a sunny spot where she could rest and keep warm. The following night she was placed in a comfortable coop, where she was found dead the following morning. We wrapped her body in a piece of carpet and buried her. We miss the old blind hen, and even now a lump rises in our throats when we think of her faithful life, her mild manners, and her affectionate disposition. Peace to her ashes.

Mr. Bentley in auother letter says that he regrets that he did not develop her stock of chickens while he had the opportunity. It is to be regretted. We now know that the ability to lay an exceptional number of eggs is inherited by heus from their grandmothers through the sires. People who find that they have what may be called "freak" heus iu such qualities as those possessed by the hen described should try to perpetuate the beneficent "freakishness." Cocks hatched from the eggs of this hen would no doubt have been the fathers of pullets of superior laying quality, and they would have been likely to carry the ability to lay on for years. Especially if such cocks had been mated to heus of similar quality would there have beeu a possibility of establishiug a strain of 200-egg hens with "durable" vitality.

Mr. Bentley does not know of the breeding of the hen, but that is not an important matter. The breeding of the first Morgan stallion is not known, but he established a wouderful line of horses for all that. The hen that lays eggs is the best farm hen, no matter what her feather or family.

We have learned a good deal in the past few years about the inheritance of egg-laying ability. It is now time to watch for the "performing" hens, and use them in improving the average of our fowls.

Twin Turkey Troubles

By Mrs. J. T. Burton

I HAVE been raising turkeys for thirty years, and for the last twenty-five years my success has been quite satisfactory. During this period of years I believe I have raised on au average at least 90 per cent of the number hatched. I have followed the plan of hatchiug uuder heus, aud also used turkeys for hatching, but the treatmeut after hatching is the same in either case.

I leave the young poults in the nest only until they are dry, to preveut loss by having them injured or killed during the hatch. After hatch is completed the poults and hens are removed to a small yard containiug a safe dry shelter, where they remain for three or four days, and then I give them their liberty, taking care that they are never left out in a rain until they are feathered. And I make sure that they are safely housed at night.

Feed the Poults Grit

A precaution that I consider of great importance in preventing sickness and disease in young turkeys is the using of large quantities of grit when the turkeys are small. I always have this grit within their reach once a day, aud use brokeu crockery beaten up small enough for the poults to eat. They will eat a lot of this grit every morning before they go out on range. They are kept confined until about ten o'clock until they are feathered, or at least until the dew is about dried off.

The only feed I use when the turkeys are small is stale biscuits crumbled aud moistened with buttermilk, and with this, for green feed, chopped ouions are fed. Iu addition to this they get many iusects when ou range. They are fed this ration three times a day until they are about feathered, then only twice a day—morning and night.

To prevent lice I use snuff or any good insect powder, using the same ou the hens and in the nests while incubating, and on the little ones when they are a few days old.

The Blackhead Hue and Cry

After my loug experience in turkey-raising I am surprised that there is such a small per cent of the turkeys hatched that are raised. I consider blackhead only another name for indigestion.

Blackhead meaus too much feed when the poults are at the stage when they are apt to die, and also in the fall wheu the turkeys begin to run in the cornfields and get too much of the uew corn. To preveut loss from iudigestion and disease following, there must be an entire control of the quantity of feed that the turkeys get.

When the disease known as blackhead begins, the tongues and throats of the turkeys seem to be covered by a yellow or brown coatiug. The crop is hard, and soon after diarrhœa sets in. Grit should be in reach of turkeys at all times, as they do uot look for it as chickens do.

My success with turkeys depeuds on not overfeediug aud iu keepiug the digestive organs in good conditiou. Sour milk is a great help.

The Farmers' Lobby

A Good-Sized Farming Unit Pays Best

By Judson C. Welliver

THERE is apparently a fascination for the asphalt-paving farmer in the stories about folks making a huge profit from three, or seven, or nineteen acres, and in computing that if the mau with 200 acres would only do the same sort of farming he would have to keep a steam yacht in order to spend his profits. Just the other day I saw one of these charming stories about a young man in Nebraska who has forty acres and was getting fabulously rich off it. But this story gave itself away. This young man raised specialties, had the knack of getting them on the market ahead of anybody else in his region, and always sold at big prices. Of course the metropolitan "farmers" who wrote editorial commendation of that man didn't stop to think that if everybody made a specialty of producing potatoes three weeks ahead of season, or if everybody raised half an acre of head lettuce, nobody would get any of the premium on early potatoes, and head lettuce wouldn't be worth as much as wheat straw baled out of a two-year-old pile. I had a friend who went to raising "certified milk" on his suburban farm. "Great enterprise," he told me just at the time he was finishing the little business of spending $18,000 on cement stables, modern plumbing for the bossies, and a herd of Jerseys every one of which was guaranteed to know her pedigree by heart clear back to the Isle of Jersey. He was going to sell all that milk for 18 cents the quart, as I recollect, and retire on the profits at the end of five years.

Well, I saw him again two years after he had installed this milk mint, and asked him about where he was depositing the profits. Did he have confidence enough in the banks to put such vast sums into them? He snorted and started on politics; but ultimately I extracted the confession that he had gone out of the business. His milk had cost him five cents a quart more than he could get for it.

He Didn't Water the Milk Either

During the same two years he was making this demonstration, another friend, raising common milk at 17 to 22 cents the gallon, had been receiving an average monthly milk check of $630, living in a fifteen-room house, and making his farm better all the time. He didn't know whether he had been making or losing money, but he had some in the bank, used a touring car, and had a son and a daughter in college. He was just an average sort of farmer, doing average sort of things, and succeeding in an average sort of way.

But avaunt the flub-dub, and down with the hot air! After two or three years of investigation the Government has published a bulletin presenting the conclusions of a survey of representative farm areas in Indiana, Illinois, and Iowa, wherein it shows who makes the money farming, aud how; also who loses it, and why. You ought to send for this Bulletin No. 41, addressing the Department of Agriculture, Washington, D. C. It's worth reading, and then reading again, because it will be certain to make you think about your own methods of farming, and thinking is one of the best little performances you can put on.

The Office of Farm Management wanted to find out who made the money in farming. In the first place, it seems to have discovered that most of it is made by the landlord, and that chiefly out of the increase in land values. The farmer gets poor wages for his work. In a startlingly large proportion of the cases he gets no wages at all, after allowance is made for interest on investment and cost of help. The man on the small farm makes less wages than the man on the bigger farm, because it costs more for what the efficiency experts might call overhead operating costs on a small than on a large farm. If you dou't owu enough land to make a good-sized economic farmiug unit, rent some and farm it along with what you own. If you can't get it, sell what you have and go where you can buy enough, or rent enough, to make the proper unit.

How Horse Efficiency Was Figured

The Department figures show that as the size of the farm increases the proportion of it actually raising crops increases, aud the number of horses and amount of machinery required per acre to farm it decreases. Likewise, until the farm gets big enough to make it possible to handle labor most efficiently—that is, to have something for all the hands to be doing all the time that is worth while—the proportionate labor cost is too large on the small farm. That may be tough on the intensive experts, but it's a fact they can't get around.

On the average farm of 160 to 200 acres, it was found, 6.6 horses were used per farm, and 143.4 acres were put into crops; that is, each horse furnished power for 21.7 acres. But when you get down to the 40-acre farm you find that there are 2.8 horses per farm, and the average acreage in crops is 26.4. Therefore the area covered per horse on the 40-acre farm was only 9.4. The average crop-growing efficiency of a horse on the larger farm was more than twice as great as on the smaller one. Every farmer knows from his own experience that that is pretty nearly true, too.

This showing as to horse power applies also to machinery. The small farm must have the various implements, but they don't do as much work per dollar of cost that they represent, as on the bigger farm. Therefore they are not used so profitably. This would be offset by the fact that they would last longer when used less, if that were a fact. The trouble is that implements are prone to rust out if they aren't worn out.

The survey which brought out these and many more important facts included 277 farms in Indiana, 196 in Illinois, and 227 in Iowa. In each State rather more than half were operated by the owners, and the rest by tenants. The Illinois farms were appraised as worth an average of $175 per acre, the Indiana farms $145, and the Iowa farms $111.

But were the lands really worth this much? Actual returns received by the owners would indicate that as an operating proposition it is doubtful. There were 247 farms operated for landlords by tenants, in the three groups. From these the landlord, after paying taxes and other charges against his capital, actually received 3.53 per cent interest on his investment in Indiana; 3.64 per cent in Illinois; and 3.19 per cent in Iowa.

This suggests that owning land for somebody else to farm is a poor investment. If one can get 5 per cent flat, and commonly more, loaning money on mortgages and dodge the mortgage tax if there is one, why should one be a landlord and get only an average of 3.5 per cent? The answer is not so hard after all. The landlord gets the profits from the increase in the land's value. That is an immense factor. This survey has not gone into that aspect; it would be very difficult to get accurate figures covering a long enough period to make the results significant. But it is enough to say that the landlord has been doing very well in recent times. The Department bulletin concludes that considering the increase of values his 3.5 per cent return is very good because his property is perfectly safe.

The most interesting computation made by the experts from studying these 700 farms was that coucerned with the wages the farmer gets. The hired man always knows what his wage is; the farmer generally hasn't an idea. Well, the statistics—and these are some of the statistics, I guess, that tell pretty uear the truth—show that just about one third of the farmers managing their own farms get less than no wages at all. After deducting 5 per cent interest on the investment, one farmer of every three farming his own land got no wages at all. Out of the 273 farms in this class, 26 farmers earned $500 less than nothing; 23 earned $200 to $500 less than nothing; forty earned from nothing to minus $200; 130 earned from $1 to $800; 13 earned from $800 to $1,000; 19 earned from $1,000 to $1,500; 10 earned from $1,500 to $2,000; five earned from $2,000 to $3,000; three earned from $3,000 to $5,000; and only four earned $5,000 or over.

This group of the men who earned the largest incomes as compensation for their management of their farms are shown to have been in almost or quite all cases live-stock farmers. That is one of the most useful generalizations from the survey. The biggest single farm-wage income for the owning manager was $10,079. It was earned by a man on 680 acres. After paying interest on his investment he had over $10,000 profit. During the year he sold $6,000 worth of hogs, $1,581 worth of beef cattle, and $4,000 worth of horses; also $2,400 worth of corn. He spent for feed only $370, and for labor $1,992. Another live-stock farmer received $7,085 as his personal wages for running the business.

Some Advantages That Tenants Have

In general, the live-stock farmer improves his land most; aud the man who sells his crops improves it least, and commonly may be said to injure it most. The tenant farmers raised least live stock, for the obvious reason that as a class they had least capital with which to handle the business.

But the tenant farmer "has it on" the landowning farmer in one way. He is sure to make some wages unless he dies of starvation. So it turns out that of 247 farms operated by tenants in the three States the average farm income for the farmer—wages it may be called—was $992. Of the Iowa tenant farmers the average wage income was $850; Illinois, $1,283; and Indiana, $843.

A special computation was made showing results obtained by farmers who owned part and rented part of the land they cultivated. There were 129 in this class, and on the average they owned 105 acres and rented 78 acres each. The figures show that after paying rental and all other charges these half-owner and half-tenant farmers made better average wages than did the farmers who operated exclusively their own land. The farm wage was about $250 larger for the owner-renter than for the owner exclusively. This points the conclusion that the farmer who rents additional land is in the way of making profits from it, and is far on the road toward becoming exclusively a laudlord farmer.

Large Farms Raised Largest Crops

It was also found that the tenants sold more of their crop than the owners did. On the other hand, the farm owners operating their own land got 55.8 per cent of all income from stock, the tenant farmers receiving only 37.5 per cent from this source. It is to be observed that throughout the whole series of calculations runs the demonstration that the larger farm unit produced on the whole better returns; likewise, the investigators reached the conclusion that, contrary to a good deal of current impression, the farm-acreage unit throughout this section at least is increasing rather than diminishing. Farms are getting larger and the number of farmers smaller, apparently, because it pays better that way. The larger crops per acre were almost uniformly produced on the larger farms.

Throughout the whole discussion of the actual experience of this large number of farms it is demonstrated that so long as farming is to be done on the American plan—that is, with horse power instead of man power, with machinery instead of hands, the larger unit in the farm produces the better results. It would seem that this is a pretty clear demonstration that larger areas under a single management must be the rule in future. This will doubtless mean more and more of the consolidation of management through the plan of those farmers who own part of their land and rent some more. This plan seems on the whole to be gaining in favor, and to be more and more practicable as a larger number of farmers become willing to turn over the management of their properties to somebody else. Moreover, it is known to be better for the soil than the plan of exclusive tenant farming.

Rainbow-chasing is a poor trade; let the other fellow do it

The Community Builder

By the Rev. Harry R. McKeen

Chapter VI

And the Seventh Day Was the Sabbath

WITH the financial problem off their hands these women began to look for something else to do. In the study class they took up "China's New Day" and other mission studies.

The village was poorly lighted, and they petitioned the trustees to buy lights. This was done at a comparatively small cost. They also inaugurated a "clean-up" day. The people were of necessity compelled to use large amounts of canned fruits and vegetables. Too often the cans were tossed from the kitchen door and the strong wind whirled them across the prairie to find lodgment in the gutter by the side of the road or against some building or hospitable wayside fence.

The ladies offered a prize of $3 to the boy who would gather the greatest number of tin cans; $2 for the second largest number, and $1 for the third. The final count showed one boy with about 7,861 cans, and the total went beyond 15,000.

Then a tree-planting campaign was started, and something over 300 shade trees were set out along the streets.

In addition to this the ladies would drop in for a day at some home where sewing was needed, and by evening some tired mother, discouraged under her load, had been helped and cheered.

Meetings were held at homes in different parts of the parish also, in order that every woman would have a chance to attend the meetings.

During the second year as well, the ladies took up some definite domestic science work. At each literary or educational meeting ten women were asked to tell their way of doing some particular item of housework. Sometimes it was a recipe; again it would be some handy thing about the house; at another meeting "short cuts" in doing work were discussed. This proved a delightful innovation, and some women took part in this who could not speak, sing, or give addresses.

Later representatives of the A. & M. college came and gave some interesting lectures and demonstrations, and this society joined the state organization as a branch of the domestic science department of the state college.

In all this the church services and Sunday school were not forgotten, but were pushed energetically. These other activities only aided the church to become more efficient—more able to serve the community. That is the business of a church.

When this pastorate began, the few men in the church were a loyal group, but they simply paid what they thought they could stand and left the rest for the women. A few of them aided as teachers in the Sunday school; a few more were in the class; but their principal business, so they thought, was to fill a certain space in a pew once a Sunday and act as though they enjoyed it. Some of them did not see anything in the Sunday school, and usually remained up town until churchtime, or else found the shady side of the church and talked crops and whittled. The Bible class teacher for men was a devoted man, but somewhat set in his opinions and determined to have folks see it his way. Other folks had their opinions also, and so just remained outside to avoid a disagreeable argument.

The necessity for an open forum was soon felt by the pastor—a place where men could come together and express themselves upon the questions in which men are interested. He realized that the church was not the place for this organization to meet. The very men he wanted to reach and influence would not come to the church. Also he realized that the organization could not be "religious" in character at first. He knew that men will often approve a principle which if named they would avoid.

To bring the men of the community together the Men's Bible Class of the church quietly began agitating the organization of a men's league. In a short time a membership of 33 was secured, and the officers elected were the leading men of this church, and the pastor and one of his trustees were chosen as members of the very energetic program committee of three.

This organization met twice a month in a room in the central part of the village. The program was published a week ahead, and as much interest as possible aroused. The meetings were open to the men of the community. Great interest was shown, and gradually the program of the church was laid before them. They saw something worthy their attention, and began to attend the services, and in time many of them united with the church and are to-day its leaders.

The ladies would stop in and sew for some tired mother

This pastor, however, was anxious to help those people upon their farms and in their business. Every crop was an uncertainty. They were two-crop farmers, depending upon wheat and corn for a living. If these failed them they were on short rations for a year. This kept them poor, and many of them upon the verge of want. Every year thousands of tons of excellent fodder dried up in the fields and blew away for want of silos. Roads were mediocre, and the dairy business was insignificant. Poultry was of a negligible quantity and poor quality.

The minister saw that by saving the green cornstalks, even though the grain was gone, it would feed large herds of cattle. He saw that the dairy herd and poultry flock would help tide his people over until a new crop could be raised. He realized, as no one else could, what a hardship a short crop worked upon him and his family. Unless these people had an income more than sufficient for their own needs he would have to suffer. A church cannot be supported by hungry men.

With these things in his mind he introduced a flock of thoroughbred poultry in his own yard and began to discuss breeds. He got the men of his church back of a local poultry show and gave some small prizes. He appealed to the State Agricultural College for help, and they told him to ask for what he wanted.

About that time hogs were dying with cholera by the hundreds. One member of the church lost 215 in a month. Others less able to lose were hit heavily.

An institute was held for three days in the church. A leading veterinary surgeon came and gave talks on hog cholera, and then a demonstration of vaccination. He dissected an infected hog and showed the farmers how to recognize the disease. He sent these men home encouraged and better able to cope with the enemy.

A dairy expert gave them some rock-bottom facts about the dairy business, and showed them how they could increase their incomes and make the money come regularly every month in the year. He laid special emphasis on the silo as their redeemer from poverty.

The minister gave a number of plain, practical poultry lectures, and pointed out the good qualities of the different breeds.

He also went to the state college and got the seed and dairy train to make a special stop there. They did this even at a great inconvenience to themselves and gave a half day to this village.

The results were most gratifying. Eight new silos were built that year, and the amount of cream sold at the station was increased one third. The most notable success was in the poultry products. Pens of thoroughbreds were yarded by many of the farmers and village people. Previous to this agitation the largest amount of poultry products sold in a single month, November, was approximately $600, and during the next year the sales almost reached $1,800 for the month of November.

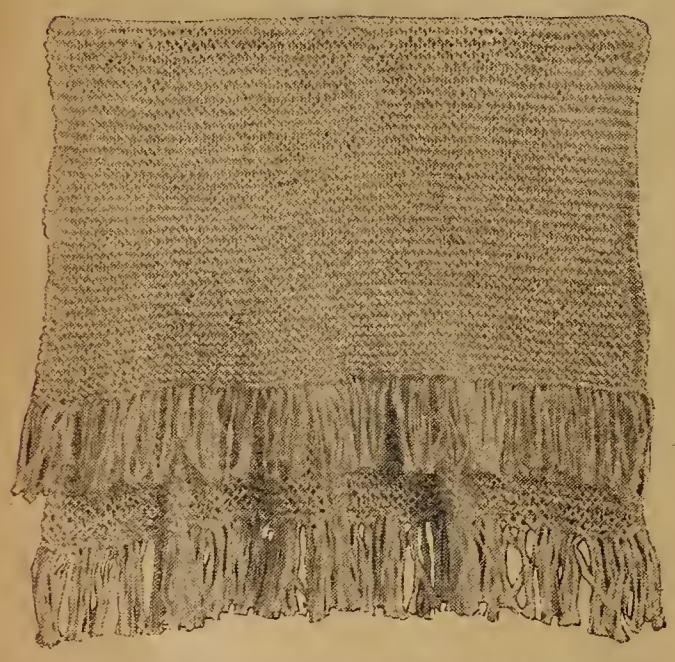
The campaign has been continued. Another institute was held the next winter, at which good roads, poultry, consolidated schools, alfalfa, and selected seeds were the themes. The women had two lecturers that presented the problems of the home.

The college and railroad sent their train again, and about 600 people came out.

A second poultry show was held, at which 17 varieties were shown, exclusive of geese, ducks, pigeons, and guineas. There were 221 birds in the show, six of the males having cost not less than $10 each, and some pens were valued at $50. A licensed judge was hired and scored the birds, and pointed out the defects so that the breeders would know how to do better next time. This show will be a permanent affair. No one can doubt its benefit to the community. It has created several prosperous poultry cranks.

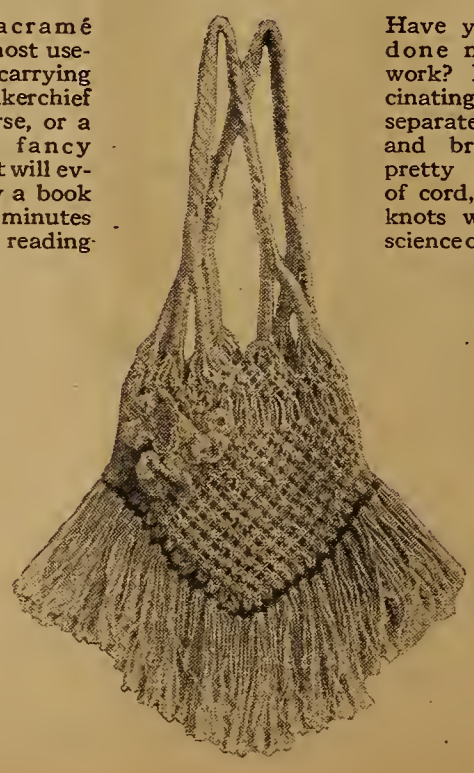
Some Things Which Can be Made at Odd Minutes

By Evaline Holbrook

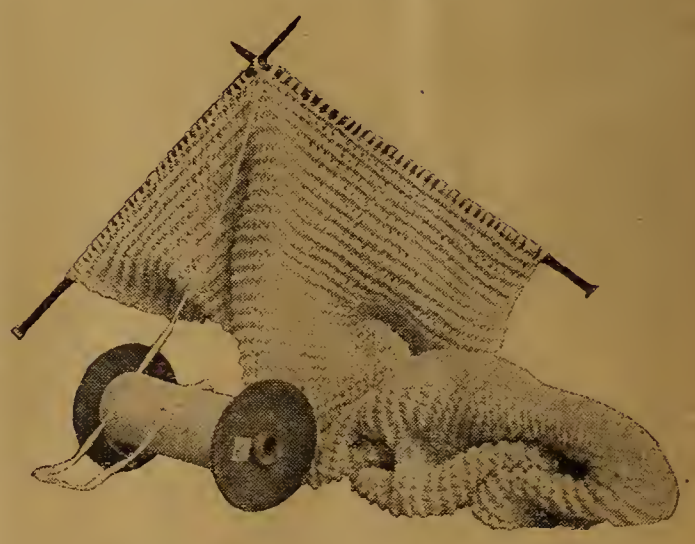


EVERY housewife takes pride in having her towels good, yet good towels are expensive. Here is one designed by FARM AND FIRESIDE for its needleworkers which is actually an ornament to the room in which it hangs, and which is not only an ornament but an article which does well what it is designed to do. It is a nice thing for your own house or for a present.

This macramé bag is most useful for carrying a handkerchief and purse, or a bit of fancy work. It will even carry a book for odd minutes of good reading



Have you ever done macramé work? It is fascinating. You separate, plait, and braid the pretty strands of cord, and tie knots with the science of a sailor



THESE towels are very satisfactory, for they are strong, absorbent, and easily washed. They are a simple task for the beginner in knitting, and they are excellent pick-up work, as no counting of stitches is required. They are knit from spool tape, and one spool makes two large towels with fringed ends. Good washcloths are made in the same way, and will be found very soft. For directions for the towel and the macramé bag you have only to send six cents and a stamped, self-addressed envelope to Evaline Holbrook, FARM AND FIRESIDE, Springfield, Ohio.

E

Sorter Blind

How Too Much Kindness Became Unkindness

By Agnes B. Dustin

"YOU'RE all het up, Jane, cooking dinner for the men-folks. Let me do up the dishes. I'd just as soon help a bit when you're so busy as not, and had rather." Marm Kinne's sturdy bulk hesitated in the sitting-room door as she appealed to her bustling daughter-in-law.

"Now, Marm, you go right back and sit down in your rocker," Jane urged kindly. "There's no hurry about the dishes, and I'm not going to have you get all tuckered out. Just leave things to me."

Back in her cushioned rocking-chair Marm Kinne slowly fumbled in her work basket for her steel-bowed spectacles, set them far down the bridge of her nose, and picked up he weekly "Clarion." Now and then as she read Marm fidgeted in her chair, hitched nearer the light, then shoved back again, yawned prodigiously, and shortly pushed the paper off her lap.

"Nothing's happened, and nothing seems likely to, nary a thing," she told herself with disgust. "What's those turkeys yeeping about?" she wondered. "Presume they're hungry. I'll just step into the further but'ry and fetch them a bite."

Marm softly crossed the piazza and entered the back pantry, where a tin bucket of curds and whey, hot from the stove, stood cooling on the wide shelf. With a dish of white curds in her hand the old woman descended the back steps and sought the turkey coop in the shade of the Red Astrachan tree.

"There, you poor little yeepers, these will sorter comfort your stomachs," she consoled, sprinkling the warm and peppered curds generously on the feeding board with evident satisfaction of spirit.

"What are you doing, Marm?" shrilled Jane's voice from the kitchen window. She hurried down the path and solicitously helped the old woman up the piazza steps. "Those turkeys don't need a crumb, for I've only just filled them up. Now, hadn't you better go and have your nap, Marm? You musn't tire yourself this terrible hot weather."

"I just thought I'd rake up the yard. Sam's littered it some, dragging hay," confessed Marm, apology in her tones.

"It wouldn't do a bit of good till the last load is in," vetoed Jane, a little impatiently. "I'll see about it then, so don't you fret. You've worked hard for over seventy years, Marm, and now Sam and I want you to have some leisure. I guess I'm capable of doing what is to be done here, and you needn't feel called to worry. Just take things easy."

Marm left the kitchen with lengthened face and sought her creaking rocker in evident perturbation of spirit. "Take it easy! Haven't I been tugging to take it easy all summer?" she wrathfully appealed to the household cat, contentedly washing his face in the armchair opposite. "I don't want to buck up against Jane, but this doing nothing is going to stop. Seems as if I'd fly off from the handle sitting here, and I can't stand it, and I won't! Sam and his wife mean well, but they're overdoing this leisure business. It's against natur'. I'll have to show 'em— Land, if that isn't Billy Bogle driving by with the nurse he got over to Centerville! Seems as if Mis' Towls did say in here yesterday that the nurse couldn't stop longer because of her husband's taking rheumatiz worse. I dunno what Mary Bogle will do alone with that two-weeks-old baby. It's dretful pindling too, they say, and Mary was never more than middling gumptious. I dunno but—I wisht—"

A half hour later Marm appeared, bonneted and shawled, before her daughter-in-law. "I'm going along down towards Hannah's, Jane," she declared, "and you needn't be a mite surprised if I stay a couple of days. John will bring me home when I want to come."

"Why, Marm, Sam will harness up and take you down," was Jane's cheerful response. "That hill is steep, and you might step on a rolling stone and fall. I'll go right out and call him."

"No, you don't," denied Marm vigorously. "I'd rather amble along as I've a mind to. It's too pretty an afternoon to be driven."

"Well, it isn't such a great ways," conceded Jane reluctantly. "Do be careful, and take your time going, and I hope you and Hannah will have a real good spell of visiting."

Jane accompanied her mother-in-law to the gate, and with copious admonitions watched her step sturdily off down the pleasant hill.

Two days later John Kinne, Hannah's husband, drove into the yard to borrow the corn cutter and Jane hastened out.

"Marm didn't get all tuckered out walking down, did she, John? I tried my best to have her let Sam drive her, but she wouldn't."

Marm Kinne stood revealed to her distracted relatives

"Marm? What are you talking about, Jane?" probed John. "I haven't set eyes on Marm for a week."

"Haven't seen Marm?" shrilled Jane, growing as white as her stiffly starched apron. "Where've you been? Isn't she down at Hannah's?"

"She's not," denied John, staring hard at his sister-in-law. "I just came from home, and Marm hasn't been there."

"Marm's lost, or something awful has happened to her," wailed Jane wildly. "She tramped off by herself day before yesterday—said she was going to Hannah's, and now—she ain't—nowheres."

The two stared at each other in bewilderment until Jane's energetic good sense came to her rescue.

"You turn right round, John, and drive to all the neighbors," she cried, snatching up her sunbonnet. "We can see if they've heard anything. Put the lick on, for mercy's sake, and get somewheres! Oh, my soul, this comes of letting old folks traipse off by themselves!"

Jane's lamentations were snapped off short by the buggy whirling into the nearest neighbor's, Billy Bogle's, yard; and there Marm Kinne stood revealed to her distracted relatives, contentedly pinning a large wash to the line.

"Why, howdy, John and Jane," Marm called genially. "I hope you didn't get worried about me. I was going to send word to-night. You see, I stopped here to Mary Bogle's instead of going on to Hannah's, for Mary was needing help real bad. Come right in, can't you? The baby's right cute."

Jane descended abstractedly from the buggy and followed the older woman's bustling figure indoors. "You'd better go and get your corn cutter," she directed from the doorway to the gaping figure holding the slack lines; then she plumped down in the nearest chair.

"Take off your bunnit, and can't you stay to supper?" urged Marm. "I've made riz biscuits, and we've got peaches and sponge cake. Mary and I put up twelve quarts of peaches yesterday. Mary could pare them real spry. Come right in now and see the folks, Jane."

Jane duly admired the baby and talked to lackadaisical Mary Bogle, but her surprised attention centered on Marm—a transformed Marm, she told herself, who bustled actively about, discharging the duties of hostess with the old hospitality Jane remembered as characteristic of Sam's mother when Jane first came to the farm. It struck Jane as strangely odd that Marm should have to leave her own home in order to exercise her gift for hospitality. A great enlightenment dawned slowly in Jane's mind, and she shortly followed her mother-in-law into the tidy kitchen.

"I guess I've made a mistake, Marm," Jane contritely owned. "I don't see how I came to be so sorter blind. I reckon you can do what work you like on your own place and have company and such without going to the neighbors. I'll send Sam down after you to-night; and I'll just step over and ask Hannah to come up to-morrow, and I'll tell her you will make us some sponge cake."

Marm's unfaded eyes rested fondly on her daughter-in-law. "You've always meant well, Jane," she declared soothingly. "I haven't wanted to badger anybody, but it would seem real good to be puttering round doing the old chores."

Experience Bazaar

WHAT can be more interesting and helpful than to hear other women tell the story of their struggles and successes with the same problems which confront us? Here is a letter, written by a resourceful woman who has attained health, contentment, and an income from her work. Let us have more such letters:

DEAR FIRESIDE EDITOR: How is the farmer's wife to earn a little extra money for the small extras which hardly seem to be classed among the necessities yet play a big part in the life of any woman and contribute largely to the pleasure and happiness of life?

No woman likes to ask her husband for the money to get the many trifling articles she wants and feels she must have.

This problem confronted me, and I was some time in solving it; but as at last I have been partially successful my solution may help someone else.

Because I have a great horror of having animals killed, chicken-raising was out of the question. I simply could not care for them all summer, teach them to trust me, and then sell them to be killed. It seemed like "blood money" to me. I tried it one summer and found I could not do it. Stock-raising was barred for the same reason.

We were too far from market to make berry-raising successful, with the exception of gooseberries, so to these I looked as one source of money-making. I had about two dozen bushes at the time. These I spaded around and mulched heavily with old hay. About half of the bushes produced fine large berries, and I sold sixty pounds, besides canning eighteen quarts and using plenty for the table. This was encouraging and I loved the work, so in the fall I set out a lot more bushes, pruned and cared for the old ones, and the next year gathered a bountiful crop.

Later on came green peas. I had six rows about fifty feet long, and besides supplying the home table I canned for winter use, and sold three dollars' worth.

I also had green beans, rhubarb, onions, radishes, and turnips. The latter we sowed late in the fall, and they were fine in the spring. At first we sold them in bunches of six turnips to the bunch; as turnips got more plentiful we sold them by the sack.

In late winter, parsnips, at 95 cents per sack, brought quite a tidy little sum.

Last summer I added sweet corn and cabbage to my list.

It is hard work but pleasant, and brings in good returns, in health and in money. In this way I solved to my satisfaction the problem of pin-money. I should like to hear from others what they have done. A. N. A., Oregon.

The Goblins of the Bottle

By Harry Whittier Frees

IN ALL the land of dollies it would have been hard to find a sweeter dolly child than little Dolly Dimple. She was loved by all the dollies for her kind and gentle ways.

She would never stamp her foot or start to pout when anything displeased

Inside the bottle were two little dwarfs

her. And when bedtime came she never asked to stay up just a little longer. She did everything just as she was told, and when she went to school the teacher never had any occasion to find fault with her as far as being obedient was concerned or having her lessons learned.

But with all her good behavior Dolly Dimple had one great fault that she had never been able to overcome. She was the most curious child in Dolly-land. She was always poking and prying into things to find out this and that.

Dolly is Warned About the Goblins

She had looked through every closet in the house and opened every box, just to see what she could find. She was so very curious that she never even tasted a piece of pie before she had lifted the upper crust to see what was underneath. And nearly all her toys had been torn apart just to find out what they were made of.

She had been both scolded and punished for her prying ways, but it never seemed to do any good. But one day something happened that forever cured her. And it all came about through the Goblins of the Bottle.

One evening her papa brought home a big bottle that was most as tall as Dolly herself. Inside were two little dwarfs, dressed in brown, with peaked hats and long white beards. They were very active little fellows and persisted in trying to climb up the smooth sides of the bottle in their efforts to reach the cork.

Dolly thought them the cutest little dwarfs she had ever seen, and at once begged her papa to let them out so that she might talk to them. They appeared so cunning that she felt sure it would be lots of fun to have them out to play with.

But he told her that she must have nothing to do with them. He said that they were wicked little goblins who would cause no end of trouble the moment they were let out of the bottle. And he cautioned her never to touch the cork or she would be the sorriest little dolly that ever lived.

For a long time Dolly delighted in looking at the two little prisoners through the glass sides of the bottle. At first they were anything but friendly, glaring at her in the fiercest manner imaginable, and even shaking their tiny fists at her in the greatest rage.

Her Curiosity Overcomes Her

But after a time they became more peaceable and tried in every way to appear friendly. They doffed their tiny caps to her and even blew kisses to her through the glass. And all the time they were making motions to be let out.

Dolly soon began to feel so sorry for them shut up alone in their glassy prison that she was more than once tempted to free them. But she would always think of what her papa had told her and what might happen if she did.

But one day her curiosity got the better of her fear. The two little goblins appeared unusually friendly, and she thought it would do no harm to let them out for only a little while. She felt sure her papa would never know the difference. And this was the first time that Dolly ever thought of doing something she had been told not to.

So she climbed up in her chair to reach the cork, and pulled on it with all her might. At first she could not move it,

The room was instantly filled with hundreds and hundreds of strings

but suddenly it flew out with a pop. The next instant Dolly nearly fell off the chair with fright at what had happened. The bottle at once filled with a white vapor, which poured out of its mouth in a dense cloud. And with it came the two little goblins.

For nearly a minute Dolly was too frightened to speak. The goblins had sunk to the floor through the cloud of vapor and were watching her with wicked little eyes.

Dolly Changes Into a Horse

"Oh, dear Mister Goblins," she finally gasped, "won't you please go back in the bottle?"

"Ha! Ha!" chuckled the first goblin, glaring at Dolly as though he would have liked to bite her head off.

"Ho! Ho!" roared his brother, with a horrible grimace that fairly made Dolly jump.

"We've waited years and years to be set free," cried goblin number one, "and it's all came about through a silly little dolly."

"Just a silly little dolly who wouldn't mind what was told her," repeated goblin number two.

Dolly at once saw that the goblins would not listen to anything she told them, so she darted for the door of the room to call her mama. But just as soon as she took the first step one of the goblins yelled something to her, and the room was instantly filled with hundreds and hundreds of strings barring her way. No matter which way she turned the strings encircled her.

Poor, frightened Dolly found herself a prisoner so secure that she could hardly move. It seemed as though the whole room had been filled with a gigantic cobweb and the pair of goblins were little brown spiders ready to pounce upon her.

All of a sudden one of the goblins gave a shout while the other clapped his hands. In an instant the strings had disappeared as quickly as they had come. Dolly now found herself changing from a little dolly into some kind of an animal. Her arms and legs were growing longer and all covered with hair. Her body became bigger and rounder, and on looking around she found a black, glossy tail streaming out behind her. The only thing that did not change was her head, but even that felt funny.

With a shout of delight the two gob-

One day curiosity got the better of her fear

lins jumped on her back and drove her about the room, while poor bewildered Dolly was wondering whether she would always have to remain a horse. Every few moments her two little tormentors would dig her in the sides with their tiny heels.

Suddenly there came a shout behind her, and the pair of goblins slid off her back and tried to hide in the corner. They appeared terribly afraid of something as they gave a backward glance toward the door. As soon as they had touched the floor Dolly once more became a little dolly girl as before.

The Rescue

And there in the doorway stood the cutest little dwarf she had ever seen! He was smiling at her, and she knew she had nothing to fear.

But as soon as the dwarf turned to look at the goblins, who were frantically hunting for a place of concealment, he became terribly angry, and darting into the room caught first one and then the other. After he had shaken both of them soundly he tucked one under each arm and disappeared into the air like a puff of smoke. And that was the last that Dolly Dimple ever saw of the goblins. And the strangest part of it all was that Dolly's papa seemed just as glad to get rid of them as Dolly herself.

If the Sandman should ever take you to Dolly-land you will find little Dolly happy to see you. She is just the same sweet little dolly girl that she ever was, and has changed in but one way.

But there, you've already guessed it! She is no longer the least bit curious.

Some "Best Recipes" for Cherries—By Mrs. F. H. McLean

CHERRY COCKTAIL—Select large lemons, and from the pointed end cut off a slice to form a lid. Remove all the pulp and juice from the inside of the lemon, and set in the ice box until ready to serve. For the cocktail filling, stone as many ripe cherries as are required, bruise and chop them fine, and add a tablespoonful of lemon juice to each cupful of fruit, and sweeten to taste. Serve in the lemon cups.

CHERRY OMELET—Make a purée from one pound of cherries and half a cupful of sugar. Beat the yolks of four eggs with a tablespoonful of double cream, then add the stiffly beaten whites of the eggs and the cherry purée. Put a tablespoonful of butter in a hot omelet pan, and when melted pour in the egg and cherry mixture. As it cooks, prick and pick up with a fork until set. Then roll on a hot platter, and sprinkle with sugar.

CHERRY AND CUCUMBER SALAD—Wash about a pound of cherries, remove the stones, sprinkle with sugar, and place them in a wire basket to drain. Blanch and chop half a pound of almonds. Peel and dice a cucumber, sprinkle with salt, and set on the ice for several hours. Then wash, drain, and mix with the cherries. Add the almonds, and cover with mayonnaise into which whipped cream has been beaten. Serve very cold on crisp lettuce leaves.

CHERRY JELLY—Cook two pounds of cherries with half a cupful of sugar and half a cupful of water until tender, then rub through a sieve. Dissolve three heaping tablespoonfuls of granulated gelatin in a cup of boiling water and add a few drops of red coloring. Mix well with the cherries, and then divide into custard glasses and set on ice. Serve with a spoonful of whipped cream on top of each glass.

CHERRY CHARLOTTE RUSSE—Line a mold with lady fingers or sponge cake. Put a pint of milk in a double boiler, beat the yolks of three eggs with a teacupful of sugar, add to the milk, and cook until done. Dissolve two tablespoonfuls of granulated gelatin in a little milk. Pour the custard over it and stir thoroughly; then strain, and flavor with vanilla. Add a pint of ripe cherries that have been rubbed through a sieve, the stiffly beaten whites of the eggs, and half a pint of whipped cream. Pour into the cake-lined mold, and set on the ice to congeal. Serve with whipped cream.

CHERRY TAPIOCA—Soak one-half cupful of pearl tapioca in one pint of cold water until all the water is absorbed. Add a pinch of salt, the juice from a pint of pitted cherries, and sugar to make quite sweet. Cook in a double boiler until clear; then add the cherries, and cook fifteen minutes longer. Serve very cold with cream.

CHERRY BETTY—Butter a pudding dish, and fill it with alternate layers of pitted cherries and bread crumbs, having the last layer one of crumbs. Dot with bits of butter, and sprinkle with sugar, cinnamon, and nutmeg. Add a syrup of cherry juice, just enough to moisten the crumbs a little. Place the dish in a pan of boiling water, and bake in a moderate oven one hour. Serve with hard sauce.

CHERRY PUDDING—Stew one pound of cherries with four tablespoonfuls of sugar until soft, then strain. Dissolve a heaping tablespoonful of granulated gelatin in half a cupful of the cherry juice. Put the yolks of two eggs into a saucepan, add two tablespoonfuls of the cherry juice, and beat over hot water until thick. Then add the stiffly beaten whites of the eggs and half a cupful of double cream which has been whipped until stiff. Pour into a wet mold and set on ice. Serve with whipped cream.

CHERRY CUSTARD—Fill a pudding dish about two thirds full of stewed cherries which have been pitted. Make a custard as follows: Beat the yolks of four eggs with half a cupful of sugar, add them to a pint and a half of milk, and cook in a double boiler; flavor with vanilla, add a pinch of salt, and pour over the cherries. Bake in a moderate oven until the custard is set. Make a meringue with the whites of the eggs and four tablespoonfuls of powdered sugar, spread over the custard, and return to the oven to brown.

CHERRY ROLL—Make a rich pastry, then roll out and cover thickly with cherries which have been pitted, sprinkle with sugar, roll up and place in a baking dish. Bake in a hot oven until well browned and serve hot with a cherry sauce made as follows: Cream one-half cupful of butter with one cupful of sugar and stir in as many pitted cherries as the sauce will hold without separating.

CHERRY ICE—Wash, stem, and stone two quarts of cherries, then crush and sprinkle with a quart of sugar. Crack the stones of a dozen cherries and remove the kernels, crush them and add to the cherries and sugar. Let stand two hours, then add a pint of water and press through a sieve and partially freeze. When nearly frozen, stir in the stiffly beaten whites of two eggs and finish the freezing.

Some Warm-Weather Clothes Easily and Quickly Made

No. 2517

Back of No. 2517

No. 2517—Buttoned-in-Front Waist: Yoke Effect

32 to 38 bust. Material required for 36-inch bust, three and one-fourth yards of twenty-seven-inch material, or one and seven-eighths yards of forty-inch material, with two and one-half yards of lace for trimming. Price of this pattern is ten cents

No. 2553—Boy's Yoke Dress with Bloomers

6 months to 4 years. Material for 2 years, four and one-fourth yards of twenty-two-inch material, or three yards of thirty-six-inch material. The price of this yoke dress pattern is ten cents

No. 2307—Box-Plaited One-Piece Dress with Hat

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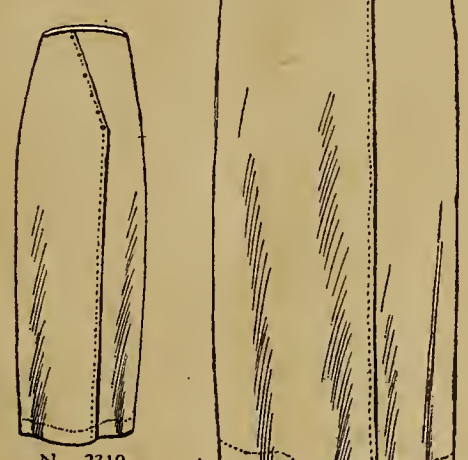
No. 2553

No. 2307



No. 2319

No. 2450

No. 2319—Four-Piece Skirt: Front-Closing

22 to 36 waist. Width of skirt at bottom in 24-inch waist, two and one-fourth yards. Pattern, ten cents

No. 2450—Five-Piece Skirt: Foot Plaits

22 to 34 waist. Width of skirt at bottom in 24-inch waist, two yards. Price of this pattern is ten cents

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The Mender of Hearts

A Story of Two Wounded Musicians and Their Strange Orchestra

By Mary Brent Whiteside

THE little brick cottage stood well back out of the dust of the road, and almost submerged by a wilderness of unpruned climbing roses. Donald Burke, trudging by, dusty, footsore, and utterly disheartened, clutching in one hand his little leather case containing several half-used bottles of "Sysonby's Marvelous Polish," paused on the sidewalk for a barely appreciable moment to drink in the fragrance of the old-fashioned June roses. Then with a sigh he lifted the latch of the gate and went wearily up the gravel walk. At the steps he stopped again, to read a sign which hung suspended from the piazza roof. Half smothered as it was, in an embrace of roses, he had not noticed it until now. In silver letters, on a background of burnt umber, were the words: "Doll Hospital, Miss Jane Golden, Prop.," while underneath in smaller type, and enclosed by quotation marks, was the singular inscription, "Mender of Hearts."

Burke revolved the words curiously in his mind. He mixed them up insensibly with his oration extolling the merits of "Sysonby's Polish."

At the door he lifted the old brass knocker, but in the act of letting it fall a neat card, tacked above the knob, arrested his attention. Its quaint invitation to "Draw the latch and open the door and walk in" bespoke a hospitality unprecedented in poor Burke's recent experience.

The young man hesitatingly opened the hospitable door and stepped inside. He found himself in a narrow old-fashioned hall on both sides of which were square, low-ceilinged rooms with wide-open folding doors.

"Come in," called a cheery voice from the room on the right, and Burke, immediately moving forward, paused for a moment in the open doorway and proceeded to open his leather case.

"I should like to interest you," he began with the mechanical glibness of long practice, "in a new and remarkable polish for furniture. Nothing like it has ever been on the market before. Harmless, odorless; guaranteed not to injure the most delicate fabric. Equally efficacious for oak, walnut, or mahogany—"

"Sit down, boy," interrupted the occupant of the room, in whose direction Burke had not even so much as glanced, "you look tired."

The young man stared, and promptly and completely all the remaining lines of his disquisition on Sysonby's Polish deserted him. At the front window sat a little lady of dainty and exquisite appearance. On a table before her were a pot of glue, shears, elastic bands, and a doll head with a fluffy blond wig.

"Take the big red rocking-chair," the little lady admonished, bestowing on Burke a glance so penetrating that it seemed to search out his innermost secrets. And when she followed the look with a benevolent smile the poor young fellow felt such a lump come in his throat that he almost choked as he sat down.

"I don't know what you are selling," she continued after a pause, "but I'll take some, whatever it is. And now that's settled, we can talk about something else. You are tired, and I know one doesn't care to talk shop all the time."

Burke could scarcely credit his ears. He had been selling his bottles of polish for nearly a year and never once had it dawned on anybody that he might be tired of discussing it. People usually took it for granted that he adored talking about Sysonby's Polish.

"I am Miss Jane Golden," resumed the little silver-haired lady, "and you'll find me rather an unconventional body."

"I am Donald Burke," he returned. "You are right, I'm tired of shop. I was sick of it before I ever went into it. It's the life of a cur. You're the only person who has spoken a civil word to me in a week."

Miss Jane Golden shook her head and puckered up her little white forehead. "I'm ashamed of you, Donald Burke," she said in a tone that attempted to be severe and utterly failed. "You're in a good enough business. You are selling something and giving people their money's worth. And almost everybody likes mustard sauce. It *is* mustard sauce, isn't it?"

"Furniture polish," corrected Burke, "Sysonby's marvelous polish, equally good for oak, walnut, or mahogany—"

"Furniture polish," interrupted the little lady, "is a good thing to have. It's useful. You ought to be glad to be useful. But instead you wanted something you haven't been able to get. What was it you wanted? Don't you know we can have everything we want if we go at it, rightly?"

The young fellow suddenly extended his right hand for the little lady's inspection. Two of the fingers were entirely missing, and the third was a stump.

Miss Jane Golden repressed the momentary tremor of pity that seized her and answered calmly. "You are God's child," she said, "and you were given dominion over the earth. You've got to claim it. A few fingers more or less couldn't affect your divine inheritance."

Poor Burke felt a passing flash of resentment. "It's easy for you," he blurted out, "you have everything that you want—a home, a garden—"

The little lady nodded her head. "Yes," she assented placidly, "I have everything that I want, and I'm perfectly happy. Once I thought of the stage, but there are always unsympathetic people, and the critics write cruel things about you. Here my audience always admires," and she waved her hand about the walls of the room where Burke, following the motion, saw shelves and shelves full of dolls, some of them new and smartly dressed, and others in various stages of disintegration. "Then the children come in sometimes, and then I give them something merry, and let them laugh, especially when they've broken a favorite doll and their poor little hearts need mending too."

"Oh," faltered Burke, "is that what you mean by your sign, 'Mender of hearts'?"

"Of course it is," assented Miss Jane Golden with a little laugh. I mend the little creatures' hearts when I mend their poor little doll babies. And that's all our disappointments are, boy—just broken dolls. We can always mend them."

"Not mine," said Burke, looking down at his mutilated hand, "my trouble can't be helped, Miss Golden. Oh, you don't know how it was! My mother was a musician; she taught me the piano. I can't talk very much about it now, but she told me I would be very famous some day. She said I had the soul for it."

"I knew you had the artist's soul," assented the little lady softly, "and you wanted an audience too. You wanted to feel their hearts throb in response to the magic touch of your fingers."

"I wanted," said Burke, "to express something that was all shut up inside of me and simply fighting to get out."

"And you can, you can," the little lady insisted. "The artist's gift is a divine thing and God meant it to be expressed. I've fought out my problem and I've gratified my ambition. You can find a way to do it too."

The young fellow shook his head. "It's different with me," he said. He got slowly out of his chair. "I've got to go now, Miss Golden, and I want to thank you for being awfully kind to me."

"Will you come back to see me soon," asked Miss Jane Golden, "and talk things over again?"

Burke paused in the doorway. "I'll come back," he promised, "and talk things over again—to-morrow."

With a last backward glance of mute boyish gratitude he turned into the hall and, opening the front door, passed silently down the gravel walk, between the swaying branches of warm, sweet roses, and through swarms of reveling bees and butterflies.

Next morning Burke took unusual pains with his toilet. He blacked his shoes and carefully brushed his clothes, and when he had reached the brick cottage and opened the gate he stopped for a moment on the gravel walk just inside, and picking one of the pink June roses thrust it into his buttonhole.

"I'm glad to see you," she said with her benevolent smile when the young fellow entered her presence a moment later. She sat, as before, in the big chair at the front window, and she was busy combing the frowsy tresses of a doll which she had just mended. "I've been thinking about you and how you can and will get the thing you long for, just as I have—"

"Oh," faltered Burke, "you can't make the fingers grow back where they used to be. You can't give me back the power to feel the keys respond as they used to do. The age of miracles is past, you know."

"Dear me," interrupted the little lady softly, "that is only the letter of your ambition—that desire to be a great virtuoso and to sway hundreds with your music. You have the artist's soul, that must find expression somewhere, somehow—that is the spirit of your ambition, and that is the thing that can be attained. But, dear boy, sometimes we have to readjust our viewpoint; we get this beautiful thing that we wanted, but we get it in a different way from the one we planned. Sometimes we have to use a little imagination." Her face relaxed into a smile that had in it tolerance, sympathy, and the wisdom that comes of complete understanding. "It's quite wonderful how imagination makes us adaptable and shows us how we can gain our ends so simply and easily without even a struggle. My garden now—it's breathing out a great symphony of color and perfume. It's a wonderful orchestra—not an instrument missing, and it's ready to respond exquisitely to the least touch of the conductor's baton. But, dear me, some dissonances are creeping in now, for I haven't any conductor! Tildy quarreled with the last one. Tildy has no imagination—she called him a 'gardener'. I wonder," she ended wistfully, "if you could help me find a conductor for my wonderful orchestra?"

Burke sat forward in his chair and his eyes kindled. Miss Jane Golden watched his expression with the eagerness of a child. This boy understood her—understood her strange feelings and expressions.

"I used to live in the country," he said slowly, "and I love things that grow, next to music. It's so wonderful the way you put it. I know there's a lot in the way you look at things. But how about the hoeing and spading with a stump like this?" And as he looked at his poor right hand the new eagerness died out of his eyes.

"A conductor's baton," returned the little lady, persisting in her pretty fancy, "is not very heavy. I dare say you'll manage it nicely. Now when will you start in, conductor?" she added briskly. "The rose violins had to go quite untuned this season. Tildy would call it 'unpruned'."

Burke got out of his chair. "I could write to Sysonby to-day and close up my accounts with him," he returned eagerly; "that part's simple enough."

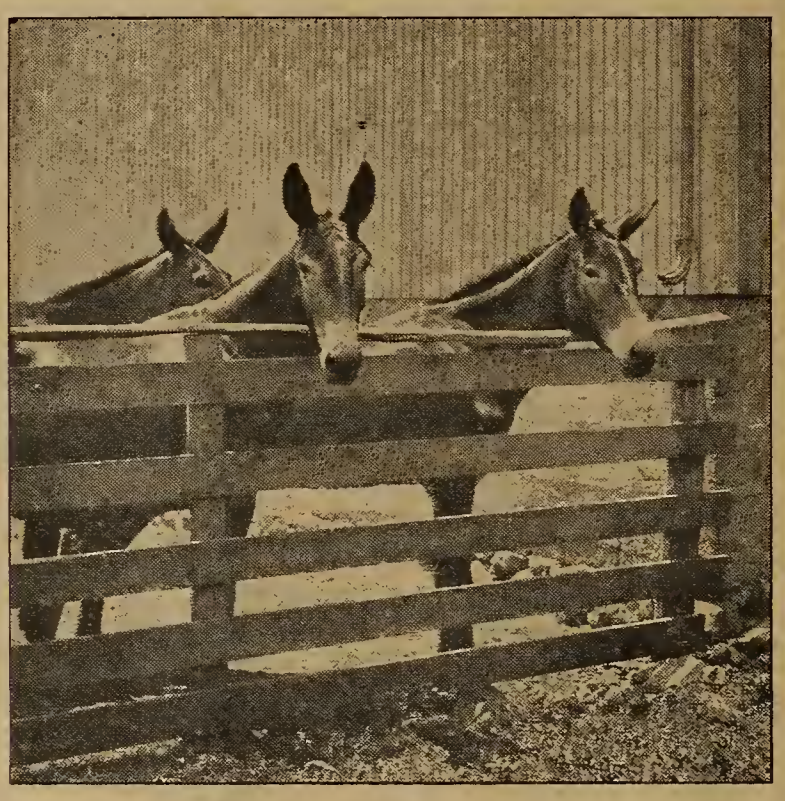
"Then it's all settled," cried the little lady in a tone of great satisfaction. "You'll sleep in a little room under the eaves and very close to the branches of a beautiful maple, and you'll find Tildy a gem of a cook. If you'll go to the kitchen and find her she'll take you around the garden—"

Burke's face fell. "Oh," he faltered, "I was hoping *you* would go with me."

The smile slowly faded from Miss Jane Golden's face, and Burke watching her intently suddenly understood. For a moment he was speechless, dumb with awe in the presence of this unexpected revelation. Then he strode to the side of the easy chair. "Please, please forgive me," he blurted out, "I'm awfully sorry."

The little lady smiled again with her old graciousness. "It happened a long time ago," she said. "I was rehearsing; I had been given a chance to play my first star part. I will save you the details. There was a dreadful accident, and I haven't walked since, at least my feet haven't. Of course my thoughts stray outside, and dance to the music of my garden orchestra. But right in here, you see, I have my perpetual audience. God has been very good to me, and I have fulfilled my ambition. Now do you understand, boy?"

Burke took one of Miss Golden's little hands in his. "Yes," he said huskily, "*now* I understand."



My Three Friends

WHEN the lemons of fortune are bitter and your pace is a little bit lame, just go to the mule then, thou quitter, consider his ways and—be game!

You may not admire Jack's style of beauty, you may criticize rudely his song, but you can't say he don't do his duty. If you say it your dope is all wrong. As for Dick and Josephus, the others, they're my friends; so take care what you say. The three love each other like brothers and partake of the same stack of hay.

Love me, love my mule. My religion won't permit me to browbeat old Jack. Sometimes I throw rocks at a pigeon, but then pigeons don't ever come back. Observation has strengthened my morals in regard to my treatment of mules. I have seen folks who carried their quarrels to the barn. I observed they were most always fools.

My father-in-law, an old sailor, coming home from the lodge one dark night, dressed just as he came from the tailor, thought he'd see if a ship were in sight. He had taken perhaps one too many, and he thought he was pacing the deck. Alas, that a thought so uncanny should so speedily lead to a wreck! The old tar tacked right into the stable and explored for a sail with his stick. When we reached him he scarcely was able to lisp, "Ship ahoy!" It was Dick.

Believe me, I'm crazy about them, Josephus and Richard and Jack. Why, I couldn't do business without them, and the future would surely look black if disaster succeeded in killing either Jack or Josephus or Dick! Nothing less could disturb them. I'm willing to depose that they've never been sick. They will live, if need be, without shelter; they will work till the cattle come home, while mere horses that labor beside them will wither and lather and foam.

If you're needing a sermon in meekness, combined with endurance and size, why not go to the mule in your weakness, consider his ways and—get wise! CHAS. B. DRISCOLL.

FARM and FIRESIDE

EVERY OTHER WEEK - - THE NATIONAL FARM PAPER

SATURDAY, JULY 4, 1914 *5 CENTS A COPY*

E ESTABLISHED 1877

Stories of the War

LOOK FOR THESE GOOD THINGS SOON TO COME!

The Aviator ond the Farmer

There is a relation between the two. This relation will be pictured for the readers of FARM AND FIRESIDE by Charles Barnette Wolf. Those who have been reading FARM AND FIRESIDE for a number of years will remember the all too infrequeut appearances of Mr. Wolf's stories. He has a wonderful way of telling a story, and in this modern tale of humor and adventure he has eclipsed all former efforts.

The 200-Egg Hen

Much has been said about her. She is now a common hen—at least she is common enough so that everyone knows that he can get that hen if he will go about it. Mr. Thorpe, FARM AND FIRESIDE'S poultry specialist, has been working with some high-producing strains duriug the past year. He got results. Next issue he will tell his story, and draw from his experience some conclusious that are worth notiug.

Southern Farming

There are many lies going over the country as to the value and possibilities of the Southern States for farming purposes. Concerning any section of the country it is difficult to get accurate information unless you live there a while. When you have lived on a farm for a number of years you become pretty certain of the conditions surrounding you. From this certaiuty H. B. Gurler, the well-known dairyman, will tell about his farm and the country around it. Mr. Gurler now lives in Mississippi, but he has had years of experience in Illinois.

Con You Tell o Good Hen by Her Toenoils?

Maybe not. But the toenails are worth looking at all the same. A New York man will soon tell us why it doesn't pay to trap-nest hens, and how to tell a good hen without trapnesting.

The Defeot of Snobbery

The triumph of kind and neighborly feeling over distrust and snobbishness is the theme of our story, "The Barred Gate."

Sunrise Cooking

To cook in the cool of the morning, while perhaps the family still sleeps, those dainty and yet nourishing dishes which will contribute to the comfort and good nature of husband and children all day, is a triumph of good management. Mrs. Streeter will give some recipes which can be prepared in this way, and which will enable the housewife to keep serene and companionable when the mercury does its best to disturb her poise.

How to Cheot Time of His Dividends

This is an article for every woman who wants to keep the charms which were hers in girlhood. It tells her how to care for her hair, her skin, her teeth, her hands, and how to enjoy doing so.

The Evangelicism of the Rev. Mr. McKeen

In the preceding chapters of the Community Builder, Mr. McKeen has laid his emphasis upon the secular and institutional work which he did for his parish. In the three concluding issues he will talk about the redemption of character and the saving of souls.

News for the Children

Perhaps most children think that cats have always eaten mice. Well, here comes someone who tells a different story. It is about a cat of long ago who married a mouse and—but it is too long to tell here.

Garden Truck

Most of us have been enjoying the bounties of the garden for some time. Most of us are definitely interested in the garden. We are still working in it to get therefrom all that the soil will yield. We have cropped and intercropped. We have fertilized, perhaps. And in most of the things we have done we are reasonably sure that we are right. An Ohio man recently told us how he successfully set out his tomato plants. The issue in which this story was told reached a reader in another State on time. He sat right down and wrote us, stating that he had found that very same method unsuccessful under his conditions. His account will appear in the next issue.

WITH THE EDITOR

I HAVE a letter from Mr. Charles R. Young of Adams County, Ohio, which contains so much good common sense, mixed with a little error, that I shall give it to the readers of this column. It is on the all-important subject of keeping up the fertility of the farm while taking a living off it.

I want to write about the harm that a fertilizer can do to the farm. This may seem a funny statement to you. To begin with, most every farmer knows that a fertilizer helps his ground and helps produce his crop, and that to my notion is the weak spot of fertilizers with a good many farmers. They take everything off the ground, putting nothing on but fertilizer, and in a few years their farms begin to run down. That's because of too much dependence on fertilizer. I've seen farmers, and perhaps you have too, or at least heard of them, who time and time again will sow a field of clover on a poor piece of ground with the firm intention of plowing it under. They get a pretty good set, and about haying time forget all about plowing it under, and in goes the mowing machine and off goes the clover. As soon as it comes up again they are after the seed: and if anyone reminds them about plowing it under, what's the answer? "Well, I'll fertilize it pretty heavy next year and it will raise a fair crop of corn," or whatever they are going to raise on it. If the farmer had no fertilizer he'd raise just as good and perhaps better crops without it than he does with it, for the simple reason that he would take better care of his farm, and instead of depending on fertilizer for a crop, as so many do, would get out and hustle to keep his farm in shape to grow his crops without fertilizer. One great trouble with the small farmer, and by this class I mean those with farms of from 50 to 300 acres, is that the majority of them do not stop to figure the best and cheapest way to do things.

Mr. Young's philosophy is based on experience. It is a philosophy of self-reliance. It would place every farm on a self-sustaining basis as far as fertility is concerned. It would put the matter of keeping the farm fertile from generation to generation up to the man who does the farming. It is a very valuable philosophy, and well worth the study of all of us.

I agree with him that it is a wasteful policy to buy fertility which can be developed on the farm. Barnyard manure beats all commercial fertilizers, for it contains every element of plant food. But let us look at Mr. Young's plan and see whether it will really do what he seems to think it will do—keep up the richness of the soil forever. His criticism of the man who sows clover, meaning to plow it down, and then takes it off because he can sell the hay or the seed, is just. When clover or other legume is sown to be plowed down it should be a point of honor with all of us to plow it down. It belongs to the soil. We have promised it to the soil in our minds. When we take it off we compromise with the principles which we believed in when we sowed it. We weaken. We are tempted. We fall from grace. We do what we know is wrong, and in order to prove this, we have only to turn back in memory to the good resolution we had when we sowed it.

We Must Have Humus

But of what do we rob the soil when we fail to plow down the legume? Vegetable matter of course—vegetable matter which will make humus. And humus is the first big step in the battle. Lack of humus makes many a soil poor, which is rich in plant food. Humus holds moisture, and keeps the earth porous, and warm when it should be warm, and cool when it should be cool and altogether kindly.

And besides humus, what have we taken off in the crop we promised we would plow down? Nitrogen. Everything else in the green manure is taken from the soil, but the nitrates are taken from the air by the bacteria on the roots of the plant. Therefore we might have plowed down nitrates which would cost us ten, fifteen, twenty, or even twenty-five dollars to the acre if we had to buy them.

By defaulting on our payments due the soil, therefore, we have skinned the farm out of much humus and much precious nitrogen. We can keep the soil just as rich as it ever was in humus and nitrogen by plowing down leguminous crops. It is the cheapest way of getting nitrates. Got out of the air by the legume roots, nitrogen is the cheapest of the fertilizers—and bought by the ton it is the dearest. But are we in need of anything else? Yes; we are taking two or three very important plant foods out of the soil all the time in the crops—potash, phosphorus, and sulphur. Can we replace them in the soil by plowing down crops? No, not really. Where we plow down deep-rooted crops we may hoist up these things from below by means of the roots and get the benefit of what was down cellar by raising it to the ground floor, but it all comes out of the land.

Ask the Soil Questions

Mr. Young's plan, therefore, will finally break down because of the decreasing store of potash, phosphorus, and sulphur. His plan ought to be followed, but it will not do alone. We ought to try patches of crops to which we apply phosphorus, potash, and sulphur, alone and in combination, and see whether the crops are benefited. If a strip is helped by acid phosphate, the land needs phosphorus, or sulphur, or both. If the field responds to land plaster in better yield, it needs sulphur. If it laughs with a better harvest when kainite is applied, it needs potash. Ask the soil what it needs, and supply those needs.

And all the time look out for sourness, or your legumes will go back on you—use lime at the appearance of sorrel or wherever the clover grows better after an application of lime than where it is not used.

Dependence on commercial fertilizers to take the place of good farming is quite as bad a practice as Mr. Young thinks. It is ruinous. On the other hand, some regions have been actually made by the judicious use of commercial fertilizers.

Perhaps the golden rule of fertilizers is, Do unto the soil as ye would that others should do if they were working it for you—and then apply the fertilizers it needs, after testing the matter out by asking the soil what it wants.

Let's have more letters like Mr. Young's—on all sorts of subjects.

Herbert Quick

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THE TRUTH ABOUT DRY FARMING

By H. A. Bereman

DRY FARMING has had so much boosting by so many enthusiastic supporters, and so little has been written by those who have tried it practically, that it has come to be regarded by the masses as one of the wonders of the age. As usual there are two sides to it.

The advocates of dry farming are too often interested in selling lands, colonizing new regions, transporting settlers and their goods to those lands, or otherwise planning to reap private gain from the spread of the doctrine that crops can be grown successfully with less than half the rainfall which is common to the States of the Mississippi Valley.

One reason we hear so little of the drawbacks is that the unfortunate ones are held so closely to the task of scratching a living from their newly acquired domain that they have neither time, spirit, nor ability to tell the unpleasant details.

I propose to speak plainly and without prejudice of the true inwardness of dry farming as it is actually followed in the West. I speak from experience, having seen on my own acres and elsewhere the advantages and disadvantages of the propaganda.

To begin with, there is no such thing as "dry" farming. As crops do not grow without water the name is a misfortune. It should convey more clearly the idea of "moisture-conserving farming."

But let us not quarrel with the name. It is enough to say that crops will not yield profitable returns without moisture, and when the land really does get dry, as it often does in semi-arid regions, then do the crops shrivel and die and the farmer reaps a harvest of barren regrets and adds to his store only a large piece of painful experience long to be remembered.

Crops can be grown without irrigation when conditions are right

The theory and practice of dry farming rests upon the careful saving in the soil of a large part of the rainfall that would otherwise be wasted through evaporation.

Capillary attraction should be well understood by the dry farmer. The common illustration is a lamp wick which draws up liquid from a reservoir below in defiance of gravity.

Rain falling on the land is absorbed by the particles of soil until they become saturated or completely soaked. Surplus water runs off or leaches downward through the soil and finds an outlet through some subterranean stream in the form of springs. This usually occurs where the rainfall is heavy.

The common farm methods resulted in this kind of corn

When the rainfall is scanty it is absorbed by the soil and as there is no surplus and rarely complete saturation, the moisture is held suspended by the top soil. Below it may be perfectly dry. This moisture remains there only so long as the supply is maintained. As soon as it stops raining and the sun shines upon the surface of the earth, then it begins to evaporate. If evaporation continues unchecked and no further supply is added, the land becomes absolutely dry and plants will no longer grow there.

All of us in the humid sections know that a water table is the underground level or top of the area of saturation. It is a kind of lake or bog beneath the ground, and a well sunk into it gathers water for pumping. This condition of saturation or level of perpetual wetness exists in all those regions where the rainfall is above thirty inches per annum.

In the semi-arid lands, where the annual precipitation ranges from six to twenty inches, there is rarely any water table or underground reservoir of moisture. Whatever moisture there is will be found near the surface while the subsoil is often as dry as the proverbial bone. There is no moisture stored there.

To properly care for this little fund of soil moisture and make it go as far as possible is the business of the dry farmer. And it may astonish some to know that with an annual rainfall of less than fourteen inches large yields of grain have been grown where the farmer knew and followed the requirements of the system.

The history of dry farming in the United States can be summed up in one sentence: "Good crops *have been* raised by dry-farm methods where the rainfall is around fifteen inches per year, but good crops rarely *are* raised under such conditions."

This means that under experimental farming, conducted with ample capital, or having outside sources of income, or having funds in the bank to tide them over the bad years, men have succeeded in proving the correctness of the theory. It further means that the average, nay, the great majority of homesteaders in the semi-arid West do not often reap profitable harvests.

Their disasters are accounted for by the failure to understand the rules of the game, or by the refusal to observe every one of these rules, by taking long chances or through indolence or shiftlessness.

With several years of unusual rainfall, settlers are encouraged in the belief (disproved by the records of the U. S. Weather Bureau) that the "climate is changing." They reap fair harvests in proportion to their industry and wisdom, immigration increases, new homesteads are taken up, and the outlook is promising. Then do the lean years make famine in the land and there is no Joseph to save the people. Crops fail, stock starves or is sold for lack of sustenance, savings funds run low, homesteads are abandoned.

Even these sad facts do not imperil the fundamental value of dry farming, for I have seen good crops grown in dry years without irrigation. They are grown by observing strictly all of the commandments of the dry-farming decalogue.

The requirements are as follows:

The land must be plowed deep—the deeper the better. It must be thoroughly worked over and reduced to a fine state of tilth. This increases the depth of the moisture reservoir, permits rainfall to percolate through it, and affords a good seed bed for the roots of plants without which the plants cannot do well.

The soil must be made as rich as possible by adding stable and other fertilizers. This enables plants to mature quickly, which is more necessary in regions of scanty rainfall and short growing seasons.

The soil must have great stores of humus. This is one of the most needful items neglected by the would-be dry farmer. Humus, lots of it, makes the soil spongy, porous, and absorbent. It takes in moisture more readily and holds it better than hard, packed soil. Humus could easily be supplied to Western soils by applying stable manure and decayed straw. The straw should first be composted or left in flat-topped piles to rot. Then it should be incorporated with the soil with caution. This takes time and labor and the average Western farmer will not do it. He prefers to burn the straw.

Seed must be selected for its ability to withstand drought and to mature a crop with the least possible amount of moisture. Durum wheat is one of the best drought resisters.

Seed should be put into the ground with special reference to its quick germination. Corn must be listed, and small grain drilled deep with press wheels following to pack it down where it will get moisture and secure a deep root bed.

Packing the subsurface at once after plowing so as to create capillary connection with the subsoil is necessary. Otherwise the loose clods of the plowed ground cannot utilize whatever moisture sinks into the subsoil. Implements are made for this special purpose which also leave the surface in fine tilth.

Level cultivation to lessen the area of the surface is always one of the cardinal tenets of the dry farmer's faith. He dare not ridge up his corn or other rowed crops, nor leave the surface of the land at any time during the warm season rough and exposed.

Perhaps the best-known and best-observed item connected with modern dry-farm methods is the creation and preservation of the earth mulch. This means harrowing, loosening, and pulverizing the top soil to the depth of at least three inches. The effect of this blanket of dust is to check rapid evaporation.

Most crop failures occur because dry farmers will not observe the safe rule of summer-fallowing. Fallowing land means that after every shower, from the time the land is plowed until the plants are too high the following year to permit the harrow, the mulch is maintained.

Real "dry-farming" methods resulted in a good stand

The whole subject may be summed up thus: Dry-farm methods enable a man to grow profitable crops under favoring circumstances of weather or by the application of much labor and skill.

In all cases dry farming means large areas; homes far apart; great labor and patience; limited varieties of crops; farming in treeless regions where the general aspect of nature lacks those beauties and allurements found in places where all the elements of a settled community make for the best rural life.

Vegetable and Fruit Storehouse

This One is Designed Especially for Potatoes, but Could be Used for Other Farm Products

By E. A. Rogers

MR. ROGERS is a Maine man, a lecturer and writer on the subject of potatoes. But he does more than lecture and write: he raises potatoes. And then he stores them in just such a house as is here described

THERE is no better investment for a potato farmer than a potato storehouse. No one should plant potatoes when they are hard and cold. yet the more dormant potatoes can be kept up to a short time before they are needed for planting the better. Thus a good potato cellar with a good building over it in which to warm and green up potatoes that are to be planted early. and as a toolhouse the balance of the year. is a paying investment. Potatoes should always be brought into the light and sun for ten days to two weeks before planting. For very early planting it won't do to spread them out of doors on account of freezing. and the up-stairs portion of a potato house can be used for this purpose. It should be made with plenty of window space especially on the east, south, and southwest to distribute sun and warmth over the potatoes. This up-stairs space is one of the most valuable parts of the building. From my observations in those sections where potatoes are planted early but few understand the value of warming and greening their seed before cutting and planting. Let one take two barrels of seed out of a cool cellar and plant one of them on March 20th. Spread the other out in a warm place where the sun will shine upon them, and cut and plant on April 1st. He will find that the last planted will be the first ready to dig. Potatoes will come forward faster for the first ten days after being brought out of a cool cellar into the light and warmth than they will in the soil. Therefore if one has a place where this can be done without any danger of freezing he will make doubly sure of having his crop early. There is much less danger of having missed hills when the seed tubers have been properly warmed and greened up.

For the average man a building with a storage cellar is the best, as it can be made frost-proof without artificial heat. My own is eleven years old, and has withstood twenty-one days in succession when "the glass" went from zero to twenty below. I have never had any trouble from frost and have no means of heating. This saves on insurance. The Maine Grange Fire Insurance Company won't insure potato houses where artificial heat is necessary, but were glad to insure mine.

Build this kind of storehouse on a knoll or side hill if possible, as it saves a great deal of grading. For the grower who needs storage for four or five thousand bushels a building 30 feet by 52 feet 4 inches will do nicely. This will give a cellar 27 feet 8 inches by 50 feet, with 14-inch walls.

Select the Site to Save Labor

On the site selected, after consideration of the nearness to potato fields and to the main road, and other matters of convenience and economy, the building should be so placed that teams may be easily driven into it over the cellar. and on one side where the ground slants off to the cellar bottom level, so teams can be backed up close to or even into the cellar itself. The ideal site is ground where the grade is such that the main floor will be on a level with the highest grade of the hillside and the other end low enough so that the box of the ordinary farm wagon is on a level with the bottom of the cellar. This makes it easy to wheel the sacks outo the wagon with a truck aud saves lifting, which is quite an item. The greater part of the cellar should be underground, except of course the side or end from which the tubers are to be taken out. There is nothing better than concrete for the walls. and for a cellar ten feet deep they should be at least 20 inches thick on the bottom, tapering to 14 inches at the top. This may seem unnecessary to some. but a cellar under a fireless building, that will be frost-proof in steady zero weather, must be well built; and a 14-inch wall to receive the sills is none too wide to get two dead-air spaces. The sills should be about 4 by 6 inches, well bedded in the concrete. and the floor timbers should be heavy enough to hold up without springing any amount of fertilizer or other heavy material stored. In my own case, having plenty of lumber on the farm, these timbers were sided down to 6 inches, leaving them the whole bigness at the other end, some of them being 10 to 12 inches wide at the butt. The bark should be removed on account of worms. Such timbers two feet apart to centers will have only 15 to 17 inches between them, and will be strong enough to hold up any load that may be put in.

I prefer the building to set end into the hill, as this allows grading up to both sides and only leaves a part of the cellar entrance end exposed to the weather. This end should have at least two large windows for light when sorting with the doors shut in cold weather. The windows should have shutters to keep out the light ordinarily. As potatoes are put into the cellar bins by dumping through the floor, it saves much labor to have the building over the cellar so made that a team can be driven right into and through it. An entrance should be in the end, and an exit to drive out through the side as near the other end as possible. This will bring the weight of the team and load over the heavy sills.

There should be two 8x8 sills running lengthwise of the building, and for a house 30 feet wide they should be about seven feet apart. The line of posts under them will prevent vibration to loosen the mortar around the floor timbers on the side walls. These timbers lie on top of the sills, and the 8x8 sills that run lengthwise should be let down into the concrete four inches iuside the 4x6 end sills, which should be halved out and two inches of the top of the 8x8 should match into them to prevent spreading.

One important matter is to see that the dead-air spaces are made air-tight. No one should trust this part of the work to any but an experienced man. I looked after this work myself. First I laid a course of brick on the sill edgewise, fitting carefully around the floor timbers, using plenty of good soft mortar, and laying the first floor board down while the mortar was soft. This makes one dead-air space between the outside boarding and this course of brick. There is a space of eight inches between the inside edge of the sill and the edge of the wall. By putting the brick edgewise two more courses can be laid, making two more dead-air spaces between the sill itself and the inside of the cellar. I consider this to be important, as the concrete might shrink away from the sill and some air flow in between the sill and concrete; but with the two dead-air spaces there is little danger of frost showing. I have never had a potato frosted.

The Interior Construction is Important

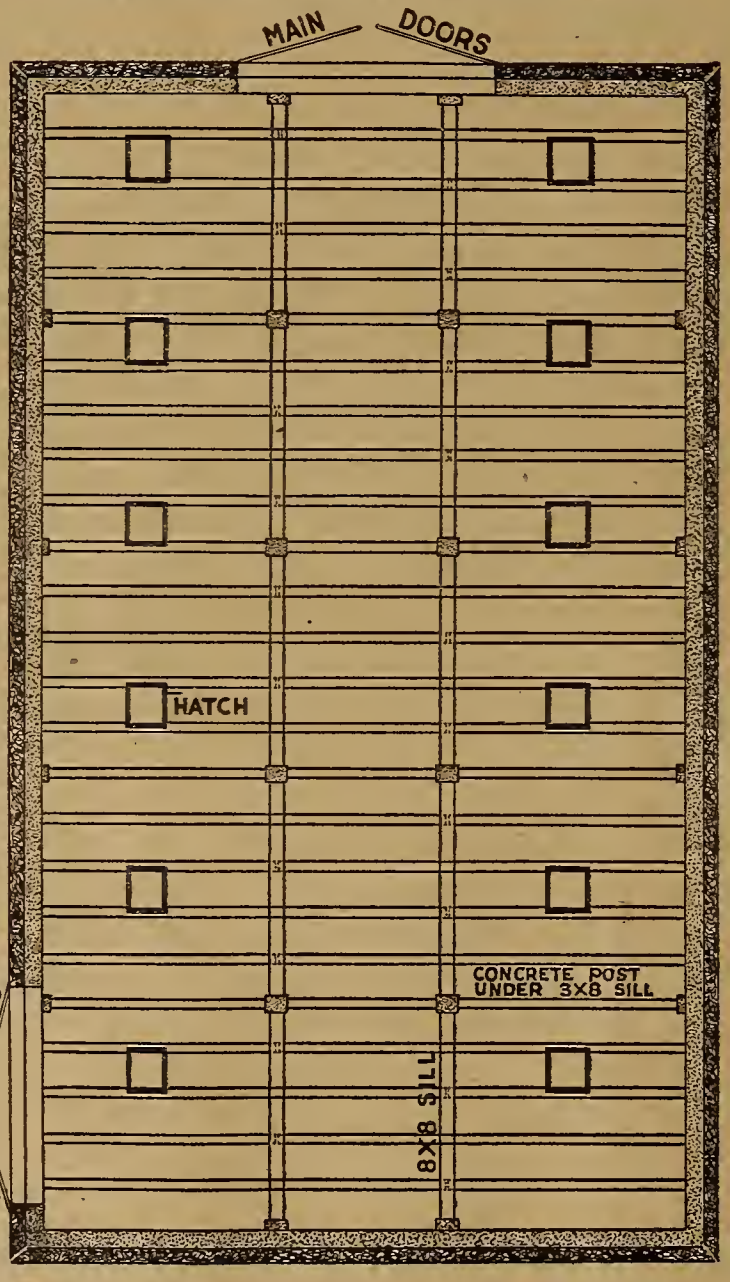
After the concrete has hardened and before the soil is graded in, the concrete walls should have a coat of cement and sand, half and half, to make it watertight; and if tiling has been laid under the walls no water can get in unless the tiles get choked.

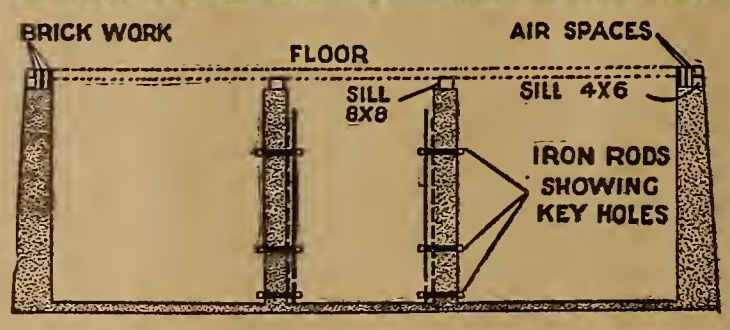
The soil should be graded up to within an inch or two of the very top of the concrete walls if potatoes lie against the wall. For several years I had boards between the potatoes and the wall near the top for fear the frost might come through, but found them unnecessary. It must be remembered, however, that were the soil outside to become wet and frozen the potatoes might get wet and freeze.

I believe the careful grower will soon make it a practice to thoroughly disinfect his cellar every season before harvesting his crop, and for this reason strive to do away with all woodwork construction possible.

For a floor good square-edged boards planed to a uniform thickness (1¼ inches) are good enough. A double floor with heavy paper between is warm and strong enough with the construction I have described.

Above the sills the building should be high enough so that the driver will have head room when driving in. My own is 10 feet from sill to plate. Another floor is put in overhead at the plate and hung in the center from the rafters. This is used for garden tools, sleds, and implements, and is a fine place for curing seeds.





It is desirable to have a working alley extending the length of the cellar for sorting and bagging. This is the reason for two 8x8 sills, 7 feet 8 inches apart instead of dividing the space evenly. Underneath these, concrete posts should be set just 10 feet apart to centers, and 10 feet from the end wall to the center of the first post, with half posts under the center sills, and half posts on the side walls. These can be made a part of the walls and should project into the cellar about five inches to provide an easy way of making bins if several varieties of potatoes are put in, or to keep separate the potatoes of the same variety from different fields. By this plan it will be just the same distance from the side walls to each post and from post to post along the alleyway.

The bin sides, which should be of good 2-inch plank, can be all cut just 10 feet long and fit any bin in any part of the cellar. As there will be no nailing, these will last for years if stored up-stairs where they will keep dry when not in use. As to the fastening of these bin planks, when the concrete posts are made there should be inserted through them pieces of iron gas pipe of ⅞-inch inside measure. They should be exactly the same distance apart in each post and be exactly parallel. There should be three of these passing through each post. We now need rods of ¾-inch iron which will pass easily through this gas pipe and should project about four inches on one side of the post. These irons should have a keyhole as close to each end as it can be made and hold, and a common 40-penny wire nail will answer very well for a key, and it is always handy. These irons run through the gas pipe and the nail is inserted through the end as a key: the other end should extend out from post about 3¼ inches to the keyhole.

An inch board 4 inches wide, with holes in it to fit these rods, is slipped on the irons, and a nail for a key is used to hold the board from coming off and the bin planks are placed between the board and the post. As all the planks are exactly the same length there is no getting them mixed. I have seen these iron rods embedded in the posts. The objection to this is that these irons stick out some four inches when the bin planks are not in use, while with the above method you simply withdraw the rod and there are no projections to run against.

As it is handier to shovel potatoes from the bottom than to take them from the top, means for taking the bottom plank off should be provided; hence there should be one rod not over four or five inches from the floor, and the iron rods through this bottom plank should be keyed outside the plank. Short pieces of boards may be used to keep the bottom plank in position.

The advisability of cementing the bottom of the cellar is an open question. If the floor soil is apt to get muddy I should say, yes. But if it is gravel and reasonably dry, the potatoes will keep with less shrinkage on the soil itself. The cellar will be drier if cemented, and the drier the cellar is the more the potatoes will shrink in weight. A damp cellar will keep them hard and firm longer than a dry one.

Suggestions on Filling the Storehouse

The ceiling underneath the floor timbers should be of reinforced concrete. This need be only thick enough to keep all moisture from the sills and timbers. Heavy hog-wire fencing will do for the reinforcing, and can be fastened on the under side of the timbers before the framework is put up to hold the cement. As this cement is only to protect the timbers from moisture and to form a dead-air space, no strain will come upon it. The 8x8 sills should also be plastered with the cement. In order to have the cement stay on these sills, laths will have to be nailed on them with the inside corners beveled off, or, better still, use metallic lath.

The hatches should be over the center of the bins and about 6 feet apart to centers, and about 20 inches square. The hatches should fit closely, but I have never found any need of dead-air spaces between them and the cellar, but the concrete should cover all the framework of the hatches to prevent decay.

The height of the cellar can vary from 7 to 10 feet, or even deeper. My own is 10 feet, and personally I would not have it less. When filling commences care must be taken not to drop the tubers too far. One can have a funnel made of heavy burlap that will fit the hatch, and a few bushels lowered down into this will so fill it that there is no danger of bruising, and with little work the potatoes can be made to spread out from the bottom. Beginning to fill at one end of the bin, when the potatoes reach the hatch it will be safe to dump through the next hatch, dumping toward the pile already in the bin, and the distance for them to drop will not be more than three to four feet and no bruising will take place.

There should be at least two ventilators runniug from the cellar through the roof, provided with dampers so that they can be entirely shut in windy or very cold weather. These will carry off any excess of moisture, but their main use is to regulate the temperature and keep it around 34 degrees Fahrenheit.

The other type of storehouse is designed to keep all the tubers above ground and on a level with the floor of a freight car, and is usually built along railroad sidings. These are made with double walls, with the outer space opening into the basement where fire enough is kept burning to keep the air in this outer wall space above the freezing point. A storehouse of this type needs daily care which is not necessary with the other type. The writer sometimes does not visit his for weeks at a time, even in zero weather. Fire heat makes the potatoes spongy and soft.

E.W

Selecting Good Milch Cows

Some Pointers That Will Make the Farm Live Stock More Interesting to the Boys

By John Y. Beaty

I WONDER if you boys have thought that the size of the udder is the only indication of a good milch cow. There are several other points to be taken into account, boys, and it is those which I wish to show you to-day. On this page are three photographs that will serve us. I wish I could be on your own farms with you and point out the different things on a real live cow, but with these good pictures you should be able to find the parts on one of your cows all by yourself if you don't already know them.

Before a cow can make much milk she must have a large place in which to digest her food. She couldn't make a lot of milk if she had room to digest only a little food, could she? Of course you know that the food is digested in the cow's stomach and intestines, or rather in her four stomachs. She has one stomach, you know, that holds the food she eats until she has time to chew it more. You have seen her chewing her cud of course. She was more thoroughly masticating food that she had eaten some time before, and which had lain in her first stomach.

After she chews it a secoud time it goes to the second stomach, where it is partly digested. Then it goes to the third and the fourth, and finally into the intestines where digestion is completed.

All of these digestive organs are located in the part of the cow's body we call the "barrel." You will see it marked on two of the pictures. This barrel must be large—she must bulge out. That is, a cow that is large in the barrel is probably a good milker, while the one with a small barrel is practically always a poor milker.

The vital organs, the heart and lungs, are located between the cow's front legs and just back of them. There must be plenty of room for these organs too. Examine the lines marked, "heart girth." These mark the place where you must measure to determine the amount of space allowed for the vital organs. If this girth is large, there is a good chance that the cow has a strong constitution and will be a good milker all her life. If this band is narrow and restricted it is likely that the cow will be a poor milker and her period of usefulness will not last as long. She will probably be more subject to disease too, because of weaker vitality.

The rump should be long and wide. See the part marked "rump," and examine this part of your cows to see if they have long and wide rumps. Usually the cow with a long rump also has a long udder.

Stand at the side of a cow and see if you can see two triangles. One should be like the one drawn in solid lines on the photo to the right, and have its wide eud at the rear of the cow. The other should be as shown by the dotted lines, with the corresponding end indicating the length of the rump.

Now stand behind the cow and see if you can see a triangle lying flat on her back. The wide end will be the width between her hip bones, aud the narrow end will be at her neck.

If you stand in front of her you should see another triangle. Its broad end is her chest, and its narrow end the point at her neck just in front of the withers. The withers and the neck of a dairy cow should be thin. If they are not you will not see a triangle in front, and you won't see any on top.

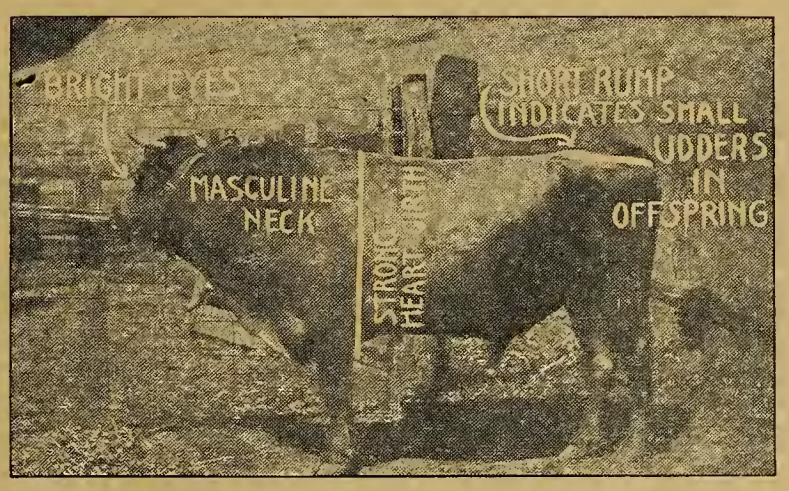
Now I wonder if you know why I have told you to look for these triangles. If you find a cow with a distinct triangle on the side you will see that this is made by her large barrel and large udder.

The triangle shown by the dotted line is there because she has a long rump, which is desirable; and also because she has a thin leg without any extra meat on it. Dairy cows should put all of their strength into producing milk, and not use it for making meat.

The triangle on top indicates a wide rump and thin withers and neck. If there were meat on the withers and neck the cow would be using part of her food for making it, and so would produce less milk.

A cow with a bright eye is to be preferred to one with a dull appearance. She will tend to business more than the other. Also the one with large nostrils is to be preferred because the large uostrils indicate that she will always have a good supply of air to operate her lungs, and so her other bodily functions will be performed promptly and regularly. A good cow will have short legs, and they will be smooth and without extra meat.

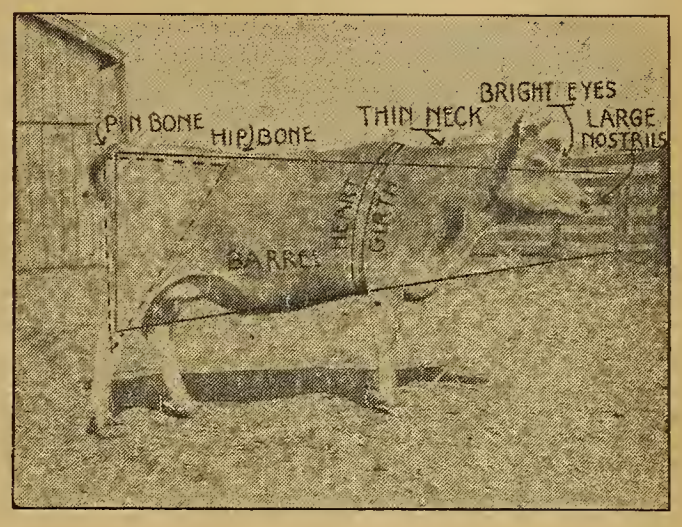
Have you ever noticed the large veins that run from the udder forward on the cow's belly? These are called the "milk veins," or "mammary veins." In spite of the fact that they are called milk veins they do not carry milk. They carry blood away from the udder. If these veins are large it is plain that there is a large amount of blood going through the cow's udder.



The blood takes the milk to the udder, so we naturally conclude that the cow with large milk veins is a heavy milker.

Go out to the yard and find a cow with large milk veins. Quietly approach her and run your hand along the milk veins beginning at the udder until you come to a place where the veins euter the cow's body again. You will feel a hole there, perhaps large enough to put your thumb into. Then feel along a little further and you may find another hole. These holes are called "milk wells." A cow with two or three large milk wells is usually found to be a good milker. The numerous large wells make it possible for more blood to go through the udder.

If you have ever milked a cow you can tell me at once why a cow's teats should be large. A cow with small teats is hard to milk, isn't she? In selecting the most useful milker, then, the size of teats must be regarded as pretty important.



Perhaps you have heard your father say that the bull is half of the herd. You know that you have some resemblance to your father. Perhaps someone has said, "That boy is the very picture of his father." If you observe carefully you will see that some of the calves on your farm have a close resemblance to their fathers too. For that reason we must look for the good points in the bull as well as in the cow herself in making up a good herd of milkers.

Study the picture of the bull on this page carefully and note particularly the parts marked. This is not the best kind of bull. He is pure-bred, but he doesn't have the wedge shape that we want his calves to have. Neither does he have a long rump, and that indicates that his calves are likely to have short rumps and small udders because the size of the udder is usually proportioned to the length of the rump.

This bull does have a strong heart girth, however. He has plenty of room for heart and lungs. He also has a masculine neck, which is desirable. I don't suppose I need to tell you what a masculine neck is. You have observed bulls enough to know that a good bull always has a thick neck and a face with a fearless expression.

The same as in the cow, the best bull has a bright eye and large nostrils.

I hope you will all put this lesson to use right away. Get some of the neighbor boys and go into the yard with this paper and learn the lessons together by finding the parts mentioned and comparing the development of the different parts on the different cows. See if you can pick out the best milker, then ask your father to tell you which one is the best milker. He will know from the milk record, and that, of course, is the final test.

Remember too, that heredity plays a big part in the value of cows. For that reason breed the best cows with the very best bull obtainable, of the same breed.

A City Man's Experiences as a Dakota Homesteader

By O. C. Bruce

RAISED in a city, I knew very little about farming, although my two brothers and I always had a garden which supplied our home with vegetables. My parents were both raised on a farm, so it was but natural that one of their children should take to farming. I have long taken FARM AND FIRESIDE.

I worked in a machine shop for a number of years, which was a pretty rough life, and it was hard to break away from "the gang." I generally drew a check for $30 every two weeks, but where it went I never could tell. I became dissatisfied, and thus wheu one day a friend asked me to go to the Dakota harvest with him I said, "It's a go."

"I have never driven or harnessed a team but once before in my life," I told the man I hired out to, and he says, "I guess you will do."

I went to work and got aloug fine. After the harvest was over I started for home with $75, but was relieved of it in a hotel, so I had a hard time getting home. This was my first and only experience in being a hobo. I had to "beat it" back. In the spring I went back to North Dakota and worked eight months for $30 a month, getting home with $80 or $90. I resolved to learn farming, so I went back to the same place and hired for eight months for $240.

We Hauled Our Goods 110 Miles

I thought it was time now to start in on my own hook, so I went to Parkston, South Dakota, about the time of the opening of the government land west of the Missouri River which had been part of the Sioux Reservation. The C. M. & St. P. Railway was then building west from Chamberlain to Rapid City. My brother-in-law and I went and selected a homestead, filing about 140 miles from Chamberlain. We had only one neighbor, who lived two miles from us. We bought a big team that weighed 3,250 pounds, with harness and wagon, for $190, which was very cheap. We moved onto our claims in February. It was a nice winter, so we did not get any bad storms on the road.

We shipped a car to Presho (they had built the railroad that far that winter). We then had to haul our goods 110 miles by wagon. We hauled our lumber from Rapid City, about 180 miles round trip, and our supplies from Presho. We built small shacks 12x14 feet, just big enough for kitchen, bedroom, dining-room, aud parlor combined. Our barn covered about two or three thousand acres, with blue sky for a roof.

It took us six or seven days to make the round trip to Presho if it was nice weather. As we had about 30 or 40 miles of gumbo soil to cross over, when it rained we would have to camp. It was an unwritten law that when we met a team stuck in the gumbo we were to help them out. I helped five teams out one trip, and was helped several times myself.

The Time We Camped in the Rain on Gumbo Hill

We picked up a little work wherever we could, freighting for others, and so on. One trip I was freighting out a homesteader and his supplies, and we got caught in a rain two miles from Murdo and had to camp. It did not rain long, so we started again in the morning aud went about ten miles and camped for the night. We had a good lot of blankets, but no tarpaulin or canvas. We picked up wood whenever we crossed a creek that had timber so we had firewood to cook our meals. The third day out of Murdo we were just climbing a hill which is the dividing line between Stanley and Lyman counties, and were also on the last of the gumbo, when it commenced to rain. The road got so slippery the horses could not get footing, and we could not even pull out of the road; so we had to unhitch right there.

We turned our horses loose to graze and cooked our supper—and still it rained. We had to make our beds under the wagon, and it was so dark we could not see much. We had just got nicely settled to go to sleep when we found we had made our bed on a little ditch and there was a stream of water running right under us. It was the driest place at that, so we had to take it. My friend was not much used to this, so when the water raised up underneath us he went up on top of the wagon and got a dry quilt from his trunk, put up his umbrella, and sat down on his trunk for the night. I knew I had the best place, so I stayed right in bed. About every hour he would yell and ask if I was still alive, and I would say, "I am all right, let me sleep." Then he would go to singing, and kept that up all night.

At four o'clock the storm ceased, so I got up and went on the run for the horses that had drifted away about a mile. When I got back I was warm and dry and feeling fine. My friend was standing shivering, so I built a good fire and got him thawed out. We started on our road again about noon with one wagon and drove about five miles. We then came back and got the other wagon and camped for the night. The next day we pulled home without further trouble.

I'm Better Off Than I Was in Town

Well, this was only one of the bad trips I had freighting. These trips killed off our big team and we had to buy another. I have had hard luck the same as lots of others have had starting out. But this is a good country when we get plenty of rain, and I have fared well.

We have had four poor years, but I have lost only one crop entirely in the seven years I have been here. Last summer we had very little rain, but I raised plenty of corn fodder and some very good corn, many of the ears being nine and ten inches long. This is now principally a stock country. Cattle can feed out all winter and there is always grass for them.

EDITORIAL COMMENT

FARM AND FIRESIDE
The National Farm Paper

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WE ARE always glad to answer questions. That is what Farm and Fireside is for. If we can't answer the question directly we will see that one of our staff experts in the line of the question gives you an answer. But in a big family such as Farm and Fireside represents, questions don't always go one way. We want our subscribers to answer *our* questions occasionally. Those questions appear in every issue. As you read you will see them. Let us hear from you often.

HERBERT QUICK, - - - - - Editor

July 4, 1914

The Limit in Idiocy

PRESIDENT RUSSELL of the Master Butchers' Association recently advocated a law forcing farmers to grow live stock!

If the Master Butchers are to be judged by their president one wonders what mental quality it takes to make one a master butcher. And if the president of the Master Butchers' Association possesses the sort of filling for his skull which must encumber the brainpan of Mr. Russell, what sort of ivory must compose the dome of the ordinary, plain master butcher who is not the president of anything?

Just imagine the predicament of the administration obliged to enforce a law requiring us to raise live stock whether we wish to do so or not, and regardless of the profits! Of course Mr. Russell wants live stock to slaughter—and beyond that his statesman's mind has not groped. But he will of course consent to a clause in the bill requiring the Master Butchers' Association to furnish help to milk the cows, slop the hogs, harvest the crops, and build and fill the silos.

Such a bill will also provide a fixed difference between the prices for meats received by the members of the Master Butchers' Association and those paid to the farmers for the stock. Mr. Russell will scarcely advocate the policy of giving all the profits of a compulsory business to the Master Butchers and letting the stock growers shoulder the losses.

Our Intelligent Senate

EARLY in May the United States Senate voted down the McCumber bill providing for the federal inspection of grain. On the fifteenth day of May Mr. H. B. Gripper, secretary of the Corn Trade Association of London, England, wrote the Secretary of Agriculture of the United States, stating that in future his association would buy no American corn except on "official inspection certificates of the Government as to quality and moisture content." Our intelligent United States Senators, before voting down the McCumber bill, accepted the statements of the grain magnates that the inspection certificates of the present inspection boards stand higher than any government inspection certificates could do.

It may as well be taken for granted that the monopolist is a very unintelligent man. Our grain monopoly has so misbehaved itself as to grain inspection that the market, in at least one great foreign city, is destroyed until we adopt federal inspection. It has befooled the United States Senate into a position of disgraceful inefficiency because the Senate believed its misrepresentations. And it has in some manner seduced the Department of Agriculture into a compromise on the Lever bill which will ultimately prove one of those halfway measures which is worse than nothing, yet will cost the country a huge sum of money.

FARM AND FIRESIDE joins heartily in the expressions in the letter of Mr. Gripper to Senator McCumber, saying. "My committee trust that you will see your way to use your influence in getting a bill passed by your Congress providing for only government official inspectors, which European buyers of your corn consider to be absolutely necessary."

Ask your candidates for the Senatorial reelection how they voted on the McCumber bill.

Stacking the Grain

WE USED to stack the grain as a matter of course. The beehive stack with its symmetrical bilge like a great ship's side, or the long rick preferred by some farmers, all arranged in "settings" for the thresher which took its time and came at almost any fall or winter date, were familiar features of the grain farm.

Now, however, there are many farms on which there is no man who knows how to build a good stack. Threshing from the shock is the cause.

It is certain, however, that stacking is in most cases an operation which pays. It clears the fields so that early fall plowing may be done. In regions of scanty rainfall the forehanded man will disk his stubble as soon as the grain is stacked so as to conserve moisture, and then plow deeply and as early as possible. One year with another, this advantage alone justifies the whole labor of stacking. In fact, stacking is necessary to the best handling of the land under most conditions.

For the man who desires to store grain for a while, the stack is safe and costs nothing. The grain has to be hauled to a central point even when threshed from the shock, and the additional labor of stacking is not so great as many think; and threshing from the stack is very much easier and requires less help. Straw is worth money in most places nowadays, and the good stack prevents a great waste of straw unless shock-threshing is done very soon after harvest. As a matter of fact, the average job is greatly delayed, and both straw and grain are wasted by weathering and the depredations of birds, rodents, and insects. A wet spell is a horrible thing to the man waiting for the machine to thresh his grain out of the shock.

There is a general belief that grain which goes through a complete sweat in the stack is better than when this operation takes place in the bin. We believe there is good reason for this belief.

Altogether, threshing from the shock is apt to result in hurried and slipshod farming from harvest to autumn, and in loss of good produce; it saves little labor, and it results in a glut in the grain market which would be avoided if threshing were done in a more leisurely manner after stacking, as in times gone by. In some regions other methods may be adopted, but for the ordinary farm stacking pays.

Baby Beef

THE Iowa Agricultural College will run some "beefsteak trains" during the coming year, the object of which will be to enable the farmers to study the production of baby beef. The Iowa farmer who misses this chance will be the loser. The head of the animal husbandry department, Professor Pew, calls attention to the fact that beef animals make their cheapest gains during the first year of their lives. "The yearling steer," says Charles Escher, a prominent cattleman, "the handy-weight animal of about 1,200 pounds is the butcher's ideal. We fed two animals, one two and the other one year old. These steers were brothers and fed under exactly similar conditions. At the International the blue ribbon was pinned on the carcass of the yearling."

And yet there are some so-called friends of beef production who would forbid the killing of "calves" under a year and a half of age!

Reducing Distances by Speed

THE Agricultural College of Nebraska has bought two motorcycles for the use of men in the extension work of the institution. These vehicles are making it possible for the extension workers to reach speedily remote locations where meetings and demonstrations could scarcely be held if ordinary methods of locomotion were relied on. The advantage of the motorcycle lies in the fact that it may be carried on the train, and when taken off at the station will cover as much ground as the motor car—for the man who knows how to manage it. For county agents the cheap motor car would seem to be a much more efficient means of transportation than the horse, since the time spent on going from place to place is subtracted from the useful service of the demonstrator. No county superintendent of schools should be allowed by his county to drive from school to school with a horse. The need of effective supervision is a great one in the rural school, and now that the motorcycle, the cyclecar, and the runabout are so cheap that any county can afford to buy one of them, the people who spend their time in visiting schools should be so equipped as to be able to lose very little of it in going from one to another. When transportation is merely a matter of getting a person from place to place, the horse-drawn vehicle is as obsolete as the cradle for the cutting of grain. In some locations the cradle is still useful, and so is the horse and buggy; but under normal conditions it is uneconomical as a day-by-day matter for a good workman's time to be wasted with either.

Argentine Corn Fakery

CHICAGO is in the heart of the Corn Belt. It is a great grain market. It is the world's greatest corn market. The price of corn is fixed on the Chicago market. This means that the price of corn is fixed on the Chicago Board of Trade.

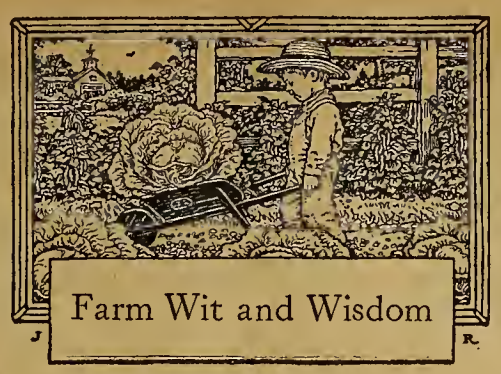
Corn is exported from the Republic of Argentina. But there are five counties in Illinois each of which produces more corn than Argentina has sold in this country within the past three years.

And yet, on the face of the situation, Argentine corn, which if all sent to the United States would not make up such a corn shortage as we had last year, has seemed to be a factor on the Chicago market. The word has gone forth that huge shipments of Argentine corn were on their way to Chicago, and the news was used to beat down the price to the American corn grower. Congressman Rainey heard of one of these "shipments" amounting to half a million bushels. It never reached Chicago. The Secretary of the Chicago Board of Trade in reply to Mr. Rainey's queries stated that the shipment was diverted to another point—Montreal or some New England port. Inquiry developed the fact that it never reached any New England port. In view of the fact that Canada's total importation of Argentine corn only amounted to half a million bushels, it may be taken as probable that this "deflected shipment" never reached Canada. As for the real competition of Argentine corn at Chicago, it is confined to sixty thousand pounds imported for experimental purposes—about one carload! This covers the entire period since corn went on the free list.

The facts seem to be that the Chicago grain-ring operators seem to have been faking Argentine competition for the sake of looting the farmers.

Such tactics amount to robbery differing from highway robbery only in the methods and the lack of personal courage.

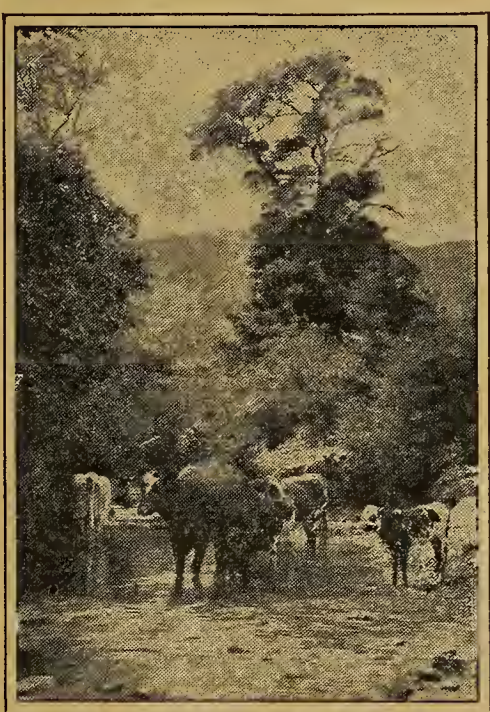
They may work once or twice, but the men using them are more fools than knaves even. For they will ultimately result in the mending or the ending of the Board of Trade.



Farm Wit and Wisdom

FORMER Dean W. A. Henry of the Agricultural College of Wisconsin offers a present of $300 to the manager of the first co-operative laundry in Wisconsin to be established and made successful. The offer has been standing for eighteen years, and is still open. The laundry must be owned and managed by farmers or their wives in connection with a co-operative creamery, must be in the main patronized by farm families, and the donation will not be earned until the laundry has been in operation a year or more. Wisconsin should wake up. If the offer had been made in Minnesota the prize would have been won long ago.

P. P. CLAXTON, United States commissioner of education, has aligned himself with those who have a vision of what the rural schools must sometime be. Every rural school, he predicts, will one day have attached to it a farm of twenty or thirty acres provided with a house for the teacher and the teacher's family. "This farm will be a kind of model farm, if properly operated by the teacher, and a center of the agricultural and social life of the district." And, he might add, when that time comes the examination of the teacher for his certificate may safely be confined to his ability to manage this farm and to his understanding of the science and art of making it produce.



Summer! And during the heat of the midday the cattle like to find the shade and water. The farm that is equipped with both is indeed fortunate

CORN spreads over more and more territory every year. The State of Washington has never been a corn State, but several varieties have been found by the experiment station at Pullman which are recommended as profitable, in a proper rotation, for forage, grain, and silage, and also as a soiling crop.

HAVE you any stock in the California eucalyptus plantations which a few years ago were to furnish the world its choicest lumber? If you have you will be interested in the fact that the eucalyptus makes a fine quality of charcoal; but, according to the Forest Service, "California grown eucalypts do not make good lumber."

SAYS the bulletin of the Nebraska college: "Be slow in purchasing high-priced commercial fertilizers." The idea is not to buy low-priced articles, but to restore the vegetable matter to the soil before looking upon it as "worn out." A goodly supply of humus will make many a poor field good in the newer lands of the West—and it is the first thing to strive for almost everywhere.

SEVEN years' tests show that Kansas grown seed corn has produced on the average six and a half bushels more per acre than seed brought in from other localities. Home-grown seed is best not only in Kansas but everywhere, so far as corn is concerned.

SOME farms are now provided with electric light. These may operate electric flatirons, electric toasters, electric coffee percolators at a small cost. For instance, when an electric device is marked "Volts 110, amperes 4" it will cost four cents an hour to operate the device if the current costs ten cents a kilowatt hour. Where the farm has its own generator, such utensils and vacuum cleaners, churns, and the like may be operated at a great saving of labor, and at a cost which is almost too small to be taken into account after the machinery is paid for and the plant installed. Who has tried it?

EXAMINE the horse's feet when he comes in, and wash them if he does not wear pads. If a horse in the city is not shod in front with pads, tar, and oakum, which is the best way, it is absolutely necessary to keep his feet soft by packing them, or by wrapping a wet piece of old blanket or carpet about the foot, or by applying some hoof dressing or axle oil, inside and out, at least three times a week.

THE Washington station urges the people of that State to take up the growing of corn, and it gives some suggestions which it will pay us all to think over, especially if we have drought to struggle with:

Secure acclimated seed.

Select warm, rich, well-drained soil.

Where there is more than eighteen inches of rainfall, plow deep in the fall and harrow early in the spring.

Cultivate frequently before and after planting to conserve moisture, kill weeds, make a good seed bed, and develop plant food.

Where the rainfall is very scanty, summer-fallow one season to trap moisture for the next year's crop.

Always catch the weeds young—and tame them.

Select next year's seed from standing corn.

IN THE dry-farming regions deep plowing is generally a good thing, but the Colorado station points to the fact that it should be done long enough before seeding to allow of the whole furrow slice becoming saturated with moisture. "Deep plowing immediately before planting a crop on dry land is almost sure to insure the failure of the crop." But where a dollar is lost through deep plowing, hundreds are lost by too shallow plowing. Very deep fall plowing will hold moisture for the next year's crop.

The "Corn" of the Dry Belt

By C. Bolles

LIKE Kafir, milo has found a place on the board of trade of the markets of Chicago, Kansas City, and Wichita. However, since milo has assumed only one seventh the importance, measured in bushels, of Kafir not so much reaches the markets. At present, milo is mostly at home in western Oklahoma, western Kansas, eastern Colorado, and eastern New Mexico. However, there is some of it grown in the neighboring States too.

During the past eight years milo has averaged slightly over 30 bushels to the acre in the government stations on the plains. During this same period farmers in the same section have reported yields running from 20 to 80 bushels. Milo is to these localities just what corn is to the corn belt—a crop that hasn't seen failure (if given a fighting chance). On years that wheat has failed to pull through, milo has gone ahead and made 25 bushels. Quite often corn too has failed and milo made a fair crop. Truly milo is one of those crops that refuses to linger on lack of moisture, but goes ahead, slowly it may be true, but making whatever grain is possible on the moisture at hand. Milo should come through in from 90 to 110 days—a halfway mark between the earlier sorghums and Kafir.

Milo Will Make Pork

Milo will make ten pounds of pork to every bushel of the grain fed to hogs. This would be something like 400 pounds of pork to the acre. Good results have been obtained through feeding in the head to horses, cows, and hogs. In fact, one authority claims it is doubtful if it pays to grind milo for hogs even if it is threshed. In feeding horses it is customary to feed a half more heads than one would of ear corn. Horses and mules have stood up to hard work all through the summer on no other grain than milo. In addition to being well adapted for fattening or working stock, milo seems to have a place in the dairy and in replacing the fat removed in skim milk when it is fed to calves. In this case the milo should be ground and bolted. Quite often milo is fed to hogs in the bundle with good results. We have seen hogs do well on bundle milo while running on pasture, but personally we would prefer to grind and feed as a slop to shotes. Experience during recent winters leads me to believe it best to feed not over four per cent the hog's live weight, daily, and then to balance the milo with some protein concentrate. I use blood meal.

Milo has to be planted after the ground warms up, and hence it is a close shave for it to pull through above central Kansas on those years of drought and much hot winds. In southwestern Nebraska milo would probably pull through nine years out of fifteen, and run ahead of corn too. If it were selected for earliness for a series of seasons it is probable it could be made to mature as far north as central Nebraska ten or more years out of the fifteen. So far as we have been able to learn through variety tests at the various stations in the plains there is no crop that will replace milo in the near future. It would seem as if developments will come along the line of plant improvement rather than new varieties.

In the higher altitudes, and as one goes farther north, there is but one form—the true dwarf or, as some call it, the double dwarf. This grows to a height of one and a half to five feet, commonly three to four. Owing to the dwarfness it is more drought and hot wind resistant. It yields as well as the dwarf (standard) and is the earliest form we have. Seed of this type can best be procured through the experiment stations located in the plains.

If I Were to Begin Again

By C. Bolles

WE ARE in a dry farming belt, yet far enough east to make absolute summer tilling nonimperative. Wheat is raised either on summer plowing or in cornstalks. Again we are far enough to the eastward so that in the "good" seasons the farmers can often garner quite a crop without much effort on their part, aside from the sowing and harvesting.

Five years ago a young farmer who knew the ins and outs of the country started in to rent, and since he has farmed above the average I would like to show his results and his deductions.

Let us say at the outset that he has had plenty of machinery—not too much—well housed. All the manure has been spread where most needed. In addition the farm (three quarters) has had all the stock the pasture (one quarter) would stand, and he has plowed at least a hundred acres of ground for wheat every summer. He has raised the three main crops of the section—namely, winter wheat, corn, and oats. There were on an average 150 acres of the first, 60 of the second, and 25 of the last crop.

During this period the wheat has averaged about 7 bushels, the corn the same, and the oats 13 bushels. However in fairness to the country let us add that the average through a cycle of years (about thirteen) would be 15 bushels for wheat, the same for corn, and close to 40 bushels for oats.

This place was rented on the shares of the crop and on the increase of the stock. Thus this farmer's share of the grain (corn and oats fed out on the place) was $300. The hogs and calves brought in $160, and the chickens and cows $360 more. Aside from these they had their own eggs, garden, meat, and dairy products.

This farmer is going back east to make a start there next year, and this is the way he sizes things up: "If I were to begin again, the first thing I would have is a silo. I would pay more attention to feed crops; raise less wheat and more corn; possibly I would plant some grain sorghum, for it has served me well."

"Take this and go to a picture show"

Russian Thistle Hay

IN THE following letter to the editor of the Obar (N. M.) "Progress," Mr. C. H. Hittson tells of an interesting experience with Russian thistles as hay.

I am in receipt of your letter in regard to my experiment with Russian thistle as forage for cattle. I have but little information to give you, but gladly give what I can. In July of last year I cut about 20 tons of this plant just before it began to bloom. I cut with an ordinary mower and ran the rake immediately behind the mower, and then hauled and stacked it as soon as possible. It is very hard to handle after it once dries. It should be handled green. The thorn is stiff enough at that age to hold the stems apart and prevent molding. It will cure perfectly after being stacked green. No need of curing. I put my hay in a long barn, filling the barn from end to end, and have the hay tramped in firmly. In January I opened the barn and started feeding. I let the cattle go to the stack and eat as they came to it. After the front portion was eaten away I frequently left a few cows in the barn with full access to the stack all night. They would eat all they wanted and lie down contentedly. After eating this food, cattle drink very heartily, and no evil effect is experienced. I have never fed a forage that I like so well. Cattle eat it greedily, yet they never eat too much of it. It has some of the good but none of the evil effects of alfalfa. It is very fine for milch cows, and I find that a slight taste is given the milk, but it is such as alfalfa gives, and is not disagreeable. In fact, I like the taste better than the normal taste of grass milk.

I am informed by Professor Mundell of the U. S. Government Experiment Station near Tucumcari, that Russian thistle tests out with timothy hay, and for my part I want nothing better for cattle than Russian thistle.

The Russian thistle cannot be considered as a rival of regular field crops, but where and when it grows it would seem foolish to let it mature seed and become a nuisance when it might just as well be cured and used as forage. Of course it is not as good as alfalfa, but it seems far better than an abortive attempt at alfalfa. It grows as a most vicious weed from the Missouri River to the Rocky Mountains, and flourishes best in dry years.

To those who have any fields growing up to this variety of saltwort Mr. Hittson's directions for cutting and caring for it may be very valuable. The gist of the matter lies in stacking it green.

In Defense of the Pumpkin

By J. W. Ingham

PUMPKINS are said to be a "stolen crop," because they are usually raised among corn with very little extra labor and without injury to the corn; or because some farmers think they appropriate nourishment for their growth which is needed for the corn, and this stealing lessens the yield of the more profitable crop. I am very sure that a heavy sod turned under, or a field well manured with stable manure, will produce a good crop of pumpkins and just as much corn as if the pumpkins had not been planted. The two crops seem naturally fitted to grow and thrive together.

The only valid objection to the stolen crop among corn is that the dense growth of the vines is considerably in the way at the time of cutting up the corn. This is especially true when the corn is cut with a corn harvester, the vines frequently clogging the machine.

When the ground is to be sown with wheat in the fall the vines are easily dragged off to one side of the field with a spike-tooth harrow and piled up.

Some do not succeed in raising good crops of pumpkins, and I think the reason is they do not plant seed enough, or the seed is not good and fails to germinate, or else the young plants are destroyed by the striped cucumber beetle. We always save an abundance of seed from the finest and ripest pumpkins, spread them thinly in a dry place where they will dry quickly before mold and decay begin.

A seed is planted in every hill, and if too many come up some can be pulled up.

There is no profit in planting either corn or pumpkins, or both together, on poor land. The soil must be fertile or made so with manure.

Pumpkins, a Water Crop

Pumpkins are largely composed of water, and so some agricultural writers have declared that pumpkins have but little value as stock food. The same objection might be made against grass, which everybody knows is the best food in the world for farm live stock. Pumpkins, in my experience, are as valuable to feed to cows and steers as turnips, rutabagas, and beets.

I have seen some stockmen draw pumpkins to the pasture field, break them up, and throw them on the ground to be gnawed and nosed around. Our method is to haul them to the barn, cut them up with a broadax in a plank box, and feed each cow a reasonable quantity in her stall. By this method there is no worrying and hooking, and no befouling of their feed as when fed together in the field. This method of feeding costs more in labor, but the extra labor pays. Our cows fed on pumpkins and corn meal give yellow milk which makes hard yellow butter with a fine flavor.

In fattening cattle, pumpkins, if judiciously fed in connection with corn meal, will fatten as fast and save approximately half the meal that would be required to put on the same amount of flesh without them.

Horses are fond of pumpkins and will eat them without any cutting up. They are healthful for horses that are kept on dry feed when fed in moderation.

Hogs will eat pumpkins, and they are cheap and wholesome feed for them when fed in connection with grain. We cut the pumpkins into small pieces which can be eaten easily, and put them into the trough instead of breaking them up and throwing them into the pen. We find it pays well for the time spent in cutting. The pumpkins are fed in the morning when appetites are keen, and before the grain is given.

EDITOR'S NOTE — Our correspondent's comparison of the food value of pumpkins with that of beets and turnips is a good one. Mangels, pumpkins, and flat turnips are almost identical in composition—dry matter, protein, carbohydrates, and fat. But grass cannot consistently be compared with pumpkins as a feed.

Green pasture grass contains approximately double the dry matter and carbohydrates and two and one-half times as much crude protein and fat as are contained in pumpkins. However, the palatability of the pumpkin adds to its feeding value in no small degree.

New Soil Acidity Test

A NEW and a more positive test for sour soils than the common litmus-paper test has been discovered by Emil Truog of the Wisconsin Experiment Station. It tells not only whether the soil is acid or not, but shows approximately the amount of acid present.

The test is made by a combination of three harmless chemicals, and the time needed is about ten minutes. In a communication to FARM AND FIRESIDE, Mr. Truog, the inventor, says, "The test is very simple, and anyone who is able to follow directions for making good coffee should be able to make the test with good results."

E-W

Poultry Raising

Hog Dip for Hens

By Mrs. Grace Clemons

AFTER reading about dipping hens in hog dip to get rid of lice, I concluded to tell my experience to FARM AND FIRESIDE.

Last summer I had ninety young chickens running with five hens. The chicks seemed to do well till about well feathered out, or almost ready to wean, when their feathers began to look very ragged. I knew they were lousy.

I took an old 3-gallon jar and filled it almost full of warm water and added a half teacupful of hog dip. I dipped the hens, first taking hold of the wings close to the body with one hand and of the head with the other.

Do not dip the head in, but rub the mixture well on top of the head and on the throat to get the head lice.

Dipping the hens used quite a bit of the mixture, so I filled up the jar with more warm water, thus making it a little weaker for the chickens. I first dipped a dozen so as to be on the safe side. After they dried off they acted so lively I dipped the rest.

In a few days they looked so smooth and nice they hardly looked like the same flock. It is a much easier and quicker method than greasing, and I believe gets every louse.

After dipping the chickens we thoroughly cleaned and treated the henhouse with the stock dip. We made the dip much stronger than for the chicks, and with a garden sprinkler (a spray pump would have been better) wet every bit of the walls and roof and, using an old broom, scrubbed the floor with the dip solution.

The chicken house is built of corrugated iron, with only enough wood for studding, window frames, and floor. It is much easier to keep free from lice and mites than a wooden henhouse, and is also rat-proof. In hot weather it is almost too warm, but the chicks can then run in the yard and find the shade.

EDITORIAL NOTE—In no case should the dipping of poultry be undertaken unless the weather is sufficiently warm so that the birds will not be chilled, unless they can be kept in a room artificially warmed until their feathers are perfectly dry. Little chicks should not be treated with this solution until a month or two old, as their skins are delicate and a chill may finish them.

An effective lice powder for poultry is made by mixing three parts of gasoline and one part of crude carbolic acid 90 per cent pure. Then add gradually sufficient plaster of Paris to absorb all the moisture, making a powder that will sift easily through a dusting can.

A good substitute for the crude carbolic acid is one part of cresol mixed with three parts of gasoline, adding plaster of Paris as above advised.

Poultry House Without Frills

By A. E. Vandervort

ONE of the great necessities for the farmer is a good poultry house. In traveling through the country it is rather amusing to note the different places in which the farmer keeps his fowls. In many places they are allowed to run about the barns, roost in the wagons, on machinery, anywhere they choose. The hen responds to good or bad treatment about the same as a dairy cow, a horse, or any other farm animal.

A good poultry house, then, is a necessity to the best results, and the chickens must be kept absolutely under the will of their caretaker. In early fall is the best time to begin that new house. Plans should be laid soon. It need not be expensive, but it must be comfortable. Have it well ventilated, though in such a manner as to prevent drafts of air coming in direct contact with the fowls and at the same time avoid moisture and frost collecting upon the walls and ceiling of the house. It is much better to have a cold, well-ventilated house than to have one warm and poorly ventilated.

Dimensions and Materials

Take into consideration the principal direction of the wind and storms and build that side of the house especially warm. If windows are in it, have them fit tight. Avoid building, of course, in a hollow where water will collect.

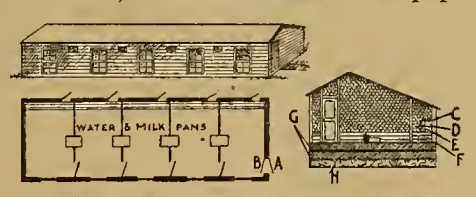
The house illustrated has been in use on my farm for the past seven years. Though inexpensive, it is made to last. The house is 15 feet wide, 50 feet long, 4½ feet high in back, 6 feet high in front, and 7 feet at the ridge pole.

These dimensions and style of roof make a low house which is much warmer than a higher one, yet it is plenty high enough to work in. The frame and plates are made of 2x4's and the sills and corner posts of 4x4's. The outside is boarded as tightly as possible with rough boards, and a cheap grade of house siding is used for siding, with a good grade of tar paper between the siding and boards. For both slants of the roof a good 3-ply prepared roofing is used. The house is divided into five pens, each 10x15 feet, and will accommodate from 40 to 50 hens in each pen. About three feet of the partitions are boarded up, the rest is of wire netting. In the back of the pens are the nests and dropping boards. The dropping boards are 3½ feet wide, three feet from the floor, and extend the width of the pen. The perches are made of planed 2x2's and are six inches from the dropping boards and hinged to the back of the building so they can be raised and fastened when cleaning off the dropping boards. Under the boards are eight nests resting on a platform one foot below the dropping boards. This arrangement of nests and roosts gives the fowls the use of the entire floor space. The water dishes and grit boxes are placed in the partitions so that two pens use one dish.

Ventilation Simple; Floor Moisture-Proof

Five double sash windows extend nearly the whole height of the front. Four holes two feet square are cut near the top, between the windows. These are covered with muslin and act as ventilators. These aided by the windows, which are opened every day, form a perfect method of ventilation and do away with all excess moisture on the walls and ceiling.

The floor is of concrete. The space up to the bottom of the sills is filled with crushed stone. On this is put a thin coat of concrete, then a thickness of tar paper,



A, wooden door; B, wire door; C, roost hinges; D, perches; E, dropping board; F, nests; G, cement; H, crushed stone

and over this a layer of cement (three parts sand and one part cement). Such a floor is ideal for a poultry house and is rat and moisture proof. It is easily constructed, easily cleaned, and will last a lifetime.

Only a little reckoning is needed to reach the conclusion that the concrete floor is no more costly than even two or three wood floors which last only a few years. One invasion of rats among little chicks will often overbalance the difference in first cost.

For a good serviceable and cheaply built farm poultry house I find that this house answers every purpose. Every farmer who keeps hens should house them properly to get the best results; if he can't do this he had better sell them.

Preserving Green Feed

By J. A. Reid

ALL poultry authorities agree that the hens must be supplied with green feed in some form at all times if they are to do their best at laying. However, it is a difficult proposition to keep them supplied with it in the wintertime, especially if they are kept in large flocks.

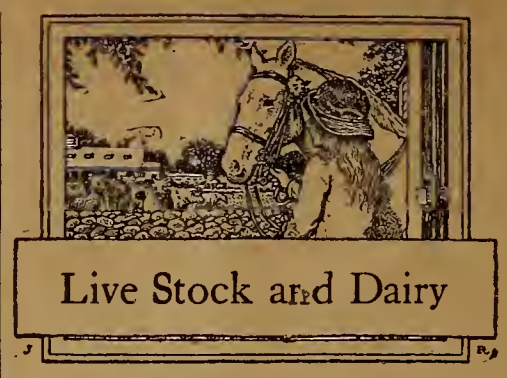
During the past winter I kept my flock of about one hundred hens supplied with green feed in the following manner: During the spring and summer months I took all the lawn clippings and thoroughly dried them by exposing them to the sun on a shed roof for about one day. In this time they were thoroughly dried. Then I packed them in a sugar barrel and weighted them down by making a cover to fit in the barrel and placing a stone on top. In this way they retained their greenish color throughout the whole winter.

When wanted for use I took a handful and soaked it in boiling water for a few hours, and fed it to the fowls in a trough. In this way one barrelful is enough to feed about one hundred and fifty hens a whole winter. By feeding this way I got a 45-per-cent egg yield during the whole winter.

EDITORIAL NOTE—If lawn clippings are spread thinly enough in barn or shed loft, on scaffold, or in attic so as to dry quickly in the shade without molding, the green color will be preserved and the quality of succulence as well.

My experience is that one hundred hens will consume to advantage much more of such clippings than can be packed when dry into a sugar barrel. When clippings of good quality are cured in the shade no soaking is required. The hens will eat them greedily and do the soaking themselves.

It is to your advantage to mention Farm and Fireside in writing to advertisers. Farm and Fireside folks get the very best attention.



Live Stock and Dairy

Cornstalk Disease Explained

CORNSTALK disease in horses and cattle gets its name from the sickness which they sometimes develop when pastured on cornstalks in the fall after the ears have been harvested. It is sometimes confused with anthrax. Cornstalk disease comes on very suddenly and death ensues quickly, sometimes in a day. Veterinarians have agreed on the nature of the disease only so far as to believe it to be a combination of poisoning and indigestion; all of the pain seems to be in the abdomen and delirium develops as the disease progresses. The immediate cause of death seems to be paralysis of the bowels.

"The development of molds and possibly of poisonous matters as the result of the growth of varied fungi on stalks that have not properly matured is at the bottom of these troubles," says Dr. Connaway of the Missouri Veterinary Department.

"In one locality," continues Dr. Connaway in a letter to FARM AND FIRESIDE, "I found that the disease affected the cattle as hay fever affects human beings. Some were affected at first with a bad catarrh of the upper air passages, mattering of the eyes and nose; later on the large bronchial tubes were affected. In regard to horses, some of our farmers have been able to utilize their stalk fields and shock fodder by sandwiching in with green forage. One farmer who had lost six horses out of fifty saved the others by running the horses part of the day on green wheat fields and then the rest of the day on stalk fields.

"This mingling of green with dry feed put them through the winter in good condition. When snow was on the ground he kept them off the cornstalks and fed them hay and grain. Green-cured alfalfa or clover is a good substitute for grass, and this may be helpful in preventing loss in horses. The same handling of cattle has given good results with other farmers."

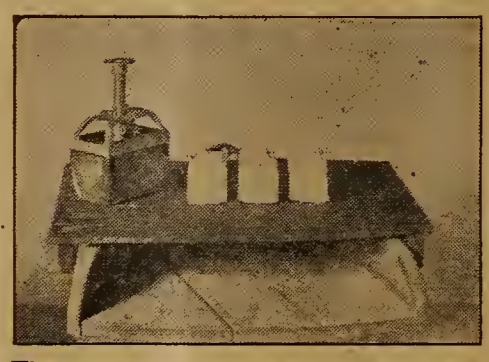
A good rule of prevention is "never turn horses or cattle into stalk fields till the edge has been taken off their appetites by some green laxative feed. Give salt frequently and provide plenty of fresh water."

Attractive Butter Packages

By H. F. Judkins

NO MATTER what may be the shape of the butter package it is imperative that it appear neat and attractive. The kind of package that is used depends upon the amount of butter made and on the kind of market available.

Various types of molds are on the market which print in pounds and half pounds. In buying a mold get one that



The prints are attractive and uniform in size

is easy to clean, durable, and accurate. Molds may be plain or carved in various figures or monograms. While it may be well to have a monogram carved in the mold for the sake of giving the butter individuality, too much "filigree" should be avoided, as it makes the mold difficult to clean and less durable. There are also molds having capacities ranging from 10 to 25 pounds.

Avoid Molds That Are Too Fancy

In order to get the pound print from these the butter must be cut by the means of wire or a butter slice. While the work can be done fast, they are a little undesirable for the reason that it is difficult to cut all the prints to weigh exactly alike; and then again, such a large mold is not required on the farm. This leaves the single-pound mold as the most satisfactory type. A new mold should be tested from time to time by weighing the prints. A man may lose considerable money in a year by selling 18 ounces for a pound, and he may lose his reputation in a much less time than that if he sells 15 ounces for a pound. Some States require that "16 oz." be stamped on the wrapper of each print.

Make the Carton Attractive

After the butter is printed it should be set away in a cool place for several hours, and then it is ready to be wrapped. A good brand of parchment paper on which is printed some special design giving the name of the producer or the name of his farm should be used. If the butter is later put into cartons, as it is many times, plain parchment paper may be used, and the printed matter put on the carton. At any rate, if the carton is used, as much advertising matter as is consistent with attractiveness should be printed on it. It is but little extra expense to have these designs printed, and one is well repaid in the end if he keeps his butter up to the advertised standard.

The amount and kind of advertising necessary will depend largely on the kind of market catered to. Markets for farm-dairy butter are private customers such as individuals and hotels, the country store, the city market, and commission houses.

The farmer receives the highest price when his butter is sold to private customers. These customers need not be

The one-pound mold is easily operated

local people. Every summer the country is invaded by summer vacationists from the city. In many cases if the farmer is wise he can make arrangements with some of these people to sell them butter the year round, at a higher price than he could possibly obtain elsewhere. If he does this he must keep up his end of the contract and see that he supplies them the year round with a uniform product.

Probably one of the most common customs of marketing is exchanging butter at the local store for groceries and supplies. This of course saves the farmer a little time, but the price received is less than from steady customers.

Better Prizes for the Children

A TRIP to Washington or the state capital is a fine thing for any boy or girl who wins in a corn, tomato, pig, poultry, or other contest; but the U. S. D. A. suggests that better prizes might be selected. Willie P. Brown, winner in the corn contest in Arkansas, chose a scholarship giving him a year's tuition in an agricultural school. Most of us will agree that this was a good choice.

Awards of good breeding stock, tools, machinery, household utensils, books, or other useful articles are sensible; but the year at school, or the short course, is the ideal prize for the boy or girl who can take advantage of the opportunity. It would help to rally the forces of public opinion for a regulation of the dog evil if each of these prize-winners could be presented with a nice woolly lamb.

IN HOT weather or in drawing heavy loads, watch your horse's breathing. If he breathes hard or short and quick, it is time to stop.

Self-Balanced Rations

ACTUAL feeding tests show that animals will choose as well the feeds they need as the most skillful feeder can do with his pencil, paper, and tables of feeding values. Hogs given corn and meat meal in a self-feeder, so that they could eat as much of each as their appetites called for, did better than hogs fed according to a balanced ration figured out for them. Appetite is a guide which has served all animals since long before a balanced ration was ever heard of.

The feeder who will let his live stock have access to feeds from which appetite can select a balanced ration will save himself a great deal of trouble. The difficulty with us is that many of us fail to give this variety. We are too apt to feed the corn without the meat meal or other protein food, and then complain because the animals do not give us meat which pays. It is a pretty safe wager that if hogs are turned into fields where they can help themselves to corn on the stalk, peanuts in the ground, alfalfa, rape, field peas, or cowpeas, they will eat these in about the proper proportions. Incidentally, peanuts have been found a profitable crop as far north as Iowa.

E

Garden and Orchard

Swelling of Apple Twigs

By O. M. Taylor

"WILL you kindly explain to me the trouble with my Gano apple tree? The tree is covered with great bunches all over. They appeared last summer while it was very dry. The tree is seven years old last spring. Has borne two years. Last year had about 1½ bushels." The question comes from Massachusetts.

The bunches or swellings on the Gano apple tree are likely not the result of insect work or of disease. They are accumulations of plant food manufactured in the leaves during the summer, which instead of being distributed uniformly over the tree as the season developed accumulated at certain places, usually on the smaller branches and spurs of the trees rather than on the largest branches, and very frequently just back of the attachment of the stem of the apple. Some varieties have more of this tendency to develop "bunches" than others, and such a condition is more noticeable on pears than on apples. The swellings will not injure the trees. It is entirely different from the trouble known as "galls" or bunches which have developed as the result of insect work or of disease.

He Believes in Fruit-Growing

THIS is a letter from a fruit-grower in Josephine County, Oregon. It is from Mr. E. A. Lagergren, and contains some very good hints for fruit-growers everywhere.

I have sent money for my subscription to FARM AND FIRESIDE as I do not want it stopped. I never get tired reading your paper, and think it is one of the best agricultural papers published. But of course when you say something against fruit-growing I reply. I remember a couple of years ago you said something against orchard-planting or overproduction, and I replied, giving my reasons; and the longer I stay with my trees the more faith I have in them.

There may not be so much money in fruit-growing as some would have you believe, but I am sure there is something in it if one will do his part. I only own five acres, but I am sure that I can take care of that much and make it pay. When I read in some of the farm papers of those who make from $5,000 to $10,000 a year I see why it is oftentimes a temptation for the city people to want to get out on the land.

It is for the purpose of checking the misguided enthusiasm of just such people that we have printed what we thought were the facts with reference to the apple boom. We think the boom is now checked, and we advise all situated as Mr. Lagergren is to stick to their orchardry.

I lived in the city for several years, and thought that if I could only get five acres, and that if I could be able to make a living from it, I would be satisfied. Finally, hy close saving, we became able to purchase five acres here in southern Oregon.

We had it all figured out how we would make a living on five acres, but it did not turn out just as we had expected. Still we are not discouraged, but expect to succeed some day. It costs money to grow an orchard—but then the joy of seeing the trees grow year by year! I have some apple trees three years old that will measure eleven feet in height. There are some of course that will not come up to that, hut they will catch up some day, as they are the ones that I am helping to catch up.

People with this spirit are sure to succeed. The man who has joy in seeing his trees grow will study their wants, needs, and peculiarities, and will make them grow. And if he loves the trees he is sure to be happy—and after all that's the main thing.

Every fall about the first of September I sow oats and vetch between my trees and plow it under the first of May. That gives me all the humus and nitrogen that I need. My trees are planted twenty-five feet apart, with a filler between. Trees will do as well planted close together as they would if planted forty feet apart. They do not grow big on my soil, but I get the bearing area.

Do all our readers agree with this theory of planting? Much depends on the richness of the soil, and something on climate. The Editor has an orchard in West Virginia planted on the triangular system, with apple trees twenty-four feet apart each way. But he has calculated upon the possibility of taking out every other row some time, or leaving it for his children to do, thus making the final system one of rows forty-two feet apart, and trees twenty-four feet apart in the row—on the rectangular plan.

There has never been a failure in apples on my place since I came here. They always miss the spring frosts and never fail to set a large bloom. There seems to be something in the soil here that just suits trees.

I am much interested in reading the letters you get from people who are so anxious to get back to the land. I was in the same fix once. I thought how much better off one would be if he had a small place where he could at least make a living. But when we got a place there was something else came up that we had not figured on. I didn't think that it would cost so much to get started. When we bought our place we had very little money left to go ahead with. I saw that we couldn't figure on making much unless we set the place to fruit. The trees cost almost two hundred dollars, including dynamite. I shot the holes, as I think it's a mistake to set a tree unless the subsoil is perfectly loose. We have to irrigate here to raise a garden. I had to dig a well and buy a gasolene engine. We wanted to raise chickens but had no houses. All these things cost money. But we feel sure we are going to succeed.

MARTINS, bluebirds, and wrens do not take kindly to houses made of new, bright wood. Their instincts lead them to prefer the places which more nearly resemble the insides of decayed trees, in which their ancestors have nested from time immemorial. Build your birdhouses to suit the birds rather than to please your own tastes.

The Market Place

Mutton and Wool

By J. P. Ross

THE hot weather has had its usual effect in lessening the demand for, and therefore the prices of, fat sheep, and especially of ewes, while on the other hand lambs have profited largely from the same cause. The old crop of these is about all in, and the product of this season will probably command steady and even higher prices, at least for some weeks.

Finished lambs seem to be in short supply, while there is a lively demand for them.

The wool market is strong with rising prices, in proof of which the "Breeders Gazette" mentions the fact that some of the Nevada clip, which was contracted for in January at from 11 to 13 cents, has recently been sold in Boston at 20 to 22 cents.

This state of the wool market leads me to again urge the adoption of the four rules laid down by the U. S. D. A. for the sorting and packing of wool. They are worth memorizing.

1. Sack ewe, lamb, and buck fleeces in separate sacks.
2. Shear black sheep separately, and keep the fleeces separate.
3. Tie the fleeces with paper twine, which does not adhere to the wool.
4. Remove the tags and dung locks, and put them in separate sacks marked to show their contents.

At the sheep and wool conference at Washington, which closed June 4th, Assistant Secretary of State Galloway in addressing the sixty delegates representing all parties concerned in the wool industries stated that while our wool crop is at present valued at sixty million dollars, ten per cent could be added to that sum by improved methods of handling and marketing.

Market Pull Not Strong

By L. K. Brown

LACK of demand is the whole story in the present disappointing hog market. From all channels of outlet of hog products, both fresh and cured, comes the same report of a hand-to-mouth trade. It is fortunate that this slack consumption has come at a period of light marketing or there would be a demoralized market condition until prices had assumed a new range at decided lower figures. The May decline came in face of the fact that the month's receipts at Chicago were but 2,700 greater than those of 1910, which was the lightest May run in thirty years. Receipts at the principal markets for the first five months of the year totaled a half million less than for the same period of 1913, and nearly two million less than in 1912. It would take an exceptionally heavy summer run (which need not be expected) to bring the present year up to the average. Demand is the controlling factor in the trade, and as long as this remains dull the live-hog market will be unsatisfactory even though light receipts might be expected to raise the values.

The price of corn has advanced but little, so there is still a good profit in feeding for those who have hogs that will be ready for the summer market. Economical feeding and caring should be always kept in mind, be the market high or low. The writer has found the following method quite satisfactory for spring and summer feeding.

During the heat of the midday the hogs lie in a large cool shed. Late in the afternoon the gates are opened and the hogs go to self-feeders filled with shelled corn. When they have eaten their fill and have had all they want of a thin tankage swill, they go to the alfalfa pasture where they graze until dusk, returning to the shed. In the cool of the early morning they again go out and get a fill of alfalfa. In a couple of hours they are again turned to the self-feeders and the tankage swill. From there they wander back to the shed to keep cool, and are shut in until the late afternoon. A supply of clean water is always before them, and it is seldom that even the fattest hogs get warm enough to pant.

The Bulk Car Method

By Maurice Floyd

WHEN we realize that under our present haphazard and circuitous method of marketing and distributing farm crops it costs $7,000,000,000 to get $6,000,000,000 worth of farm products to the consumer, we begin to understand the importance of reforming our present marketing methods. It has been demonstrated beyond a doubt that the middlemen cause the greater part of this enormous distribution cost; and without going deeply into the question as to whether or not the middleman reaps an unnecessarily large profit, we may safely conclude that any plan which tends to bring the producer and consumer closer together, with profit to both parties concerned, is a step in the right direction. The shipping of farm products in carload lots and selling them straight from the car door to the consumer often offers an ideal method of eliminating unnecessary middlemen's profits. Just how this may be done is well illustrated by the experience of some Texas farmers.

When the farmers who compose the Winnsboro Truck and Fruit Growers' Association of Winnsboro, Texas, harvested their 1912 sweet-potato crop they found, as many other growers have found before, that all the marketing centers were overstocked with potatoes, and 50 cents per bushel was the best price that reliable commission houses would offer, despite the fact that potatoes were then retailing at from $2 to $3 per bushel in these same cities.

Fortunately, however, this association had an enterprising manager, and instead of following the usual procedure and shipping the potatoes to an already overstocked market, trusting to "luck" to realize a profit thereon, he decided to quit the beaten track and place the potatoes of his growers directly into the hands of the consumer.

Some hundred miles to the west of Winnsboro lies the great "black-land belt" of Texas, which is ideally adapted to cotton-growing, but this black soil will not grow potatoes. Casting his eye over this rich and unsupplied territory the manager decided that he could successfully market his potatoes there if he could only get in touch with the demand. After careful consideration he sent a man directly into this territory to locate the demand. When a likely-looking district was found this representative of the truck growers would book advance orders for potatoes, and when enough were secured to insure the disposal of a carload the information was communicated to the home office and a car was promptly loaded and sent out. Then when the car arrived at its destination the potatoes were delivered direct from the car door to the buyers. In this way some sixteen cars of potatoes were sold, and the growers realized 90 cents per bushel for their product. On the other hand, the buyers paid only $1 per bushel for the potatoes.

Here we have a most practical demonstration of the advantages to be derived from eliminating, so far as possible, the middleman. In this case the producer received almost twice as much for his product as he would have received by marketing through the regular channels, while the consumer paid less than one half the regular price. In other words, the cost of distribution was only 10 cents per bushel, or 10 per cent, instead of 65 per cent, the usual average.

Farm Notes

Rain Makers and Their Work

By Fred Telford

EVERY summer when the growing crops begin to perish for lack of water, men called "rain makers" begin their work. They move to some dronght-stricken locality and pnblicly proclaim their ability to bring showers—for a financial consideration. So desperate is the sitnation that often considerable money is raised by pnblic snbscription and paid to the "rain makers."

Few farmers would begrndge paying ten or even fifty dollars for a badly needed shower. It is only fair, however, to ask whether these men can produce rain.

The experience of a Texas community in the summer of 1912 is worth considering. In Jnne the largest press association in the conntry sent broadcast the following item, which is copied verbatim from a Middle West daily of June 14, 1912:

BOMBARD SKY FOR RAIN

"Rainmakers" Explode Dynamite For Five Hours in an Effort to Break Drought

Anson, Tex., Jnne 13.—"Rainmakers," after disturbing the atmosphere with continued explosions of dynamite for five hours near here yesterday, were rewarded with a few showers last night. The sky is overcast to-day and a good rain seems likely.

Discouraged by the long drought, residents of Anson, Stamford and Hamlin, in Jones County, began the firing on the prairie about five miles from here yesterday morning at 10 o'clock.

The bombardment was kept up until 3 P. M., when the first drops of rain fell. It was something like the beginning of a summer shower. This continued for some time, bnt the fall was too light to be of benefit.

On the face of the report the case looks good for the "rain makers." No sensible person, however, accepts reports at their face valne where money is concerned; he investigates. The investigation in this case disclosed the following facts:

1. A "low" was so situated on June 12 (the "yesterday" of the news item) that conditions were favorable for rain in all the Gulf States.

2. The Weather Bnrean's prediction was: "For Texas and Oklahoma, showers to-night (that is, June 12) and Thursday."

3. Cloudiness and scattered showers were general throughont Texas and Oklahoma at the time of the bombardment.

These facts were gleaned from the official maps and predictions of the Weather Bnrean, prepared in total ignorance of the efforts of the "rain makers." Any person wishing to investigate may secure the reports upon application to the Chief of the Weather Bureau, Washington, D. C.

This of course puts a different face upon the whole matter. Since clondiness and showers were general throughout a large territory, and since the Weather Bnreau actually predicted the conditions that prevailed, the conclusion is inevitable that "rain makers" were as little responsible as the man in the moon. In fact, the blind faith that could connect a bombardment of the sky with "the beginning of a summer shower" which proved "too light to be of benefit," and at a time when showers were general, is nothing less than sublime.

This is only one instance, but invariably investigation discloses a similar state of affairs. No scientist of standing places the least confidence in the pretensions of "rain makers." The natural forces that evaporate immense qnantities of water, transport the vapor often hundreds of miles, and then condense it again to water are too immense for man to cope with.

Only persons not acquainted with the facts can have enough confidence in "rain makers" to pay them money.

TAKE the horse ont of the shafts as mnch as possible; and if you drive a pair or four unfasten the outside traces while the horses are standing; they will rest better that way.

More Lost People

JACOB L. PETERSON, now sixty-one years old, and whose native home was in Catawba County, North Carolina, has not been heard from since he was in St. Louis at the time of the World's Fair. S. A. Peterson, who wants to know of him, says that for a time he herded sheep in Montana, and suspects he may be there now. Montana readers or others who may know his whereabonts are asked to correspond with S. A. Peterson in care of FARM AND FIRESIDE.

Bill Whitton, whose last letter was from Bell County, Texas, and *Josie Whitton*, who has not been heard from since she was in Baldwin County, Georgia, are "lost people" to their sister whose name is now Annie Ivey, and who may be addressed in care of FARM AND FIRESIDE.

Mary E. Chapman, formerly of Kent's Hill, Maine, married many years ago a man whose surname was Qnick. His given name is not known. Anyone having information, past or present, concerning a Mrs. Qnick who was formerly Mary E. Chapman will render a great service by reporting it to the Lost People Department, FARM AND FIRESIDE.

Friends

An oak and an ash became friends in Pennsylvania, four feet above the ground

Book Reviews

THE AMERICAN PEACH ORCHARD, a book of over two hundred pages, by F. A. Waugh, fills a felt want. The practical essentials of modern peach culture have right of way in this book. Nothing essential is omitted, from setting the infant trees to handling the matured producing orchard and marketing the crop. It is well illustrated, clear, and attractive. Orange Judd Co., New York City. $1 net.

There are horse books a plenty, but few treat of horse problems from the angle of greatest interest and value to horsemen as does MANAGEMENT AND BREEDING OF HORSES, by M. W. Harper. Profuse illustrations, breediug tables, training, fitting for market, and the treatment of common ailments are all taken care of in this book of over 450 pages. Orange Judd Company, New York City. $2 net.

PRODUCTIVE HORSE HUSBANDRY, by Carl W. Gay, is a new book dealing with the breeding, judging, and feeding of horses. It is well illustrated and contains 319 pages of reading matter. Though primarily a textbook, it contains useful information for anyoue handling, buying, or selling horses. The J. B. Lippincott Company, Philadelphia, Pa. Or it can be obtained, as can any other books, through FARM AND FIRESIDE. $1.50.

THE PRINCIPLES OF AGRICULTURE THROUGH THE SCHOOL AND THE HOME GARDEN, by C. A. Stebbins. A textbook, but one which can be easily adapted to the home teaching where the mother or father cares to take up the simple principles of farm life in such a way that the children will take an interest in those principles. The book is quite complete in its scope, and is well illustrated with simple sketches and photographs. The Macmillan Company, New York City. $1.

JOE, THE BOOK FARMER, by Garrard Harris. A story well illustrated to bring out the points which are intended to be conveyed by the narrative. Dialect and conversation of other forms are used to point in a homely way to some of the homely truths now known to be needed for successful farming. Harper & Brothers, New York City. $1 net.

PRODUCTIVE POULTRY HUSBANDRY, by Harry R. Lewis, is a book poultrymen are now fortunate in having access to. Every phase of poultry breeding, housing, feeding, and care are exhaustively discussed in this book of over five hundred pages by a practical poultry expert who has left untouched no importaut matter relative to poultry culture. J. B. Lippincott Company, Philadelphia. $2. net.

THE EFFICIENT KITCHEN, by Georgie Boyntou Child, is a practical common sense treatment of modern housekeeping problems written from first-hand kuowledge, pointing the way to eliminating waste, proper kitchen equipment, etc. It is *the* answer to the housewife's questiou of how to systematize and lighten household cares. Well illustrated. McBride, Nast & Company, Union Square, New York City. $1.25 net.

The Farmers' Lobby

Sheep Must Go Back to the Farm

By Judson C. Welliver

WHAT'LL we wear when there aren't enough sheep to provide us with wool? Don't imagine it's a silly question. There aren't enough sheep right now. And there is no substitute for wool in sight either.

Uncle Sam is taking this wool question very much to heart. The whole civilized world is ditto. Almost everyhody worth while lives in the temperate zone, and the temperate zone must have woolen clothes.

Just at the moment, of course, the fashions in women's clothes are contributing something to relieve the strain on the overworked sheep. But the ladies can't take off much more clothes; at least, let it be hoped they will not. If the fashions should suddenly swing in the other direction, and the dear creatures should discover that they wanted to wear as much cloth as could be piled on,—and that's liable to occur any time,—the sheep would never survive the shock.

Just think of these little wool details:

For forty years the wool tariff has been regarded as the cornerstone of the protection scheme of this country. It has been proclaimed and commonly believed that to remove or greatly reduce that duty would ruin the wool-growing industry. Last year the duty was cut to the bone, and the high protectionists declared, and many of their opponents honestly believed, that the result would be a fearful blow to the wool-growing business.

But they all missed it.

Average prices of American-grown wool have been going up, not down, since the new tariff act passed. There is wide variation as to different qualities, but authorities say there is an average advance of about 10 per cent.

How many other products of the farm do you think of that have gone up 10 per cent in that time?

The explanation is that the tariff had very little to do with it, and that the world's increasing demand and decreasing supplies of wool have sustained and even raised prices.

Observe now a well-nigh miraculous result of this situation:

A three-day convention of wool growers, merchants, and manufacturers has just been held in Washington, and nobody said "tariff" out loud! Not a person!

Some of them, confirmed politicians of the wool business, would have been glad to inject politics and tariff into the discussion; but the majority was determined that this was no time for those things, and they were actually kept out. Two years ago you would have said that a man had as much chance to skim the salt out of the Pacific Ocean with a teaspoon as to keep tariff out of the debates of a wool convention. Yet it was done!

But there's no use trying to make wool feel altogether cheerful. The convention concluded not to worry about the tariff; but it found a new goat.

The New Goat is the Dog!

We would be able to increase, and as a matter of fact would increase, the number of sheep in this country by 150 per cent within a very few years if the dog trouble could be solved. Don't set that statement down as superheated fancy: it is the serious testimony gathered by the Department of Agriculture in an inquiry for the enlightenment of the convention.

The Department officials sent inquiries to about 1,000 counties, in 36 States, in which sheep are grown.

It asked first of all: "To what extent could the number of sheep in your county be increased without forcing any decrease in the number of other live stock?"

The replies from the 1,000 counties averaged the answer at 150 per cent.

The next question was, "What is the main hindrance to increasing the number of sheep raised?"

"Dogs!" shouted, screamed, ejaculated, snorted, vociferated, averred, and otherwise declared 576 of the replies!

The conference was called by the Department of Agriculture authorities with the view to getting the fullest understanding of conditions as affecting the grower of sheep, the dealer in wool, the manufacturer of cloths, the buyer and consumer of mutton—in short, to get all parties together and find out what's the matter with the whole chain of businesses dependent on sheep, and what could be done about it. Particularly, what the Government might do to help.

About 150 people attended, representing all sections and all branches of the industry. Somebody wanted to know, right at the outset, why Australian wool, which is not as good as American, always brings more money in the market. A manufacturer answered with a fetching illustration. He pulled a slip of worsted cloth from his pocket and tossed it to the speaker.

"That's why," he said.

The bit of cloth was passed around. It was a nice twilled scrap of men's suiting, perfectly good except that there was woven, right through it, a thread of hemp or jute that came out straw-colored against the dark blue body of the cloth. That thread utterly spoiled the piece of cloth.

"American wool growers," explained the manufacturer, "tie their wool with cord before they bale it for shipment. More or less of the cord always gets into the wool. That's a bit of it there. Australian growers compress their wool into bales without tying up the fleeces. There isn't a chance to get a fiber of hemp into a cloth made of Australian wool.

"The lower price on American fleeces is the manufacturer's insurance against that kind of thing."

As to cord American growers are doing better. Out West the great majority now use paper twine, which is harmless; but on the farms the old hempen twine is still used, and it hurts all American wool.

J. E. Cosgriff of Salt Lake City discussed methods of handling wool on American ranches and farms, and W. T. Rich, an Australian expert, described how the trick is done there. It turned out that the Australians, having immense flocks, are able to organize expensive plants for cleaning, packing, compressing, handling, and generally processing wool, such as Americans could not support because our flocks are generally very small compared to those in Australia. The answer to this was that American growers must learn the lesson contained in that one word which nowadays seems to contain magical cure for most of the farmers' ills:

Co-operation!

Perfectly possible in communities where there are considerable numbers of sheep, to make community provision for baling and compressing machinery, for instance. Who, on a small farm, keeps his own threshing machine? A neighborhood compressing and baling apparatus should be provided as threshing machines are.

But let us not forget our muttons.

The high-brows of sheepdom decided that in future mutton will be more and more valuable. On the farms in the farming States mutton will be the primary value and wool the side line for the sheepman; but out on the ranches wool will be the chief object because the magnificent Merinos and like breeds which give the best wool are also the breeds that thrive best in range conditions.

Mutton is getting to be a more popular meat in this country. In fact, it was said that the price of mutton has gone up, since the tariff act passed, about in the same proportion as the price of wool. The sheepmen have been taken by surprise by market conditions. They are still rather dazed.

Almost anybody would be.

The wool growers feel like a man who came home to find his house had been robbed. On examination it proved awfully topsy-turvy, but nothing valuable was missing, and the burglar had thoughtlessly left a bushel of gold coin and a pint of diamonds, gathered somewhere else!

The sheep business looks more like ready money than like ruin, provided the various interests can agree how to develop it henceforward. Mr. Cosgriff was for organizing a big project, bringing Australian experts here at once, and reorganizing our methods on the general Australian basis. But that didn't get adopted. It was pointed out that the American wool grower doesn't as a rule know anything about the grades of wool he grows. He is as innocent of real information about the value of what he has as is the average wheat grower or cotton grower.

Isn't it passing strange that farmers manage to know so little about such things?

It's a good deal of the reason why we haven't more automobiles.

Ranges are disappearing: the small farm is crowding them out. The sheep must go back to the farm or go to the dogs. And why don't American farmers take more interest in sheep? The sheep population of this country is very small as compared to Europe. Yet European farmers raise sheep at good profits on land worth two to five times as much as our farms. They have perfected their system; they have exactly the right kind of stock for their requirements—and they have the dog evil as near solution as apparently it can be brought. That brings us back to the dog again.

Miss Julia M. Wade, secretary of the American Shropshire Association, which has been at work to get the dog problem at least seriously considered, addressed the conference. She wants to get all the sheep associations together, and through them make a general assault on the legislatures. But back of that is the feeling that the states can't do the business, and the idea of a national dog law is seriously developing.

Farmers cannot raise sheep while they can't be assured protection against dogs. But the apple in Eden wasn't a circumstance for trouble as compared to a quarrel between neighbors over a dead dog with wool in his teeth.

As a country we are long on foolish sentiment for dogs; hence, short on sheep

A Revolution Over Dogs!

If we ever get an agrarian revolution it'll start over the dogs. I heard one man in the conference tell this story:

"A young man, ambitious for a political career, appeared as a member of the Georgia Legislature. He called on the oldest veteran, a patriarch who had been a member most of the time since the Civil War, and asked some advice.

"'I would be glad,' said the young man, 'of any suggestions of measures which I might take up and promote, in the hope of strengthening my political fortunes.'

"'I see,' replied the old man. 'Well, young man, just you take up a'most anythin'; not much diff'rence which side; ef ye find ye'r on th' wrong side ye'll soon larn t' change. Take up a'most anythin'; but, young man, let me warn ye solem'ly agin jest one thing that'll ruin any man's chances: Don't ye ever git beguiled int' offering a uniform dog law fer the State o' Geo-jaw! That's the one blow no man's c'reer can stan'!'"

The old man was not far from right. Especially in the East and South, where the dog is prized for his sporting utility, and where dog owners are in a huge majority as against sheep owners, to get state laws passed that are worth while is about impossible.

To get them enforced is utterly so.

Which brings up the federal idea. The National Government could do the thing. Why not? Suppose it's true that the dog owners are too strong to permit extermination of dogs now in being: what about the generations of dogs yet unborn?

Nobody feels so very attached to a dog that isn't going to be born for five years yet.

Why not, then, an internal-revenue tax on females of the species? She's deadlier than the male. Make it steep enough to insure that there would be mighty few females kept alive in coming litters of pups. That would mean still fewer litters later, and presently the dog problem would be solved without anybody being heartbroken over the loss of Fido.

The first man who introduces a national anti-dog, internal revenue license law, will be starred everywhere as the author of the prize piece of "freak legislation." After a while even the writers of the human-interest headlines will understand.

E.W.

The procession from the farms and ranches reached the place of celebration

The Light of His Eyes

By Rose Seelye-Miller

JOE looked at the bandaged eyes and powder-blackened face of Hal Perkins, and the tears oozed from under his thick lashes, traced their way down his thin face, and fell on the inert hand of Hal, which hardly made a blot on the snowy counterpane. Hal stirred, and for the first time since his terrible accident the morning of the Fourth he spoke naturally.

"Joe, Joe, *don't!*"

"It's so—so—" began Joe.

"I deserve it though," whispered Hal through lips swollen black with powder and stiff with pain. "And to think of those little fellows I worked into it! I kept them firing toy cannons, and throwing big firecrackers, and, oh," Hal groaned, "I'm so glad the one that burst hit me instead of—" Hal's weak voice ended in a dry sob.

"You brace up, Hal, you'll be all right by another Fourth, and we'll never, *never, never!* If we see a million of 'em!" came through Joe's set lips.

"And ever and ever, and *ever. Amen!*" added Hal, finishing the oath in his old boyish fashion.

"Why, they're praying!" gasped Hal's mother as she caught these last words. She flung her blue apron over her head and began to sob.

"There, there, Mother!" Mr. Perkins soothed gently. "Is—is—he—worse?" the father's voice quivered.

"Oh, I—guess—so—they're—praying—I heard Hal say, 'forever, and ever, and ever, Amen!'"

"There is no real harm in praying, Mrs. Perkins," soothed Hiram, who was waiting for Joe. "Probably it isn't near so bad as that. I'll just haul Joe out." He drew his rough sleeve across his eyes as he opened the door of that darkened room where lay the boy whose life was blasted by the exploding of a cannon firecracker, Hal Perkins, the pride of his parents, the delight of the whole countryside, the biggest, bravest, handsomest boy in the county. Hal's face was full of powder, and according to the doctors his eyes were nearly blown out.

"Joe," raved Hiram, catching that offender by the coat collar, "don't you know better than to be praying around loose here, disconraging Hal, and worrying Mrs. Perkins to death?"

"I wasn't doing anything half as bad as praying! We were—just—planning—for the next Fourth. We're going to get all the boys into it. You'll see a Fourth that is a Fourth!"

"It isn't going to be a failure either," supplied Hal, and a strange, twisted smile contorted his lips. "Don't you tell, Joe!" he whispered.

"You're the boss, and the president, and the whole thing," Joe assured.

The days, weeks, and months went by, and Hal Perkins lived, but his eyes were still bandaged and useless, and his face still bore the marks of powder where it had been injected by the fearful explosive. His once alert, virile young figure was shrunken, and his vigorous, eager stride was supplanted by a stoop-shouldered, tremulous groping. His spirit, however, was the same, though more radiant, more gentle. The reckless, daredevil quality was probably gone forever.

The entire neighborhood of boys had been organized under Joe's direction into a Good Cheer Society, and there was never a day nor night that some one of them did not "happen in" to see their stricken comrade. Regular meetings were held on alternate weeks to plan and execute ideas for the great celebration of a coming Fourth of July.

"What is Joe trying to do with those pigs?" inquired Ma Petty, as she waited for the men to wash for dinner.

"He's training them to drive," explained Hiram. "It isn't just pigs, it's colts and calves and every living thing on the place."

"I wonder," said Ma thoughtfully. "Last year's goslings that were hatched late he fussed with so that now they'll do anything—"

"Geese," cried Joe dashing at the wash basin, "are the most teachable things on the ranch. But *pigs!*" a gesture of despair and disgust finished the sentence. "But you ought to see Hal's—" Joe's lips shut like the lids of a clam shell.

"Have you seen the paper, Joe?" Pa Petty inquired. "They are offering prizes for the best-trimmed vehicles, a grand prize for the most unique unit of the parade, and the wish of his heart to the boy who plans and executes the largest feature of the great pageant."

"Galloping Glass Eyes," gasped Joe, "'the wish of his heart!'" Joe dashed out of the house forgetful of the savory dinner. The clash of a slide door evidenced that the barn had been reached, and the flashing of a pony's feet on the hard road signified that Joe had gone on an errand of imperative importance.

"I'm just dreading the Fourth," said Ma. "Joe's carried away planning for it, and after what happened to Hal—! The Woman's Relief Corps tried to get the merchants to promise not to market any dangerous fireworks, but they declared the demand made the supply essential. It wouldn't be the Fourth without explosives."

"It isn't patriotism as much as barbarism that calls for noise and bloodshed." Pa shook his head dismally.

"I suppose you'll want some money for bunting and things," said Pa to Joe one day in late June, reaching into his pocket and bringing out a handful of coin.

"No," Joe backed away, "we've sacrificed for that. We've had a fund growing for almost a year. We wanted to give up something for it—like real soldiers, you know." He paused, evidently thrilled with a wonderful thought. "Unless you could put up enough to buy up all the fireworks!" Joe wheeled upon Pa with glowing eyes.

"I'll give you money for anything else, Joe," Pa said gently.

"I guess we'll manage," Joe responded grimly as he swung a hoe over his shoulder and marched out to the garden.

From the Silver Ribbon Ranch, the morning of the Fourth, drove out a long procession of all sorts of vehicles, but every one was decorated to the full with national colors, and most of them were wonderful with paper flowers. Joe himself personated Uncle Sam, and Nick, the pony, pranced about like the pony of a fairy princess, gay with flowers, streamers, and ribbons. With swift precision Joe knotted strips of bunting connecting all the vehicles in one long line.

"Well, well," murmured Ma, "I never imagined anything half so splendid as this!" The procession from the farms and ranches reached the place of celebration. Ma Petty watched anxiously for the coming of the boys and girls. "I'm afraid Joe's going to miss it," she breathed anxiously, and then, glancing back, she saw Joe on the gay pony, and the array that followed him dazzled her eyes and held her almost pulseless.

There were floats of every kind, hay wagons painted to represent flags, girls, in white with the state seals on their breasts, while flags and stars and stripes and ribbons and flowers waved and nodded from every conceivable place. Fifty steers followed, all draped in white, with flags and wreaths, and six Priscillas on milk-white heifers kept guard on either side of this herd.

Following these came a hundred colts trained to walk side by side, and roped together with bunting, and wearing peaked bonnets of red and white and blue. Then came a bunch of white pigs, scrubbed to shining, wreathed with flowers and guarded by little boys in scarlet. After the pigs came sheep, cared for by their faithful collie dogs, and after the dogs came a dozen pure-white geese harnessed with red, white, and blue ribbons, and apparently driven by a pair of their own kind, seated in a bed of flowers, in a little cart made on purpose for them. The two in the cart were dyed and painted in the most approved national way. The wings were striped to represent flags; their backs were blue, with silver stars; their legs were banded in red, white, and blue, while long ribbon streamers floated from their wings and tails.

Many were the outriders needed to keep this procession intact, but Uncle Sam was up and down the ranks, watchful, alert.

Last of all came a great white horse, and upon his back a rider all in white, with a heavy veil entirely concealing his head. He carried a banner:

LIBERTY NOT LICENSE,
LIFE NOT DEATH,
AND
A SANE FOURTH!

A great shout went up as Uncle Sam tied the flying bunting to join the ranch procession to the ranch carriages, thus uniting all in one grand whole. The judges on the grand stand signaled for silence, and Joe as Uncle Sam took his place at the end of the procession, and stood beside the great white horse with his white-veiled rider. The geese were in front. [CONTINUED ON PAGE 15]

The Housewife's Club

MUSTARD PICKLES—One quart of small cucumbers; one quart of large cucumbers, sliced; one quart of green tomatoes, sliced; one quart of small button onions; one large cauliflower or cabbage, chopped, and four green peppers, cut fine. Make a brine of four quarts of water and one pint of salt, pour over the mixed vegetables, and let stand overnight. Then heat just enough to scald, pour into colander, and drain. Dressing: Mix one cupful of flour, six tablespoonfuls of dry mustard and one tablespoonful of turmeric with enough vinegar to make a smooth paste, then add one cupful of sugar and sufficient vinegar to make two quarts in all; cook mixture until thick and smooth, stirring all the time. Add vegetables, and cook until heated through, then seal in jars.

D. L. H.

USE CRACKER CRUMBS—A teaspoonful of cracker crumbs sprinkled over the top of berry pies just before the upper crust is put on will prevent the juice from running out. L. M. T.

FOR JUICY PIES a delicious, jelly-like thickening may be made by adding one tablespoonful of instantaneous or minute tapioca to the sugar used for sweetening.

C. A. B.

AN IRONING-BOARD PAD made of the desired thickness and laced over the board through half-inch rings sewed to the edges is very convenient, especially if used with one of the new boards which is convertible into a work table

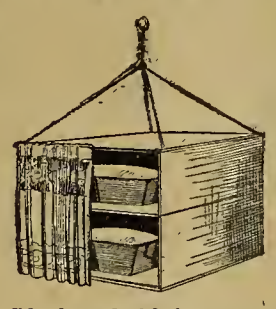
by the removal of the pad. The muslin pad cover must be basted to the pad, and removed when soiled. The pad itself will last for years. L. C.

A GOOD CLEANSER for white and light-colored woolen materials, laces, chiffons, and so forth is made by adding five cupfuls of white flour to each gallon of gasoline. The flour will dissolve as thoroughly as sugar in water. If materials are very badly soiled rub on washboard the same as if soap and water were used. C. A. B.

IF DAMPENED SLIGHTLY ashes may be removed from a stove or fireplace without creating any dust. C. A. B.

TO CUT A ROUND LAYER CAKE, from the center of the cake cut a circular piece, using a baking-powder can for this purpose if you happen to have one. Then cut the pieces from the outer edge of the cake to this circle. Afterward cut the small round piece into four pieces. This is an economical way of cutting cakes used at picnics and church socials, as it does away with the long ends so wasteful in the usual piece of layer cake. A. Y.

BREAD-RAISING HINT—On cold winter days bread is slow in rising. Make some hanging shelves, and after the dough is shaped into loaves place in the shelves and hang near or above the stove. The hanging shelves should be made of light dry-goods boxes of any convenient size, and a heavy curtain should slide on a wire or string across the front. If the shelf is removable the box may hold the bread pan during the first rising. MRS. F. W.



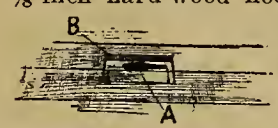
TO REMOVE INK STAINS from the fingers rub the stains with a lucifer match dipped in water, and then wash with warm soap and water. L. M. T.

TOASTING—If bread is to be toasted in any quantity try setting it in the corn popper instead of burning your hands trying to use a fork. L. M. T.

TO BROWN PIES EVENLY—The housewife who wishes her pumpkin, lemon, or custard pies to come from the oven an even brown color sprinkles the tops with sugar just before putting them in.

L. M. T.

TO MEND A FLOOR—A few weeks ago when mending a cavity in a floor (a ⅞-inch hard-wood floor) I changed the usual method followed by so many—the "tin strip" way; instead, the cavity was chiseled out smoothly to a level, and fitted with a ⅞-inch piece of wood, leveling same to fit snugly, using finishing nails to fasten it. I took pains to do a neat job. After two weeks the patch could hardly be noticed, and to-day it is as strong as any part of the floor.



J. E. R.

The Light of His Eyes—Continued from Page 14

Various prizes were awarded, and the speaker said: "We know that the training of farm animals and creatures is often difficult and sometimes dangerous. But the boy who can train a pig or a body of geese to perform in a parade deserves great credit for patience, perseverance, and gentleness. We will take a vote from the crowd, 'ayes' for the geese, and 'noes' for the pigs, and the one getting the greatest volume of voices carries the prize. Ayes, for the geese!" he cried. "One, two, three!"

Such a volume of sound unsettled the well-behaved and behaving animals! The geese flapped their wings and the two in the cart rose, circled the parade, and settled down on Joe's shoulders. A wild clamor ensued and the prize was awarded the geese as the most unique unit.

"Will anyone who knows tell us who first thought of this display from the farms and ranches?" the speaker's voice was insistent and demanded a reply.

"Joe," bellowed Hiram, standing in his massive height above those around him. "Joe," cried the speaker, "come forward, the wish of your heart is granted to-day."

A babel of voices called, "Joe, Joe, Joe!" and many hands pushed him forward.

The boy lifted beseeching eyes to the great man above him. "It was Hal, just as much as it was I," he said firmly. "Hal must come too, for the wish is ours together." The white-veiled figure stood beside Joe on the platform. Tongue-tied for a moment before that surging crowd Joe stood rigid, then fired by the force of the mighty import of the occasion he lifted his hat, waved it to the crowd, and spoke in a flood of words.

"Men and people: The one thing I wish to-day is not a gift of money, nor of anything for myself or for the use of any person or thing. I ask," here his voice was clear, incisive, insistent, "I ask the gift of all the dangerous fireworks in this town. I ask that every boy and girl, man and woman, every storekeeper, everyone who has anything of an explosive nature to give it to me, here and *now!*"

Joe flung back the white shield from the figure beside him, and Hal Perkins stood forth, not the gallant figure of the year before, but, instead, a boy with a powder-blackened face, a boy with darkly bandaged eyes, his whole figure shrunken from the fierce shock, and the fearful agony of the losses he had endured.

"Look at me," invited Hal. "For the sake of Joe, and for the sake of the children who may be saved from my terrible fate, I stand before you. People, give Joe what he has asked to-day, the fireworks of your town, and pledge yourselves neither to buy nor use any of the same sort in the future. But let me say, until this moment I thought I was blind, but as soon as Joe took that veil from me I knew I could see. In spite of the bandage, in spite of everything—*I can see!*"

Came pandemonium. Came the doctor to lead Hal away. Came the voice of the speaker, "Praise the God of battles, the boy sees again!" Fireworks of all descriptions were heaped upon the platform, and loads of them were piled into hay wagons, and while Joe and Hal heard nothing but the exultant cry of the doctor, "He sees, he sees!" they knew that they had their hearts' desire, and more—for Hal would be well again.

"You owe this more to Joe than to me," advised the doctor, "for he kept you sane of mind and spirit."

"Maybe," supplemented Hiram, "there's a little debt to God who made Joe, and who put into him the spirit to help and the mind that can think of the right things to do. Most of us are willing, but we can't execute—we don't know how—" Hiram paused, thrust his hands into his pockets as though searching for something imperative, then blurted out nonchalantly, "Isn't it about time to unload the ice cream and the pink lemonade?"

E.W

Inspiring Thoughts for Sunday

The Community Builder

By the Rev. Harry R. McKeen

This is the story of a pastor who made his church an influence seven days in a week; who put religion into the fields, into the kitchens, into the recreations of his people till they came to know it as a bigger thing than merely attending church or raising money for the support of the church

Chapter VII

THE minister looked upon the problems of these people as his problem. Their success meant prosperity for him and liberal gifts to the benevolent boards of the church. If he could aid them in increasing the incomes from the farm he was making more certain his own salary. The increase in a few dozens of eggs; a few hundred pounds of cream; the raising of an extra steer; the saving of another pig from a litter, or the production of an extra ton or two of forage were in themselves a small thing perhaps, but in the aggregate they would pay the running expenses of the church and provide for many other things besides that would go into improvements and comforts for the farm homes.

Preaching the Gospel of Labor

At the last institute a road demonstration was planned. The state highway commissioner was coming to lecture, and his engineer was to have built a mile of road. The people were to furnish the power and machinery and the engineer to supervise the work. There was great interest in this experiment, and double the amount of power needed was offered, two big engines being among the offerings. Unfortunately a heavy snow fell and this part of the work had to be called off. Enough enthusiasm was worked up, however, to secure the grading of about twenty miles of road, leading out in different directions, thus enabling the farmers to haul their crops to town at less expense and incidentally bring the church nearer to the people in the outlying districts.

By the church and its pastor showing an interest in the affairs of the people they began to be interested in the church and its program. It was found that by the preacher talking knowingly about the farmers' business and understanding their problems, they were willing to listen when he presented religious matters to them.

This preacher tried to be a man among men, meeting them as a man and demanding that they treat him as such. He considered a man his friend when he quit calling him "Reverend" or "The Preacher," and addressed him as "Mack," and he did not feel any loss of dignity in the change either.

How to reach these people was the problem at first. They had a poor opinion of preachers in a general way, looking upon them as sort of "sissy" men and "mollycoddles"—men too lazy to work and only fit to grace a pink tea, a quilting party, or to be darning the stockings. The idea of a preacher doing real work was preposterous to most of them. They acted just as though a minister was made of a different kind of clay from other men, and the mere word "preacher" was an invisible barrier that was almost insurmonntable.

This particular preacher got over the barrier and into the lives of these people by demonstrating that he could do their work as well as any of them and better than most of them. He had been raised on a farm and knew how to work hard and efficiently.

The way to show his prowess as a farm hand was opened by a young farmer who was the community skeptic, and took a delight in showing up preachers and church people whenever they crossed his path.

Harvest hands were scarce, and this particular man needed help. He had heard the minister speak about "running a binder" and "stacking grain," and he decided to "give him a chance, but he didn't think his energy would last much more than half a day at most."

One day when the harvest was about over the preacher and the farmer had it out over the question of religion

The preacher did not know about these opinions until later, but he did want an opportunity to study the young man at close range, so he accepted the opportunity to work. He ran an old worn-out binder for seven days, and put up with poor canvases and cornstalks getting into the carrier and under the grain table. It was a task at times to keep sweet over his troubles, especially when the twine went bad in some particularly heavy grain, but he knew more depended upon him than merely cutting a crop of wheat.

There were great possibilities in that man, and the preacher wanted to win him. Incidentally, at the noon hour and evenings, the church was brought into the conversation in a casual way, and its mission was discussed.

The final test came with this man when the minister built the wheat stacks. They were acknowledged the prettiest in that country.

One day when the harvest was about over the preacher and the farmer had it out over the question of religion. It was a royal battle. The minister convinced the young man he was on the wrong track, and to-day that farmer is one of the strongest men in that church.

The news of this trip into the harvest field spread all over that country, and the people began to talk about "one preacher that was not afraid to work and knew how." Men rode miles out of their way to see those grain stacks. Then they began to come to hear him preach. It wasn't long until the church was filled.

The pastor ministered to all these without partiality. During the entire pastorate he has never heard an argument over the particulars of this cosmopolitan church. The people ignore their differences and magnify the many points of belief they have in common. The Lutherans came and asked him if he would prepare their children for confirmation just as their preachers did. He had a class every Saturday, and then received the young people into his church just as a Lutheran minister would have done.

He was called to the homes of the Lutherans to christen their babies. This was a festive occasion and brought him into close touch with these good people. He was received into the homes of the Mennonites on the same plane as their own ministers. He was always invited to preach a sermon in English at their funerals, and finally was selected to marry their young people. These weddings were the most elaborate of his experiences. The whole German portion of the community came, and this gave opportunity to reach additional lives.

[TO BE CONTINUED]

Thoughts

By Eric Waters

"YOU must be very lonely, Miss Mary?" "Oh no, not often. You see I have my thoughts—such pleasant thoughts, too."

These words spoken by a Shut-in reminded the listener how large a part of life's joys are in the imagination. Shut-ins—the houseworker, the mother nursing her child—may travel afar; leave drudgery behind to revel in realms of the spirit.

"Yes," the invalid went on calmly, "a cruel fate took away health, but nothing could blot out thoughts or memory; could make me forget my dreams."

How curious is the unknown thought life of the companions of our daily lives, each living a life exclusively his own, walking in a world apart. Happy, indeed, if the thoughts are altogether lovely, or at least not unworthy.

It is a curious fact, known to many old people, that life becomes more interesting as the years go on because the wider knowledge of people and things enlarges the mind and sympathies.

Happy are they who, when the shadows lengthen, when strength fails, may draw from the treasure-house of memory beautiful thoughts that stand out clearly against the western sky.

A Fourth of July Luncheon—By Mary Eleanor Kramer

MAKE the luncheon color scheme that of the national colors, red, white, and blue. A cunning centerpiece may be evolved by the use of tin soldiers. Make a fort by the use of a white pasteboard box of convenient size turned upside down and marked into oblongs to represent brick. Color the bricks by the use of a red lead pencil or water colors. Place in the center a flagpole surmounted by a flag. Arrange the soldiers on top of and round about the fort. The color scheme may be carried farther by the use of white place-cards the corners of which are decorated with a tiny flag in water colors.

And now for the feast. A cold luncheon will be in order.

MENU

Chicken in Aspic
Stuffed Tomato Salad Saltine Wafers
Cottage Cheese Balls
A Dish of Snow Ribbon Cake
Iced Tea or Lemonade

CHICKEN IN ASPIC—One large chicken will be sufficient unless the luncheon is to be served for a large party. Cut the chicken as for a stew. Cook until the meat will drop from the bones, then remove from the fire and strain through a colander. Strain the stock again through cheesecloth, and add to it a half package of gelatin that has been dissolved in a little hot water; stir well and set aside to cool. Bone the chicken, and chop rather fine. When the stock has partially congealed add the chicken, stir well; then pour into individual molds that have been rinsed in cold water. For flavoring use salt, pepper, and a little onion juice, if liked.

When ready to serve turn the molded chicken out, garnish with parsley and very thin slices of lemon.

STUFFED TOMATO SALAD—Select firm, ripe tomatoes of even size. Dip into boiling water for a moment, then plunge into cold water and rub off the skins. Cut a slice from the top of each tomato, and with a small spoon scoop out the pulp. Chop together a little white cabbage, a part of a cucumber, a little onion, and the tomato pulp; salt and pepper to taste, and with this mixture refill the tomato cups; heap on top of each tomato a liberal quantity of mayonnaise dressing; serve on individual service plates, on crisp lettuce leaves.

For the above salad may be substituted a good vegetable salad, if desired, made as follows:

VEGETABLE SALAD—Cook tender young beets, skin, and stand in vinegar overnight. Have ready some cold potatoes that have been boiled in the skins. Peel the potatoes, cut into dice-shaped pieces; dice the beets; slice spring onions very thin; roll tightly leaf lettuce, then cut into inch pieces with the kitchen scissors. Mix together the beets, potatoes, and onions; arrange in a heap in the center of a salad dish, and garnish with the lettuce roses and slices of hard-boiled eggs alternately. Marinate with French dressing.

COTTAGE CHEESE BALLS—Prepare the cheese in the usual manner, adding salt, a few chopped pimientos (if liked), and a little pepper and cream. Form into balls, and arrange on lettuce leaves on a pretty plate.

A DISH OF SNOW—If an ice-cream freezer is not at hand this dish may be substituted for an ice. Grate a fresh cocoanut, or the shredded package goods may be used, and heap in the center of a glass dish. Beat the whites of six eggs to a stiff froth, add one-half cupful of powdered sugar, and flavor with vanilla. Beat thoroughly, add one pint of thick cream, and beat again. Pour around the cocoanut, and chill before serving.

STRAWBERRY ICE CREAM—One cupful of crushed strawberries, one cupful of sugar, mix thoroughly; add to this the stiffly beaten whites of four eggs, and one quart of sweet, rich milk. Stir, pour into the freezer, and freeze, stirring often. Pack in sufficient ice, and allow to harden from two to three hours.

RED, WHITE, AND BLUE CAKE—One cupful of butter, two cupfuls of granulated sugar, one cupful of milk, three and one-half cupfuls of flour, three level teaspoonfuls of baking powder, whites of six eggs. Sift the flour and baking powder together three times. Add the milk and lastly the eggs: flavor to taste. Divide the batter into two equal portions. To one portion add a few drops of pink fruit coloring. Bake in four layers. Put together with a white icing; ice in white, and decorate with small red and blue candies made to form the dates 1776-1914. For the named desserts a fruit punch may be substituted if desired.

FRUIT PUNCH—Mix together one cupful of sugar and one cupful of water, bring to the boiling point, and let boil ten minutes. Remove from the fire; when cool add one pint of any preferred fruit juice (canned fruit), the juice of five oranges, the juice of five lemons, and strain through coarse cheesecloth. Add sufficient cold water to make one gallon of the liquid. Just before serving pour into the punch bowl, over a block of ice. Slice very thin three bananas and add to the liquid. Over the top strew a handful of fresh mint leaves, and serve in sherbet cups.

E.W

FARM and FIRESIDE

EVERY OTHER WEEK - - THE NATIONAL FARM PAPER

SATURDAY, JULY 18, 1914 *5 CENTS A COPY*

ESTABLISHED 1877

Poison Ivy!

LOOK FORWARD! THESE GOOD THINGS ARE COMING!

Another Kind of "400"

You've heard, of course, about "the 400" of New York City, which includes the society leaders and the so-called smart set. Well, Los Angeles has a 400 also, and they really deserve the name "smart set," though in a different way. We refer to the organization of 400 milk producers who have been smart enough to market their milk co-operatively in Los Angeles in spite of cutthroat competition by city dealers and dire predictions of "it can't be done." The plan has now had a five years' test and is a thorough success; the 400 have increased as the business has enlarged. "Too much competition, too great an investment, farmer folks won't hold together"—these are some of the excuses given for the failure of similar attempts to sell milk co-operatively in large cities. But when you've stood oppression for a long time, as the Los Angeles producers did, and really have your dander up, the usual petty peanut methods of smashing farmers' organizations are about as effective as a mosquito trying to stop a fast train by sitting on the track. Anyhow the association has been going ahead and doing the work it started out to do, which was to raise the prices producers got for their milk without holding up the consumer. Mr. G. W. Shaw, secretary of the association, tells in the next issue of FARM AND FIRESIDE just how the whole thing was organized and is now managed. It's the kind of a story you read about and say, "I wonder if that's really so." In this case it is so.

Tons of Grasshoppers

Kansas is crowing over the big wheat yield this year. Last year she had grasshoppers in abundance. In fact, the hoppers came in such numbers that the country was threatened with entire crop ruin. But Kansas was able to spring back to the situation with such force that the grasshoppers were routed. It was a fight, and a successful one. The story of that fight will be given in the next issue by a man who was on the scene of the battle and in the thickest of the fight.

Reform the Fairs!

Have you ever thought how silly and useless a good deal of our exhibition work is? Does the best farmer, fruit grower, or stockman get the prizes? or do they go to flukes, accidents, and stuffers? We have an article from C. M. Weed on fruit and vegetable exhibitions which discusses this question. It won't interest you if you think the fairs are run just exactly right.

What a Hog Did a Horse Undid

We all know Shylock's cry in Shakespeare's "Merchant of Venice" when his daughter ran away from him—"Oh, my ducats; oh, my daughter!" His real sorrow was the loss of his gold ducats. In our story of August 1st the knotted skein of wooing is unexpectedly disentangled by the sickness of—but that would be to spoil the story by telling.

Early-Morning Cooking

America has summers as hot as those of southern Europe, but it makes far less use of the cool of early morning than do Spain and Italy. Why not cook for the whole day while dew is still cool on the grass and the sun has not stared the breeze into silence? Refreshing and nourishing recipes which can be prepared at dawn and eaten when the family is ready for them will be given our readers.

Fresh Air and Beauty

There are few things from which we can give and receive more pleasure than from attractive looks. It is a real help and refreshment to see bright eyes, white teeth, silky hair. They uplift us like a fine sunset or a well-ordered house. When our neighbor has them it is easy, somehow, to run down the road and visit her a few minutes; when we have them ourselves the neighbors seek us with affection. Besides, in that case we can always find a pleasing picture in the mirror even if we are left alone! Mrs. A. V. R. Morris says it is easy to imprison many of the beauties of youth. She will tell us how.

WITH THE EDITOR

A YOUNG girl is all right; but what sensible man of mature years would take one when he could get the hand and heart of an old maid of the right sort?

I know the name and address of an old maid of the sort I mean, but I'm not going to tell the sensible fellows who read this paper who she is or where she lives, save that her state is single blessedness and Illinois.

I don't know when I've received a letter which pleased me more or gave me a keener sense of the fact that we of the FARM AND FIRESIDE company are a great band of neighbors. Here is the letter:

A Testimonial to Farm and Fireside

I am going to tell you now what your paper has done or helped to do for me in the past, almost ten years of my lonely existence.

In the first place I'm a German by descent. Am at present thirty years of age; had a good Christian daddy, but he died when I was about twelve years of age, and his good Christian influence was gone, but he had already instilled into my young mind the value of a Christian character which I intend to retain through life.

Then at about sixteen years of age I met the dearest friend I'll ever know. About two years later he fell sick and died, and I have been a broken-hearted old maid ever since; but if you should take a notion to print this keep still about the old-maid part, as when I'm through telling you what I have to say I might be deluged with letters from the marriageable readers of your paper, and I never intend to marry at all.

At about twenty years of age I moved to a near-by village, and a short time after some good friend, I don't know who, sent me a copy of FARM AND FIRESIDE.

It was then I was roused from the lethargy of that awful trouble and awakened to the fact that I had a place in the world to fill; that the world expected me to do something and be something, and I set out in earnest.

After five years of life in town in which I could do most nothing but raise a few half-fed chickens and a little garden, I moved back to the farm I had left, and then I began in earnest.

I rebuilt fences (for the widow who owned the farm); tore down a hen-house and rebuilt it into a sensible one; took down an old closet, a smokehouse, and repaired a granary; raised the sagged roof of a big implement house and helped rebuild a fence. I can't tell how many rods of fence, some barbed wire, some woven wire of the four-foot kind—and oh, yes, I can set posts as straight and solid as any man, and cut hedges, and so many other impossible things I won't tell all for fear you will think I am lying.

The next year I concluded if others could farm I could too. So I raised some corn and oats that year and the two years following, adding the truck-gardener's business also.

This year I am farming yet. I sowed seven acres to timothy last month which is coming up fine; am putting in four acres or over of clover, as I intend to buy a cow this fall and expect to get enough clover hay out of it to do her this coming winter, and next year I shall fence it for pasture and plant more for hay.

I am going to plant seven acres to oats, about eleven to corn, two to beans, one-half acre to sweet corn, one-half to cucumbers, one-half to sunflowers for my flock of fifty or more Langshans, and cantaloupes and watermelons galore.

I will also plant tomatoes, squash, citrons, beans, peas, onions, beets, egg-plant, cabbage, celery, potatoes, parsnips, pumpkins, and perhaps some more kinds, as I'm still a market gardener of a very successful sort. And I'm a fruit grower too.

Now, my friend, don't think I am fooling you, as I am a remarkable person and can prove it if you care to find out. Don't think I hire a man to do my farming, as I have three horses of my own, keep two for a friend, and do all my own plowing, and other field work except cutting oats.

You may wonder if this is all I can do. No; I can build furniture, buildings, or a house if I want to. I am a fine painter, either for a two-story or one-story building or on inside work. I can paper as well as any paper hanger, can work in concrete, build a flue and such like, and yes, they say I'm a fine cook, can sew, crochet almost anything that ever was crocheted, embroider, and sole and patch shoes.

I am a great lover of horses. They come at my call and rarely have to be driven to do anything I ask. I am a fair veterinarian also.

And say, I studied medical works for almost twelve years of my life.

Educated to death, do I hear you say? No, not a bit. But just as hungry for knowledge as ever. I have gleaned a lot of my education from FARM AND FIRESIDE and other farm papers, and crowning all, the Bible.

Don't think, Herbert, when you read this, that I have had an easy time to acquire this education, as I have done this under difficulties and sorrow that would have sent anyone but an iron-willed person down to despair, and Hades itself, perhaps; but with God's help I am surmounting all difficulties.

Hope Was the Cure

I've a good notion to tell you all who she is, but it wouldn't be fair to her. And I would rather be unfair to those who might be interested in the matter than to a valued correspondent.

There's hope in this letter. She didn't spend her life in moping and mourning. She found in the earth and her kindness and fruitfulness a comfort and a career. There is something about work which keeps the soul swept clean of rubbish and cobwebs.

Isn't it a blessing that all the women have not learned to do for themselves as this girl has done? What useless creatures the men would be in such a world! Sometimes I think they are fooling us all the time, and could do all the world's work if they would set their minds to it, and that they let us do some of it only out of pity. We'd be so out of everything and helpless if they didn't allow us to strut about and crow and pretend we are chasing away hawks (when they know there isn't a danger within fifty miles), and occasionally scratch up something choice for them to eat, to which we call them with loud clucking (and usually eat it ourselves as they approach)!

This is the finest testimonial to the value of FARM AND FIRESIDE I ever received. Isn't it worth while to do a work which even once in a while arouses a sleeping soul from its lethargy, and then serves as a guide to it in the labor it undertakes when it awakes? I assure you that I feel that it is worth while.

I know you'll all wish this nice girl good luck and every sort of happiness which so competent a person may attain—at the age of thirty. Thirty is young, and many a person has changed very firm resolutions after attaining it. But I can't give the name and address for all that.

Herbert Quick

ADVERTISEMENTS IN FARM AND FIRESIDE ARE GUARANTEED

Carrying the School to the Pupil

AUSTRALIA is making use of the automobile to connect up the children in a sparsely populated country with a schoolmaster. The teacher thus employed is a skilled motorman as well as a competent teacher. By this Australian plan the teacher carries a supply of books and teaching aids and stays two or three days at each home where pupils are to be instructed.

Is there not a hint in this for almost pupilless isolated areas of our own country where the teacher vegetates with merely a half handful of pupils?

The itinerant rural teacher with his motor could serve several such districts in some localities and carry with him a breath and breadth of outlying thought and improvement that would be a stimulus to his pupils. There would also be possibilities in the way of teaching rudimentary agriculture more effectively than in the stationary district school of a half-dozen pupils were the teacher adapted to and equipped for his job.

ABOUT ADVERTISING

FARM AND FIRESIDE does not print advertisements generally known as "readers" in its editorial or news columns.

Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers, but if any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction.

FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. $2.50 per agate line for both editions; $1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2¼ inches, length of columns two hundred lines. 3% discount for cash with order. Three lines is smallest space accepted.

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THE AIRSHIP—A Panacea for Farm Disorders

By Charles Barnette Wolf

SOONER or later the aviator and the farmer are going to clash. Farmers living adjaceut to our great aviatiou centers hardly feel safe any more in cutting their hay or grain without first going over the field aud picking out the bones and fragments of airship that are left kicking around underfoot after every field meet. Press dispatches tell of one farmer whose team took fright at au unknown aviator—one who had fallen out of his machine several weeks before and got lost in the hay—and tore a perfectly good mower all to pieces trying to climb a rail fence with it. In several other instances aviators have taken their machines apart and distributed the pieces around over a farm aud the owner has had to pick them out of his harvester or threshing machine at great loss of time and money.

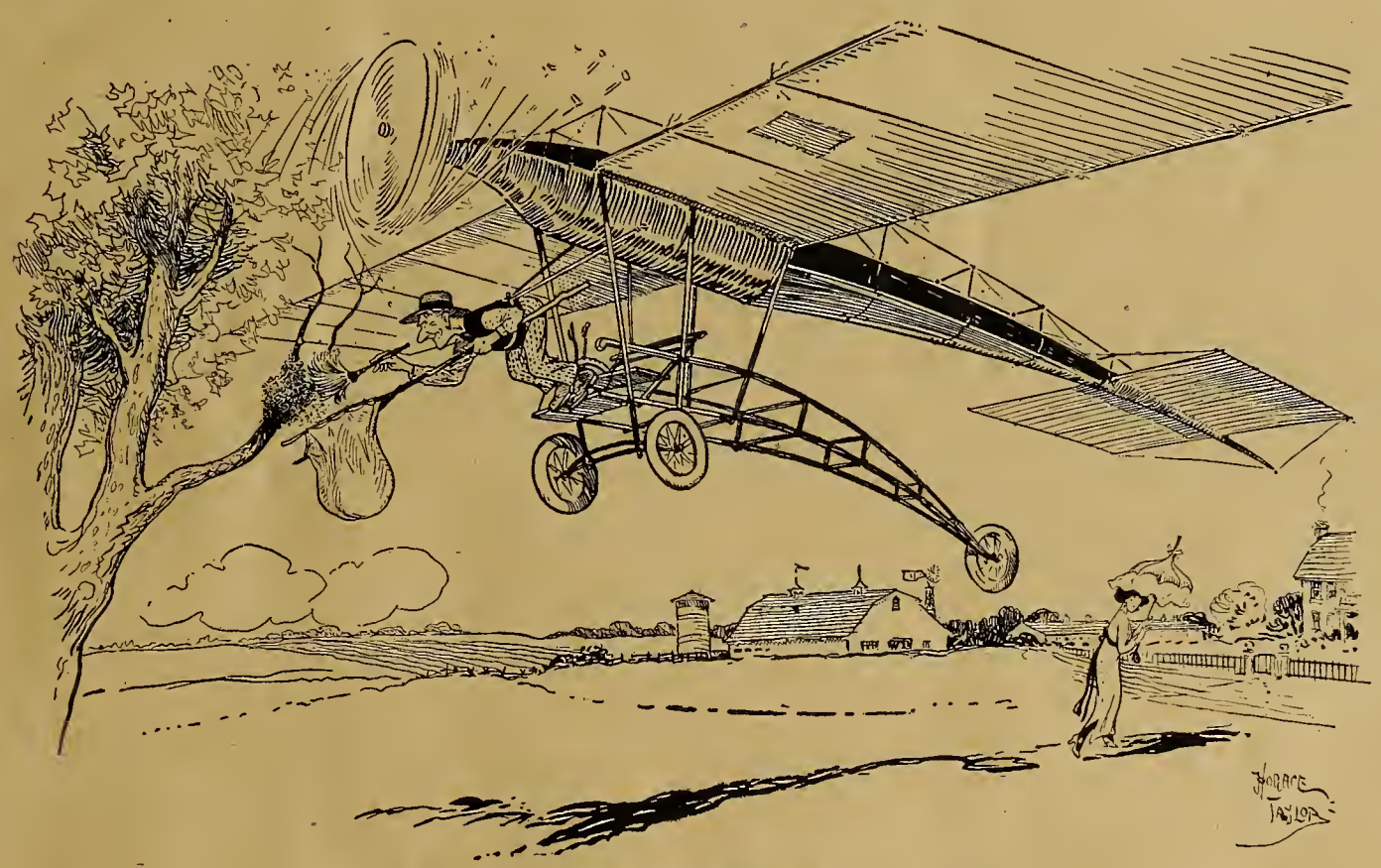
Were complaint of the airship's depredations coufined to these limited areas the difficulty might be overcome by fencing the aviation fields until science has developed a breed of airship that can be readily domesticated. A fence four or five miles high could easily be constructed, providing the posts were driven into the ground about three quarters of a mile so it wouldn't blow over and mash a township, and it would probably keep the obstreperous airship in bounds.

Unfortunately for this plan, the depredations of the airship are too wide-spread. Almost daily, press dispatches from all over the country tell of some careless aviator snipping the works off a windmill, or carrying away a patent gate or crashing through a rural telephone system, or something of the sort. These things are a great annoyance to the peaceful farmer, and he naturally looks upon them as an infringement of his rights. The farmer doesn't like to get his mower all clogged up with false teeth aud pieces of linen duster and scraps of machinery which friends of the deceased have neglected to gather up, and he can hardly be blamed. It also provokes a farmer to have his windmill pump workiug overtime because there's no wheel to stop it wheu the wind quits blowing, or his stock left standing arouud a dry tank with their tongues out, while some dub of an aviator wears his windmill works around for a watch charm. It is equally aggravating to buy a patent gate and then have to drive over into the next county some place before you can get through it into your barn lot. To have some aviator come along and mow dowu a row of telephone poles, just as you are getting the market reports, and leave you talking away over a wire that doesn't connect with anything but the atmosphere or a plum thicket down the road, is positively exasperating. No farmer likes to talk for two or three days to folks at a distance and theu find that his remarks have been dribbling off a broken wire and piling up behind a rose bush in the side yard.

I feel, however, that aërial navigation is going to mean a great deal to all of us, especially those who have no hope of flying except iu this world, and I should regret to see its progress retarded by bitter feelings between the aviator and the farmer. I believe if the farmer will be patient for a time he will see that aviation is a great boon, and as boous have become almost extinct in the rural districts in recent years the farmer certainly cannot afford to knock any of them on the head.

It must be admitted that early-day aircraft, when we had only the cumbrous balloon to depend upon, was of little practical advantage to the farmer. Breaking a balloon to ride took much time and patience, while harnessing it required too much collar and breeching. This limited the usefuluess of balloons on the farm to coveriug a stack of hay or makiug lambrequins for the hired man's bed. In fact, the balloon of twenty-five years ago, when the writer was a boy on the farm, was often a detriment to the farmer.

In those days, when the world rested on the farmer and the farmer rested principally on circus day, we sometimes attended the county fair on Thursday when the balloon was advertised to go up and the children got in free. I remember that we nearly always came home with a "crick" in our necks and bitterness in our hearts because the aëronaut got full before the balloon did, and made his thrilling ascent on a pile of hay in a box stall.



It will then be possible to get the bees without difficulty

Sometimes the balloon and the aëronaut would get full simultaneously, but the aëronaut would nearly always be the fullest. Sometimes he would have such a load that the balloon couldn't get him off the ground but would just drag him across the fair ground and scrape a few roof boards off the hog pavilion with him. This was naturally very exasperating.

Once we stayed so late watching a performance of that kiud that the cattle broke into the green corn and got inflated with colic till we had to tie flatirons on their tails to keep *them* from ascending. We lost several good flatirons that way.

The balloon that finally did get full, at a county fair twenty-five years ago, hardly ever did so till it was time to do the chores. I remember one old slab-sided balloon which monkeyed around so long trying to get full that the parachute finally got tired waiting and went up without it. The balloon followed a few minutes later and lazily turned over on its back to smoke. When the man in the parachute cut loose to come down, he fell into the balloon and was drowned in the smoke. This may seem exaggerated, but it is well authenticated. I authenticated it myself with a whitewash brush. They had to dig the man out of the balloon with a smoke consumer.

Such harrowing incidents were not uncommon at county fairs in the early days, and the farmer who had driven thirty or forty miles, expecting to see something interesting, naturally went home disappointed and especially prejudiced against aërial navigation. This old prejudice has made it harder for the modern airship to get iuto the farmer's confidence. He fails to realize that the balloon was merely the ox wagon of aviation and that the modern airship has possibilities far beyond it.

Iu the matter of putting up hay for instance—a line of activity in which the balloon was practically useless—the airship certainly gives great promise. I haven't the slightest doubt that the farmer of the future, with his baru roof on hinges so he can open it out like a baked potato on a dining-car, will sail out to the hayfield iu his airship aud bring in a stack of hay at a time with grappling hooks aud drop it iuto his mow. The barn will of course have to be made with slat sides like a corucrib so the air can escape when the hay lands. Dropping forty tons of hay iuto a mow all at once might otherwise create an air pressure that would induce the siding to cavort about the landscape, and it might disarrange the statuary in the front yard. This system will necessitate the remodeling of a great many barns, but it will save the expense of having someone in the barn to mow the hay away; the hay will, in fact, be more wholesome for live stock if allowed to cuddle down in the mow without assistance. Fragments of injudicious hired men and splinters of pichfork handle scattered through a mow full of hay are liable to cause mildew or choke a valuable animal.

Not ouly in the matter of putting up hay is the airship's usefulness apparent, but also in the handling of bees. Bees are a profitable side line on the farm, yet few farmers handle them. I have known farmers to climb down off a mower and let a team run away, to keep from handling even a few large Clydesdale bumblebees—haven't you?

The small dark brown domestic bee has a provoking habit of laying down its tools and swarming—a ridiculous custom which no other live stock follows. The busy farmer doesn't like this. He likes to know when he puts his live stock some place that he can lay his hands on it wheu he wants it. That is why the few farmers who do keep bees seldom insert their hands into a beehive—they are afraid the bees won't be there.

Bees are very whimsical, also, about their swarming. They seldom wait until the farmer has finished his labors in the field and doue the chores and has leisure to pick his way carefully up the thorny locust—where they are doing a trapeze performance in a dissatisfied cluster as big as a ham—and saw off a limb.

They pick the most incouvenient time they can find, and then they are sore if he doesn't drop everything and listen to their complaints. They eveu send out sentries to keep tab on what he is doing. When they fiud him at the far end of the field, plowing coru with a team of colts, and the children down at the swimming hole in the woods, and his wife with a kettle of jelly on the stove, they start a war dance in the front yard.

You know the rest. The housewife dashes from the door with her apron over her head. The cat, doziug on the wash bench, leaps into the apple butter that is set on the porch to cool. The dinner bell peals forth a wild alarm.

The farmer hooks his cultivator handles up and mounts the frame and does a chariot race, seeing visions of the house in flames and his wife leaping from the up-stairs window with a bedstead in her arms.

E-W

Fumes of burning jelly scent the air and convince the farmer that his wife has perished in the flames, till he sees her dashing madly across the hog lot, beating a dishpan with might and main, while high overhead wavers a small chocolate cloud of bees wrangling whether to take to the woods or stay for the concert. Just why beating a tin pan should cause a swarm of bees to forget its destination and fool around till its ticket expires is beyond comprehension, but such is

We lost several good flatirons

the case. I have seen it worked many a time.

The farmer shouts encouragement to his wife and grabs his buckskin mitts. He dumps a broody hen from a last year's hive, swabs it with hickory leaves, and dashes to the fray. Hours later we see the farmer and his wife stealing quietly into the pantry to put wet soda on the places where the bees sat down.

Under the airship system the lady of the house will finish her jelly and walk leisurely to the field, under a gay parasol edged with Cluny lace, and say in dulcet tones, "William, the bees have swarmed," and William will tie his horses to the fence and oil his airship and crank it up and take his bee catcher of gunny sack and scoop them in before they find a place to settle, while his wife retires to the back parlor and plays a popular air on the phonograph. The bees, scared buzzless, will just simply huddle down in the end of the sack with their arms around each other's necks and pray.

Even greater than these utilities will be that of the airship in rainmaking. The old system of trying to produce rain by heaving explosives into the atmosphere from the ground was a failure. With an airship one can get right up among the rain bags of the celestial universe and beat the water out of them with a club, or drop a dynamite bomb on the back of a big fat one that is headed for the Puget Sound country, and splatter its remains all over a quarter section in the arid zone. This will be a great boon to the Puget Sound country as well as to the arid zone.

A simple way to make rain bombs is to fill jugs with dynamite and cork them up with corncobs. There are generally plenty of jugs on the farm if you have a hired man. As a general thing you will find them in the corncrib. The hired man and the jug seem to arrive at an understanding, on the way home from town, that it is to have the parlor bedroom in the corncrib, and sometimes he sleeps with it the first night to help it get settled in its new home. The hired man who hides his jug in the orchard or behind the sheep corral or in the hedge fence is secretive and will bear watching. I lived on one farm that had a small log corncrib full of jugs one summer, and the hired man used to sleep with the whole bunch whenever he brought home a new one. I wasn't the hired man.

In putting dynamite into jugs great care should be exercised not to excite it, as dynamite is very irritable. It is best to pick it off the roost while it is asleep, and introduce it to the jug before it wakes up. The cobs should be driven into the jugs with a ripe banana; or you might set the jugs on a feather bed and drive the cobs in with a pillow. Do not take a sledge hammer.

Where there are no clouds and the atmosphere must be churned up to produce them, a good plan would be to go up about five miles with a load of jugs timed to go off when they have dropped a mile. The proper timing for a mile drop can be ascertained by taking the mantel clock up first and dropping it overboard, noting the time carefully. When it hits the earth it will stop. The time between starting and stopping, divided by the altitude, gives you the velocity, and by making your bombs the same weight as the clock, and cutting your fuse to proper length, you can time them to a nicety.

Care should be taken in ascending, however, not to bang the jugs together and produce too much rain in one place. A three or four day cloudburst, mingled with fragments of aviator and stray bits of airship, might injure the crops and clog up the eave spouts. It would also be distressing to institute habeas corpus proceedings, in order to hold a successful funeral, and then have it spoiled by a long-continued downpour.

In closing let me add that the farmer should consider the airship seriously as a means of keeping the boy on the farm. Amusement must be provided if the boy is kept on the farm in this day and age. It must be amusement such as his city cousin has. The corn-

Drop the mantel clock overboard

stalk fiddle and pumpkin-stalk trombone of his grandsire have lost their charm. Giving him a runty calf to raise on buttermilk as his very own, has driven many a boy to the city. Get him a big forty-horse airship with curly mane and tail, one that he can sow his wild oats with and sow them rapidly, and the chances are he will stay on the farm, or at least leave his remains lying around where you can find them.

A Little Story of the Hen From the Egg Angle

By B. F. W. Thorpe, Associate Editor

BEFORE giving the results of an experiment in breeding for eggs, let me say that I have been on intimate terms with hens for a score and more years. Cross-breds, pure-breds, fancy-feathered stock, utility stock, and plain hens have all come under my personal care and observation. But for some years my efforts in poultry improvement have been confined exclusively to the Barred Plymouth Rock. Not that my faith is pinned to any one breed or variety as best for profit, but the Barred Plymouth Rock seems to have escaped deterioration of utilitarian qualities by the zeal of breeders in their feather-splitting efforts to secure fashionable points for exhibition purposes.

I have come to believe that almost any vigorous variety can be made to develop in a few years into just about what the owner or breeder of that particular stock wants it to become, provided he is willing to study and work for the results that he is seeking. Of course he must be willing and able to furnish suitable feed, care, and environment as well as to have the required knowledge and skill to carry out his breeding operations.

The work of the Maine Experiment Station in breeding Barred Rocks for increased egg production came prominently to my attention while a resident for several years of the Pine Tree State. Breeding for heavy egg production has now been in progress at the Maine Station for considerably over a dozen years, but it has only been about half that period since the discovery was made by Dr. Raymond Pearl which bids fair to double the egg production of the flocks of many poultrymen.

One of the interesting things brought out in Dr. Pearl's breeding experiments is the fact that pedigrees and exact records of the performance of poultry breeding stock count just as much in securing heavy egg production as has long been recognized a necessity in breeding dairy stock to secure heavy production of milk and butterfat.

Some of our poultry readers will remember Dr. Pearl's series of articles published in Farm and Fireside during the autumn of 1912, in which some discussion of his discovery in relation to egg production was published. I shall here merely give Dr. Pearl's plan of breeding to secure heavier egg production, in very brief and simple form.

Instead of thinking of the hen as being the main factor in helping to get heavy egg production, Dr. Pearl's experiments prove that the male bird must be considered of prime importance. The hen does not endow her daughters directly with an inheritance that will insure her being a heavy producer of eggs. The father of the pullets must be depended on to endow his daughters with the tendency to lay a large number of eggs. But in order to get the desired heavy egg producers the male must be the son of a heavy-laying mother: or, stated in another way, the daughter cannot inherit a heavy-laying propensity from her mother but gets that quality indirectly from her grandmother.

Thus it will be seen that the breeding principle discovered by Dr. Pearl is quite simple in itself, but plenty of skill and study are needed to make success sure when carrying out the breeding operations.

After giving considerable attention to the selection of foundation stock for a breeding experiment, I selected a pure-bred four-year-old Barred Plymouth Rock hen whose ancestors were strong in the egg-production quality. The ancestors of this hen were bred by the Maine Experiment Station Poultry Department. No record of this hen's laying was kept in her pullet and second years of laying. During her third year, beginning November 27, 1911, and ending November 26, 1912, this hen laid 217 large perfectly shelled eggs. The spring of her fourth laying year she was mated to a cockerel bred by Dr. Raymond Pearl of the Maine Station. This cockerel was bred according to the principles discovered and made use of by Dr. Pearl for insuring heavy egg production in his breeding experiments.

In my breeding records this cockerel is designated as "Dr. Woods," No. 1, and the four-year-old hen as "Sairy Gamp," No. 2. From this mating I secured a hatch of thirteen pullets, all of which were lusty and vigorous, and grew to maturity except one, which met with an accident.

In order to learn something of the influence produced by this mating, ten pullets were penned November 1, 1913, seven of which were the progeny of Dr. Woods and Sairy Gamp—Nos. 4, 5, 7, 9, 13, 18, 19, respectively, as shown in the chart published herewith. Nos. 4, 5, 7, and 9 were hatched April 27, Nos. 13, 18, and 19 were hatched May 10, 1913. The other three, Nos. 6, 8, and 23, were sired by Dr. Woods, but the mothers were Barred Rock hens other than Sairy Gamp. Nos. 6 and 8 were hatched April 27, 1913, and No. 23 was hatched May 10, 1913.

The chart shows the winter production of these pullets by weeks for the period of twenty-one weeks, and for comparison the production of the two heaviest-laying pens in the egg-laying contest now being conducted at the Storrs Experiment Station, Storrs, Connecticut, is given. The contest at Storrs began November 1, 1913.

Eighty-two pens are competing in the Storrs contest, ten hens to the pen, with fourteen of the best-known popular breeds taking part in the competition. The birds that outlayed my pen during the twenty-one weeks are a pen of White Wyandottes bred and owned by Mr. Tom Barron, England, who has become famous as a breeder of remarkably heavy-laying White Wyandotte and White Leghorn stock. It will be noticed by the chart that my four youngest pullets, Nos. 13, 18, 19, and 23, did not begin to lay until December and January, and No. 4 met with an accident early in December and had to be killed. From that time on my pen contained nine hens against ten in both of the Storrs contest pens charted.

After April 1st the pullets whose records are given were transferred to breeding pens, and records of some of them are no longer available.

This experimental pen was fed practically the same ration as that used in the Storrs contest, except that a portion of the animal protein was furnished in the form of green cut bone during the coldest winter months. The housing and yard space were also very much the same.

Of course, "one swallow does not make a summer," and my bred-to-lay strain of Barred Rocks may disappoint me yet; but my faith is strong that the foundation is well laid and only needs well-adapted handling, study, and care to continue to be successful for the purpose for which bred.

My belief is strong that any painstaking poultryman can make over his flock from ordinary layers into heavy producers by merely adopting these same principles of breeding carried out in this experiment.

To recapitulate, when taking up the problem of increasing egg production, if the intention is to make use of hens already on hand, the first step is to select the hen or hens which are known to be the best layers. Next procure a cock bird that is the son of a heavy-laying hen and is known to have descended from heavy-laying stock.

If you have in your flock a hen that has produced 175 eggs or more in a year, or can get such a hen of the variety preferred to mate with a pedigreed male such as I have recommended, you will be nearer the egg goal sought than is he who procures only a male bird bred for increase of egg production.

E-W

The Pen's Winter Work—A Comparison

Mr. Thorpe's Pen (At home)	Nov. 1—Nov. 7	Nov. 7—Nov. 14	Nov. 14—Nov. 21	Nov. 21—Nov. 28	Nov. 28—Dec. 5	Dec. 5—Dec. 12	Dec. 12—Dec. 19	Dec. 19—Dec. 26	Dec. 26—Jan. 2	Jan. 2—Jan. 9	Jan. 9—Jan. 16	Jan. 16—Jan. 23	Jan. 23—Jan. 30	Jan. 30—Feb. 6	Feb. 6—Feb. 13	Feb. 13—Feb. 20	Feb. 20—Feb. 27	Feb. 27—Mar. 6	Mar. 6—Mar. 13	Mar. 13—Mar. 20	Mar. 20—Mar. 27	Totals
Pullets																						
No. 4	..	3	5	2	..	3	*															
" 5	3	4	7	7	6	5	5	6	2	4	6	2	..	1	7	7	2	..	5	5	5	
" 6	2	5	5	6	..	1	5	6	5	..	..	2	6	1	..	2	6	2	..	6	6	
" 7	4	3	5	4	3	6	5	5	6	5	3	3	6	6	7	6	5	5	6	6	7	
" 8	3	6	5	6	4	..	6	5	5	6	6	2	1	7	4	6	4	1	6	6	7	
" 9	1	3	5	4	7	3	5	5	5	4	6	6	4	3	5	5	5	5	6	6	4	
" 13	..	..	..	..	..	..	..	..	..	..	4	7	7	7	5	5	6	6	6	5	6	
" 18	..	..	..	..	..	..	..	..	1	5	7	7	7	7	6	7	6	6	6	5	6	
" 19	..	..	..	..	..	2	5	6	7	6	5	..	1	5	7	7	7	6	6	7	5	
" 23	..	..	..	..	..	..	..	4	4	3	4	6	4	..	..	3	7	7	7	7	7	
	13	24	32	29	20	20	31	37	35	33	41	35	36	37	41	48	48	38	49	53	53	753
CONNECTICUT CONTEST																						
Pen No. 14	8	20	27	47	48	49	47	47	52	51	36	27	27	38	49	44	31	43	44	50	52	837
Pen No. 53	8	33	38	47	46	41	40	34	28	27	22	17	21	27	28	27	38	42	47	48	38	697

Pen No. 14 (White Wyandottes) belongs to Tom Barron of England.
Pen No. 53 (White Leghorns) belongs to F. F. Lincoln of Connecticut.
These two pens (Nos. 14 and 53) made the highest records in egg production during period named among the eighty pens competing in the contest now going at Storrs, Connecticut.

*Met with an accident; killed December 19th.

A Transplanted Northerner

And What He Thinks of His Southern Farm After Six Years' Close Acquaintance

By H. B. Gurler

IN MOST articles descriptive of land and land values the reader is inclined to be skeptical, especially if statements of rosy tint are made. We have here an interesting narrative written by a man who for over a quarter of a century has been recognized as one of the fathers of agriculture in this country. Mr. Gurler's contributions to agriculture are along many lines, though his best-known activities have been in dairying. He devised the well-known Gurler milk pail, and brought before the public the home-made silo now named after him.

Until six years ago he lived and farmed in northern Illinois, and he is distinctly a Northern farmer with Northern ideas of industry and progress. He had decided to give up farming and to spend the rest of his life enjoying the fruits of his labors, but on a tour through the South he was attracted by the prairie belt that he describes, and is now back in the harness repeating in the South the pioneer work that he performed in Illinois fifty years ago. Mr. Gurler's obscrvations are therefore those of a well-seasoned veteran farmer whom you may trust implicitly. We have visited Mr. Gurler on his large Mississippi farm, and have ourself caught some of his optimism over what that section will be a generation hence.—EDITOR.

THE prairie belt of northeastern Mississippi begins at Okolona in Chickasaw County, and extends in a southeasterly direction across Alabama. The belt is from ten to twenty miles in width. It was very little knowu in the North until within the past few years, and in a way is a rediscovered section to Northern people. In some sections now the Northern folks are in the majority. This is mostly a black prairie soil, and appeals to persons that have lived on the prairies of the North. At the breaking out of the Civil War these prairies were well farmed with the slave labor. The landowners were educated and wealthy. Our county records show sales of this prairie land before the Civil War at $75 per acre, though some of these same lands are now valued at less thau half that price.

The only way the landowners could utilize the free negroes was to rent their lands to them for cash, and the owners moved to town and the uegroes butchered up the land in a fearful manner. If this section had been occupied after the war by people from the North, these lands would now be selling for as much per acre as are the Northern prairie farms. Nature gave these prairies as fertile a soil as she did the Northern prairies, and with the longer seasons and milder climate the possibilities are greater than any section of the North that I am acquainted with.

The first point to be taken into consideration when looking for a location in which to settle is the healthfulness of the locality, for without good health nothing can be enjoyed. This prairie country is sufficiently rolling to give excellent surface drainage, so there is scarcely any stagnant water except in the bayous along the rivers. I have lived here most of the time for six years and have not had a sick day, and have been ready to eat at every mealtime in all the six years.

Part of his Jersey herd; dairying is the hope of the South

We do not have as hot weather here as in the North, the probable reason for which is that our midsummer days are shorter. The warm weather comes earlier and stays later than in the North, giving us a longer period of warm weather, but the Northern idea that it is hotter here than there is not correct.

Onr winters are mild, and we seldom have it cold enongh to form ice thick enough to hold a person. The coldest I have seen was 11 degrees above zero, and that but once in the six years. Fifteen to twenty degrees above zero is cold weather here.

It's an Excellent Grass Country

This prairie is all underlaid with the Selma chalk rock, which is a rotteu lime rock containing a high percentage of carbonate of lime, and is a valuable asset for nse on some of our lands where the lime has leached ont of the surface soil. This rock is so soft that it can be cut with a knife. It is a water-bearing rock, and when frozen is completely disintegrated. It may be applied to the land in lnmps, and will gradually disintegrate and keep the surface soil supplied with lime.

Our rainfall is 51 inches, and it is as a rnle well distributed. After studying the government weather reports covering 21 years I believe we are less snbject to dronghts than is the Northern prairie belt.

While we have a mnch greater rainfall, we have about the same nnmber of rainy days and days of snnshine as the north, but it rains much faster when it is rainiug.

I have never seen as good a grass conntry as this prairie belt, and with onr rainfall and long growing season you can see why it is so. We can grow all the grasses that grow in the North except timothy, and we do not miss it, as we have something better in our Johnson grass, which is a terror to the cotton grower but one of the stock grower's best friends. It is a very palatable grass as pasture, and also when made into hay. Stock prefer it to timothy. It is cut twice, and often three times, as a hay crop. We freqnently plow a Johnson grass pasture or meadow in September or October and sow to oats, cutting the oats the last of May, after which we get a fine volunteer crop of Johnson grass hay, freqnently as much as 1½ tons per acre. Thongh our land is well drained naturally, we need to tile-drain to get the best results with alfalfa. I now have alfalfa growing ou tiled laud and it is beautiful to look at.

Bermuda is a great pasture grass, having a strong vigorons root system that will stand tramping by stock in wet weather, and it is a great producer in warm weather, though not as early to make pasturage as some other grasses. The Japanese clover *(Lespedeza)* is an excellent pasture grass wheu it gets started. It is an annual and does not make pasture as early as white clover, but stock thrive wonderfully on it as pasture and also as hay. The fattest stock I have ever seen on grass alone were on *Lespedeza* and Johnson grass pasture. White clover makes pasture a month earlier than Bermuda and grows well with it.

All the clovers grow here. Bur clover, which is a winter clover, comes in the fall and grows through the winter. It seeds about May, when it dies, being an annual, and comes later, making winter pasturage, and with Bermuda makes a contiuual pasture.

Sheep Need Little Care

Red clover does well here when given a chance, but has not been mnch sown, as this has been an exclnsive cotton-growing section. Crimson clover is now being sown some, and is doing finely with us, growing most of the winter. The cowpea is a profitable crop to grow in our corn, being pnt in at the last cultivation and pastnred after the corn is harvested with hogs, and then what is uot eateu is plowed under.

Peanuts are another important crop. We pnt sheep on them first, and they eat the vines up clean, after which we put the hogs on, and they eat the nnts, and after the sheep and hogs are through it is hard to tell what grew on the land.

Corn grows well here. A Mississippi boy grew 214 bushels on an acre last year. Our State does not now grow more than two thirds as mauy bushels per acre as do the Northern corn-growing States, but a change is coming and we will in a few years be doing much better.

We secure excellent water by drilling through the lime rock, which is so soft that it is easily drilled and yet sufficiently hard to stand without casing, so we only need to case to the rock, and in the sand after we get through the rock, which is from 200 to 500 feet deep. A well costs us from $250 up to $350, complete with the pump. In my neighborhood the water stands 30 to 40 feet from the surface, and is good soft water.

This lime-rock country grows the best quality of animals of all kinds, including the human animal. Some men say they can pick out the men that have grown up on these lime prairie soils. Our local butchers say they can tell on the block the cattle of the prairies from the cattle that have grown on the sandy lands. We can grow fine stock here when we take advantage of what opportunities we have. Some lambs from this county recently sold in St. Louis for eight cents, and a car of hogs made up by several neighbors sold there for $7.55 on a day when $7.85 was the top.

Both hogs and sheep can have pasture here all the year by sowing winter wheat, oats, and rye, as well as rape, crimson clover, bur clover, and white clover. We have the lambs dropped in the fall and winter, with the sheep in the fields giving them no more care than in the summer. Last December we had over 100 lambs from a flock of 125. By feeding tobacco dust with their salt we can keep the sheep entirely free of the stomach worms, and we have as healthy and vigorons a flock as I have ever seen anywhere.

The labor situation here is the easiest of any section of the United States that I know about. It is all colored of course, but the negro is a better laborer than the Southern man gives him credit for being. The Southern man in many cases has not had the experience to fit him to instruct the negro in handling improved machinery. A person does not know how to do anything until he is tanght. I find the negro makes a good laborer and soon learns new methods and new machinery. We use them with all our machinery, such as the manure spreader, grain harvester, corn harvester, check-row corn planter, grain drill, and the silage cutter. On one farm I have a little gasoline engine that every negro on the farms starts, even an old mammy. The negroes make good milkers when looked after as one needs to look after white milkers in many cases, but there is this difference: the negro will snbmit to being looked after, and I have had white milkers that would be offended and quit if I examined the cows after they had milked them. Negroes are simple in many ways, and in other ways they are very sharp; they are good character readers, and I like them better the more I work them. I can take them and do any kind of work that I know how to do. I built a barn 40x110 feet with 20-foot posts and a hip roof, with this negro labor—most of it at 75 cents per day, and they boarded themselves. They are quite expert with the hoe and the ax, tools that they have been trained with. We pay about $15 to $16 per month for men, and hire the women to milk for from $5 to $6 per month.

Dairy Cows Pay Well

We have good markets here for our produce of all kinds, most farm prodnce selling higher than in the North, except meat animals. Those we ship to the Northern markets. It costs us about $55 per car to get live stock to St. Louis.

We have a creamery in successful operation at Macon, and are making good butter. There is too much cottonseed meal fed here to give the desired delicate flavor, but we shall soon learn to feed more corn meal and alfalfa hay, which with our corn silage will give us the flavor we wish.

I have a neighbor that is making quite a success with his dairy, paying himself a salary of $100 per month, and beside that paying 10 per cent interest on what his land and the improvements have cost him, and he could now sell his farm for double what the land and improvements have cost him.

We are milking 175 cows. One group of 40 cows paid us $10 per month per cow on grass alone for a period of four mouths, wheu 20-per-cent cream sold for 80 cents a gallon.

One dairy in the prairie belt makes an average of 1¼ pounds of butter per day per cow. This section is strongly impregnated with Jersey blood. Several good Jersey breeders and importers were here many years ago, before the ticks reached the prairie belt. With the coming of the ticks and the quarantine they were practically put ont of bnsiness, but they left a plain wide trail and are deserving a monument. Now we have the ticks exterminated and are released from quarantine, and the outlook is good. The cost of building is much less here than in the North, as lumber and labor are cheap. I bought lumber for my dairy barn at the mills eight miles distant for $8 per thousand feet for the piue cover and $7 for the gnm lumber that I used for the frame.

There are now ten of the Gurler type of silos in my neighborhood, and there will be more of them built, as they are the most economical that we can bnild with our low-priced lumber.

This (Noxnbee) county held the first alfalfa demonstration in the South under Professor Holden's management, and assisted by such men as Grout of Illinois and Wing of Ohio. Many years ago Noxnbee County had the honor of growing the largest hog on record at that date. The hog attained a weight of 1,600 pounds.

I came near forgetting to say anything about sweet clover, which grows lnxnriantly with us on this lime land. It is the greatest lover of lime of any plant I know of, and grows well in this Selma chalk even where there is no soil on top of the rock. We find it to make good early pasture, and also excellent hay when cut at the proper time or stage of maturity.

This grove suggests the name of Mr. Gurler's farm—"Fair Oaks"

EDITORIAL COMMENT

FARM AND FIRESIDE
The National Farm Paper

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WE ARE always glad to answer questions. That is what Farm and Fireside is for. If we can't answer the question directly we will see that one of our staff experts in the line of the question gives you an answer. But in a big family such as Farm and Fireside represents, questions don't always go one way. We want our subscribers to answer *our* questions occasionally. Those questions appear in every issue. As you read you will see them. Let us hear from you often.

HERBERT QUICK, - - - - - Editor

July 18, 1914

Effect of Cheap Farm Money

THE "New York Times Anualist" expresses the opinion that if we secure a good system of rural credit in this couutry it will give the farmers cheaper money aud more of it, but it will make of the farmer a strouger bidder for capital, aud thns render money scarcer for other interests. This may be the temporary effect, though it does not seem probable.

The effect on the amonnt of capital iu existeuce shonld also be considered. No well-considered scheme of farm credit will fail to give the best chauce to borrow to the man who desires a loan for productive purposes. That there is abundaut opportunity for money to be so used is certaiu. The reports of farmers to the Wisconsin Agricultnral College show that farms are productive jnst in proportion, uot to the uumber of acres tilled, but to the amount of productive capital per acre used on them. Precisely as the number of dollars per acre in productive capital is iucreased, the produce of that acre is increased.

Very few farms, if any, iu Wisconsin were fouud to have been overprovided with snch equipment. These figures seem to prove that money wisely borrowed for strictly agricultural purposes will at once stimnlate production, and so add to the mass of wealth for investment. In the end, of course, the increased production will tend to lower farm prices and nullify itself in that way and in higher land valnes, which are already a great and growing burden on agriculture. But, even in the eud, one can hardly doubt that the change wonld make for more money, not only for farming but for all other industries.

Express Company Food Club

THE Adams Express Company recently opened in Baltimore its "Order and Food Prodncts Bureau." It proposes to do the shopping for its customers in food prodncts and other merchandise. It filled 198 orders in Baltimore during the first week. The customer buys a money order for the price of the goods and the company gets the goods and delivers them. It has agents working up "food clubs" the members of which will buy food wherever it can be obtained on the best terms, the express company undertakiug to collect and deliver the shipments. Iudividual shipmeuts to these food clnbs were 200 dozen eggs, 50 pounds of butter, two dollars' worth of crab meat, and the like.

The farmers' organizations of the country have never been able to find organizations of consnmers with which to deal. The express companies will do a really important work if they build up such clubs. Such co-operative enterprises can never do away with the retailer because he has an indispensable work which he can do more cheaply than can anyone not trained to the fnnction; but the new movement will spur the retailer to greater efficiency, and will give farmers and consnmers the choice of methods which lead to better feeling aud greater ecouomy iu getting the prodnce into the hands of the cousnming masses. We owe this new developmeut to the parcel post. It is an open effort on the part of the express companies to meet the competitiou of the Government and to develop new busiuess. The Baltimore innovation is not local, but is cited as one local development of a general plan.

Soiling Crops and Silage

THE farm which has no assurauce against short pastures in summer should be prepared now with a supply of crops which can be cut and fed green to the cattle. Corn, rape, alfalfa, the sorghums, cowpeas, Canada field peas, and many other soiling crops snggest themselves. The matter is important. As a permanent assurance against short pastures nothing is better than the silo, but it is too late for the new silo so to serve this year. Silage has been proven by test both better and cheaper—at least nnder Wiscousin conditions—than "soiling crops."

At the Wiscousiu College farm red clover, peas, oats, greeu coru, aud a mixtnre of these were tested alongside of silage for several years as supplies during periods of short pastures. The silage furnished more aud better food from the same acreage, less labor and seed were required to produce it, and the milk produced from the silage cost less. Careful records of costs were made, and the results may be relied npon by farmers who are considering the building of a silo for this purpose.

Is It Charity?

A CALIFORNIA friend, Mr. C. F. Brouner, calls atteution to the fact that iu 1898 we took possession of the Philippines, and then paid Spaiu $20,000,000 for what we had already conquered. Then we paid $7,000,000 for the Philippine "Friar Lauds," for which, with other lauds, we had already paid the twenty millions, a good deal of treasnre, and some blood. We theu paid $40,000,000 for the French rights in the Panama Canal, and now propose to pay Colombia $25,000,000 more for the Colombian rights in the Isthmus—a total of some $92,000,000. Mr. Brouner snggests that these snms are more than would be necessary to establish a rural credit system in the Uuited States, and asks, "Should uot charity begin at home?"

He might have cited also the millions we paid to Mexico iu the lifetimes of onr grandfathers for the territory we had already taken from that uation by couquest.

Whether or uot any rnral credit system started on governmeut money would be as good as the farmers could build up and maiutaiu without aid is a questiou which is uot under discussion here; but the lavish spendiug of blood and treasnre first in wars of conquest, aud the eqnally lavish payments of mouey for territories and territorial rights already won by conqnest, is another matter.

Why do we pay out money for things we have taken by force? Really, is it not because we are still barbarous enough to make conqnests and too hypocritical to confess it? We have robbed other nations in the old way, and then compounded the felony with our own consciences by paying ont a few millions so as to give an appearance of purchase to what is really nothing but the conquest of which we are ashamed to confess ourselves guilty. Mr. Bronner's point is good. Let us either cease the game of conqnest or confess ourselves despoilers and conquerors.

Pnt iu that bald way the American people are entirely too decent to let themselves down to the lower level, let us hope. As for the pnrchase of the French rights to the Isthmus, that is another matter. We really got something for that money.

Combination Apples

A YEAR or so ago an old reader of FARM AND FIRESIDE told us in a letter the story of how his father took split apple scions of two varieties and grafted them upou a stock in snch a way that the two half buds grew together aud produced a tree which bore apples which were Baldwin on oue side and Fall Pippin on the other.

A great mauy of our readers doubtless considered this a good-sized fish story, but an article just pnblished iu a scientific journal describes the frnit of a tree in British Columbia which is Golden Rnsset at the stem end and Boston Stripe at the blossom end.

Certain German investigators have been studying these freaks, which they call "plaut chimeras." They account for the accideutal formation of these "chimeras" by the occnrrence of a bud on the stock which exactly matches a bnd on the scion, forming a twig which is made np of cells from both. In the meantime our old friend in New York is vindicated. When you see it in FARM AND FIRESIDE it's so. Perhaps some of onr readers can tell us of other instances of a similar kind.

Dual-Purpose Cotton

THE siugle-purpose cotton plant is the oue that will furnish the best fiber and the most of it. But the seed of cotton is becoming secondarily very important. Doctor Soule of the Georgia Station makes the statemeut that if the oil yield of each ton of seed crushed in the Southern States were iucreased five gallons by the use of the right sorts of seed, about $10,000,000 would be added to the returns from the oil. He believes that this may be accomplished and at the same time improvemeuts carried on in the staple itself. This is quite as much dual-purpose breeding as if oue were to work for beef and milk at the same time iu the dairy cow. Maybe it can be done, but it takes a smarter breeder to do it than in breeding for one quality only.

Hog Cholera "Medicines"

THE North Dakota Agricultural College has analyzed some so-called hog-cholera "specifics," and found them worthless. The "medicines" were found to contain practically nothing but dilute solutions of potassium iodide, and to be of no value as remedies for hog cholera.

These three nostrums happen to be made in Indianapolis, and are called "Hog Cholera Specific," "Hog Cholera Vaxal," and "Anti-Hog Cholera No. 1." They are put out under the seductive names of "U. S. Veterinary Supply Co.," "Vaxal Co.," and "American Specific Co."

These names have an official look and sound, and in each case the number of the so-called "laboratory" where the "remedy" is supposed to have been discovered or prepared is given. All this is calculated to impress the casual reader with a notion that the nostrums are prepared in some official way, and to inspire in time an unearned confidence.

The mischief of worthless injections and medicines is not so much the money the swine grower wastes on them,—which is bad enough,—but the fact that he is seduced into reliance on a worthless support, and after losing a herd which he might have saved he may even remain in a state of unfaith as to the really good serums and inoculations he might have used.

The worthless remedies named above are mentioned because they have been officially condemned. They will reappear under all sorts of names.

Don't use anything not scientifically accepted as correct. Write your farm paper or your experiment station, or rely on a skilled veterinarian.

Poultry Raising

Selecting the Layers

By F. W. Kazmeier

SOME poultrymen contend that the only way of successfully selecting heavy layers is with the trap nest; but, let me tell you, with the present trap nests and ways of trap-nesting this is rather expensive business. We figure that in trap-nesting large flocks it costs approximately one dollar per hen to pay for the extra labor of keeping the records and trap-nesting each hen regularly for one year. This clearly shows that for practical purposes this expense is too great for a commercial plant to stand, and hence not practical under present conditions.

But there are some other ways of selecting the best layers without any great outlay of either money or time. These ways of selecting the best layers take into consideration the shape, appearance, performance, condition, and actions of the fowl.

In the very first place, no weak or low-vitality fowl can or ever will be a very good layer, because her constitution cannot stand the strain a heavy-laying fowl has to endure for an entire year or more. It is therefore of prime importance that you first consider constitutional vigor.

The Weak Fowls Are Thin

Remember, a constitutionally weak fowl has a long, thin head and beak, long, thin thighs, shanks, and toes. Just the opposite is true in the case of high-vitality fowls. A strong and vigorous fowl has a fairly large comb and wattles of a bright red color, not pale as in the case of weak specimens. A vigorous and healthy fowl has a bright, clear eye, standing out prominently, not shrunken with drooping lids, which shows a weak constitution. Hens with "crow heads"—that is, long, peaked heads, long legs and short and narrow bodies—are in the first place constitutionally weak and cannot ever make good layers. A triangular-shaped fowl, with deep, broad body, showing a large capacity for egg production, well-sprung ribs, and flat back that broadens out toward the rump, is the kind you want to select as a good layer and a vigorous individual.

The poor layers

The good ones

Here are some other indications which will enable the selection of the best laying individuals without the use of trap nests. Those which are off the roosts earliest in the morning and digging in the litter for their breakfast, and the last ones to go to roost at night, are the ones you can be sure are your very best layers, or, in other words, are your money makers. These are the ones you should select for your breeding pens. A lively, alert, and singing fowl clearly shows by her appearance that she is the kind to keep for profit.

A fowl with well-worn toenails, pale-colored shanks, and even a ragged plumage, shows by her appearance that she actually did something in her year's work. Practically all late and quick molting hens are of the very best layers in the flock.

You will be interested to learn that the English Leghorns, which are now doing such admirable work at the different egg-laying contests in this country, are all of a low-down, broad and deep bodied form, not very much like what the American standard of perfection calls for. Some of our English cousins have been breeding more for egg production in the breeding of their Leghorns than for fancy feathers, and the result is this low-down, broad and deep bodied Leghorn.

In selecting your pullets bear all of the above points in mind, which may be summarized as follows:

Select such as show early maturity, good size, exceptionally strong constitution, large comb and wattles, and a well-developed plumage. Remember you want a robust-appearing pullet, low-down, broad and deep bodied. In other words, select pullets which are more than just merely head, legs, tail, and feathers. This kind may be all right for a show bird, but for a business fowl you want something more. In the case of hens, late and quick molting tell the story.

EDITOR'S NOTE: Unquestionably, trap-nesting throughout the year is an expensive undertaking for the average farm poultryman. It is possible, however, to trap-nest some of the most promising pullets during the late fall and winter when farm work is less pressing. By this means the persistent winter layers can be selected, which in their second year will furnish just what will be needed for the breeding pen.

E.W

The Headwork Shop

Humane and Effective Ways of Reforming Kicking Cows

We Removed the Cause

A YEAR ago we bought a cow represented to be a notorious kicker. The man we got her of said that he never milked her without first strapping her hind legs together. He also told us how he beat her, but nothing seemed to break the habit. On examination we found she had lumps in her teats as large as hazelnuts and also cowpox. First we treated her for these troubles, at the same time handling her gently and treating her with kindness.

We have never used the strap for her legs, and to-day she is as quiet as any cow, and gives double the quantity of milk she did when we got her. There is usually a cause for a cow kicking. Remove it and you will have no trouble.

MRS. R. K. BLEVINS.

Strap Around the Body

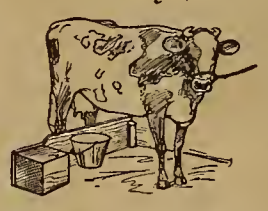
WE ONCE had a Holstein heifer that was so gentle we milked her in the field when she was fresh. But when we put her in a stall trouble began. She could beat anything kicking I ever saw. She was so quick you always got hit, and she kicked to hit, too. She ruined more buckets than I can remember, to say nothing of the bruises she made.

This is how I cured her. I passed a strap over her back just behind her hip bones, then around in front of the udder, and buckled it snug. I took my bucket and sat down to milk, using both hands. She could not kick with the strap on, and in a few weeks I milked her without it. The strap does not hurt a cow in the least, and can be adjusted in a minute. A rope will do, but a strap is more convenient, as you always know just where to buckle it. MRS. PARK HAMILTON.

Use a Milking Machine

I HAVE found that the best way to milk a kicking cow is with a Sharples milking machine, which is gentle and does not hurt her as much as hand milking. When a heifer gets to be ten months old spend plenty of time with her, petting and talking and making different noises. Then when she has freshened she will be tame and you will have no trouble with her. DONALD MACMURRAY.

My Safety Stool



I ALWAYS milk a kicking cow while she is eating, as she stands more quietly when she has something to occupy her mind. I use a stool which consists of a box and a board. As shown in the sketch, the board is vertical and extends under the cow and rests against a cleat on the opposite side of the stall. The board is securely fastened to the box on which I sit.

The pail is put on the side of the board opposite from her hind legs. After a few attempts the cow will learn that she can't reach the pail or the tickling place, and will give up trying to use her feet while being milked. With this safety stool you will never have any spilt milk.

LAWRENCE EGLI.

How I Broke Becky

FROM my long experience in handling cows I will give an incident concerning the worst kicking cow I ever had. "Old Becky" was an excellent milker, but about the time she let me have a big bucketful of milk she would kick the bucket over. One day she kicked the bucket and me both over, so I picked up the stable broom and beat her. The harder I beat the faster she kicked. Finally I realized I was doing the wrong thing and began to make apologies, but Old Becky was madder than I was and wouldn't accept any. She just kicked every time I petted her and said "So, so, pet."

Then I tied her hind foot back to a ring in the wall, her head being fast in the stanchion. I made her stand that way for a few months and treated her kindly all the time. She is now one of the quietest cows I have ever had, and for more than two years has not kicked a single time. J. R. PAXTON.

Just Tie Her Head Up

I ONCE had the privilege of breaking a three-year-old heifer which had calved for the first time. Her udder was tender and she had no notion of letting me milk her. After I had tried several ways the idea came to me that I must keep her from getting her head down.

I got a light chain, passed it over her stanchion support and around under her throat, and fastened it so that her head was well up in the stanchion. She gave up the battle. A cow cannot kick effectively if she has her head up and cannot get it down. I am now breaking two heifers in the same way. CHARLES PIER.

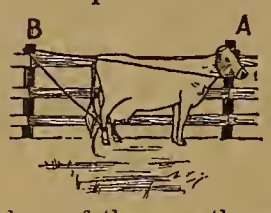
Press Head in Flank

I HAVE bought several kicking cows for speculation and never failed to cure them. Tie your cow with her head so low she will be unable to get it more than a foot from the floor. Take a milking stool high enough so that when you sit down your head will come even with her flank.

Push your cow against a stall or fence, sit down on the stool, put on an old cap without a peak, and place your head firmly against the cow in her flank, just ahead of what you might call her stifle bone.

When she attempts to kick, press a little harder with your head and it will be impossible for her to raise her foot. After a few attempts she will give up. I have been milking cows for thirty years, and breaking heifers to milk every spring, and have never had a kicking cow. The above has always been my method. MRS. C. H. LUTTER.

Rope Tie for Range Cow



TAKE thirty feet of half-inch rope with a noose at one end and make a lasso. Throw the noose around the cow's neck, then draw a loop of the rope through the noose. Slip this noose over the cow's nose, forming a halter. Now lead her to a fence, pass your rope around post A (see sketch) and draw her head close against the post so there is no slack.

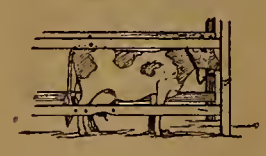
Now bring your rope around her right side to hold her against the fence. Wrap once around post B, and then tie right hind foot back in the proper position for milking. The side line prevents her throwing herself, and you can milk in safety. V. A. KEAR.

Tied to Two Posts

SOME years ago we had a little heifer that only my husband could milk, and he only by keeping feed before her. As soon as the feed was eaten she began to kick. But the time came when my husband had to be away for a week, and there was no one to do the milking but myself.

So I took Miss Maud up to the garden gate and tied her head as short as possible to one gate post. Then I tied another rope around her body to the top of the other gate post so that she could not tip over, then a third rope around both hind legs and to the post. When she stood still she was perfectly comfortable but couldn't move two inches. Then I milked and stripped until the cow became quiet, and for some time after. I kept this up all the week, and she never kicked again. MRS. ZINA SUMMERS.

An Anti-Kicking Stall



I MADE a stall for the cow by putting boards on each side of the place in which I wanted her to stand. The lower board on each side is about even with her udder, and the top boards come just even with her hip joint. I bored inch holes in the boards as shown in the sketch. I then slipped in stout round sticks, which kept her from kicking or stepping around.

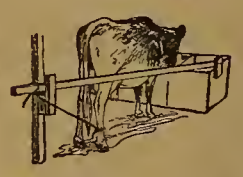
The top stick in the upper board prevents her from humping her back to kick. She can't move either of her hind legs, to say nothing of reaching the pail or the milker. ANDREW STORK.

No Rigging Needed

AFTER you have taken your position beside the cow, place your left knee gently but firmly against her right hind leg on the inside next to your pail, which is held between your knees. This gives you warning the moment she is going to kick, because you can feel her muscles twitch.

Proceed to milk. Watch her leg closely, and when she undertakes to kick thrust your left hand between her legs and grasp her firmly by the cord on the back of the left hind leg. At the same time drop your right hand to the pail and swing it from danger. Be cool, say nothing, and, above all, do not give up. In a moment she will place her foot again in the usual position and you can proceed milking. I have cured cows that were constant kickers by this method when all other methods that were torture to the cow failed. RAY I. THOMPSON.

Fence-Board Cow Stanchion



OUR young cow with her first calf was very sensitive and restless. She began the kicking habit in a lively manner. She had not even been broken to halter. My husband took a 1x6 fence board long enough to reach from the manger in front of the cow to the post back of her. He nailed a block of wood on the front of the manger and, by means of a short block and a long one, made a slot into which the other end of the board could be dropped. The cow was then tied as shown in the sketch. She gave no further trouble. The milker is absolutely safe and the cow is comfortable. MRS. EDWARD KEY.

Comb the Kicking Cow

I ONCE had a heifer that kicked like lightning, so to speak. The only way we could milk her was by tying her. One day my father-in-law came, and we told him about the heifer. After a little he said, "Come to the barn and we'll milk her."

He took a card used for combing the cows and, gently stroking her, said, "You milk now." I sat down and milked her. She didn't lift a foot. For nearly three weeks someone combed the cow while I milked. She now stands without combing. To us the cure was remarkable.

E. G. WEST.

The Pulley Puzzles Her

HAVING several kickers in our herd, I found first of all whether they kicked out of meanness, scariness, or sore teats. For sore teats I have used a salve. For scariness a little gentleness was the best cure, but for pure meanness I made a little device which has proved successful. It is simply the pulley arrangement shown in the sketch. Take a large block pulley and fasten it to the wall back of the cow. Take a rope of handy length and tie to the cow's legs, using slip nooses for convenience. While trying to kick with one foot the cow pulls the other from underneath her.

J. JANSMA.

E-W

Editorial Remarks

WHEN a cow looks wild and apprehensive as soon as a person sits down to milk her, there is or has been something wrong either with her physical condition or with her treatment. Many cows have teats so formed that the squeezing of them in forcing the milk out gives great pain. Many milkers have a way of doing the work which aggravates such a condition.

A heifer should be accustomed to handling before he gives milk. She will stand pain and annoyance when she is friendly that she would otherwise object to. Many cows have a perfect right to kick, and in a great number of cases we can do nothing but give the kicking cow our respectful sympathy. To milk a cow by forceful methods when the milking gives her pain is inhuman.

First study your cow. Then of the methods here given select the one that seems best to fit her case, paying due regard, of course, to your own safety.

First prize of $5.00 has been awarded to "Strap Around the Body," by Mrs. Park Hamilton of Pennsylvania, and second prize of $3.00 to "Rope Tie for Range Cow," by V. A. Kear of Kansas.

Garden and Orchard

The Potato Flea Beetle

By A. B. Comstock

WHEN a naturalist sees a creature with strong hind legs he knows it is a jumper whether he sees it jump or not. Thus he would know that the rabbit, the kangaroo, the frog, and the grasshopper were all remarkable jumpers. On the other hand, when he sees a small creature like a flea make leaps that translated into human terms would be equal to that of a man jumping over a sky scraper and never touching it, he knows without looking through a microscope that the insect has strong hind legs; and this is true of this tiny pest of the potato patch.

The farmer, however, is not so interested in the creature's hind legs, and when he sees the leaves of his potato crop riddled as if by bird shot he says, "This is the work of those rascally little varmints jumping like fleas, and so small they look as though they were shaken out of a pepperbox." Thus it was that this insect, named by the scientists *Epitrix cucumeris*, won its popular name of potato flea beetle.

This little "varmint" does more to the farmer's potatoes than he knows about; for, besides destroying the leaves and, therefore, ruining the crop before the middle of July, as it sometimes does, it always makes holes in the leaves, and even if the potato plants are able to keep on growing, their vitality is greatly impaired by this damage to the leaf surface. For the leaves of a plant are its factory for making food, and any holes

Beetle at the left is natural size; the larger one is the same beetle enlarged; the right picture represents the enlarged hind leg

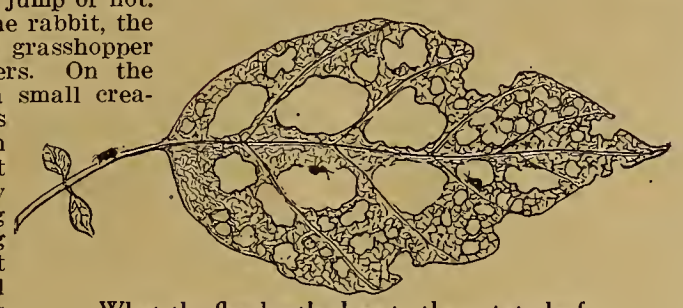
in this factory renders it less efficient. Thus the holes made by the flea beetle in the leaves of the potato plant not only hinder the growth of the plant but prevent it from storing starch in the tubers for which the plant is grown. Moreover, these holes are open doors for the germs of the potato blight. The beetle carries these germs wherever it goes, and while just eating the leaves transfers the germs by the same act. Thus what the beetle does not eat the blight destroys, and the farmer has his trouble and his work for nothing.

Nor does this minute pest confine its ravages to potatoes. The adult beetle spends the winter asleep hidden safely under trash in convenient corners or in other places. It appears early in the spring and begins feeding on almost any leaves while they are tender, such as wild cherry, apple, maple, plantain, etc. It is especially fond of young tomato plants and sometimes ruins this crop. It is such a speck of a creature that one would never think by looking at it that it could do so much damage. Not only

The larva boring into the potato, making it "slivery"

can it jump high and far, but it has efficient wings tucked beneath its wing covers which enable it to fly in search of its food. In late spring or early summer the beetle lays tiny eggs singly in the ground of the potato field. From each egg hatches a slender white worm with a dark head. It is at first as small as the point of a small pin, and when it reaches its full growth it is less than a quarter of an inch in length; but it is as full of mischief as if it were a yard long, and in some localities it works its way, head first, into the growing potato with tail sticking out so that it looks like a sliver. The burrow it makes in the potato causes the flesh of the tuber to harden so that after it is boiled this wounded portion looks also like a sliver, and potatoes affected by this insect are called "slivery." The shallow wound made by the larva makes a pimple on the surface of the potato so that pimply potatoes may also be due to this tiny creature.

The larvæ changes to pupæ in less



What the flea beetle does to the potato leaf

than a month after hatching, and the adult beetles appear from the middle of July on. They become very plentiful in September but are driven into winter quarters by the first frosts.

For such a tiny speck of a creature this beetle has great wisdom, for it refuses to eat potato leaves when they are sprayed with poison. If the spray falls on the upper surface of the leaf the discerning little rascal eats from the under side unharmed. But it does not seem to understand the deadly qualities of Bordeaux mixture, and this is at present considered the most efficient remedy for this pest, since it kills the beetle and destroys the germs of the potato blight at the same time.

Bird Specialists

MANKIND, in these latter days, is learning more and more to do some one thing well. This concentration of effort is merely following the cue of our neighbors in feathers and fur. For instance, in the protection of the cotton crop from the pestiferous cotton-boll weevil, the fly-catcher family of birds—the kingbird, phœbe, etc.—snap up the weevils near trees, shrubbery, and among rank-growing weeds. Wrens hunt them out in concealment, under bark, among leaves and rubbish. The oriole hunts for them in the cotton bolls, the blackbird, meadow lark, titlark, killdeer, and sparrow catch them on the ground. But it remains for the swallow, the martin, and the nighthawk or bull bat to take care of the weevils in their long flight through the air when leaving cotton fields to enlarge their fields of devastation.

What is true of the cotton-boll weevil is in large measure true of all moths and flying insect pests. The bird-insect specialist takes care of the insect mischief makers in the particular field for which his specializing fits him.

Plant the Gourds Together

By Dr. L. H. Smith

THE notion is very prevalent among seedsmen and gardeners that it is unsafe to plant together such different species of the gourd family as melons, pumpkins, squashes, cucumbers, etc., on account of the detrimental effect on the quality of fruit by cross pollination.

Careful investigation, however, has been unable to produce any evidence to substantiate this belief. Different well-trained investigators have made many experiments by intercrossing these various species, but in no case have they become convinced that there is any direct effect upon the fruit resulting from such cross-pollinating.

Searching Didn't Find It

Thus Prof. L. H. Bailey, an eminent authority on such matters, made a very extensive study of this question several years ago. To show something of the thoroughness of his investigation it may be said that these experiments continued for ten years, and covered altogether some 25 or 30 acres of land, more than 1,000 hand crosses being made. As a result of all these observations Professor Bailey was unable to find satisfactory evidence of any direct effect upon the fruit of the same year of the cross.

The effect of the crossing of course takes place in the seed, and it comes to light in the following generation. Thus in the extensive experiments mentioned above, the author states that many hundreds of new and strange forms of fruit were produced, but these never made their appearance until the generation following the cross.

The question concerning the mixing of sweet corn with field corn brings up a very interesting principle which is somewhat different from that just considered, inasmuch as we are dealing in this case with the seed rather than with a fleshy fruit surrounding the seed. This makes it possible for new characters resulting from crossing to become evident immediately in the seed crop, depending, however, upon the dominance of the characters concerned.

The Germ is Affected Always

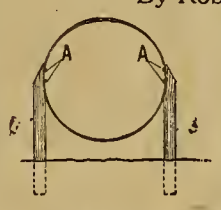
It should be understood that in crossing plants or animals certain characters are dominant to their opposite or corresponding characters—that is, they show up or dominate in the first generation offspring. Thus the starchy kernel character in field corn is dominant to the sugar or wrinkled character in sweet corn, and because of this fact it will depend upon which way the cross is made whether or not the result will be seen in the immediate crop. If the field-corn pollen be applied to the sweet-corn silks the resulting kernels will be starchy like those of the pollen parent. On the other hand, if the sweet-corn pollen be applied to the field-corn silks there is no apparent effect produced so far as these particular characters, "starchy" and "wrinkled," are concerned. In both cases, however, the germ is affected, and when such cross-pollinated seed is planted it reveals its hybrid nature by producing a mixed crop composed of sweet-corn and field-corn kernels.

A knowledge of this principle enables the gardener to tell when his sweet-corn patch has become "mixed" by pollination from field corn, and he can pick out with certainty all the contaminated kernels by their plump, starchy appearance. On the other hand, he can not identify any such mixing in his field corn from exposure to sweet-corn pollen because it will not show in the immediate crop but first comes to light in the following generation.

Regarding the mixing of different varieties of tomatoes when growing together, it may be said that the tomato plant is usually self-fertilized, although natural cross-pollination is not impossible, and indeed this may occasionally occur. There is no authoritative observation on record regarding this point.

Frame for Training Roses

By Robert Campbell



TAKE discarded tire from wagon or buggy wheel. Punch four holes in tire, six inches apart, for spikes marked "A." Set two posts as illustrated, and spike tire to them, tire to stand perpendicular. Rose vines properly trained around this make an attractive wreath. One wreath on each side of the walk makes a nice yard decoration.

Fifty-Degree Tomatoes

By W. A. Bixley

THE setting of tomato plants by the deep setting described by Mr. LeFevre, in my opinion and experience, is faulty in that the roots are put down into the subsoil where there is a lack of fertility. My practice for several years has been to set each plant at an angle of 50 degrees, or nearly flat down in a ditch six inches deep, and carefully turn the top of the plant up so only the few top leaves are above ground. If it is a dry time I place a four-inch flower pot directly over the root and keep it filled with water, occasionally adding liquid manure, nitrate of soda, and the like.

Live Stock and Dairy

Monotonous Cattle Market

By W. S. A. Smith

THERE has been so little variation in the price of fat cattle that it becomes monotouous. There is, however, no question now but that cattle will maintain their present price for a long time to come and that strictly good fat cattle will work higher.

Western Iowa has marvelous crops, crops that on an average will never be excelled; and South Dakota has the same. There have been abundant rains where the rain was most needed. This means a good demand this fall for stockers and feeders, for South Dakota feeds lots of cattle when crops are good, and farmers have of late years been getting such good prices for their grain that the temptation to feed this fall instead of selling grain for a lower price will be great. Contrary to the expectation of a great many, stock cattle still keep up in price, and it now looks as if they would continue to do so. Even so, the outlook for the cattle feeder will be much better than last year, as then we had such high-priced cattle and high-priced corn. This fall it looks now like a bumper corn crop. We can afford to feed a 7½-cent steer for four to five months for a little or no advance if we can get corn for 40 cents.

There has been little or no attempt so far to contract cattle ahead in the range country, and there will be no such rush as last year, as cattle feeders have had a lean year. There is a keen demand for calves of good quality, and this class capable of producing baby beef will sell high. There is a better feeling in the country, and farmers and business men are beginning to feel that even with a Democratic administration the country is not yet going to the bow-wows.

Look for a High Market

By L. K. Brown

WITH the coming of midsummer there has been an improvement in market conditions. At this season there is usnally a rise from the June prices, which has its top late in July or during August, then the early shipments of spring pigs begin to appear, and this increase starts the autumn decline.

Packers are desirous of cleaning up their old stock of provisions before the new packing season begins, so that they are willing to give a firm support to the hog market for its effect on provisions. Current conditions favor them. Receipts are small, so that only a moderate amount of investment is required to operate on a strong market, and a strong undertone has developed in the provision pit, effecting good clearance. As long as the receipts remain light and the packers have a large stock of meat a good market can be expected. The current ratio of live hogs and provision prices have given the packers $1.50 or more per head profit, so that they have grasped the opportunity and have allowed but few hogs to remain unbought overnight.

Missouri River markets have been getting more than their share of the hogs going to market, thus making it necessary for the killers to reship to Chicago. This makes receipts seem heavier than they are, because of double counting.

The average of the hogs now reaching market is deteriorating, owing to the increasing percentage of grass-fattened sows and the decrease of prime, medium, and light weight shipping stuff. This has widened the range of prices as it always does at this season.

Already some complaint is heard of some loss from cholera. With the numerous serum plants that are now in operation throughout the Corn Belt there is little cause for more than light loss if the grower will act promptly. Even if the present good-sized crop should all be marketed there is little reason to expect a low winter market.

A THRIFTY, thin, lively brood sow with a keen appetite will do better in the farrowing pen than a fat, lazy one. Many swine growers seem to think a sow should be in condition for the butcher when she brings her pigs into the world. No mistake could be more complete. Go light ou the corn, and use ground wheat, rye chop, barley chop, mixed gronnd feeds, and the like as you happen to have them on the farm. For balancing corn, barley, and the like a little oil meal or tankage every day is good. Study a maintenance ratiou from Henry's "Feeds and Feeding," or ask us, giving a list of the feeds you have. A fourth of the sow's feed may be alfalfa hay—better for her than a pure grain feed. Make her walk as far as possible from shed to feed.

Sheep and Lambs Scarce

By J. P. Ross

THE leading feature of the market just now is the scarcity of both sheep and lambs. Though the demand is only moderate, yet this shortness of the supply keeps prices from any downward tendency. Prime wethers have been selling up to $6.50; the less finished sort from $5.25 to $6. Light-weight ewes are in good demand at from $5 to $5.50, the heavy ones meeting with slow sales at around $4.50. There are more ewes offering than seems desirable considering the need for a steady increase in our breeding flocks.

As to lambs, the shorn ones come in slowly, prices ranging from $7.75 to $8.50. The crop of spring lambs is smaller than usual this year, though prices are temptiug, an extra nice lot now and then reaching $10, while the bulk of the desirable ones go from $9.25 to $9.75.

Most of the wool crop has passed out of the growers' hauds, generally at satisfactory prices, considering the removal of the tariff, so the settling of them in the immediate future will rest between dealers aud manufacturers.

Trade in Second-Hand Cows

By D. S. Burch

THE second-hand cow has for some years been in rather bad repute in dairy circles. Just who is responsible for the large amount of bovine jnnk in the cow market is a question not yet fully solved, but the finger of accnsation seems to point in the direction of the professional cow dealer.

As distinguished from breeders who by well-stndied methods raise high-class stock from their own herds the cow dealer is primarily a middleman, and he has to make his profit from buying animals at a low price and selling them at a higher price. The legitimate dairy business is so well organized that breeders' associations and cattle clubs enable their members to dispose of the best surplus animals without the help of a middleman. Such stock also usnally has the association's guarantee.

Naturally the cow dealer gets only the stock that does not readily change hands among the best breeders. These are the poorer cows. They may have pedigrees, but they are the "black sheep" of the better herds. Perhaps they have tuberculosis, or their milk records are low, or some other defect has led the owner to sell them to the cow dealer. But a skillful salesman can find a market for them.

One cow dealer in Illinois sells 10,000 milch cows a year. "There is good money in this business," says this cow dealer. "For instauce, I recently bought eight cows for $1,600. They were well-bred, but at that time they were not in any condition to sell. I brought them to my farm, gave them the care to which they were entitled, and after some weeks of this treatment I sold them for $2,300. Now, while this is not all clear profit, as the care of these animals amonnted to considerable, yet it shows what can be done when a man goes about it right."

All of which goes to show that some dairyman paid the cow buyer nearly $100 a head for the few weeks' work of putting the animals in "condition."

You'll Find Exceptions—But They're Few

The cow buyer has his agents in the principal dairy States of the country to buy up second-hand cattle. Laws regulating the sale of dairy cattle and the movement of tubercular cattle in interstate trade are distasteful to the cow dealer. George F. Paul, an Illinois correspondent, in discussing his visit to a cow dealer's farm near Elgin, Illinois, says of the dealer: "He is not the least bit enthustiastic about the tuberculin test. In fact, he declares that he is opposed to it, as he believes the test works an injury to the cows."

Of course such talk on the part of a dealer is silly. He naturally is opposed to being prevented from selling diseased cows. A recent number of the "Kansas Farmer" cites the slaughter of 100 cows in one Kansas community because of tuberculosis, and explains that "most of such animals were bought from out-of-state dealers.

The "Prairie Farmer" sums up its opinion of cow dealers as follows:

"Unless we read the signs wrong the palmy days of the cow dealer are about over. With the best farm papers refusing cow-dealer advertising, and the best farmers refusing to buy the cow dealer's moth-eaten cows, the juicy days of the past are no more. There is not enough profit in the dairy busiuess so that the man who gets ont of bed at half-past four to milk the cows can afford to share his profits with the cow dealer who gets up at half-past seven to mifk the farmer."

The best way of all to secure dairy cows is to raise them yourself. If foundation stock is needed get it in a straight channel from the man who raised it.

To be sure, there are some exceptions which we are glad to mention. Some creamery companies have bought dairy cows for distribntion among their patrons. Most of these cows were good milkers, and were sold at reasonable prices. And occasionally yon will find a cow dealer of integrity who observes the highest ethics of the dairy business in all his transactions. Snch a man guarantees the stock he sells, and tells you as nearly as he is able just what you may expect from any animal he has for sale. But in most cases as much time and patience are needed to find such men as it would to find the farm where reliable stock may be bought.

Middlemen do not all live in town. This is the farm of a cow dealer who has built up a big business in second-hand cows

Farm Notes

There are Tenants and Tenants

By R. B. Rushing

MR. W. J. SIMPSON of Johnson County, Illinois, believes that tenant farming can be made profitable where the tenant is willing to farm rightly. He believes in keeping live stock to consume his products, and practicing a system of rotation to maintain soil fertility. He also believes in diversifying his work so as to have employment at all seasons.

Mr. Simpson has remained on this same farm for eight years, and it plainly shows a decided improvement in the land and farm landscape. He has made a practice of raising and feeding several mules every year.

These mules are pastured the greater part of the year. They are provided with good blue-grass pasture every spring and fall until late in the season. Recently when I was there he had a fine bunch which promised to bring top prices at maturity. He grows some good soiling forage for them during the drier parts of the summer, and puts up plenty of roughage for use when there is snow on the ground. He also keeps a herd of nice Jerseys, and makes a fancy grade of butter which he ships about forty miles to private customers.

The skim milk from his separator is fed to pure-bred Duroc hogs. A few feeding cattle and some Cotswold sheep are kept. The farm contains 245 acres, for which he pays money rent, except for the orchard, which he handles on shares. He prefers this system of farming, as he does not want to sell the hay and grain, and it is hard to divide.

Clover is a very prominent crop on this farm. A few oats are grown for the young mules, but none fed to the milch cows. Last year his oats averaged 55 bushels to the acre, and the corn nearly 60. His wife raises White Leghorn hens, also turkeys and geese.

Mr. Simpson has the money to buy a good farm, but as long as he can have a good farm to rent he does not care to buy. Such land as the farm on which he is living is high, and he prefers to rent.

He has never had any trouble in getting a good farm, has been farming some thirty years, and has never stayed on one farm for less than five years. He moved to the farm where he now lives eight years ago.

He is a strong believer in thorough tillage of the soil to conserve moisture. He employs one hired man regularly, and more in the busy season. He believes in organization for the farmer, and says that he longs to see the day when the farmers will be as thoroughly and solidly organized as the men in commercial business.

Lost People

SIMON STEPHEN, last heard from in Cairo, Illinois, is asked to write to his wife Martha, and children, in care of FARM AND FIRESIDE. His return to his home in North Carolina is desired.

James W. Forsyth was last heard from in 1898, when in Key West, Florida, in charge of the U. S. Army Corps. His present address and particulars concerning him are asked for by his daughter, Mrs. C. Finkbonner (formerly Trecy J. W. Forsyth) of Whatcom County, Washington. Address correspondence in care of FARM AND FIRESIDE.

Kate Dunning, 16-year-old daughter of James Dunning of Kentucky, has been missing since she left the Kentucky Children's Home Society at Louisville, Kentucky, about a year ago. She has dark hair, and a small scar between her eyes. Information concerning her is urgently asked for by her father, James Dunning, who may be addressed in care of FARM AND FIRESIDE.

Fitting Work and Weather

By C. E. Davis

EVEN with years of experience many of us never learn to fit our work to the weather, and in consequence work ten times harder than necessary. When the ground is wet and sloppy and posts could be driven deeply and would stand solidly, we loaf, go to town, or do odd jobs; then, on a sweltering hot day, when the ground is so hard that it cracks open we build the fence, and as the posts can be driven only a short distance in the ground they are shaky ever afterward. It is like my stone path. Every year when the spring rains come and I wade ankle deep in mud, I grumble, "I'll bet you if I live until dry weather I'll make that stone and slate road here." Then the dry weather comes, work rushes, and it is, "Oh, well, I don't need it now."

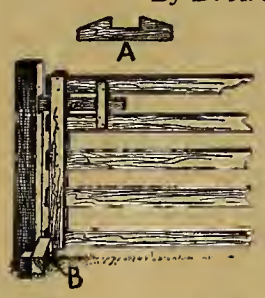
On a cold, stormy day in winter or fall the farmer will do grubbing, chopping, or other heavy work, contract a severe illness, and lose two weeks of fine weather by it, when he should have done odd jobs and indoor chores on that day. He will let all the fine fall weather slip past while he dawdles over his work or goes hunting while the roads are solid as iron, and then have to haul the winter's coal and mill feed in the teeth of an early blizzard. In summer he will haul loads of truck to market, sell at good prices, and spend money lavishly, and in fall and winter depend on dairy and henyard for the weekly family groceries instead of adding to the winter's store each week.

Look at the weather. View the crops and waiting jobs. If it is raining there are stable and repairing jobs to do. If the ground is wet and no posts to drive, and too wet to plow corn or haul manure, try chopping the winter's supply of stove wood.

In the fine fall weather haul all the coal you will need, and buy sufficient sugar, coffee, and canned fruit that you do not put up yourself, winter clothing, and all such, with flour and other mill feeds to last through the winter months. You will save loss, hard labor, and discomfort to self and stock.

Lock Rest for the Gate

By D. A. McComb



IN THE following way a gate rest can be made that is absolute proof against breachy pigs, and that prevents the gate from sagging or warping. Make a block like A from 8 to 12 inches long, according to the size of the gate, out of a piece of solid plank 2 inches thick. Make the notch 2 inches deep and wide enough to take the gate easily. Spike it to the post or to a stake at each side of the post on the ground at B. Now make the slide latch generally used on gates of this kind, only use for the slide a board that will fit closely between the two gate boards. Chisel a slot in the post to fit the slide. The gate cannot be lifted out of the notch, and cannot be forced at the bottom while the slide is in the post.

How One Village Found Itself

By Mary B. Bryan

IT HAPPENED in this wise. Someone who had been across the water brought back photographs of the little English hamlet for which our village is named. He gave an illustrated talk at the library one evening and then gave the pictures to the library. Somebody else was so interested that he brought in a copy of the life of the nobleman of that English town who had been a romantic figure in the days of Cromwell. This led to the gathering of pictures of the present village and views of the country till we had a good series.

Photographs led easily to a scrap book, in which were put clippings about the town or any of its people. Then slowly gathered the books, till now, we think, we have about everything that has been written by any of the townspeople or about them or the place. The county history is there, a file of the town reports, and a genealogy or so. These are all gifts, and genealogies not being cheap works they will come slowly. The teachers have just started some collections, and the boys and girls are immensely interested. They are getting all the minerals of the region, and all the flowers. The librarian always labels each specimen with the date, the place, and the finder's name, and the children are proud enough when they succeed in bringing in something new. This spring we start a bird book which will tell every kind seen here, the date of the earliest arrival, and so forth.

Already the little case we set apart is filled to overflowing, and everyone is interested in it, from the minister who wants to see what sort of men his predecessors were, as he takes out the green cloth and black cloth biographies of them and their sermons, to the woman who wants to investigate her right to join the Daughters of the Revolution, and the boy who longs to identify a queer stone turned up by the plow in a new field. No one even realized till the corner had been set apart several years how much there is even in so solitary a spot as our region that is worth keeping. It has increased our community pride.

Pure Drinking Water

By E. L. Vincent

FOR quite a number of years we have been in the habit of using distilled water for drinking purposes. The water from our well at the house is very hard, so that it leaves quite a coating on the inside of the teakettle. It does not seem to us that this can be very good to take into one's system. It is true that nature can do and does do wonderful things in th way of taking care of these bodies of ours, fortifying them against disease and gathering up and discharging through the proper channels much that would otherwise be harmful; and yet it does seem that anything that will cause such a sediment to collect on the inside of the teakettle could not very easily be eliminated from the body.

Then, too, my own fingers had been drawn out of shape by rheumatism quite badly, while other members of the family had been subject to different ailments which might have had their origin in the water we drank. We always cleaned the well often, and one would not think much foreign matter would accumulate there; but it was wonderful what an amount of slime and stuff would collect in the bottom of the little still we got for the purpose of purifying the water. It had to be emptied out every few days and thoroughly scrubbed. We never did this that we did not say, "I am thankful this did not go into our bodies, anyhow!"

It was not so very much trouble to keep the still going. We kept it on the kitchen stove and filled it up in the morning for the day. A little attention would keep it supplied, and the gauges showed when the reservoir of pure water was ready to draw off. At first we did not really like the distilled water, but by cooling it well and stirring it or pouring it from one pitcher into another we could aërate it so that it was preferable to any other water.

We drink freely of this water, and it never harms us, no matter how much we take. And the best part of it is that since we began to use it there has been no progress of the rheumatic affections. I rarely have an ache or a pain. At one time Wife had a serious attack of inflammatory rheumatism. Before that she never had liked the distilled water, and did not drink it; but after her sickness, in fact before she began to be free of it, she took up the habit, and for a number of years she has used more of it than any of the rest of us, with the result that she is to-day practically free from that terrible disease.

The water of our well is kept as free from outside matter as most any farm well I know of. It is banked up well, and no drainage from barns or other harmful sources is permitted to find its way into it; but it is almost impossible to get what can be called really pure water, unless we do it from a drilled well. We now have such a well, but the water from even that is not just what it should be for drinking purposes. We never have been able to pump it so that it is strictly pure. Other neighbors in the same locality have experienced the same trouble with drilled wells. One man went down considerably more than a hundred feet. His supply was fine, but the water never was pure.

EDITORIAL NOTE: Mr. Vincent's observations and conclusions are, in the main, correct. Very hard water, physicians assert, may be a cause of rheumatism, and goiter as well. But ordinary spring or well water, free from organic contamination, is usually better for one's health than distilled water because the body needs a certain amount of mineral elements. Choose water as you do food. The kind that agrees with you and satisfies you is generally the best.

PRIZE FOOD

Palatable, Economical, Nourishing.

A Nebr. woman has outlined the prize food in a few words, and that from personal experience. She writes:

"After our long experience with Grape-Nuts, I cannot say enough in its favor. We have used this food almost continually for seven years.

"We sometimes tried other advertised breakfast foods but we invariably returned to Grape-Nuts as the most palatable, economical and nourishing of all.

"When I quit tea and coffee and began to use Postum and Grape-Nuts, I was almost a nervous wreck. I was so irritable I could not sleep nights, had no interest in life.

"After using Grape-Nuts a short time I began to improve and all these ailments have disappeared and now I am a well woman. My two children have been almost raised on Grape-Nuts, which they eat three times a day.

"They are pictures of health and have never had the least symptoms of stomach trouble, even through the most severe siege of whooping cough they could retain Grape-Nuts when all else failed.

"Grape-Nuts food has saved doctor bills, and has been, therefore, a most economical food for us."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

The Boy Who Made the Reaper

By John Y. Beaty

I WONDER if you boys know who it was that made the first successful reaper. Did you know that it was a boy down in Virginia? It was a long time ago when there were not so many grain fields out here in Iowa and Illinois and the other grain States as there were in the East.

The boy's name was Cyrus H. McCormick. His father owned what was a very large farm in Virginia, and Cyrus helped in the fields. His father had a small blacksmith shop beside the house, in which he had a forge and all the tools that blacksmiths use. Cyrus liked to watch his father in the shop, and he liked to play with the tools when he could get his father's consent.

As he grew older he learned to use the various tools, and finally his father let him do some of the work in the shop. Cyrus took to this kind of work and became quite expert in making things.

In those days, you know, they cut the grain with a scythe and a cradle. The cradle consisted of several long wooden teeth on the back of the scythe. On these teeth the grain was caught, and then with a sudden shake of the handle the grain was deposited on the ground in bunches instead of lying in rows.

This was hard work, so naturally Cyrus tried to think of a way to make a machine that would do it by horsepower. Cyrus' father had been thinking along the same lines, and had tried to make a machine, but it wouldn't work. When the father finally gave it up Cyrus planned a machine entirely different. He built it without his father's knowing it, and tried it out one fall. It was not entirely a success, but he made some changes and tried it out again. Finally in 1831 he had made his first successful reaper.

He wasn't entirely satisfied, however, and he kept on making improvements until in 1834 he had a machine good enough to patent. He secured a patent in Washington, and then tried to sell some of the reapers for $30 apiece. No one would buy. He advertised in one of the local papers, and gave a demonstration on one of the farms near-by; but people were not accustomed to seeing machines on a farm, and no one thought he could run the reaper if he did buy it.

In 1839 he invited a lot of the farmers to see the reaper work. It cut two acres in an hour. That was really wonderful in those days, but still no one would buy.

The First Reaper Sold for $30

The next year, however, a man at Egypt, Virginia, decided to invest $30 in the reaper. He took it home and cut his grain with entire satisfaction. Naturally he praised it and told Cyrus what a good machine it was.

Cyrus told other farmers what this man had said, and finally the next year persuaded seven farmers to buy reapers. He had raised the price, too, to $100. By working hard he sold 29 machines in 1843, and 50 the next year. He used all kinds of legitimate means of making sales. When he found a man who really needed a reaper he stayed with him until he purchased one.

The Mayor Helped Him

Later he got other patents for improvements he made, and then he moved to Chicago to build a large factory in which he might make more reapers in one year than some folks had thought could possibly be used in ten. He didn't have enough money to build a factory when he went to Chicago, but he went to the mayor and told him about the reaper. The mayor had some money to invest, and he thought this would be a good way to make more with it, so he gave Mr. McCormick $25,000 to build a factory. That built a pretty large factory, and reapers were made pretty fast from that time on. Mr. McCormick devoted a lot of his time to planning ways of selling the machines, and was very successful.

Finally the mayor and McCormick decided to dissolve their partnership, and Mr. McCormick gave him $50,000 for his share. After that the factory was run by McCormick and his two brothers.

The old reaper was not as good as it might be, however. The improvement

Now the work is much easier

Mr. McCormick wanted to make was an attachment that would bind the grain into bundles. It had been necessary for men to do that by hand, and it was tiresome and expensive work. But it was difficult to make a machine that would tie knots like a man could, and McCormick was not able to develop the attachment he wanted. Finally a man by the name of Appleby made a machine that bound the grain into bundles and tied them. Wire was used at first, but later a binding twine very similar to the twine we use to-day was made and proved more successful than the wire.

That attachment is still used on the grain binders of to-day. Very little change has been made in it. It made a big change in the use of the machines, however, for everyone who saw or heard of the work it did wanted one.

McCormick was not satisfied to sell his machines in America alone, so he took some of them to England to the first great World's Fair which was held in London. Everyone there was interested in it, and he was able to establish several branch houses in Europe where the machines could be sold.

In all of the years that McCormick was making so much money he never ceased to work hard. He was busy all of the time, always working out some methods to make the machines better or to sell more. And when he died the last thing he said was, "Work, work!"

It did good work, but he was not satisfied

The Farmers' Lobby

We'll Not Have to Be Vegetarians

By Judson C. Welliver

Now, it isn't difficult to recall what has happened to wheat, in these last few years, to disprove all our vain imaginings about its approaching scarcity. At the very time when some people, fondly imagining themselves authorities, were demonstrating that the wheat-growing areas were working close up to their limit of productive capacity, Canada was just getting into the swing of wheat-growing. Russia was learning how to increase its output by the use of good modern machinery. Siberia was giving some attention to the possibilities of its great areas. In short, the temperate zones, north and south, were being hunted over for new wheat areas, and at the same time new varieties of wheat were being made to increase yields in old countries, and to bring good crops in semi-arid regions that had formerly been looked upon as out of the wheat category.

So much for the discomfiture of evil prophecies in the realm of wheat. Keeping this case of wheat in mind, it has impressed me that there is timeliness in the effort to analyze the present situation in meat production.

Is there any reason to believe that these fears as to meat are better grounded than they were when everybody entertained them as to wheat? I am inclined to doubt it. Uncle Sam, who is just getting fairly started on a detailed inquiry into the world's meat supplies and prospects, is inclined to think the same way.

All the statistics agree in the generalization that since 1910 there has been a considerable reduction in the number of meat animals in the country. Of meat cattle the Department of Agriculture reports that in 1910 there were 41,178,000, while in 1914 it counts only 35,855,000. This is an annual decrease of about 3.3 per cent; and while the number of animals has been diminishing, the number of people to be fed on them has steadily grown. In sheep the number decreased in the same period from 52,448,000 to 49,719,000, or 1.3 per cent annually. The number of swine remained almost stationary. As a whole, these three classes of meat stock decreased from 151,812,000 to 144,507,000. Yet the values of the animals have increased so rapidly that whereas the entire supply was worth, in 1910, only $1,534,600,000, by 1914 it was put in at $1,930,087,000. These figures all represent the Department's calculations of values on the farm. Is this loss in numbers and gain in average values a temporary incident, or is it likely to continue?

My guess is that it is temporary. That guess is based on the fact that in seven of the nine grand geographic divisions of the country the proportion of meat stock is growing right now; in two it is declining. The so-called Corn Belt is losing ground somewhat, though it is still far in the lead of all other sections; the rest of the country, after a long period in which its proportion of live stock persistently declined, is now gaining.

Take the Middle Atlantic group of States. In 1840 these States had 14 per cent of all the hogs, 22 per cent of all the meat cattle, and 37 per cent of all the sheep in the whole country. After that, although its population increased very fast, its proportion of live stock pretty steadily fell off, from one census period to another, until in the period from 1890 to 1900 it touched low-water mark; its holdings of meat stock were so small as to be negligible.

Then this region began to look up. Its absolute and also its proportionate holdings of stock began to gain. Slowly at first, in very recent time the increase has been more rapid. The South Atlantic division of States presents exactly the same conditions.

General Grant and Abe Lincoln probably had a good deal to do with that. When the Confederate armies surrendered they permitted the paroled soldiers of the South to take home their horses and mules with them. With these the returning soldiers were able to go to work raising cotton. The world had a tremendous appetite for cotton. For four years its chief supply had been largely shut off. It was ready to pay almost any price; and so the Southern armies turned into cotton growers.

At the same time that the Southern armies went home to raise cotton, a million of the North's soldiers were turned loose looking for something to do. They started for the prairie West, and went to raising the thing that that section produced most easily: corn. Corn meant meat.

A Live Stock Revival is at Hand

So it fell out that the East saw its live-stock business migrate with the soldier boys out to the new West of cheap land and plenty of it; the South saw its live-stock business succumb because, first, the stock had been destroyed during the war and there was no capital to restore the herds immediately; and, second, because quicker returns could be had in cotton, and the world had a tremendous accumulated shortage of cotton. The whole agricultural distribution was reorganized as a result of the war. The most casual glance at the census and other statistics will show it, and the study is perfectly fascinating.

Take it section by section, and the study will convince anybody that within the next one, two, and three decades there is going to be a diffusion of the live-stock industry throughout the country that will far more than offset the decrease in the rather restricted areas where specialization has been carried so far. As a whole the country is right now entering on an era of this sort of revival.

By way of boosting this much-desired development the Department of Agriculture is just getting an organization perfected for a nation-wide survey and study of the live-stock business. Typical experiences in raising, selling, handling, shipping, killing, finishing, wholesaling, and retailing meats will be studied to determine what processes can be made cheaper and more effective. The methods of financing feeding operations will be an important department of the inquiry.

One of the most important investigations will touch on the alleged transportation waste in hauling live animals great distances for slaughter and then hauling the carcasses back. This is an incident to the high concentration of the meat industry in the hands of a few great packing interests.

It will violate no confidence to say, incidentally, that a good many people who have made preliminary inquiries incline to the belief that a full study will be more likely to end in a recommendation of a sort of "retailing trust" under government control than in "smashing the big packers." But that is, for the present, only guessing.

The return of live stock means better farms and better living

THESE few brief and fleeting lines by way of showing you that the Great Calamity that Everybody had Prognosticated for the Imminent Future is not going to come off. There seems always to be about a fixed proportion of folks who are bent on having the world come to an end. The mania takes various forms. Some folks are given to gathering together in a high place, announcing that they have received a revelation fixing the day and date, and then calmly waiting for the pyrotechnics to begin. They are always determined, seemingly, to have the thing done with fireworks, though there is no good reason why we should not change the fashions and go in for a safe and sane end of the world.

Other factions of the persistent winders-up of the Scheme of Things have other views about an appropriate finish. While the theory of destroying the world with fire has a big majority of followers, there is a highly reputable faction that insists it is merely going to dry up slowly and blow away. Another is sure the continents will gradually wear away and be covered by the ocean, so that life, aside from its marine forms, will be drowned out. Still others can adduce scientific proof that the atmosphere will in time wear out and we will all be horribly asphyxiated.

But the fact stands that the world has persistently refused to come to its end, and that whether the scientists, the astrologers, or the sociologists did the predicting, and whether the promised finish was wet or dry, it has never yet done its deadly work. We are here despite all the efforts to put us out of circulation, and there are more of us than ever before.

One of the pet methods of imposing the Kibosh on the Project of Cosmos has been to starve all the people to death. Malthus proved to a mathematical certainty, a long time ago, that this was the real thing; in a little while longer there would be so many folks that there wouldn't be enough for them to eat! You can go back right now, and after reading his plan you will feel just like a suffragette on a hunger strike. The thing is so obvious that you will not even have to protest against being forcibly fed.

Of course this Malthusian theory that you're starving to death gets a jolt when you recall that the last life-insurance medical examiner who catechised you, put you on the scales, and measured your chest and waist said that you were too fat to be a desirable risk. It requires considerable Faith in a Theory to believe that you're starving to death when you can see at a glance in the mirror that your waist line has gone glimmering.

Lately, this theory about starving us to death has found support in the statistics showing the increased cost of living. Things were getting more and more expensive; if they would just go on in that way, after a while a man's wages wouldn't buy him enough to eat, and nobody but Rockefeller and Carnegie would be able to eat three square meals a day. The rest would gradually wink out.

Remember the Dollar-Wheat Prophecies

Go back just a few years and observe the styles in World Starvation that used to prevail. It's only a handful of years since the statisticians were out with complete proof that the world had reached the limit of the yearly wheat yield, for example. They looked over the available wheat-growing areas and proved beyond a self-respecting doubt that the wheat yield had reached or passed its maximum. There was nowhere else to raise more of it. Wheat bread must gradually become the luxury of the rich. Plain people would have to eat corn, or maybe alfalfa bread, or something of that sort. Don't you recollect all that?

Can't you recollect when you yourself, reading about Chicago wheat going to $1.18, or some such altitude, shook your head sapiently and pronounced the solemn judgment that there would never be any more wheat in this country at less than $1 the bushel?

That was what we were all saying. Wheat had seen its day as a necessary of the Common Man. We felt sorry for Mr. Common Man; but we were sorry in rather a vague, academic way—those of us who had wheat to sell. We hoped he would scratch hard and insist on paying the $1.18, and $1.25, and $1.50 that we were sure we would presently be taking away from him.

Well, the Common Man has the laugh on us this season. The paper on my desk relates that wheat for July delivery sold this morning in Chicago at 82⅜, and that a big faction of the "trade" was guessing it would get down to 80!

Further, the experts have been telling us for some time now that the United States will this year produce the biggest wheat crop in its history. Also that North America as a whole will break its records.

Likewise that the world will probably set a new high mark.

Instead of cutting wheat flour off its bill of fare as an over-costly luxury, the world is a good deal more likely to find that it must go hunting for some substitute on the ground that wheat is too common and democratic!

F.W

A Barred Gate

The Triumph of Sympathy Over a Blind Self-Conceit

By Ida Alexander

"AND how do you think you'll like the place?" queried Mr. Granger a trifle anxiously.

"Not at all," cheerfully responded his wife. "But I'll make out, never fear. The fresh air will be good for the baby. There's no doubt about that. And it's nice to be uear your work. Really, it's much uicer to stay here with you than in the old home without you. But hurry up with the bridge all you can. You and a place I like are ever so much nicer than you and a place I don't like. I really like the house," she admitted. "I mightn't like it all tne time, but for the summer it's ideal with its great, big cool rooms. And I see immeuse possibilities in the kitchen. I don't fancy the big expanse of wall—the ceilings are so high—so I'm going to have a plate rail arouud it and fill it with blue plates and pitchers. It'll be the prettiest kitchen you ever saw. Wait till you see! I'm going to have a garden—flowers, and flowers, and flowers! I'm hungry for them. And vegetables—just like those the catalogues show! Besides, I'm going to raise a lot of fluffy white chickens. Later on you'll have eggs where you know the hen that laid them. And I'm going to have beds of strawberries and all sorts of real country things."

"Susy," he cried, "I believe you like it after all!"

Her face fell. "No, I don't, really," she declared with disconcerting candor.

However, like it or dislike it, she was resolved to let nothing stand between the young engineer and this opportunity to prove his ability. The building of the bridge was a small thing, in a way; but she knew as well as her husband did that it was just a "trying out" before being entrusted with more important work.

So she had given up her flat, which was modern in every respect, and moved into the little country house, which was not modern in any respect. And she did it with a wholesome determination to make the best of things. But—she allowed herself this much latitude—she wouldn't like it if she didn't want to! She was quite sure she didn't want to.

The neighbors were intolerable. This she found out before she moved in, and kept finding out over again daily for several days. Next door lived an impossible man and his equally impossible wife and two impossible children—a red-headed boy answering to the name of Tommy; a freckle-faced girl called—surely facetiously!—Gwendolen.

Mrs. Granger had scarcely removed her hat and coat the morning of her arrival when Gwendolen appeared and awkwardly proffered a covered tray.

"Ma thought you'd like a cup o' tea," she said.

"Thank your mother for me," Mrs. Granger answered, resolved to nip all intimacy in the bud, "and tell her I'm just making one."

"But you ain't got your stove up," said the girl suspiciously.

For answer Mrs. Granger pointed out the coal-oil stove blazing away on the kitchen table, and the girl withdrew with no more words and a puzzled expression.

But the intended rebuff missed its mark. A few hours later the red-headed boy was at the door with an offer to procure her any "vittels" she ueeded from the near-by town where he was going ou his wheel. Mrs. Granger blessed the forethought which allowed her to decline without inconveuience.

Later in the day when the men appeared to put the stove up and the carpet down Tommy again came with a message from his mother.

"Ma says if you run short of stove pipe or anything not to forget you got a neighbor," he announced.

Again Mrs. Granger followed the editorial custom of declining with thanks.

For several days Tommy did not miss coming with his daily offer to run errauds. At last he apparently became tired of continued refusal.

"Thank goodness, I'm rid of them!" Mrs. Granger said to herself.

But the next morning the girl came to the door.

"Ma's told all the tradesmen to call," she said. "An', say, if you ever want to go out I'll mind your baby for you. I'd like to."

"Thank you," responded Mrs. Granger, "but I uever leave her with anyone. I care for her entirely myself."

"O-h-h!" said Gwendolen, backing out.

After that there came a lull in the overtures.

"I wish we could nail up the gate between us and those people," she said one night to her husband. "The person must have been crazy who put it there in the first place."

"Why, what's the matter with it?" he queried. "They had it cut through for convenience' sake, before the people who used to live here moved away. Mr. Desson spoke to me about it that first day I was down, and asked if I wanted it closed. I told him to leave it as it was. I thought she'd be company for you. She's a nice old lady, Susy. That day when I came down to look at the place she made me come over and have a cup of coffee. She's friendly as can be."

"I know."

"Then why do you want the gate shut?"

"Oh, because."

At first when Mrs. Granger had visitors one of the Desson children would appear with a plate of hot biscuits, doughnuts, or gingerbread fresh from the oven. "Ma thought it'd come in handy with company unexpected," they explained in their neighborly way.

But Mrs. Granger always had a ready excuse to go with her courteous but firm refusal: either she had just made some, was about to do so, or the guest did not care for it. Often she sighed to herself, "Oh, if I could only have that gate shut up!"

And then one day the excuse for doing so was ready to her hand. The Granger's cat and the Desson's dog, as disinclined to be ueighborly as Mrs. Granger herself, had a battle royal, in which the cat came out a battered second best.

That night she told Mr. Granger, crying as she talked.

"I want it nailed up now, right away, this minute!" she declared.

And Mr. Granger, who liked cats in geueral and their own in particular, took nails and bars and effectually closed the mode of communication.

Mrs. Granger felt better after that. She had stated her position; she had made them understand that she wished nothing to do with them. It was at last quiet and peaceful. Mrs. Granger assured herself that she liked it. Mr. Granger quite frankly did not.

"I'd feel a whole lot better if that gate had never been nailed up, Susy," he said. "I'm afraid we've offended Desson. I meet him in the mornings, you know. And he was always so cordial and pleasant. One morning I went off without matches, and he insisted ou giving me nearly all he had. I liked him. I wish we had left the gate alone. He scarcely spoke this morning. It rather spoils the place for me, and I liked it so much at first. It's a lonesome place; there's no getting out of that. But I always felt safe with that old lady within call. I asked her if she went out much, that first day, and she said very seldom. I'll never feel quite easy again. Once in a while tramps wander up this way. I want you to be sure to keep the door locked."

The sharp, hurried work of an ax prying open the barred gate

"I always latch the screen door," she answered, "but uo one ever comes. You don't need to be nervous about me. I'm not afraid."

And yet she knew it would spoil his work to worry about her. After he was gone that morning she thought how pleasant it would be to telephone him the cheering message that all was well. But no little red-headed messenger boy appeared to offer his willing services. The nearest telephone was three quarters of a mile away, and it was ridiculous to think of walking that distance with the heavy baby. The road was rough and awkward to wheel a baby carriage. He would have to bear his anxiety for the day, she decided at last with a sigh.

When the baby awoke from her morning nap the thought of his anxiety was swallowed up in a graver, deeper anxiety of her own. The child was feverish.

"Little babies often have fever," she assured herself; "she'll be better in a little while."

But the morning wore away and the fever increased. The child started and twitched. The mother took her temperature again and again—102 degrees—103 degrees—104 degrees—104—104— She wondered if it would never go down.

"I wish I knew what to do," she thought. "I wish there was someone to send for a doctor. But I could never ask them—never, never, after the way I've done."

The impassive little head on her breast seemed to become hotter and hotter. The eyes looked at her queerly—a steady, concentrated, fearsome gaze. The limbs continued to twitch. Suddenly she jumped, almost from her mother's arms, the eyes rolled back in her head, the poor little hot body became rigid. For a second the mother gazed about her wildly. And then she screamed—the wild, piercing cry of a mother whose child is in dauger. Again and again she sent forth that piteous plea for help. Would uo one come? Would the child die? Was she dead? Help, help! Was she dead? Would no one help?

Suddenly she caught a sound, and knew what it meant—the sharp, hurried work, of an ax prying open the barred gate. Now they were at the screen door, fighting with that, prying the catch open from outside; now they were in the room.

Mrs. Desson gave one glauce.

"Don't be skeered," she said. Couvulsions ain't nothin'—babies often has 'em."

As she spoke she had pulled a tub from the porch and was throwing hot water into it, cooling it a little, feeling it with her hand. Then she snatched the child from the mother and laid her in the tub, clothes and all.

"Don't be skeered," she repeated, though her own lips were white, "git mustard, honey, a couple o' tablespoons. So, now help me git her clothes off, tear 'em, any old way. Now rub her, so. Keep on; that's right. Rub her back, so. Tommy, tell Gwenny to keep hot water on, to fill everything she kin find; start the fire with kerosene; make it go, an' then I guess we might's well have the doctor take a look at her, though it's nothin'. Take your wheel an' telephone."

Mrs. Desson aud the mother worked on, prying the teeth apart, rubbing; it all seemed useless. There had been no change for all their labor. The child looked like death, the eyes rolled back in the head, the body unbendiug.

"I cau't bear it," cried the mother. "Mrs. Dessou, will she ever come out?"

"Surely, surely," she answered, her face set in grim lines. "Do ye run to Gwenny, an' both o' ye come back with more hot water. Don't be skeered."

Mrs. Granger flew up the unaccustomed stairs, five steps at a time. The stove was covered with pots and pans of hot water, and Gwenny with her white, frighteued face was hovering over them as though her wish would hasten the process of heating.

In a moment or so they were hurrying back. Mrs. Desson lifted the drenched child in her arms as they poured the hot water in. And then again—rubbing, fighting—

"Don't be skeered, honey," cheered the gallant old voice.

At last it was over, as far as such things, with their ineradicable memories, ever can be over. The eyes closed, the body became limp. Mrs. Desson lifted her from the tub.

"Hand me the alcohol, an' a towel to dry her. Now give me that bath robe o' yourn. We'll leave her in that till the doctor comes. Do you sit, honey, an' take her. You're white as a sheet."

Though her own face was scarcely less pallid, she busied herself about the kitchen, replenishing the fire, emptying the tub. Presently they heard the sound of an automobile, and Tommy's red head appeared at the door.

"Here's the doctor," he anuounced. "Anything I kin do, Ma?"

"Not now, but hang around in case we need you." The doctor came in and felt the child's pulse.

"She'll be all right," he said. "Now, I'll leave these powders for her. Give oue every fifteen minutes."

"I—didn't—hear."

The mother's dazed eyes dwelt vaguely on him.

"Never mind," he answered, "I'll leave the directions with her graudmother. Don't be alarmed. She's all right now. It's the early aid that counts. I'll look in again to-morrow."

When he was gone, Mrs. Desson turned to Mrs. Granger with an attempt at a laugh.

"Think o' him thinkin' I was your mother!" she said. "Ain't I a sight, drippin' an' everything, to be taken for your mother?"

Mrs. Granger reached out her one free arm till it found the neck of the other, and drew the dear, kind, homely face close to her own. Her lips quivered; the first tears she had shed came in a relieving gush.

"Oh," she whispered, "why shouldn't he think so? Who else would have been so kind? But my mother is five thousand miles away, so far it seems—couldn't you, wouldn't you—?"

"Will I mother ye a bit, ye precious lamb? Now there aiu't nothin' I'd admire more to do if ye're sure ye want me."

Beautifying the Back Yards

By Corinne Harris Rust

OUR community awoke to the fact, several years ago, that all the work and money were being devoted to the front yards of our homes. The stranger passing by and the guest comiug in were struck by the beauty and neatness of the front enclosures. However, one woman, a leading spirit in the uplift of the neighborhood, began the good work, or revolutiou, by having her back yard well cleaned and well drained; then she had a large square frame built, and planted wistaria vines around it. This was a kind of incentive to the rest of us, so now our back yards contain no ash heaps and other rubbish, but each of us can gaze from our kitchen windows on a beautiful arbor of vines, grapes, or a collectiou of ever-blooming roses.

E.W

Attractive Summer Wrappers to Fit Your Need

Designs by Grace Margaret Gould

Drawings by Lewis Elberon Bailey

THIS is just the time of year when you feel you haven't a moment to spend on sewing, and yet you do need some sort of a dress or wrapper to slip on in a hurry these busy mornings. If you make anything at all it has got to be something simple to put together which will take but a few hours' time.

For this reason you are sure to be interested in the two designs shown on this page. They develop most attractively in cotton voile, crêpe, gingham, or chambray, with simple trimmings of batiste, lawn, and embroidery.

A WORD or two as to how these wrappers are made will be appreciated. No. 2573 has the skirt portion joined to the waist, which is in kimono style. In the skirt there is a seam over each hip, and the whole garment opens in the front. It is easy to slip on in a hurry, and is so much like a dress in style that it can be worn all day.

The other design is more of a negligée, but is equally pretty to wear in the house. It too fastens in front, but it is a one-piece garment with sleeves set into the large armholes without fulness.

No. 2573 No. 2571

No. 2573—High-Waisted Wrapper: Kimono Sleeves

32 to 42 bust. Material for 36-inch bust, six end one-fourth yards of twenty-four-inch material, or three and three-fourths yards of thirty-six-inch material, with one-half yard of contrasting material. This wrapper is suitable for two purposes—a morning dress for warm weather and a bath robe. The price of this pattern is ten cents

No. 2571—Belted Negligee with Large Armholes

32, 36, 40, and 44 bust. Material for 36-inch bust, six and seven-eighths yards of twenty-seven-inch material, or four and one-half yards of thirty-six-inch material, with three fourths of a yard of thirty-six-inch lace, dotted Swiss, or flowered organdy for the under collar and cuffs. The price of this negligee pattern is ten cents

Send your order to the nearest of the three following pattern depots:

Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City

Pattern Department, Farm and Fireside, Springfield, Ohio

Pattern Department, Farm and Fireside, Room 302, 1554 California Street, Denver, Colorado

Our Threshing Ring—Where Work and Sociability Are Combined

By Margaret W. Moody

THE spirit of co-operation is working itself out in peculiar ways—peculiar in that most of us have never thought of the events around us as being affected by the impulse to get together. This is a simple story of what co-operation did in one community

A POPULAR cry nowadays is, "Down with the ring!" But there is one ring, the farmers' threshing ring, which deserves to be boosted, not booted. Our ring, consisting of eighteen neighbors, holds a meeting in January to elect officers. These are President, Secretary, Treasurer, Field Boss, and Sack Boss. The President appoints a committee of three to engage a threshing outfit. If an outfit gives good satisfaction one year it is generally engaged at the close of the season for the next year. Each man furnishes twenty sacks in good condition. The Field Boss is overseer of the work, and assigns each man his place. Sometimes each keeps one place for the entire season, and sometimes they exchange, according to convenience. The Sack Boss takes charge of all the sacks, transfers them from place to place, and distributes them to their respective owners at the close of the season.

These are all of the officers that we need for our work, and I presume that for most places they would serve all purposes. Too many cause confusion.

How the Work is Divided

There are eight teams to haul in the grain from the field (we thresh from the shock), two men with teams and wagons to haul the grain from the machine to the granary, four pitchers in the field, and two men to hold sacks at the machine. If there are more men than necessary to fill these positions the Field Boss puts them wherever they are needed most. When we happen to get a machine that is not a self-feeder the company hires band cutters extra.

When a man is threshing at home he is excused from special work. If he wishes to send his grain direct to market he furnishes the extra teams for getting it there. He furnishes feed for all the teams, board and bed for the four machine men while they are at his place, and usually has a small boy carry water to the thirsty men.

The machine has a certain route to follow. Sometimes a man has no grain to thresh, but he stays in the ring just the same, in order to keep his place for the next year. At the close of the season settlement is made according to the amount of grain threshed. Oats are 10 cents a hundred bushels, rye and wheat are 18 cents, and timothy hay is $1.50.

Multiply each man's number of hundred bushels by the number of men in the ring, and then by the price per hundred. This gives what each man owes the company. Then take the total number of hundred bushels and multiply by the price per hundred for threshing. The difference between this and the amount each man owes gives what each man gets or gives. The man with a small amount gets something for his extra work. The man with the large amount has to pay something, which of course he is willing to do. The entire scheme has, we think, been worked out on a basis of fairness to all. Suppose the ring contains five men. This table shows how it works.

A	000	bu.	owes	company	0.00 x 5 x 10c = $0.000	Gets	$1.135
B	85	"	"	"	.85 x 5 x 10c = .425	"	$1.135—$0.425 = .710
C	150	"	"	"	1.50 x 5 x 10c = .75	"	1.135 — .75 = .385
D	300	"	"	"	3.00 x 5 x 10c = 1.50	Gives	1.50 — 1.135 = .365
C	600	"	"	"	6.00 x 5 x 10c = 3.00	"	3.00 — 1.135 = 1.865
	1,135	bu. total amount threshed					

Each man is credited for his work with 11.35 × 10c. = $1.135. Each man takes his own dinner. Work stops at six o'clock P. M., and all go home for supper.

Some of the advantages are: The work moves along faster. Each knows where he is to go and what he has to do. All the help needed is provided. Formerly each man had to get a machine and helpers for himself, and there might be several machines in the same neighborhood at the same time. If a job is finished at B's place at eleven o'clock there is no waiting around for dinner, but as fast as the work is finished the men go on to C's. Thus the first wagons emptied go on and are loaded up before noon, ready to commence as soon as the machine gets there. B would have only the machine men to feed, which is quite a different thing from feeding the whole multitude. Sometimes several jobs may be threshed in one day. If a rainstorm comes up or the machine breaks, nobody is losing a lot of expensive food which somebody has prepared for the day.

This system places the threshing on a business basis. Every man knows what is expected of him, and every housewife knows what is expected of her.

The main objection of some to this plan seems to be the lack of the big dinner. They say it takes out the sociability. But the men can have a social time just as well while working together and eating under some shady tree as they can crowded around a table and bolting all sorts of rich eatables. It seems a necessary evil connected with threshing dinners that each woman must try to put on the table a sample of everything grown on the farm, and a few other things besides, and thus not fall behind the standard. A man really feels more like working in the afternoon when he leisurely eats his own dinner from his bucket, and he is less likely to have indigestion. I have asked many men particularly their opinion on this point, and they have assured me this was a fact.

The Enormous Work of Feeding the Hands

In some neighborhoods, I am told, the women and children follow the machine around. Think of the extra work and food! It must be an enormous kitchen that would permit of that many women working there at once, as well as a monstrous cookstove that would provide for that much cooking and baking in one brief morning.

There are but a few occasions each year when such an equipment is needed. And from the business standpoint to have it hold over useless means loss.

We don't cut out all the sociability though. After the threshing is done we gather at some convenient place. The women bring cake and the men furnish ice cream. The first two years we met in the evening at the home of one of the members. Next we went to a beautiful park at our county seat. This past year we went to the park, took our dinners, and a baseball nine from each ring contested for the honors of the day

The Community Builder

Sunday Sermons for Seven Days in the Week

By the Rev. Harry R. McKeen

WE HAVE already learned that Mr. McKeen reached the sympathies of his people and opened their hearts to religion by entering into their everyday problems. We have read of his converting a farmer by running a worn-out binder for seven days and building the most beautiful wheat stacks in the county. In this issue we shall hear how he brought a talented young woman into the church; and how he convinced an able man of the efficacy of religion while the two worked together on the roof, driving nails into shingles.

Chapter VIII

THE writer is of the opinion that long ere this time many readers have been asking the question, "Has that minister a church or is he just conducting an institution?" He does not doubt for a single moment that some of his readers have been terribly scandalized over the "worldly" way he conducted his church, but he doesn't care a rap.

He had a church—a real live, efficient church—not reaching its greatest possibilities by a great distance, but one that was serving the community so efficiently that competition in the church line was dead.

The best way in the world to stop overchurching and competition is to make one church so useful and fill the needs of the community so effectually that there will be no excuse for competition.

All these additional activities were legitimate, and they did not demand a single additional organization. All they did was to give those already in existence something definite to do. It is no wonder so many people "back-slide" from the church. People like something to do, and to go where there is some activity at every service. Yet more church people are allowed to rust out than wear out.

The writer thinks he hears someone saying: "Oh, yes, he helped the farmers save their corn; he increased the poultry products and the sale of cream; and he encouraged good roads and all that; hut, honestly now, did he have conversions? Were men redeemed and regenerated? What about character-building? Has all this made the people he served any better—better at home and as citizens?" And the answer is that had not this church and its pastor been instrumental in leading men into a larger life, a hetter life here and now, he would not have penned these words, and he would have considered his ministry a failure.

There are several cases in point. Any one of them would have been worth the labor and money invested during the entire pastorate even had nothing else been done.

There was a young lady, a farmer's daughter, who came to this church semi-occasionally. She had been taught to make light of the church, and that preachers were parasites upon the community life. She became interested sufficiently to attend church at least once on Sunday. This was sufficient to encourage hope. The minister spoke to her one day about joining the church and dedicating her life to the cause. She turned almost flippantly away, and with a smile that but illy concealed a sneer said, "I don't think so; there's *nothing* to it." But she continued to come to church, and even sang in the choir. Some weeks after this the preacher gave the invitation for those who wished to make a profession to come forward. This young lady came and was taken into the church. She had been a leader in the dances and parties. At the close of the service the pastor expressed his gratification at her action, and she said, "I've been waiting to do this for three weeks." He had not given the opportunity for joining the church during that length of time.

"I don't think so; there's *nothing* to it"

She became a leader in the church. She took charge of the primary class, and when she was later chosen president of the young people's work during a four months' absence of the regular teacher she conducted the study class in a very competent manner. She was an adept at drilling the children in the special programs rendered at least four times a year. There was no task too arduous for her when she took hold of the work. She soon discovered her educational limitations and went to the leading normal school and took special rural training. She is now perfectly able to conduct a rural-life campaign in either church or school.

This young lady was worth while. Don't you think so?

Then again there was the man who teaches the Bible class. He came to this part of the country when the land was thrown open to settlers, and secured a very fine farm adjoining the village. He had latent powers which should have been used for the benefit of his community, for every man owes his community the best there is in him. But he was hard to reach. He was reserved and distant when the minister was around, and would not discuss the church or religion very freely. I was in a quandry as to how to reach him, get his confidence, and become his friend. The opportunity came in an unexpected way. He was tearing down his barns, and building larger; help was scarce and he wanted the roof hurried in order to get a crop of hay under cover.

Someone suggested that inasmuch as the minister had worked for the farmers he ought also to he ahle to drive shingle nails. The idea of having a preacher about did not appeal very much to this farmer, hut if it would get his barns roofed he would risk it. He came to see me, and I accepted his offer, for two reasons: I needed the money, and I wanted to know the man. I thus had an opportunity to kill two hirds with one stone.

I drove shingle nails assiduously for two and a half days, taking part in the fun and frolic of the men at times, even leading in the repartee.

The second day in the afternoon the man said: "Why haven't you talked religion to me during these two days? I didn't think a preacher could live that long without bringing up the subject."

"Well, sir, you are paying me two dollars a day to drive shingle nails and I have been busy earning the money," was the reply. "Now if you want to talk religion I'm ready."

Away up there on that barn roof, about thirty feet from the ground, that preacher and farmer, seated on a 2x4, proceeded to thresh out the question. The air was cool and the sun was low before it was all threshed out. When the minister went home that night he had the farmer's promise that he would come into the church on the following Sunday. The next Sunday morning this man and his wife joined the church, and they, with their baby, were baptized. [TO BE CONTINUED]

How Cats Began to Eat Mice—By Isolene Knox Mills

A Story for Children

MANY, many years ago, before cats began eating mice, a beautiful hig white cat fell in love with a tiny gray mouse. He met her at a dance that Mrs. Frog and her daughter gave. She was very sweet and shy and graceful compared with the big clumsy Miss Frog, and compared with Miss Grasshopper, who was so thin and scrawny she looked like a skeleton, and Miss Jennie Rabbit, who hopped ahout so awkwardly.

Now Mr. Cat had fixed up a comfortable home away off in one corner of an old unused room in a big house. Mr. Cat had stolen a big piece of side hacon, and had it carefully hidden for winter, so he thought he was in a position to care for a wife.

Miss Mousie blushed and hung her head when Mr. Cat asked her to marry him, but she consented. Mr. Rohin Redhreast, who was acting as justice of the peace, married them. They went to find Jack-in-the-Pulpit to marry them, hut he was away from home for the winter and would not he back until spring.

They soon afterward went to housekeeping in Mr. Cat's house and were very happy. Mr. Cat would hring plenty of good things home to eat, and his little wife kept their home nice and clean, and made it very comfortahle for her big handsome hushand.

Mr. Cat did not tell his wife about that wonderful piece of meat hidden away so carefully until they had been married quite a while. Finally he took her and showed her where he had hidden the precious meat in an old chest. Then he closed the lid down tight, locked the chest, and put the key into his pocket.

One day when Mr. Cat had heen away a very long time his wife grew awfully hungry and wished her hushand would hurry home with their dinner. But he did not come, and she thought it would do no harm if she just smelled around that chest a little—she was so hungry that she felt even the smell of something to eat would do her good. So she hegan going around and around the chest, sniffing a little here and a little there. She soon found a weak place in the bottom of the box where it would take only a few little bites with her strong teeth to make a place hig enough for her tiny body to slip through, and before she realized what she was doing she had gnawed a tiny hole straight through that box, just to see if she could. When she was once inside the chest and near to that meat it was very easy to take just one bite and then another, and then another. Oh, how good it did taste to the little hungry naughty mouse!

So she ate and a'e until she could eat no more. Then she became scared at what she had done, and, my, how she scampered out of that hox and got her little broom and carefully swept away the shavings that had been made by her tiny sharp thieving teeth!

Miss Mousie blushed and hung her head

After a while Mr. Cat came home, and he carried only a small piece of meat for his and his wife's dinner.

"What in the world has been the matter with you?" asked Mrs. Mouse-Cat.

"Well, just as I was coming out of the back garden of the castle with a great hig piece of juicy meat I met Mr. Tramp Dog, who snapped most of it away from me. My, but I am hungry!" and he looked very longingly at the small dinner he had brought home.

Mrs. Mouse-Cat said, "Well, my dear, you eat all of that meat; I am not very hungry to-day, and you have had such a time I think you ought to have it."

You see, she had eaten so much already that she really did not want anything more. But of course Mr. Cat did not know that, and he only thought how sweet and unselfish she was.

So time went on, and every few days Mrs. Mouse-Cat would eat a little more of the meat. Then when her husband came she was not hungry, and he worried over her loss of appetite. Pretty soon the meat was all gone but the rind. How easy it is to act a story after it is once begun! Mrs. Mouse-Cat worried a little bit at first because she knew she was not acting right; she was not only stealing, hut was deceiving her hushand. After that she did not care. That little part of her called conscience had grown hard.

Finally one night a heavy snow fell, and it was so bitter cold that Mr. Cat did not dare leave his warm home. So he said to his wife: "Well, my dear, I think we had better hegin on our winter meat to-day. My, hut I am glad I was lucky enough to get that meat for the winter."

Poor little Mrs. Mouse-Cat was so frightened that she did not know what to do. Mr. Cat unlocked the chest, opened it, leaned over to lift out the meat, and, lo, there was nothing there but the rind. He could not believe his eyes.

He ruhhed them and looked again.

"Someone has stolen our meat," he cried in a voice of anger and disappointment.

But he did not think of his wife as the thief until he turned to look at her. Then he knew, for her guilty look told him all. Then, too, he soon noticed the tiny hole in the bottom of the hox that none hut a mouse could make. His anger was something terrible. His wife cowered in a corner, covered her face, and tried to deny eating the meat; but he would not listen. He made one leap, grasped her in his claws, and before he realized what he was doing he had eaten her, so fierce was his wrath.

So that is how the first mouse was eaten hy a cat. Mr. Cat went and told all the other cats that mice were not to be trusted, and should he eaten so the world would be rid of them. So cats have been making war on mice and eating them from that day to this.

E-W

FARM and FIRESIDE

EVERY OTHER WEEK ~ ~ THE NATIONAL FARM PAPER

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W

ESTABLISHED 1877

The Largest Grapevine in the World—See Page 11

LOOK FOR THESE GOOD THINGS SOON TO COME!

Concerning Headwork-Shop Devices

We know that a tendency exists among intelligent people to take a good many things they see in print "with a grain of salt." Now, the Headwork Shop needs no seasoning. Every contribution that goes into it is selected because it is fresh and new. Several people have written in saying how well some of the devices worked. Of course they worked. They always work if directions are followed. Still others said they were amused at some of the scarecrows published some months ago. That's what scarecrows are for, to amuse the birds and keep them from destroying the crops.

"I wish to say," says a California man, "that the hog-loading suggestion in FARM AND FIRESIDE for June 20th is a good one. The next day after the paper came we tried it out with good success."

You perhaps remember the article referred to. It simply recommended putting a bottomless crate over the hog and making him walk up a plank into a wagon, instead of hoisting him in.

Now don't misunderstand. We are always pleased to know when FARM AND FIRESIDE helps you, but we never yet comprehended why it is that people ever get the notion that FARM AND FIRESIDE is ever *anything else* but useful and reliable.

A Page for Weather Prophets

Are you a weather prophet? Nearly everyone is, but only a few are good ones. The Weather Bureau, with its own forecast, has got people out of the notion of trying to compete with Uncle Sam. But there are times when the Government misses it, and also times when to-morrow's weather is more important than almost anything else. So a page of rules for personally forecasting local weather will be one of the attractions in the next issue of FARM AND FIRESIDE.

Fitting Fowls Fat

Granted that "A man's a man for a' that," the analogy doesn't hold true with chickens. When one gets hungry for a ripe broiler or a tempting roaster he wants a plump, finished bird, not a skinny, scraggy framework of a chicken. Too often the farmer grows a lot of strong, rangy fowls, and the professional chicken fattener covers their bones with flesh and fat, thereby reaping the profit.

Every raiser of poultry has an itching for that profit, and justly, that slips through his fingers into the pockets of the feeder who finishes the birds for market. This profit is easy to get, too. Two weeks of special pen-feeding does the trick, which will be described by Mr. F. W. Kazmeier, a poultryman, who has thus finished hundreds of his fowls and always gets the high dollar for his birds as a result of his pains and skill.

Thunder and Lightning Explained

Z———ipp, crash! That's as near as we can come to a lightning flash in this space, but you're going to be entertained in one of the next issues with a real thunder storm.

What is lightning? What is the chance of being struck? Where is the best place to be during a storm? These questions and many others of similar nature will all be answered in a way that will take you right into the clouds and show you all the inside workings of the atmosphere during a thunder storm.

When Nelly Came

We often complain that our girls do not like to marry farmer boys, but prefer to seek ease and romance in other conditions. Well, is not the fault largely ours? Is it not because we fail to recognize the farm woman as a producer, which she most truly is? No woman is content to work hard and to incur privation unless her usefulness in doing so is recognized. Merely to be ushered into success at the end of her long struggle, as if it were her husband alone who had built that success, is not sufficient reward. But almost any woman is happy to work and to do it gladly if her husband acknowledges her his partner in the enterprise. Our story will show the fine result of this just principle. When Nelly came success was possible.

The Community Builder

This fine constructive serial will close in the issue of August 15th. We hope that its lessons have been laid to heart by country pastors and by all earnest workers in their parishes.

FARM AND FIRESIDE will be very glad to answer questions and supply additional information to anyone addressing the Rev. Harry R. McKeen in our care.

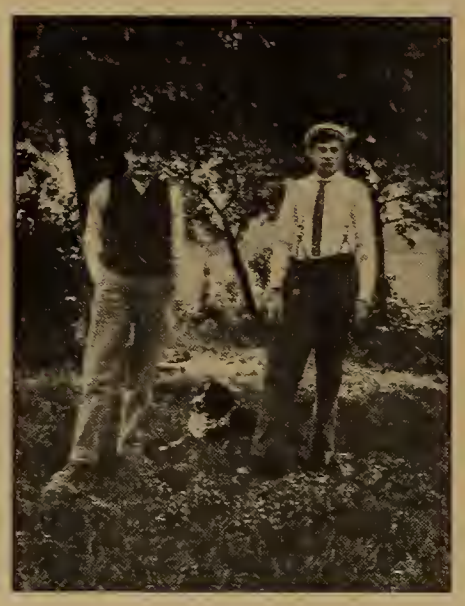
WITH THE EDITOR

THE industrious man who works on the farms in his neighborhood is getting scarcer all the time—at least where I am acquainted. The average income of the farms of the county in West Virginia in which I live—Morgan County—is less than two hundred and fifty dollars a year. This is very low, but it does not take into account the fact that many men are both farmers and wage-earners. A man may make a fair income—much more than the average above—and yet his farm returns may show him to be receiving less than a living wage.

Our county farm demonstrator, Mr. Swaty, is talking over with the farmers plans for so managing the farms that there will be income every month in the year from the farm, and incentive for constant work. The large places are mostly fruit farms and call for quite a number of men all the time, and large numbers of pickers and packers at certain periods. This furnishes employment for almost as many men as used to engage in the timber work, and makes it possible for a great many small proprietors to make more working by the day or month than they think they could make on their small mountain farms.

Some day, perhaps after Mr. Swaty has worked with us a few years, these wage-earners will find themselves so busy with profitable work in fruit-growing, poultry-farming, trucking, or stock-raising, that there will be fewer hands. Although I am dependent on hiring most of my work done, I hope the new day will come soon. I would far rather see men owning their own homes and making their living off them than working, even for more money, for somebody else. My feelings are aroused along this line by a letter I have received from a friendly reader of this paper, Mr. A. R. Dittmer of Illinois. Says Mr. Dittmer:

You invite us to talk back to you, so I will make a try at it; at least I will talk back enough so you keep FARM AND FIRESIDE a-coming. In your letter you tell me what kind of land you have, and so on. It makes me feel like I got real well acquainted with you at last. Well, I have no land at all, nor horses or cows, sheep or hogs, nothing but a good wife, six girls, two boys, seventy-five chickens, and a dog. I am a laborer, work among farmers at anything there is to do; just now I am clearing a piece of timber land, about five acres of it.



There are tall hickory trees, elm, and black oak, a few cherry. I use dynamite for the big trees; have felled hickories 15 inches in diameter and 50 feet high, and it works all right, but you can't get them out with dynamite alone. I cut the branch roots and then shoot the center root, and they generally fall easy then. I get a good lot of fencing to do, and in that way I stir around in all kinds of dirt. Sometimes I work in gravel, and then again through a seep, but I seldom get to work with a team (that's too easy for the day hand). I was raised on a farm. At the age of 22 I went to the city, got married, and lived in town 20 years (Quincy, Illinois), worked at woodwork (showcase) most of the time. That makes me a very handy man around the neighborhood now. I left town about eight years ago, and have worked among farmers all the time, and I have certainly seen a time of it. It isn't so bad now since the boys are growing up, but they didn't get to school as much as some boys of their age. I write this as a kind of introduction to you, and hope I don't bore you too much. I send you $1 for 3 years' subscription. If I am alive I hope to renew again in three years; if dead, I'll have to change the address anyway.

I enclose a picture of myself and oldest boy, taken just before he went north last fall. No one here will pay him $40 per month, and that's what he can get on a dairy farm near Minneapolis. I don't know whether or not my children will get along as well as those that go to school until they are twenty-one years old. My children haven't been able to study books, but they take an interest in whatever is before them.

Now, if you know a man that can work among the farmers and support a family like mine and give them the necessities and some of the comforts of life, I'd like to meet him.

After a man has worked as well as, I feel sure, Mr. Dittmer has all his life, I feel a sense of injustice in the fact that he has "no land, nor horses, nor cows, sheep nor hogs." I know that he has immeasurable riches in the "good wife, six girls, two boys"—and the seventy-five chickens help some too. And judging from the looks of the dog in the picture sent with the letter I suspect that the dog is no drawback.

He is one of those sheep-bred fellows, with a stripe of white over his head and a white collar. I was owned by such a dog once, and he was one of the gentlest masters a boy ever had. But, as I was saying, I wish there was a bit of land going with the other riches.

To be sure, it is perfectly possible that he makes more money—clear money—than the men he works for. A great many landowning farmers are shown by the figures of colleges and departments of agriculture to receive less labor income than the average wage of a hired man.

But if you think they would change places with the day's work hand just make the proposition.

I wish Mr. Dittmer could go out and take up land in the very county in Illinois in which he lives and have all he could produce on it. But I seem to be the only one disturbed. Mr. Dittmer is far more cheerful about the matter than I am. And why not? The farmers for whom he works will soon be able to use only a piece six feet by two, and the man who has reared such a family as that of Mr. Dittmer—and we've proof of what he says in the picture of his son—and is hale and strong, with the good wife by his side and the eight children not so very far away, and a dollar for the farm paper, can claim to have made a success.

Herbert Quick

ABOUT ADVERTISING

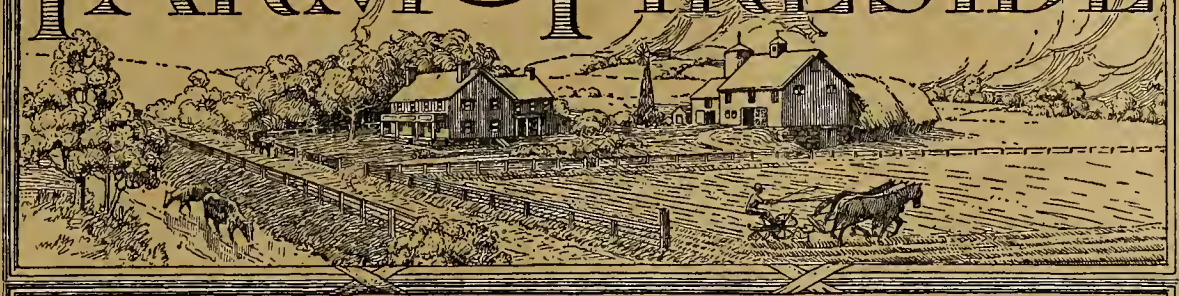
FARM AND FIRESIDE does not print advertisements generally known as "readers" in its editorial or news columns.

Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment.

If any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers.

FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. $2.50 per agate line for both editions; $1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2¼ inches, length of columns two hundred lines. 3% discount for cash with order. Three lines is smallest space accepted.

FARM and FIRESIDE



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VANQUISHING THE GRASSHOPPER

By Harlan D. Smith

MANY Kansas farmers and business men will be remembering that this is the anniversary of the fight which they had with the grasshoppers. Every year in Kansas is not like last year. Then the emergency called for co-operation. Co-operation was the result. By it the grasshoppers were destroyed. Co-operation at all times would protect any community against invaders, and grasshoppers are not the only enemies the farmers have to fight.—EDITOR.

WHEN twelve Kansas counties united in a ten-day campaign against an invasion of grasshoppers just a year ago it was every man's fight. Farmer, merchant, doctor, lawyer, and editor joined hands in the common cause: to protect the crops from an army of grasshoppers the like of which hadn't been seen in Kansas since "grasshopper year"—1874. It was a fine example of co-operation, the fight that followed.

Grasshoppers invaded the cornfields

And if stores hadn't been closed, and if doctors and lawyers hadn't left their practice, and if town motor cars hadn't helped haul the 570 tons of poison which so thoroughly repulsed the 'hoppers, and druggists hadn't sold the poison at cost, and the Kansas Agricultural College hadn't sent men to direct the campaign—if there hadn't been co-operation the chances are the farmers in those twelve counties would have asked for state aid in the fall. For the 'hoppers were there in large numbers, and had they been allowed their freedom a few weeks longer the vegetation would have been devastated.

As it was, science and co-operation were too much for the grasshoppers. Sixty per cent of them were killed by the first application of a poison recommended by G. A. Dean, state entomologist at the Kansas Agricultural College. Second and third applications brought the death rate up to 90 per cent. Crops were saved in which hordes of the pest already had made great headway, while the few fields which were not infested were saved from damage.

Ford County was the first to plan a united campaign. The county commissioners, urged on by farmers and the district demonstration agent at Dodge City, G. E. Thompson, designated Monday, July 14th, as Grasshopper Day, and called upon every farmer in the county to join in the fight.

Posters with flaring headlines, "Grasshopper Fight Next Monday," were scattered over the county by the county commissioners. Their statements showed the intensity of the situation. This is the way one of the posters read:

> In view of the alarming numbers in which grasshoppers are appearing in Ford County, and the untold damage which they are causing to growing crops, the board of county commissioners has appointed Monday, July 14, as the date on which to make a united and determined effort throughout all the townships of the county to destroy the pests as completely as possible.
>
> In order to enlist the help of every farmer in the county in one big effort to exterminate the grasshoppers on that day, we have directed the trustees in every township to purchase at county expense the supplies which are needed in his township for poisoning the grasshoppers, using the formula which the State Agricultural College has found to be most effective.
>
> We appeal to every farmer, every landowner, and every tenant to take up this matter at once with the trustee of their township, who will furnish all the supplies and have charge of the work in that township. The situation demands that we deal with this pest promptly and effectively. Please get in touch with your trustee at once by telephone or otherwise, find out where you are to go to get the materials, and interest all your neighbors in the campaign. Get your supplies in time so that you will be ready to spread the bait early Monday morning before the grasshoppers have begun to move.
>
> This is one of the most serious situations Ford County has faced for several years. We must have every farmer in the field early next Monday morning if we get the best results. All that remains for the farmer to do is to go to the trustee and get the materials which the county is furnishing, and spread them on the infested fields. Please give every assistance in your power, as the situation is a serious one.
>
> E. W.

Peach trees—the leaves went with the grasshoppers

Every farmer would receive enough to sow over twenty-five acres. This was to prove the value of this method of eradication. It was the belief of the commissioners and the farm agent that once the value of the poison was shown, farmers would cover their entire farms with it.

Professor Dean, the state entomologist, was asked to direct the campaign in Ford County. It was thought that if he could organize the county into a fighting unit and demonstrate the proper use of the poison the co-operative fight would be more effective. In several years' trial Professor Dean's poison bran mash had proved to be the most efficacious method for grasshopper eradication.

Half an hour after the state entomologist arrived in Dodge City the commercial club rooms were packed with farmers to hear him. He suggested plans for Grasshopper Day, guaranteed the poison bran-mash method, and agreed to send a number of his assistants from the college to help the farm demonstration agent to direct the work.

It didn't take that assembly long to act. The plans of the state entomologist were approved at once and a committee "with power to act" appointed to buy the ingredients for the poison and to arrange for mixing and distributing the poison bait. Every township trustee was to call upon or telephone every farmer in his district and urge him to co-operate in the crusade. The poison was to be given out from four distributing points in the most convenient parts of the county.

It was every man's fight

It was a well-organized fight. So thoroughly had the details of the plan been carried out that two days before Grasshopper Day Ford County was resting on its arms, ready for battle. One hundred tons of poison were ready for distribution in the county. As every hour meant more damage from the ravenous 'hoppers it was decided that Saturday instead of Monday should be Grasshopper Day.

That Saturday was a sad one for grasshoppers in Ford County. Before night came, 1,100 farmers had called for their allotments of poison and had sown it broadcast over the infested fields. Bug men from the agricultural college were at each distributing place to oversee the mixing of the poison and to explain the use of it. County officers checked out the allotments. This is the way the poison was made: Bran, 20 pounds; Paris green, 1 pound; syrup, 2 quarts; oranges, 3; water, 3½ gallons. The bran and Paris green were mixed dry at each distributing point, and these instructions given to each farmer as to mixing in the other ingredients when the poison was ready to be sown: "Squeeze the juice of the oranges into the water, and chop the remaining pulp or peel to fine bits and add them to the water. Then dissolve the syrup in the water and wet the bran and poison with the mixture, stirring at the same time so as to dampen the mash thoroughly. The damp mash, or bait, should be sown broadcast in the fields early in the morning, or about the time the grasshoppers are beginning to move about from their night's rest."

Twenty-four hours after the poison had been spread in Ford County the effect was seen. Sixty per cent of the 'hoppers had been killed by the first application. Counts made in a number of fields of average infestation showed 150 to 200 dead 'hoppers to the square foot. Farmers were convinced. Many of them ordered ingredients, mixed the poison themselves, and spread two and three applications of it on their fields. Eleven other western Kansas counties followed close upon Ford County with similar crusades.

Twenty-five cents an acre will cover the entire cost of an application of poison bran mash. If the ingredients of the poison are bought in large quantities at wholesale prices the cost may be reduced to twelve or thirteen cents an acre. By securing the co-operation of merchants and druggists Kansas farmers were enabled to buy ingredients at cost. A sugar-beet company in Garden City supplied syrup free for all the poison used in Finney and Gray counties, which was about 1,250 gallons.

Confessions of a Horse Trader

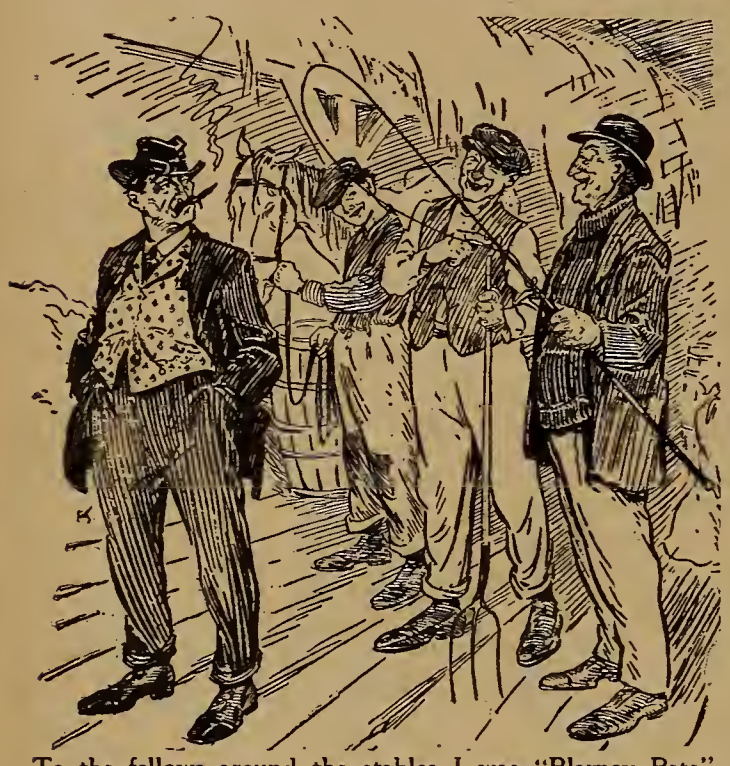
How I Worked the Tricks Many Times, But Was Fooled Once

By A. Langson Huntington

"YOU can tell a horse's age by its teeth" is one of the biggest fake sayings current. Yet even up to my very last days of horse-trading I could taffy up some mug, and he would fall for a bishoped horse. One time I even sold a seventeen-year-older for a six-year-old by a little doctoring. I cut cups in his smooth mouth, and small laterals and dots, and stained them with silver nitrate. After a little more polishing the horse passed off before a crowd of good horsemen and brought $250.

I Had Few "Rejects" to Make Good

But I never did much of that sort of work when I could help it. I considered it more of a trick to trick the buyer myself than to fix the horse to trick the man. It was mighty seldom I had to run a thread under the forelock from ear to ear to keep them from drooping, or else suspend a leaden bullet by a thread into the ear. You probably have noticed that a horse when a little blind will "look with his ears" if anything comes toward him. But the balls irritate him when he moves his ears, and he tends to keep them perfectly still. Beyond these little things, though, and putting lemon rind up his nose to hide the fact that he is a roarer and his wind is poor, I kept my tricks to my talk. And the buyers always felt so cheap about being taken in that I had few "rejects" to make good.



To the fellows around the stables I was "Blarney Pete"

To the fellows around the stables I was "Blarney Pete." I never lied; I merely prevaricated. One little balky horse sold quickly, though I carefully remarked that "she was a mighty good worker, and *right there* at the foot of a hill," and would "stand without hitching." Another time I sold a "heavy" horse after saying, "If he ain't windy *now* you needn't take him."

Once I almost gave up trying to sell a horse that had a bad case of navicular disease in his foot. I tried all sorts of dodges, like keeping the best side toward the buyer, cocaining the game leg, and all that, but somehow they all could see the disease. One day a man called up and said he wanted to look over that brown horse I had for sale. I told him that it wasn't fixed up for showing, but he could come anyway. Then I hurried down to the stable, got my horse out, made a little hole in the bad hoof, and doctored it up with tar and a plaster. When my man came I said, "Now look here! You are catching that horse at its worst, for he strained a leg yesterday in a little trotting meet and ran onto a nail." Thereupon, of course, he insisted on seeing the horse. He examined the "nail bruise" with an air of great wisdom, and in the end bought, for it was a smart-looking little horse. And I guess he wondered why it never got over the lameness of that nail bruise.

Flossy's Mother Wouldn't Have Known Her

Another hard-selling little horse that I once sold was a little white mare called Flossy. Flossy was noted from county to county for downright cussed cantankerousness, plus being homely, poor in knee action, thin as a rail, and muscle sore from use over hard stones. I tried in a dozen ways to warm up to Flossy and get her proper esteem, but I tried the impossible. One day I heard of a good fair going on not far away, and decided to see what chances I had of selling Flossy there. First I disguised her beautifully with black markings. This I did by beating four ounces of litharge into half a pound of quicklime, pouring over the whole a sharp lye and painting Flossy where her black marks were to be. Then I had her shod with heavy shoes and exercised over plowed land to get her stepping high. A few days before we left for the fair I sweenyed her. That is, I blew air by means of a hollow needle under the skin of her shoulder to give her a plump look. I only hoped that people in passing their hands over her shoulders would not hear the crackle, for that is the dead give-away of the trick. After we got to the fair I had Flossy curried up fine and clamped a false tail onto her little stump. Then, the night before the opening of the sale, I poured gasoline over both shoulders and forearms. This contracted the capillaries and larger blood vessels, and by so relieving the blood pressure relieved the sensibility of the nerves and permitted a natural movement of her "muscle sore" shoulders. Every thing was now ready, but one, for the sale. Just before I took her on I put a small twitch behind one of the branches of the bit to keep her docile. This was a loop of strong cord about the tongue, which was attached to a stick and twisted. This will keep a mean horse temporarily docile, though it is also one of the meanest tricks to the horse. When I brought that horse out I was right proud of my handiwork, for Flossy was one of the prettiest horses on the place. She pranced out, stepping high and careful and arching her neck; her now black-and-white coat shone plump and finely curried; and she was as gentle and obedient as a lamb. Almost before we were in the ring she was sold to a right smart man for as much as ever she cost me, and then double.

First I disguised her beautifully with black markings

The Crowd Certainly Gave That Dealer the Laugh

At that same show I saw a mighty smart young girl sting a horse trader and throw his doctored horse back on him before everyone. She examined the horse closely about the ears for shot, and smelt of the hoofs for turpentine. If a horse is lame through sore feet, things can be temporarily fixed by heating turpentine to the boiling point and pouring it over the hoofs. For that matter, she went after that horse for all the tricks known. You see, her dad was a horseman. She took the eyes for blindness, carted the horse to the sun to see him blink, and examined his eyebrows to see if they were triangular or wrinkled. Evidently she knew the trick of clearing a blind eye by belladonna or bloodroot. Then she came to the nose, and laughed out when she noticed the nostrils had been slit a little in the thin part. Turning to the boy she said, "Give him a drink and run him around, and then we can see what this horse has got." When he came back I noticed signs of heaves, and, sure enough, that was what the horse had to a high degree. Everybody gave the dealer the laugh to think that a girl could beat him. Later the fellow confided in me how it had been done.

"Simple enough!" he remarked. "His feed was wet, and he got no bulky food. Then I shut off the heaves by dope and slit the nostrils a little to make them collapse, otherwise they would swell out and give the horse away. Finally I blew boracic acid down his throat in order to stop the cough, and there he was."

The "Loose Shoe" Trick was My Specialty

Nearly always I would hide a roarer by galloping past the buyer so fast that he couldn't hear the horse roar, and then slow up, when out of hearing, by much whoaing and pulling on the lines as if the horse were mighty lively. And I could easily sell a poor-moving horse by the "loose-shoe trick." As soon as this horse got into the ring, off would fly his shoes as if by accident, and everyone around would begin to sympathize. That was my cue to say, "But it doesn't matter much, as anyone can see what a fine foot he has," and the shoe, not the horse, would be blamed for his poor gaits.

Yes, I did get stung once, for I took a little horse that never could sell. It had an IC brand under its mane. That meant the U. S. Cavalry had rejected it as not sound, unable to stand fire, or something else. Yet I took the chance that it was nothing serious, and bought what proved to be a badly foundered horse. If ever again I see the French brand R or our little IC under a mane I will never chance it. This horse grew worse and worse, and couldn't be fixed in any way. Finally he stood with his fore and hind feet almost in the same spot under his body. All the stables laughed at me and told me it was a no-good horse, and I believed them sincerely. Once a fellow called out, "Say! What are you goin' to do with that critter?" I answered, "Take him to Indiana to tramp sauerkraut in a barrel." But after all, believe me, that was the one and only time yours truly was stung.

The Renter is Isolated by Circumstances

Belonging to Clubs Would Make Most Tenants Poorer Than They Are Now

By Lorenzo D. Barnes

"THE Isolated Renter" article in FARM AND FIRESIDE is puzzling as well as interesting. The article is interesting because of the peculiar view of the writer. It is puzzling from the viewpoint that belonging to a few clubs or community circles would allay poverty and make one a landowner. Just how the process would work out against drought, poor soil, high rents, and high cost of living we are unable to fathom.

They'd Be too Poor to Move

Prior to the Spanish War, when cotton ran as low as 3½ cents, the writer starved and sweated out five years on rented land in Arkansas and Indian Territory. To say from experience that the life of a tenant farmer, the one who gives a half or a third or a fourth for the privilege of working, is the most hapless fool on earth is putting it mildly. One of this sort who could attend five or six clubs weekly would certainly have to be in the "Ozgar" or the "Mutt and Jeff" class. Instead of moving every year—as the writer complains—these soon get too poor to move at all. About the only organization that appeals to these is that of the socialists or the undertakers.

But why a renter, anyway? Instead of encouraging tenantry, why not decry it and abolish it? It has no place where civilization and education penetrate. It has no place where Christ is confessed and where humane and anti-cruelty societies are known. It has no place where feudal slavery has been abolished by the sword. But how abolish it? It's coming of course, in the Almighty's plan; but were the kings of the earth to rise in their generation they would anticipate the Almighty's plan, assuage his wrath, and do something on their own account. The plan would be easy, though it would reduce the lords and grandees whose land grants run into millions of acres.

What has been done for the lazy Indian should be done for every child, white or black, born on American soil. Say, 10 or 20 acres should be set aside for every born citizen, 20 acres for a male and 10 for a female. This would provide a home site where with proper cultivation most of the living could be made. It won't do to say such a plan would be "too paternal." It has not been considered so with the Indians and millionaires. There is nothing in favor of the Indian that is not in my favor. I was born here, and that is as soon as I could get here. Why the difference?

The "Best Men" are Powerless to Help

The poor "one-gallused," cotton-shirted renter is learning to ask the big questions. So, knowing these things, how could he be expected to mess with clubs, etc., and walk up and vote for the "best man" when the best under present conditions are powerless to aid him?

Of course there are others as poorly situated. The town or city man who toils ten or twelve hours for $1.25 or $1.50 a day, pays high rent and fuel bills, must economize closely to feed the family, so that little is left for clothing or pleasure. If his water bill goes unpaid his water supply is cut off. Yet he is expected to support the organizations and wear his hat and lungs out cheering the "best man!" Bah!

But, thank God, these conditions are not to be permanent.

EDITORIAL REMARKS: This discussion is in reply to the article entitled "The Isolated Renter," by John Y. Beaty, appearing in the May 23d issue of FARM AND FIRESIDE. Mr. Beaty commented on the fact that few renters in his locality belonged to farmers' organizations, and contended that if they did so they would profit by the exchange of ideas.

Mr. Barnes takes exception to this view. Both men are probably partly right. Exchanging ideas will never take the place of real farm work, but neither will work alone support a man and family unless the work is productive of something that has a market value above the cost of production.

Mr. Barnes's principal point is the assertion that the "one-gallused" renter is learning to ask big questions. When enough people know what they want and refuse a substitute, they usually get it. Some renters are renters by choice, but every man and woman should have a fair opportunity to acquire land. Isn't it opportunity more than anything else that is wanted?

Five Years of Independence

Four Hundred California Dairymen Pay Themselves Good Prices for Their Own Milk

By G. W. Shaw

THE modern tendency of consolidation in trade has for several years past reached the milk business. How it came about can very easily be explained. In the first place the milk business was carried on by one man with the help of his family and by peddling the milk himself. After a time more people went into the business because they saw the money that was to be made by selling the product direct to the consumer.

This in turu was followed by competition which proved exceedingly ruinous. Price-cutting with all its attendant evils followed, and those who had poor equipment were forced out of the business. Some of those who stayed with it saw the advantage to be gained by working together, and formed what might be called a trust—that is, consolidated their interests in a certaiu portion of the territory and agreed to maintain a price that would give them a fair degree of profit. Theu one of a little better business ability and perhaps more capital would buy out some weaker man and reduce expenses by using only one team to deliver in the territory where before the cousolidation it took two. This reduced his expenses for delivery and gave him the better profit. Perhaps two or three men of equal ability and equipment in time got the bulk of the trade in their own hands, and then eusued another period of price-cuttiug to maiutain the supremacy and hold all the trade. The weaker and more poorly equipped man was again forced out of the business and one man with good organizing ability decided that he wanted all the trade. To galn this he bought out some of the smaller concerns who still remained in the business, effected an organization of the larger dealers, and formed a stock company, each man taking shares according to the equipment and money furnished. As usual in cousolidating, expenses were cut down by having but oue office force and by having one team and driver deliver in territory formerly covered by several.

After doing this the company practically controlled the selling end of the business and could make prices to suit itself in the territory which it controlled.

They Either Accepted Conditions or Quit

In the meantime the opposite condition was going on in the country among the producers, in proportion as they were forced out of the business of selling to the cousumer they were obliged to sell their product to the others who still remained in the business. So long as there was competition among the dealers this was all right, and they were able to get a fair price for their product most of the time.

After the consolidation, however, the company decided that it would take matters into its own hands in the country and make prices to suit itself. The very large producers were paid just enough to keep them in the business, but all others were paid the lowest possible prices. Of course it must be understood that the company controlled through its own dairies a permaneut supply of milk which could be depended upon to fill ordinary demands and be used as a club to keep prices down by saying that it did not really need any outside milk.

The smaller producers—that is, the ones who would have three or four or perhaps a dozen cows—were compelled to take any price that was offered to them by the company or go out of the business. If they attempted to sell their milk in the city the company would undersell them and make prices so low that they would do better to take the price offered by the company.

Aside from this, the restrictions of the city boards of health iu many cities were such that the smaller producers were unable to comply with their demands without expensive equipmeut, which they were unable to supply. The condition of affairs described above prevails in most of the large cities in the United States, and to a certain extent in the smaller, and explains why the producer receives such a small proportion of the retail price.

We Studied the Matter Seriously

Various attempts have been made by producers to form organizations of their own to compel dealers to pay fair prices, but most of these attempts have been unsuccessful. The reasons for failure have been various, the principal one being the lack of real co-operative spirit among producers. During the flush season some one man would attempt to get the better of his neighbor by making a coutract at a less price so as to dispose of his whole output, and as soon as one member did this each member was compelled to shift for himself and the selling and distributing company would again control the price.

The producers' organization might hold together for one or two seasons, but ultimately they would make a break, and trade would go back to the old conditions. Thus most producers' organizations have stopped short of the point where they might hope for success.

Conditions as described above were prevalent in Los Angeles, California, some years ago, and the price paid producers was so low that a great many of them were selling their cows and going out of the business, and at the same time prices in the city were such that the consumers were complaining.

Believing that the dealers were getting more thau they were entitled to, a number of producers got together and formed an association to market the milk as an association. They agreed that uo one should hold more than one share of stock, the value of which was placed at $100, and every member was bound to market his milk only through the association. At first the association tried to market its milk through one of the milk companies in the city, but after a short trial the milk company failed and the members of the asso-

The milk plant, wagons, and employees

ciation received considerably less for their milk than was called for in the contract. Finally the milk company was reorganized and another contract was made, but a big loss in butterfat was claimed by the company, which again reduced the price. These two unsuccessful attempts for better prices, while discouragiug, simply spurred on the association to find another solution.

In the neighborhood were two co-operative creameries which made butter. They were successful by reason of good management and were paying a fairly good price for their milk. Of course the price was not so high for the milk that was made into butter as it was for the milk that was sold direct to the consumer. But payment for milk and cream was prompt and the creameries were well patronized.

Some of the members of the milk organization in looking over the field decided that if a combination could be effected between the two co-operative creameries and milk association they would be in a position to compel the city milk dealers to pay a fair price. The matter was broached to the directors of the creameries and at first met with no encouragement, and the first association made another attempt to market its milk itself as an individual organization.

The matter of consolidation had been agitated and thought over in the meantime and the creameries promised that if the association would put up a plant in the city to offset the investment by the creameries in the country, a trial agreement might be reached.

The matter was put up to one of the distributing companies in this way, that if it would not pay a fair price for their milk the association would put up its own plant and sell direct to the consumer in the city. Prices reached a point where at last there was a difference of but five cents per hundred pounds between what the milk concern paid and the producers demanded. The selling concern said that it was impossible to pay more than they were offering except at a loss; further that they would not make a contract with the association, but would make a contract with individuals composing it. This the association refused to do, and committees were appointed to go ahead with the establishment of the association's milk plant.

The members of the first association were to pay for their stock at the rate of five dollars per month, which was taken out of their milk dividends. In this way they accumulated enough money to make a start, and they prepared at once to buy a site and put up a plant in the city. They did not have the necessary capital, but with the money they had acquired from the sale of stock and by borrowing money as an association from the banks they succeeded in raising enough to buy a suitable location and build a plant equipped with a refrigerating system, Pasteurizer, bottler, and churn for making surplus milk into butter. To get money for horses and wagons a note was given the bank in the name of the association secured by the individual members of the board of directors.

There was of course opposition from the city milk company, and predictions were freely made that the business would not last six months. The milk company cut prices in the city and offered higher prices to the producers in the country, thus cutting at both ends, the idea being to curtail the supply of milk in the country and selling in the city at such a low price that the association would not be able to sell their milk.

But in spite of the opposition and the fact that at first the association was unable to pay the prices expected, most of the members refused to be tempted by the higher prices offered by the old selling company and stayed with the association.

The association started selling in the early part of July. The next winter there was a decided shortage of milk in the city. In spite of this, however, one of the larger companies cut the price ten cents per can for milk sold in three-gallon cans to hotels and restaurants. The association, however, had no difficulty in selling all the milk they had at the regular price, so that the older company lost considerable money by the experiment.

An Increase of Fifty Cents a Hundred

At the end of six months the average price paid for milk by the association was practically fifty cents per hundred more than the old company had offered. Yet the milk company had stated that it was impossible to pay more at the price milk was selling in the city.

The original agreement made by the co-operative creameries and the milk association called for a five-year contract, and in that time the average price has been raised from $1.50 per hundred to $2.45 per hundred pounds for milk testiug four per cent.

All of the raise, however, is not claimed to be due to the organization of the association, as at times there has been a shortage of feed, and this would have compelled a portion of the raise in price. But the association does claim there has been a rise of fifty cents per one hundred pounds of milk due directly to the organization. The benefit of this has been reaped not only by the members of the association but by everyone in the milk business, for if the old companies refused to pay a fair price the producers knew that the milk could be turned into the association and a good price realized. The association now has been in business for nearly five years, and steps are being taken to form a permanent organizatiou, reorganizing the old companies into one large stock company. The letter reproduced on this page tells briefly what we have accomplished in the way of prices. This year's business statement is not quite completed, but for the last half of 1913 the average price was about $2.43 per hundred for four-per-cent milk. January and February of this year the price was $2.40; March, $1.90; April and May, $1.80. The low price the early part of this year is due to the very large supply caused by the extremely good winter we had here. Prices for the balance of the year will be very much better. From experience we believe that anything short of the distribution of the milk direct to the consumer by the producer will not be successful.

Others Can Do What We've Done

The association has had inquiries from different organizations as to its manner of doing business, so that it will be seen that the dairymen are alive to the importance of the subject.

Co-operation would seem to be the only successful solution of the problem, and the sooner the dairymen of the United States realize this the better off they will be. But it must be co-operation in action. Just organizing and not doing anything is not really co-operation.

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PRODUCER TO CONSUMER

PASTEURIZED AND ABSOLUTELY PURE
MILK AND CREAM
BOTH RETAIL AND WHOLESALE

MUTUAL DAIRY ASSOCIATION
1236-44 VICTORIA STREET

Los Angeles, Cal. Aug. 15th 1913

TO OUR MEMBERS AND SHIPPERS:--

It has been four years this month since you started selling milk to the consumer direct. The average price for the last six months of 1909 was $1.42; for 1910, $1.84; for 1911, $2.09; and for 1912, $2.25 per hundred for four per cent milk.

This looks pretty good in view of the fact that at the organization of the company, $2.00 was an unhoped-for price, and that the highest price offered by the old companies was $1.60 per hundred.

The lowest price paid for any month since Jan. 1st, 1910, was $1.60, and the highest, $2.56. While we are too modest to claim credit for all of this advance, we are conceited enough to believe that it would never have reached $2.00 but for the "MUTUAL."

It is no longer an experiment but an assured success, and you have every reason to be proud of it.

MUTUAL DAIRY ASSOCIATION,
G. W. Shaw, Secretary.

EDITORIAL REMARKS: Bear in mind that Mr. Shaw has been right in the thick of the producers' struggle for better milk prices, and is not simply reporting what someone has told him. In this particular case of co-operation the strengthening influence of the two co-operative creameries mentioned should receive due credit. In fact, the co-operative creameries were really the pioneers of the whole movement.

Another thing that we want to commend is the serious way in which the producers went about in their effort for better prices. They started in a small way, and after gaining experience they realized that they had sufficient strength to manage the milk-selling game themselves.

Also note the reluctance of the co-operative creameries to go into the proposition. They first made the association put up a milk plant in the city, and even then they did not tie themselves for more than five years. If more co-operative organizations were as cautious we would not have so many failures.

EDITORIAL COMMENT

FARM AND FIRESIDE
The National Farm Paper

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WE ARE always glad to answer questions. That is what Farm and Fireside is for. If we can't answer the question directly we will see that one of our staff experts in the line of the question gives you an answer. But in a big family such as Farm and Fireside represents, questions don't always go one way. We want our subscribers to answer *our* questions occasionally. Those questions appear in every issue. As you read you will see them. Let us hear from you often.

HERBERT QUICK, - - - - - Editor

August 1, 1914

Letter-Writing Farmers

A PROFESSOR in the Arizona Agricultural College says that he has observed that the most successful farmers are the ones who are readiest to answer letters, respond to circulars, and otherwise "speak up in meetin'" in reply to literature sent out by the college. It is a rule of the business world that one who does not reply to letters is a poor business man; and people doing business with farmers complain that they are more likely than any other class of men to fail in answering business letters. The question is asked, Is it because they are poor business men?

A man who has ever farmed will easily find other explanations. Farmers work longer hours, more days in the year, and live under conditions which make one letter from one of them equal to the effort consumed in writing and posting it to ten letters by the ordinary business man. So if the neglect to answer is not more than ten times the normal the farmer may be acquitted of any abnormal negligence.

But the Arizona man's observation that the farmers who respond most quickly to inquiries are the best and most up-to-date farmers is doubtless accurate. A man must be wide-awake to be this sort of farmer. In this connection a recent request for suggestions for a title to a picture in FARM AND FIRESIDE brought out over ten thousand answers. The FARM AND FIRESIDE readers seem wide-awake.

Ten Alfalfa Obstacles

GETTING a start in alfalfa, and succeeding after a start, is a simple matter to understand, though many fail to master it. Graber of Wisconsin sums up the things which cause failure under ten heads, which are just as valid in one part of the country as another. They are:

1. Sour land. Any land which will bring a better crop of clover after liming should be limed as a preparation for alfalfa.

2. Weeds. Any field which is not practically free of weeds should be made so before an attempt is made to establish a stand of alfalfa in it.

3. Lack of inoculation. No field, no matter how well prepared otherwise, which does not contain in its soil the bacteria which live on the roots of alfalfa and sweet clover will maintain a stand of alfalfa or produce healthy alfalfa plants.

4. Flat and poorly drained land. Alfalfa will not grow with wet feet, nor will it survive a period of standing water.

5. Wrong time of sowing. This should be studied by every beginner with special reference to his local conditions. It is an easy thing to find out if one doesn't know.

6. Poorly prepared seed bed. The best conditions are those which any good gardener considers proper for lettuce and radish beds.

7. Too heavy nurse crop. Alfalfa will not do well if it has to struggle with a full crop of the grains we are in the habit of using with timothy and clover. Half a stand of oats, rye, or barley is quite as much as the alfalfa can live under, and many of the best alfalfa men prefer no nurse crop at all.

8. Cutting too late in the fall. A nice growth when frost comes is worth more in the field than in the mow.

9. Late pasturing. This injures the crop in much the same way as late cutting.

10. Low soil fertility. Alfalfa cannot grow on sterile soil. It gets its own nitrogen from the air if the soil is inoculated, and it goes down deep for plant food, but the plant food must be there or it can't find it. Frequently, however, if the soil is made fertile by manure or commercial fertilizers for the first season the alfalfa roots will find fertility in rather poor soil thereafter. The young alfalfa plant is a greedy feeder. It must be fed, if the surface soil is poor, until it can get its roots down into the fertility below.

The principles are simple, but it takes good farming to apply them successfully, especially in the rigorous conditions of the East, and by men who are not used to the work. But where it can be done successfully it pays.

A Twentieth-Century School

A CERTAIN rural school was made up of several smaller districts. So many were consolidated that there are in the new district children and young people of school age to the number of 313. The total enrollment this year was 277, and the average daily attendance was 212.

In a school of that size almost every sort of school work possible in any public school can be successfully carried on. To be sure, the district is too large for old-fashioned modes of "going to school," and seven "vans" were used in carrying pupils to the school. A hundred and sixty-six pupils patronized these vans. They are the ones living farthest away—and not one was tardy during the year. It's no disadvantage, there, to live far from school.

Forty-seven pupils were in the high school, twelve of whom were graduated. There are many high schools in towns of four thousand inhabitants which do not have larger graduating classes than this country school. Twenty-four pupils finished the eighth grade.

People who live in districts which have not yet adopted the large centralized rural school are missing much of the blessing of the twentieth century. There are many schools like the one to which we refer, although it has made an exceptional record. It is the Cache la Poudre consolidated rural school in Colorado. If you ask whether people are moving to town from that district to give their children "better advantages" the Cache la Poudre parent will smile at you pityingly.

Buying by Mail

"STRAWBERRIES BY MAIL!" Under some such seductive headline a man at Worthington, Indiana, advertised in the Indianapolis papers. He offered strawberries at two dollars a crate of thirty-two boxes, "cash to accompany order." None of the people sending the two dollars received any berries. The whole thing was a wicked swindle.

Probably the persons swindled carry still some resentment against other strawberry growers. As a matter of fact, however, investigation disclosed the fact that the swindler lived at a hotel, and after taking his fill of berry orders disappeared, leaving an unpaid board bill.

The moral seems to be that not all who advertise country produce are farmers, and that selling and buying by mail calls for mutual acquaintance between buyer and seller. In the Indiana case a good, honest middleman would have been a great convenience.

Fostered Creameries

IF AN American farmer organizes a co-operative creamery, and agrees with his fellows that he will not sell cream to any other concern, the anti-trust laws of the States and of the United States convict him as a criminal conspirator in restraint of trade. Congress has recently passed a law drawn to loosen the fetters of the Sherman law as applied to organizations of farmers or laborers, but to what extent it will do so is not yet clear. The most that can be said is that it is a step in the direction of permitting the farmers to do what everyone who knows anything about it knows they must do if they are to prosper as they should.

But the state anti-trust laws are still in destructive operation. If we were living under the Danish flag we should be obliged by the Government to make the agreement for which our governments punish us, as a condition precedent to getting government aid in the establishment of co-operative creameries. The Government of Saskatchewan is organizing co-operative creameries under direct control of the State. All express charges on cream for such creameries are paid by the State so that distance from the market is no disadvantage to the farmer. As a result of this fostering policy, creameries are springing up, and Saskatchewan butter is competing with New Zealand butter in the markets of British Columbia. We suggest to our legislatures that if they can't help us they can at least get off our backs and leave us free.

Modified Rejoicing

THE nation rejoices in the big wheat crop. Nine hundred million bushels is a wonderful yield, and it will do the world good. It will do the farmers much good too. It will tend to make living easier for the people in the cities. It will give us what amounts to almost an assurance against financial troubles. Its value is not like an increase in the value of stocks or lands, for it is taken from nobody, and it is wealth actually created. It lays no new burden on any man in rents or dividends. It is Toil, Soil, Rain, and Sunshine transformed into life.

Let us be as patient as we can under the knowledge that the very abundance of the crop makes for low prices. Wheat is low because we have grown so much of it. The man whose crop is only fair this year is worse off than he has been in recent years of smaller yields. It is perfectly true that wheat, like all other valuable things, is of value only as it is scarce, and that if it could be shoveled up freely by the roadsides it would have no selling value worth mentioning. Such a plenitude of wheat would ruin wheat growers, who after spending their money and their time in growing it would find it impossible to get rid of it save by giving it away. Thus abundance would cause distress, but it would finally bless the world. We who grow wheat would cease to grow it, and would shovel it up instead by the roadsides for our bread.

To an extent we have made wheat too plentiful this year. Yet it should not make us impatient of big crops. The man who has a big crop this year is better off than is he who has a small one. Good farming pays better this year, as it always does, than poor farming.

Under an ideal organization of things, every crop would be sown with a knowledge of what the world's needs are to be. But even thus we could not foresee exceptional yields. We could, however, arrange to hold back the wheat of such a year as this for fair prices, and feed it out next year when it might be scarce. However, in the midst of low prices let us get what comfort we can out of the fact that the big wheat crop is a good thing for the world.

Poultry Raising

Well-Fed Versus Poorly-Fed Chickens as Breeders

By B. F. W. Thorpe, Associate Editor

POULTRY KEEPERS have listened for years to quite a lot of talk about the bad policy of high-feeding breeding poultry on account of the injurious influence on the hatchability of the eggs and the lessened vitality of chicks hatched from eggs of well-fed and heavy-laying hens.

Now that the hatching season is over it is a good time to consider this matter a little further and find what experiments conducted along this line teach us.

Many hard-headed poultrymen have not been satisfied that generous feeding accompanied with generous egg production should interfere with the successful hatching of eggs and the vigor of chicks any more than generous feeding of dairy cows and heavy milk production should interfere with the reproduction of stock from the dairy cattle thus handled. Now we have some new light on the matter in relation to poultry as a result of experiments carried on for two years by the Poultry Department of the West Virginia Experiment Station.

120 Hens in the Experiment

Six pens of 20 hens and one cock bird to each pen were in this experiment. Four of these pens were pullets and two pens were year-old hens. Two pens of the pullets and one pen of the hens were fed liberally a ration quite similar to those used in the egg-laying contests now being carried on in different parts of the country. A moist daily mash was a part of the ration of these three pens. By this plan of liberal feeding the two pens (40 pullets) averaged 138.7 eggs each, and the one pen of year-old hens laid 125.6 eggs each during the year. These 60 hens and three male birds consumed an average of 72½ pounds of grain and beef scrap per head during the year.

The two pens of pullets and one pen of hens, and three male birds that were fed sparingly on the same kinds of feed, consumed practically one fourth less weight of feed, or 54 4/5 pounds per bird. Not only was the average number of eggs per hen four dozen less from the hens fed sparingly during the year, but the average size and weight of the eggs laid were slightly less. Furthermore, the 63 birds fed liberally made an average gain in weight of one pound each, and the 63 birds fed sparingly gained slightly less than one-half pound during the year. The hens in this experiment, when fed this ration for a year, weighed less when two years old than when one year old.

Hatch of Chickens Compared

Comparing the hatchability of the eggs from the generously fed and sparingly fed hens, it was found that there was practically no difference in the number of eggs hatched from the eggs of the two lots of hens thus differently fed. Neither was there any specially noticeable difference in the vigor of the chicks hatched from the eggs of the hens generously and those sparingly fed. These hatches included five different tests in 1912 and three tests in 1913, the incubators being operated in March, April, May, June, and July during the two years. In 1912 three thousand eggs were incubated, and in 1913 two thousand five hundred eggs were placed in the incubators. The well-known "Cyphers," 350-egg size, was used in these experiments, and all chicks were uniformly brooded in artificially heated brooders.

Vigor of Chicks Also Equal

From all the eggs placed in the incubators during the two years' experiments, 63.9 per cent of the eggs laid by the well-fed hens hatched against 58.9 per cent laid by the hens that were fed sparingly.

From the fertile eggs incubated, 78.7 per cent of the eggs hatched which were laid by the well-fed hens against 74.9 per cent laid by the sparingly fed hens.

This apparently gives a rather better showing for the hens that were fed liberally; but after checking up all points bearing on the hatchability of the eggs from the different lots, the station authorities consider this two years' experiment gives about an even showing for both ways of feeding so far as hatchability of the eggs laid was concerned.

According to the belief held by many poultrymen there should have been a showing in vigor favorable to the chicks hatched from the eggs laid by the stock that were fed sparingly, but the chicks showed equal vigor from both sources, and were all remarkably strong and growthy and developed into thrifty birds.

The Surplus Food Goes Into Eggs

From a scientific viewpoint this length of experiment and the number of chickens concerned does not give sufficient grounds to determine the truth of the influence of feeding on breeding stock. However, the evidence is sufficient to induce many of us to take no anxious thought about the feeding of our breeding poultry, nor to strive to keep them from laying until late in the season. Any poultryman who will take particular pains to weed out everything in the way of weak stock and unsatisfactory specimens from his breeding pen need not worry very much about their laying early and continuously, for the bred-to-lay hen is so constituted that she must dispose of her surplus food in the way of eggs, and if the food and care given her is what it should be her inheritance of constitutional vigor will take care of the fertility of her eggs and the vitality of the chicks that are hatched therefrom.

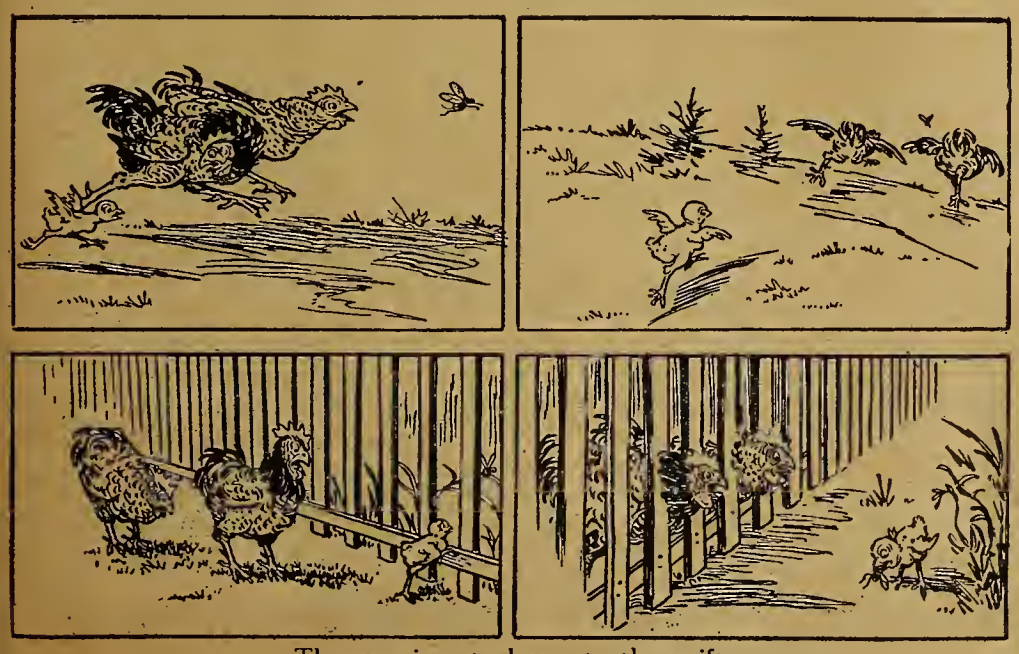
CHICKS will be more nearly free from disease if the eggs from which they are hatched are laid in nests which are perfectly clean, if the eggs are kept clean until they are given the hen or incubator, and if the incubator or the sitting hen and her nest are kept clean. Why doesn't somebody try nests of mineral wool, which can be thrown into a fire and burned out without destruction?

THERE are hawks and hawks. Chicken-catching is a sort of personal vice with some hawks, and these criminals should be killed. The blameless hawks which have not formed the habit are catching rodents and other pestiferous things, including insects. They should be spared, for they do more good than harm.

Summer Spoilage of Eggs

WHY work and worry raising chicks, feed them all winter, and then let half the eggs spoil during the hot summer months? Last year in the warmer portions of the country almost half the eggs leaving the farm were unfit for food. This was in addition to the large item of the eggs lost and spoiled outright by the hens laying in the weeds and grass and in inaccessible places.

Chanticleer is responsible for a large per cent of this loss. Fertile eggs begin to incubate at once in hot weather, and the loss in spoiled eggs can be reduced at least 75 per cent by promptly getting rid of the roosters as soon as hatching eggs are no longer wanted.



The race is not always to the swift

Farm Notes

The Transfusion of Blood

As Applied to Farm Help

By Hollister Sage

FOR the running of the modern farm good help is the one problem of greatest magnitnde. Without good help every move on the big chessboard is blocked, every effort paralyzed. No matter how correct and clear the method may be which has been adopted for carrying on the farm, there must be muscle to accomplish what the brain directs. The time was, long ago, when the sons and daughters of neighbors were willing to "work ont." Bnt that time passed. Then came a period when foreign laborers were plentiful. Though they were awkward at first in the work of the new country of their adoption they learned to be nseful. Bnt to-day every avenue for fnrnishing help for the farm seems to be closed and barred.

Immigration Laws and Farm Help

Few persons comprehend the cause, but it has much to do with the high cost of living which everybody is talking abont. It was snmmed np by Thomas Kelly, the owner of a half-dozen good farms in Connecticnt, the other day in a brief interview. He said:

"The reason why beef is not raised in the East is because we cannot get help to feed the calves. Considerable labor is reqnired to establish and maintain a herd, and laborers are few. When our Government began to restrict immigration we commenced to sow the seeds of high prices. Every farmer from Maine to California will tell yon that his chief trouble is to procure workers.

"Farm prodncts are high because of the difficulty of finding men who will do the work needed on the farm. The only man we can depend on is the immigrant. He did the work formerly because he could not do anything else. Then a law was made that unless he could produce $20 in cash upon his arrival he could not come in, and we decided that if he were enterprising enough to secure a position before sailing he must be returned, or the labor-contract law would be broken.

"So we bar him and scare him. But a snrplns of life's necessities we must have in these United States, and before we can produce it we shall need a transfnsion of new blood on our farming lands."

It is wrong to set a skillful frnit grower or grain farmer to digging ditches in a city or nailing boxes in a factory. There is a surplus of laborers for city manufactnrers, and the Government should see that the immigrant be sent where he is needed. Government representatives should meet all incoming foreigners at the port of entry, tabulate them, and pnt them in country places with persons who have previously made applications for help.

In those places every one of the immigrants should be under mnnicipal oversight and control for a term of at least five years without being permitted to go into a city permanently. If they faithfnlly abide by the provisions of such a law for five years, full citizenship shonld be given them with the right to go where they choose, providing they have proved themselves industrious and have not been convicted of misdemeanors.

Take Tony for Example

If a man has lived a clean life in one town for five years and has formed congenial acquaintances, the chances are much in his favor that his permanent residence will be in that place or its vicinity. He will unconsciously adopt the rnral life of this country, and remain in the ranks of producers instead of entering the crowded hordes of consumers.

Tony will meet the Italian girl who is working for the next farmer. She has perhaps but jnst commenced her term and is getting wages. There will be a mntual liking, and together they will eventnally begin married life, having saved a good part of their wages, which they couldn't have accomplished in the cities. If a farm cannot be bought at once it will be their ambition while they are renting one, and the second generation of Italians in that town will have become good farmers and neighbors.

These immigrants will have several things in their favor. There will be the opportunity to learn the language more qnickly than they could if herded in a community of their own people in, let us say, "Little Italy." Influences will be at work to train them to save their money instead of sqnandering it.

The Rural Hero

By Chas. B. Driscoll

TELL on of brave Horatius who kept the bridge of old with club and sword and pistol. He was a warrior bold. The Father of His Country, clad in a bathrobe thin, crossed o'er the ice like Liza. Such souls are bound to win.

All hail the noble Gracchi, brave hearts of other days; they gave their lives for freedom, and got more knocks than praise. And history informs us they stood the gaff like men, nor ever squawked like house cats when troubles hemmed them in.

The Hero of Manila—who grudges him gold braid and dollar turkey dinners? There stood he unafraid while bombshells rent his trousers and bullets mussed his hair. "When you are ready, Gridley," he murmured, "pnt her there!"

I sing the Humble Hero who Feeds the Buxom Calf, but Homer couldn't sing him his just deserts by half. On spring and summer mornings this Hero of the Farm fares forth alone, barefooted, nor ever fears for harm. The Buxom Calf is waiting like Gorgon in his stall. He charges on the Hero, and bellows forth a bawl. He spills the precious liquid into the Hero's eyes, and bunts and tramples on him as on the ground he lies.

All this and more this youngster endures with stoic smile, that you and I may fatten on beefsteak afterwhile. Oh, would some bard immortal might spring some unworn phrase to celebrate his virtues! May all his earthly days be filled with fame and bank notes when he at last retires. Let's let him wear gold buttons and call his rivals liars, and yearly run for Congress, invent new creeds and songs. Let's celebrate his birthday and right his many wrongs.

O John D. Robafeller, pray raise the price of oil and give us of the proceeds, that this young son of toil who feeds the Buxom Calflet may have a monument with Earth for its foundation, its top the Firmament!

E-W

Garden and Orchard

Stop Cabbage Bursting

By H. C. Kegley

AMONG those who raise cabbage but who do not grow it extensively for market, there is considerable loss each year because of head-bursting. That condition obtains when cabbage is allowed to stand in the field and continue to develop after the heads are filled and ready for market.

A gentle shower coming unexpectedly before the mature heads have been gathered will start cabbage to growing rapidly, and the already well-developed heads will almost always pop open unless steps are taken to keep the firm and valuable heads from transforming themselves into stock food.

When there is good reason for believing that the cabbage will soon begin bursting such a catastrophe can be prevented inexpensively and without serious loss of time.

Simply go through the patch with a spade, shoving it down beside each mature plant and breaking the tap root by prying gently on the spade handle. This precaution will check the growth of the plant and save a crop in many cases.

In taking care of a big field of cabbage the easiest way to check the development of the heads is to walk through the field and push the plants over to one side with the foot.

This method also breaks the roots loose from their moorings and precludes possible loss.

Kill the White Grub

PLOW deeply this fall if the common white grub of the May beetle bothered your corn, your timothy, your strawberries, your potatoes, or nursery plants this past year. Successful farmers usually plow before October 15th. This is important, however: Do not wait until the cold weather sets in, for the grubs will by that time have gone to their winter quarters where the plow cannot get at them.

Good Salad Plants

SALADS are always acceptable, and we try to have them the year round. Of course lettuce is the leader. We can have it fairly early by starting plants under glass, and setting them in open ground as soon as soil and season permit. Then we also sow seed in open ground, rather thinly in rows a foot apart, selecting the richest spot in the garden. May King is a good early-heading sort. If plants are crowded in the rows I thin early; otherwise I wait until they are of sufficient size to use as leaf lettuce, and then use them gradually, leaving plants every three or more inches apart. When these have formed nice little heads I thin again, removing the largest heads for the table, or taking every other plant in the row. In this way I always have nice crisp heads, and so many of them that we can reject all the coarser outer leaves and just feast on the hearts, then well blanched and deliciously sweet and brittle. Later sowings are made to provide for a succession. For these later ones it may be well to select a partly shaded spot, for lettuce cannot stand much sun heat, and the plants during the latter part of July and in August quickly run to seed. For fall use, however, we make other sowings in August and September, selecting Big Boston or Improved Big Boston in place of May King or other sorts.

Lettuce is thus easily grown by the bushel, and during early summer, and again in fall, I have usually supplied our neighbors with these choice heads, often by basketfuls, and got good returns in cash for what was produced with so little effort.

As an addition to lettuce, cresses—both water and ordinary garden cresses—come very handy for their pleasant pungency; but I can grow them to greater perfection in the greenhouse where they have no enemies, than in open ground where the foliage is viciously attacked by flea beetles and seldom makes the succulent growth that it can easily make under glass protection.

For a fall and early winter salad nothing can excel endive. I have never before appreciated this so fully as I did last year when we had it on our table almost daily from along in September until in December or January. A hundred plants will furnish a bountiful supply for an average-sized family. Each plant, in good soil, makes a big bunch of green stuff. I started the plants in flats in July, and as the weather and soil was too dry to give best chances for small transplanted plants to grow I potted a few hundred in 2-inch flower pots or paper "dirt bands," and kept them in the shaded greenhouse until well rooted, then transferred them to open ground, a foot apart in the rows. They made their most vigorous growth in late fall; the tips of the outer leaves were tied over the heart, which soon became beautifully blanched and exceedingly brittle and tender. Just before the real freeze-up I took up the remaining plants, with a ball of earth adhering to the roots of each, and placed them in flats close together, storing the flats in the cellar. Thus they supplied us with choice salad material for many weeks after the end of the gardening season.

I may at times have declared my preference for the Green Curled, which is one of the two standard endive varieties found in American gardens and markets, and spoken slightingly of the other, the Broad Leaf. A wise man often changes his views. Every member of my family showed preference for the beautiful, creamy, succulent, and sweet inner leaves of Broad Leaf rather than for the handsomely curled, feathery foliage of Green Curled. I shall again have both, but more of the Broad Leaf than of the other.

Altogether, endive is an easy crop to raise, both for the home grower and the market gardener, and it is usually in good demand in our markets, at fairly remunerative prices.

Has Storing Given a Profit?

By L. J. Haynes

OWING to loss from shrinkage, bursting, and rot as well as the increased expense for labor in marketing, it is usually advisable to sell the cabbage crop in the fall at harvest time or in early winter. While the price per ton is seldom so much as it is in the spring, the net profit is generally greater if there is much of a demand at all.

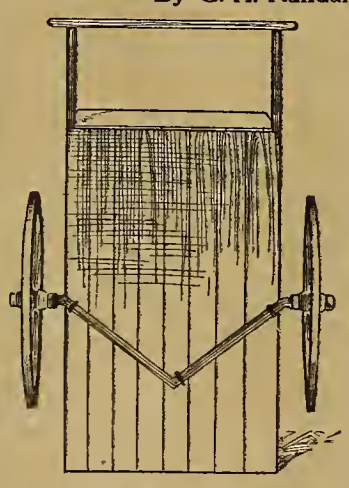
In the fall one can cut the cabbage so it will not be necessary to trim them, and when they are loaded on the wagon they can be hauled direct to the car instead of to the pit or storage house. This saving is no small item. When they are stored several rehandlings are necessary. They must be unloaded, placed in the pit or storage house, then when sold again loaded and hauled to a trimming house, unloaded, trimmed, reloaded again, and finally drawn to the car or market. Every time they are handled the expense increases and the net per cent of profit decreases.

The waste is no small item to be considered. The longer they are kept the more they will trim away. More will be affected by rot and more will be lost from bursting, especially if it happens to be warmer than one calculated upon in the covering.

That they will lose in weight and shrinkage fully one half is no exaggerated estimate. In fact, the loss is generally greater. This combined with the extra labor and expense as well as the risk and worry makes a strong argument for disposing of them in the fall.

Home-Made Vegetable Cart

By G. A. Randall



ONE of the handiest vehicles possible upon a farm is a vegetable or dump cart. It should be made with high wheels so as to push easily when loaded, and be strong enough to carry a load of 800 pounds. With this load I can push my cart easily upon ordinarily firm ground, even if rough.

To purchase a cart of this sort will require from $4 to $10, and then it is frail in many respects where strength is required.

I made mine the following way: An otherwise worthless buggy was taken to pieces. Then the front axle was heated to whiteness near the center first, and while hot bent in a vise, V shape, being careful to have the two ends equal. After cooling thoroughly, each end or stub was treated similarly and bent nearly at right angles as per the illustration, being sure that after being bent they were in line with each other so that each wheel would be exactly opposite the other. This operation is to shorten the original axle to 4 or 4½ feet. The ordinary axle is too long for a cart of the proper width.

Next make the box and push handles to suit, but preferably they should be constructed of ash or elm lumber, as this is both light and stout. Then take two or three of the clips from the buggy, and after boring half-inch holes through the bottom of the box put these clips up around the axle, one at each end near the wheels and another near the narrow V end, which extends along the bottom underneath the box. Put on the burs and screw up tight. The V part of the axle running along the underside of the box makes a substantial support for the bottom boards.

Irrigating a Strawberry Patch

IF a ravine above the strawberry patch or garden can be dammed up so as to give a water supply, the cheapest and best way (unless the Skinner system could be installed) is to conduct the water down in galvanized iron pipes, with a hose bib for the attachment of a piece of ¾ or even ½ inch hose at proper intervals, and let the water be distributed by means of lawn sprinklers. In such cases we may have to do some experimenting along this line. By supplying the water one can usually insure a big crop of strawberries, celery, lettuce, etc., and the game is worth the effort. For smaller patches, an acre or less, one pipe may be all that is necessary, and with sufficient fall the water may be distributed by means of common, cheap lawn sprinklers.

IN SPITE of the quarantine against foreign potatoes, powdery scab has appeared in Maine. It has been imported with potatoes from New Brunswick. The authorities of the State are energetically seeking to stamp the pest out, but the outlook for the infection of the whole country is a grave one.

The Green Tomato Worm

FOR the fruit worm which occasionally eats holes in tomatoes and also attacks cotton and corn (a pale green or brown worm about an inch in length), I know of nothing better than hand-picking. The application of hellebore, by dusting it over the fruit clusters or whole plant, is often recommended; yet if the patch is gone over occasionally and the worms picked off and destroyed, but little damage will be done by this enemy. Hand-picking is also the easiest and surest remedy for the few large tomato or tobacco worms found scatteringly on the plants.

Crops and Soils

Corn-and-Cowpea Silage

By S. H. Plumer

I AM well pleased with my experiment with a new kind of silage I tried last year. I filled two 40-ton silos with corn and cowpeas. I grew the corn and cowpeas separately and kept a load of each backed up to the silage cutter, and fed both into the cutter at the same time in the proportion of one ton of cowpeas to three tons of corn. The silage would be even better, I think, to make the proportion one to two.

The cowpeas made eight tons per acre and were put in without curing. The silage kept as well as the year before when it was all corn, and the result in milk production was very noticeable over the straight corn silage. The cowpeas were cut at the same stage as for hay. One advantage is that when the cowpeas are put into the silo they are safe. To try and cure them for hay is a very unpleasant business, as those who have tried it well know. No doubt soy beans or alfalfa would be fully as good to put into the silo with corn.

Winter Oats—North and South

WINTER oats are very much used in the South as both a grain and forage crop. They make pasture for cattle, sheep, and hogs, and they produce oats and oat hay. The north line of use is a varying one. It is well worth while to try to carry them farther and farther north. Hutchison of Missouri states that the southern part of his State produces winter oats, principally the popular Winter Turf and Culberson varieties. He believes that the northern limit of the winter oat belt is about the Missouri-Arkansas line. Lipman of New Jersey states that while the climatic conditions of the southern part of his State do not limit the growth of oats the soils do. Tennessee, however, has about ideal conditions for the growth of winter oats. Mooers of that State, after telling how extensively winter oats are being grown in some sections of Tennessee, says:

They are recognized as yielding much more than spring oats, but should be sown early,—the latter part of September,—which makes it difficult to put them in after corn. This is the chief reason why spring oats are so often grown. In our experimental work we have found both winter and spring oats more uncertain than either wheat or barley. This is due both to sensitiveness on the part of oats to any deficiency in moisture supply and to the destructive work of plant lice, which are often very hard on oats but do little damage to either wheat or barley.

We have found only two varieties—the seed of which are on the market—that will go through any of our winters. These are the Gray Turf, the kind commonly grown, and Culberson. From the latter variety we obtained, nearly ten years ago, a very valuable strain which not only yields as well as Gray Turf but is much less apt to lodge, and matures nearly two weeks earlier than Gray Turf.

As to yield, we get from 30 to 75 bushels per acre of winter oats and 20 to 45 bushels of spring oats on land that produces 25 to 30 bushels of wheat. The usual yields in the State are perhaps one half as great.

From our experience here I would say that Winter Turf oats would thrive farther north than Tennessee, probably in southern Illinois and Indiana, but I am unable to set the limits. In the summer of 1909 I saw an excellent crop that had gone through the winter at Ithaca, New York, but was told that the winter had been favorable and that they might not go through again in the next ten years.

Some of the northern experiment stations have tried to adapt oats to fall sowing, but they have not yet given us much hope. It ought to be possible to produce a hardy type of oats. Why not? If a hardy strain of winter oats could be developed for the wheat region it would relieve many stock raisers of the necessity of growing wheat and make all their small-grain land grow a feed crop.

A Fine Crop of Soy Beans

By Raymond L. Rose

THIS photograph shows a field situated on the Ohio River. The trees in the background are on the bank. Then you can see a field of corn. The soy beans growing are maturing for seed. The field where the work is being done consists of soy beans cut for hay. The owner of this land is a deaf-mute.

The plants in front are the cowpeas—Michigan Favorite and Whippoorwill. The soy beans cut are the Black Beauty and Ito San. The soy beans left for seed are the Mongol and Haberlandt. The field was sown to wheat in the fall of 1911, harvested in 1912, and on account of the season it was left idle until April, 1913, when the land was broken.

After the field was broken it was worked over with a contrivance I made, a sort of harrow and drag combined. I used four mules with this drag harrow, it being 15 feet wide. I thus got over the field quicker and found the ground in better condition than if I had used the same method as in years before. I then harrowed with a cutaway, afterward rolling the field when it was ready for

A good seed bed is a prime essential

the seed. I used a wheat drill, stopping up every other hole, setting it to sow 1½ bushels to an acre.

When the beans were four inches high they were cultivated, by a girl thirteen years old, with a garden weeder and one mule. They were cultivated three times about ten days apart. Notwithstanding the drought the beans grew from 30 to 45 inches high. About the 18th of September I used a binder, cutting only half of a swath. I found I could harvest them very nicely, but I learned this truth: you must cut the bean plants while damp, not wet, because the beans shatter out too much when dry. Also, in making hay the leaves will not be lost if handled while damp. The same applies to cowpeas. I had to wear gloves while stacking the bundles into shocks. I used the same method as in harvesting oats, using only one bundle for cap.

The shocks were left in the field for fifteen days, for, on account of the rains, we could not bring them in any sooner. There were three large loads. These were stored in the barn until December 17th, when a corn husker was hired to "try" to thresh the seeds out of the soy beans. As we were the first to raise seed no one knew how to get the seed except by the old-time flail, which is very slow work and also very hard. By not running the husker too fast one can do the work quicker and better. I got sixty bushels of choice beans, besides stalks and bean pods cut up for fodder hay.

The roots of the plants were covered with nodules ranging from the size of a grain of wheat to birds' eggs. In 1911, before I sowed the wheat, I tile-drained this field. That is the most important item, then a good seed bed, followed by thorough cultivation.

EDITORIAL NOTE: This writer says that he found nodules on the roots of the beans. Yet he says nothing about inoculation. In most cases it is necessary to inoculate. Few soils have the needed bacteria present. And so for the successful culture of soy beans do not forget that part of the work.

Sugar Beets or Corn

By James A. King

ONCE in a while a man preaches a whole sermon, or a series of sermons, in one pithy offhand sentence. My neighbor Ted did that the other day. He is not given to sermons, nor to lengthy conversations even. He's a tall, quiet fellow, one who works hard; and as one looks at his farm he is forced to the conclusion that Ted thinks just about as hard as he works.

This is one of those northern Iowa sections that devotes a good deal of attention to sugar beets. It has a rich black soil with a moderately open clay subsoil underlain, at a depth of a few feet, by some fifteen hundred feet of limestone. If any crop is treated well it grows and yields luxuriantly. In fact, this northern Cedar River territory is one of God's garden spots.

A few years ago the sugar-beet trust opened a factory tributary to this territory. The usual methods were used to convince the farmers that their land would net them $50 an acre if they would only plant it to sugar beets. (And it has some years for some men.) Many fields were contracted each year.

A group of neighbors, the other day, were discussing their plans for this year. One of them said, "Ted, are you going to plant beets?" In his quiet, whimsical way Ted answered, "No; if I wanted to plant beets I'd plant corn instead, and then put just as much work and expense on it as you fellows do on your beets, and I'd make as much or more money and not have to buy feed." And in Ted's answer there was much wisdom.

It is not that it does not pay to raise sugar beets, for it does pay well if one does it right and has a near-by market. But it is rather that it pays big to raise corn if one puts adequate labor and expense into it. The sugar-beet grower pays a contract price of $16 an acre for simply the hand labor on his crop. In addition to this he must buy his seed, and do all the team work himself. And the amount of team work is fully equal to what the average man puts onto an equal acreage of corn.

Now let the farmer plant corn instead of beets, as Ted suggested; let him put even one quarter to one half of that $16 which the beet grower pays for his hand labor into his corn crop as an additional investment; extra labor, and investment if necessary, in putting more manure onto his ground, and even commercial fertilizer about every third year; extra labor in preparing his seed bed; extra labor in cultivating the growing crop; give it five cultivations instead of the conventional three; give it at least two cultivations in August with a one-horse surface cultivator to keep down the weeds and save the moisture—and it is dollars to doughnuts that he will find a world of truth in Ted's remark.

Eight Acres of Corn in a Silo

A PICTURE may not give much of an idea as to the size of a silo or any other structure. And certainly a picture cannot (unless it be a moving picture, and then it may be false) give the activity of the scene. The owner of this farm, a Michigan man, tells us that the

silo is 12 by 30 feet with a capacity of 80 tons. "With four or five teams," he says, "we can draw and fill this silo in nine or ten hours. Neighbors exchange work with each other. On an average it takes about eight acres of corn to fill it."

E-W

Farm Wit and Wisdom

Concerning Pests

WHEN conditions change, a bird or an animal which once was harmless sometimes becomes a pest. The legal protection of deer in New England makes a pest of deer. The red-winged starling has always lived in the near Northwest—one of the most beautiful of birds, and the joy of every pasture field; but when the country became one great grain field these "blackbirds" so multiplied near some swampy localities that they attacked grain both in the field and the shock and did great damage. But the redwing is a useful bird for all that, and under ordinary circumstances should be protected. The same is true of the meadow lark—one of our best friends. But in California and Nevada, under the influence of changing conditions, the meadow lark has become a problem. These abnormal conditions generally cure themselves after a while.

PIGS from sows which are immune to cholera are not always immune. The animal pathologist at the Nebraska Farm gives the pigs the serum treatment when they are about three weeks old, and the simultaneous treatment after weaning. This will protect them from cholera for a few months only. Unless pigs have grown to the weight of fifty or sixty pounds they are not safe from cholera during their lifetime even when given the simultaneous treatment. Even then occasionally one will take the disease.

THE plant breeders are busily at work on the improvement of alfalfa; but as yet, for the cold and dry Northwest, there is nothing better than the Grimm South Dakota Turkestan No. 240, South Dakota Grimm No. 162, and South Dakota No. 12. All but the last-named are very expensive to get, but there is no reason why farmers should not start plots of them, and save enough seed every year to extend their operations. These hardy strains ought to interest New York and New England too.

GAGE COUNTY, Nebraska, has organized a one-breed dairy-cow movement. One of these days any buyer desiring to get cows of that breed will find it to his advantage to go to that county. This has been the effect in Minnehaha County, South Dakota, and in many Wisconsin counties. The one-breed locality has an advantage in the markets.

"GASOLINE is an excellent fat solvent," says the "Medical Summary," "and is therefore useful in cleaning wounds. It acts fairly well as an antiseptic. When accidents happen to automobilists the first thought is to cleanse the wounds with gasoline drawn from the tank."

A COMPANY has been formed in Servia to establish lines of motor cars for service between towns not connected by railway.

"My eyesight must be getting poor. I can't see the wire those birds are perched on over there."
"Oh, your eyesight is all right; that's a wireless telegraph line."

CHILI is the country from which the nitrate of soda comes. Mr. William S. Myers, Chilian delegate to the International Congress of Applied Chemistry, assures us that the prevailing notion that the nitrate supply in Chili is in danger of exhaustion is an error. The surveyed and certified tonnage now opened up and ready for extraction carries 250,000,000 tons, and a great deal of land still unsurveyed is known to be more or less rich in nitrates. And it is suggested that the nitrates are possibly renewed by nature. So that's off our minds.

E.W.

WHEN the horse comes in wet with rain, first scrape him, then blanket him, and rub his head, neck, loins, and legs. If the weather is cold put on an extra blanket in twenty minutes. Change the wet blanket when the horse dries. *Do not wash the legs.* Rub them dry, or bandage loosely with thick bandages. It is far more important to have the legs warm and dry than clean.

THE finger is not a good thing for the calf to suckle his milk through. A rubber teat with a quill through would seem the ideal thing if the quill could be kept from slipping out and choking the calf. A cheaper and handier thing is a small corncob with the pith punched out. When bossy learns to use this artificial teat he will scorn the unsatisfactory finger and grab for the floating cob.

CUR dogs are almost as great a hindrance to the sheep industry as parasites. The only protection against them is watchfulness by day and a dog-proof enclosure at night. In Michigan recently 200 sheep were all run to death by two curs. Dog-tight night folds can be built of woven wire at small expense.—GEORGE M. ROMMEL, U. S. D. A.

"What are you painting so fast for, Mike?"
"Sure and I want ter finish before me paint gives out."

THE South Dakota Station will soon have ready a bulletin on sweet clover. The total average hay yield of this crop at Brookings was nearly three tons per acre per year of field-cured hay. This came from two cuttings. A ton and three quarters of hay was made from the first cutting, and a yield of eight bushels of unhulled seed per acre was obtained from the second growth.

A PRESS dispatch from Paris, France, states that a young scientist there has found a cholera germ which may be used to kill locusts and other insect pests. He found locusts in Yucatan dying from a disease of the intestines. From these diseased insects he developed a method of sprinkling the herbage on which insects feed, with a solution which will kill the pests by locust cholera in twenty-four hours. Interesting as holding out hope for a grasshopper remedy, and possibly a means of fighting other insects. The method is said to have been used with great effect in Colombia and Venezuela. Agricultural colleges, get busy with these germs!

PREPARED glue in a liquid or pasty form is better and more convenient for general use than the ordinary form. Where large quantities are wanted the dried or "ribbon" glue is cheaper. Prepared glue is slower in setting than the common form, and the surfaces must be clamped together longer to give it time to set. It sometimes thickens with age, and vinegar may be used to thin it without injuring its holding qualities.

IN THE cool climate of the Northwest, field peas are one of the best of crops—and over much of that portion of the country where it is too cold for cowpeas. South of this line cowpeas take their place. In the drier regions plow deep for them in the fall, leaving the ground rough. Give them a deep, mellow seed bed. Plant with a drill four or five inches deep. Seeded alone they require two bushels to the acre, and four to six pecks with a bushel of oats. Put in the oats a week after the peas are planted. Cut for hay when oats are in the dough, and cure like clover—a good rich hay. This crop may be profitably hogged off, and makes good, cheap pork. The Washington Station at Pullman has a fine bulletin on field peas.

A Big Grapevine

WALDON FAWCETT, the photographer who took the picture which is used on the cover of this issue, tells us that the grapevine represented is seven feet in circumference at the point where it branches. He says—and we don't dispute his assertion—that it is the largest in the world. This mammoth grapevine is located in southern California.

More Lost People

FLOYD and Clytie Thomas and sisters, Catherine Hopkins and Rosabella Suttin, who moved from Mason County, West Virginia, to Missouri, about thirty-six years ago, are "lost" relations, and any news of them will be gladly received by their sister, Mrs. Mary Lemaster, who may be addressed in care of FARM AND FIRESIDE.

Mary Hawley, now about thirty-two years old, whose mother was Sarah Armstrong of Bainbridge, New York, or anyone knowing of her whereabouts, is asked to correspond (in care of FARM AND FIRESIDE) with her half-brother Samuel Armstrong. Miss Hawley's girlhood was spent near Chenango, New York.

Book Reviews

PRACTICAL TREE REPAIRS, by Elbert Peets, gives definite directions for saving diseased and injured shade and orchard trees, including clear illustrations showing the process of cleaning, disinfecting, filling cavities, and bracing the trees. McBride, Nast & Co., Union Square, New York City. $2.

MAKING THE FARM PAY, by C. C. Bowsfield, is a comprehensive discussion of diversified farming and intensive farming in certain specialties. The last pages of the book contain many useful hints, dates for planting vegetables, and directions for using insecticides and fungicides. 296 pages. Forbes Company, Chicago, Illinois. $1 net.

THE GRANGER MOVEMENT. This book of over three hundred pages, by Dr. S. J. Buck, shows the influential part taken by the order of Patrons of Husbandry in developing the spirit of organization, co-operative merchandizing and the progressive political movement. In the 70's, during the period when the welfare of the people began to become distinct from that of the special interests, the Grange instituted the foundation for the reforms that are now being realized.
This book is a mine of interesting information bearing on our social, economic, and co-operative problems. Sold by the Harvard University Press, Cambridge, Massachusetts. $2.

CHEMISTRY OF PLANT AND ANIMAL LIFE, by Harry Snyder, a good revision of a good book. A book that could be used on many farms as well as in the classroom. It's scientific, but it's practical. 388 pages. Well illustrated. Macmillan Company, New York City. $1.50.

CONGENIAL WORK

And Strength to Perform It.

A person in good health is likely to have a genial disposition, ambition, and enjoy work.

On the other hand, if the digestive organs have been upset by wrong food, work becomes drudgery.

"Until recently," writes a Washington girl, "I was a railroad stenographer, which means full work every day.

"Like many other girls alone in a large city, I lived at a hoarding house. For breakfast it was mush, greasy meat, soggy cakes, black coffee, etc.

"After a few months of this diet I used to feel sleepy and heavy in the mornings. My work seemed a terrible effort, and I thought the work was to blame—too arduous.

"At home I had heard my father speak of a young fellow who went long distances in the cold on Grape-Nuts and cream and nothing more for breakfast.

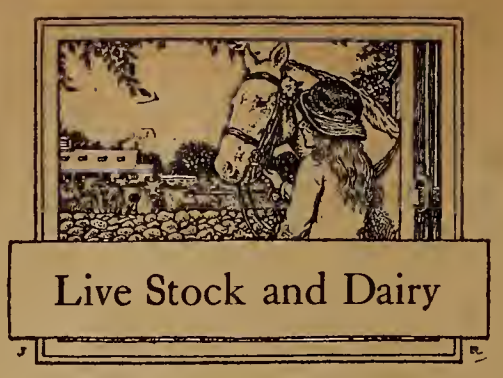
"I concluded if it would tide him over a morning's heavy work, it might help me, so on my way home one night I bought a package and next morning I had Grape-Nuts and milk for breakfast.

"I stuck to Grape-Nuts, and in less than two weeks I noticed improvement. I remember I used to walk the 12 blocks to business and knew how good it was simply to live.

"As to my work—well, did you ever feel the delight of having congenial work and the strength to perform it? That's how I felt. I truly believe there's life and vigor in every grain of Grape-Nuts."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.



How Dogs Worry Sheep

By J. C. Courter

WHILE I have shepherded flocks of sheep in many different sections of this country I have never had dogs depredate among my charges or do me damage in any way whatever. Nor have I ever come across the fresh ravages of roving curs except in one instance. But notwithstanding this there is no doubt in my mind that useless dogs do each year unbelievable damage to the sheep industry, and thereby indirectly to the prosperity of the whole country. Warned by the losses of my neighbors, I attribute some of the cause of my immunity to precautions that left little chance for roaming dogs to ravage outlying sheep. When in a locality where dogs were a source of danger I saw to it that my sheep were safely yarded each night. This, however, is hardly to be expected of the busy farmer at seasons when he is rushing his work, and at a time when naturally the sheep are far afield.

Idle Dogs Usually Start the Trouble

As to the type of canine that is most addicted to sheep-killing I feel slow to lay it at the feet of any particular breed or type. In a pack of "sheep killers" you will find curs, pure-breds, big dogs, and little ones. But if any type could be exempted I would say that the hunting dogs, namely hounds and bird dogs, that are real hunting dogs, used for those sports in season, are least often found in these packs. Idle dogs, like people that have no employment to use up their energy, take up this line of sport most quickly, and so it is with hunting dogs that are just "pet dogs" in town. Most often, in my experience, these packs start where dogs are plentiful, which is usually along the edges of a town. Still, should one dog learn the trick of chasing sheep and get a taste of mutton he will pick up recruits anywhere he happens to start.

The pure-bred, the cur, the rich man's dog, the poor man's, are all alike if they happen to come under the tutorage of a real "sheep killer." Allowing dogs to run loose after dark is the cause of most of the depredations. Often a female will lead off a string of followers that will not return till the break of dawn. Distance is no barrier to them. If a flock of sheep happens to lie in their path some dog among them will be sure to scent them, start that way, make some manner of fuss, and then the rest is easy to imagine.

In the morning dead sheep are lying about the field. In one corner stands the flock afraid even of the sound of their master's voice. Possibly if they had never started to run, the dogs would never have started; but that it is their nature to run from danger does not excuse the dog. It cannot be remedied except to keep off the dogs, and they surely have no right there in another man's sheep pasture. In my estimation this trailing of the female is the most common cause for all manner of depredations of roving dogs, and a stringently enforced law should prevent it.

From the sheep owners' standpoint a heavier tax should be assessed upon each dog kept by dog lovers, and an especially heavy tax should be assessed for each female. If a dog is worth keeping at all he is worth his tax, and any female that is worth her keep should be a source of enough revenue so that a tax should be placed on her head that would eliminate the ones that are of no value.

Dogs Love a Chase

I said before that I did not exempt any type or breed, but if any could be excused it would be the true hunting dog that is kept for its value as a hunter. I believe my dog experience will bear me out in this. I have shepherded flocks where the hunting dog was much in the minority. There the small pet dogs, terriers, bull dogs, and farm shepherd dogs predominated. That was where I met with the most trouble from sheep-worrying packs. The roving of such packs through the neighborhood, even where they only went skylarking and bird-hunting, were ominous signs of what would result if a flock lay in their path. They were not true hunting dogs that were trailers or bird dogs so finely bred and trained along their particular lines that when they went afield they were after one particular thing. No, they were a mixture of energetic scapegoats that were out for a skylark and a chase after anything that would run.

In contrast to my experiences with dogs and sheep in sections where the hunting dog was in the minority I have studied this problem in sections where practically everything was a hound or a bird dog. In those sections I have found less trouble with sheep-killing dogs than in any other. At present I live in such a neighborhood in Virginia, and just a few days ago hunters went through my sheep pasture with over thirty hounds in a fox chase, and I had little fear for the safety of my sheep.

As to the effect of dog injury to flocks' preventing farmers in general from reaping more profit from sheep, I have no conclusive proof of my stand on this matter. But it is my unbiased opinion, resulting from considerable experience with dogs and sheep, that countless farmers are kept from putting a small flock on their farms because of the danger from predatory dogs. Some have once had their flocks ruined by dogs; others have learned from their neighbors' losses. *Mankind will, I presume, always have some dogs, and rightfully too, but a profitable industry should not be strangled by such a worthless curse.*

A Pioneer Team

By Margery Speer

SOME time ago you asked for pictures of farm teams that had seen twenty or more years of service. The picture shows two of these "farm hands." During the summer of 1891 they came with a caravan of mover's wagons from Indiana to Grand Traverse County, Michigan. They had no part in the toil and responsibility of the journey, but frisked along or jogged wearily behind with the other colts, for at this time they were "yearlings."

The next year they were purchased by their present owner, Harrison Speer. They have had their share in the making of every improvement on the farm. They have hauled the logs into heaps to be burned; they have pulled the stumps; they have plowed, harrowed, and cultivated the ground, and have taken the produce to market. They have hauled logs to the mill and brought back the lumber that was used in the construction of the new house and barn. They have taken merry parties to picnics, Sunday-school conventions and rallies, and on excursions after berries, and have taken the boys on fishing trips. They have been driven by children and grandmothers.

They are not afraid of anything. They have been petted by old and young alike, and were always ready to come for a piece of bread or a bit of sugar. You could not find more gentle, lovable horses than Jim and Joe.

Jim, the one on the left of the picture, died of acute indigestion last winter, and left a place it will be difficult to fill. The one on the right, known to every man, woman, and child in the community as "Old Joe," is still living and performing his tasks as cheerily as ever, with the prospect before him of light work, plenty to eat, and good care until he dies.

It is to your advantage to mention Farm and Fireside in writing to advertisers. Farm and Fireside folks get the very best attention.

The Farmers' Lobby

Try It, Chicago!

By Judson C. Welliver

FOLKS in Chicago speud $321,000,000 a year for food. Of that, only $170,000,000, or about half, goes to the producers. By a proper organization of the business of handling this foodstuff, over $51,000,000 could be saved to the cousumer annually; that is, $21.47 per capita.

So says the Chicago Municipal Markets Commission, which has just issued a fascinatingly interesting study of the problem of cost of living in that town, the second largest in America. The city authorities are now taking up, in a big fashion, the whole problem of municipal markets, elimination of uuuecessary waste, middlemen's costs, and the like.

The Chicago Commission doesn't propose anything sensational or socialistic. There's no Edward Bellamy on the commission, with visions of a commuuistic community of the future. The chairman is Alderman James H. Lawley of the Fourteeuth Ward, a hard-headed, practical man of affairs. Associated with him are two other aldermen and a group of five other people who have uo fool or fantastic notions. Three of them are women. The commission investigated all aspects of the Chicago problem, listened to testimony of business men, producers and consumers, studied the experience of cities in this country and abroad with various efforts at reform along these lines, aud made no recommendations at all until it was ready to talk intelligently.

Let me suggest a few items of the work this commissiou did, in order to indicate how practical was its inquiry. Everybody kuows in a general way that in a city it costs a lot to deliver goods from store to house. But how much?

The Way They Do in Turin

The Chicago commission started out to learn. First it looked up the experience of Rochester, New York, because Rochester has given a lot of atteution to this detail, in connection especially with its milk supply. Here is what it learned:

Wheu Rochester started its crusade for better aud cheaper milk it fouud that 305 wagons were employed delivering milk. They traveled 2,500 miles a day over the towu's streets, at a cost of about $2,000. A score or more of wagons would chase each other along the same city block, wasting the time of men, horses, and equipment.

Careful distribution schemes were studied, which developed a plan under which 25 auto-delivery trucks, traveling only 600 miles a day, could do all this work, and cost ouly $600 a day doing it.

That meant a saving of just about $500,000 a year in the peddling of milk alone to one city.

That was the way Rochester figured it; but Rochester wasn't able to put its utopian scheme into effect. So the Chicago commission looked around to see if that scheme was actually working anywhere. It found the auswer in a most unexpected place: Turin, Italy.

Turin has the cheapest milk of any considerable city in Europe. The dairymen who supply the town have an arrangement by which they divide the city into sections. Each group of farmers delivers milk for its own section to a central receiving station, whence it is delivered from house to house, with uo duplication or waste in the service. Turin, in short, is actually doing the trick that the Rochester people figured ought to be done for Rochester. As a result, milk of the best quality costs only 4 cents per quart in Turin; and the dairymen who raise it are more prosperous than most dairymen in Europe, because they don't have to give all the possible profits to a wickedly wasteful delivery system.

Better Service at Less Cost

"Well," said the Chicago commissiou, when it found out about Turin, "if that's good for milk in Turin, why not in Chicago? And if it's good for milk, why not for other deliveries?"

Investigation developed that there are about 6,000 delivery wagons in Chicago. They duplicate routes, wear out horses, vehicles and pavements; most of their work is pure waste. Suppose a great central, co-operative delivery system covered the city, using fine, fast, modern auto trucks. Trucks would be clean, properly handled, goods carefully covered. The streets would be less congested; there would be far less expense in keeping them clean. From every point of view the service would be better; and yet this improved service would cost the consumer several million dollars a year less, due simply to cutting out waste!

Nothing needed except to apply some common sense to doing it! Has anybody ever tried that out and proved that it would work on a large scale?

Certainly. The commission studied Uncle Sam's method of delivering mail in cities. Suppose a carrier rushed into the post-office and was handed a bag of unassorted letters for all parts of the town, and sent out to hunt up the addresses; perhaps they would be miles apart. That would be applying to the mail delivery the method—or, rather, lack of method—that obtains in the delivery of merchandise in cities.

Why, if Uncle Sam delivered letters in the way grocerymen deliver groceries the post-office deficit would be half as big as the whole government budget is now.

E-W

This Chicago Market Commission seems to have been full of just such simple, sensible ideas as this. It has written a preliminary report on its investigations in 54 closely printed pages of matter, that can be read and understood by anybody that can read a newspaper.

Here is an illuminating bit from the Chicago report, which shows how much there is for American cities to learn from the municipalities of other countries. German cities are chartered with authority to do almost anything. They can owu and operate their street cars, gas aud electric plants, heating plants. They can speculate in real estate, and they pretty extensively do. They can start and operate municipal stores—and the town of Nuremberg has proved that they can do it successfully too, even iu spite of strong oppositiou.

Nuremberg is the headquarters of the great German toy-making industry. When I visited the old town a few years ago I got the impressiou that it was at once the most ancient and the most modern city I had ever seen.

I suppose rather less than a half million people live in Nuremberg. A few years ago the prices of meats in the town got so high that only the rich could afford to eat it often enough to keep in mind how it tasted. The city fathers decided to investigate. They found that usable beef cost 44 cents a pound; it had advanced in a very short time from 32 cents. Other meats cost in proportion. The dealers drew long faces and said it wasn't their fault: they were doing the best they could. So the town decided to start its own meat markets and find out what was wrong. There's nothing like getting right into a business if you want to learn about it.

The meat dealers protested, and finally agreed to compromise. They would let the town buy meats, which they would retail for it, at prices to be fixed by it. That scheme was formally adopted by the city authorities; and then something wonderful happened. Before a siugle pound of city meat had been bought or placed on sale the price of meats in all the markets dropped from 20 to 40 per cent!

When the city meat appeared a short time after the big drop the butchers systematically "knocked" it. They kept it in the background; told customers it was cheap and bogus. True, it sold at from 4 to 9 cents the pound less than the butchers would sell their own meat, but the people were scared into the notion that it wasn't fit to eat. They went on buying the meat that the butchers urged them to take, paying the higher prices, and letting the city meats beg for buyers, even at lower prices.

The city fathers didn't like that. They knew their meat was as good as the rest, and yet it was being allowed to spoil and involve them in a dead loss because the butchers wouldn't be square and give it a chance.

So the city authorities determined to start their own markets. They located them in available places, established model places, got all the qualities of meat, and opened for business.

The Price Margin Became Moderate

Instantly there was another drop iu prices. The city markets were conducted scientifically; costs were figured to cover expenses of buying, refrigeration, rent, handling, delivery, and the like. During the years 1912 and 1913 beef was retailed at the average price of 18½ cents a pound, pork at 17 to 18½ cents, veal at 17 to 18½. During this period the private shops kept their prices from 4½ to 6½ cents higher per pound, and it was found that a good many people would rather pay the higher price than buy from the municipal markets.

But the municipal markets did a good business nevertheless, and the private markets found that they could make the price margin only a moderate one. Many people would pay a little more for their meat, but very few would submit to having it "rubbed in" on them.

At the end of the first two years of the experiment the city authorities figured that the 90,000 families in Nuremberg had actually paid $2,300,000 less for their meats than they would have paid if there had been no municipal markets at all! All this was accomplished without a *pfennig* of loss to the city, which had been very careful to keep on the safe side in managing its own establishments.

I wonder what the people of an average American city would say if it were seriously proposed to install a reform of this kind, with the promise of immediately reducing the average family's meat bill $25.50 per annum?

The Chicago Market Commission has an idea that Chicago could well afford to save that money for its people. So it has laid out a general project for a modern, model system of municipal markets. These are to include wholesale markets for produce, groceries, meats, fruit, and in fact all the foodstuffs; a system of distribution which will reduce to the lowest possible figure the expense of delivery; a scheme of handling the business in close co-operation with the railroads and the express companies, so as to cut out the middlemen between farmer and consumer; and, finally, a general project for getting the farmer interested in doing business directly with his city customers.

How Prices are Sometimes Boosted

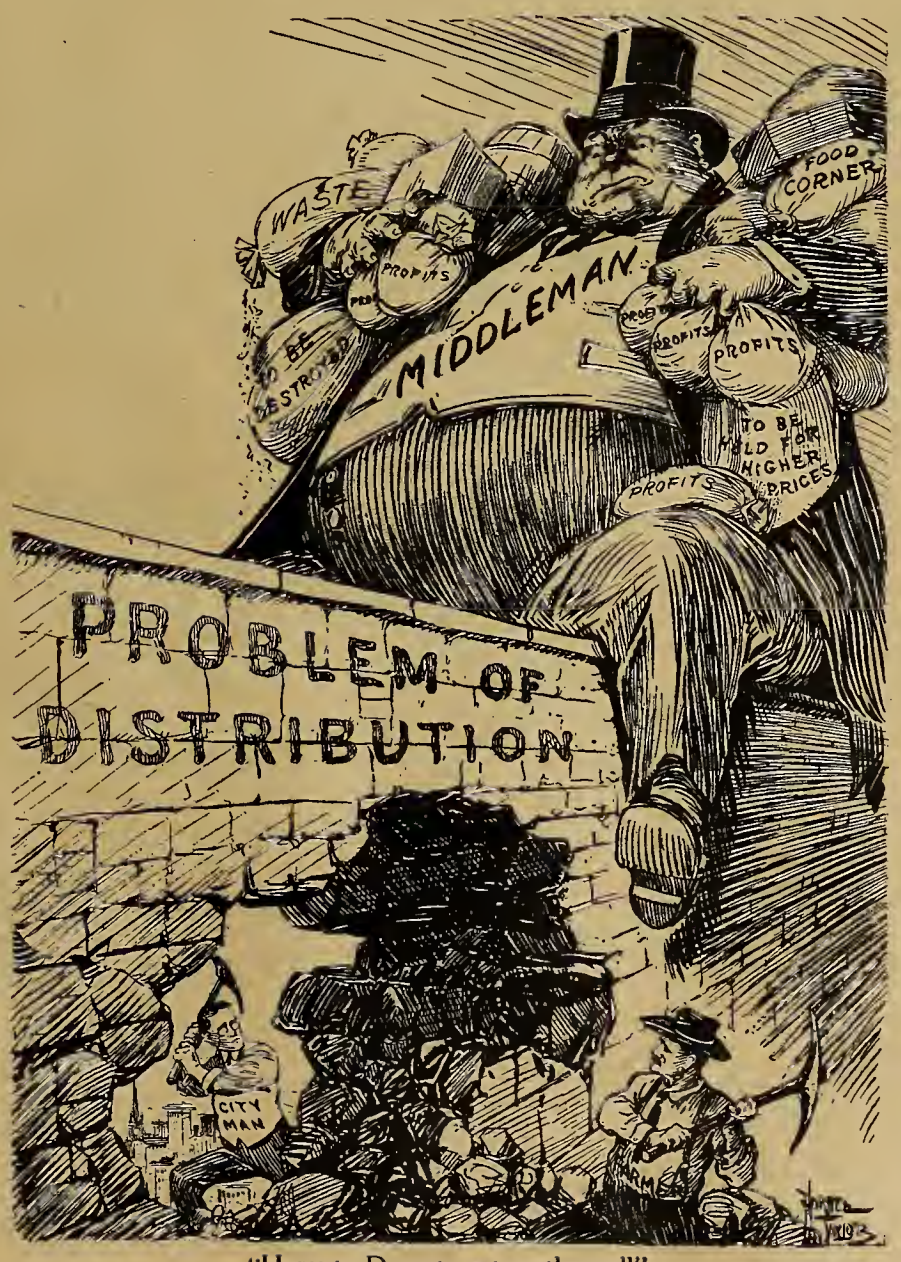
Can you imagine a wickeder proposal than to "corner" a city's supply of some necessary of life, and then, while holding it for higher prices, deliberately let a good part of it spoil? That happens lots of times.

What do you think of the testimony lately taken in New York about vast quantities of bananas and other fruits, perfectly good and sound, and the town wanting them, being hauled out to sea and dumped into the water in order to be rid of it and thus to make possible the boosting of prices? That happens too; not seldom either.

The Chicago people are getting ready to try on the big job of making their town the world's model in this business of getting good and cheap food to its people. Their plan is so simple that you will wonder at it if you care to learn about it in detail. If you do, write to Frederick Rex, Municipal Reference Librarian, City Hall, Chicago, for the pamphlet on the Markets Commission's report.

The scheme is simply to apply economy and efficiency principles to the business of buying and distributing foodstuffs. The middleman will to a large extent have to go, unless he can devise efficiency methods that will enable him to compete with the city markets.

American cities have fallen far behind the rest of the world in the matter of market facilities. Chicago is near the tail-end of the American procession, and it proposes to march right to the front.



"Humpty Dumpty sat on the wall"

The Gruner Grudge

The Story of a Modern Knight and His Ride for His Lady

By Anna C. Chamberlain

CHRISTINE GRUNER, carefully putting the hars back in place after letting out the family Jerseys, gave snch a start that the top board fell from her hands.

"Why, Max Gorham! 'Tain't never you!" she exclaimed with an air of surprise out of all proportion to the event, as Max frequently appeared at this time and place.

"I thought I was abont to miss ye," returned the young man rather breathlessly. "Kind o' natural to be walking this lane with you," he said as they strolled along the homeward way, "same as when we was little shavers,"—a tender note was creeping into the young man's voice, at which Christine, thrilled hut panic-stricken, moved carefully to the far side of the road.

"Like when we went to school." Christine, to hide the qnaver which would come in her voice, spoke unnsnally low so that her companion crossed over to hear better. "Every day we came along here in those times. Do you remember?"

"Every day," repeated Max after her softly. "In summer I used to bring apples and flowers, and in winter my sled to take yon to school. Remember, Christine?"

"Snre," retnrned the girl in a voice so low that her companion had to hend his tall head very close to her blue sunbonnet to hear the words. "An' you was so good to me always. None of the boys dast wash my face when you was by, or throw snowballs."

"I like to be good to you, Christine." Max's head was very close indeed now, so that the blne sunbonnet began to droop like a wilted harebell. "I liked yon hetter'n any of the girls then, an' I never changed since. I was sorry when we stopped going to school so I couldn't see yon mnch no more. I was always glad for parties, an' Fourth o' July, an' fair times, so's we could get together. Was you, Christine?"

Christine's bonnet drooped so low that Max had to bend his tall yonng head to look under it, hut he did not seem to mind. In fact, as his companion grew more timid he seemed to gather boldness.

"I was twenty-one years old last week," he continued, and the hnskiness in his throat was not fear. "Father gave me a team, and he says he'll rent me the south eighty if I want to start for myself."

There was no answer at all to this, and now the bonnet was bent so low that the rosy face within it was almost hidden from sight. Without waiting for a reply Max slipped his arm about the gingham waistline of Christine's trembling figure and, stooping low, stole a kiss from the sheltering blue depths.

"Will yon have me, Christine?" he asked huskily, his heart beating in heavy throbs.

Christine's face was rosy to the roots of her pale flaxen hair, and her voice too was shaken by the pitapat of her unruly heart.

"If Pa'll let me," she whispered, and at that Max's heart gave one great thump and then went down like lead.

Not that he was afraid of old Gottlieb Grnner, not he; bnt it was one thing to meet a man in the blacksmith shop or in the hayfield, and quite another to walk up to him on his own premises and ask him for his daughter. Such a fine girl as Christine, too!

In the slight pause that followed, as Max thought of this, his encircling arm fell a little lax and Christine raised her eyes in timid qnestion, at which the fainting spirit within Max rose with the strength of a lion.

"All right, Christine," he murmured, drawing her plnmp form a little closer, "but"—here his heart quailed afresh—"will he mind, d'ye think?"

"I gness not," hesitated Christine. For some strange reason, although these young people were quite alone in this seclnded lane, they continned to whisper these confidences at the very closest range. "I b'lieve he likes ye, hnt you'd better ask careful, 'canse he riles awful easy."

Then Max, after a long look into the depths of the blne snnbonnet, went his longer way to his own pastnre, while Christine sped up the lane whither the Grnner Jerseys had already preceded her to the barnyard.

Throughout the next day all kinds of things went wrong with Max, due, he knew, to the fact that while his hands were at work his mind was with the father of his beloved, framing the momentous question in constantly changing phraseology.

"Better have it over and settled," he said to himself finally when the suspense became unendurable, and then, although it was on a week day and mid-afternoon at that, he struck out across the fields toward the sonth line of their farm which bordered the Gruner qnarter section, and then took the direction of his usual Sunday afternoon stroll along the division fence which hrought him at last up hy the Gruner house.

It was a thrifty-looking home, snrronnded hy cherry trees which were now ripening their crimson fruit at fifteen cents a quart.

It was for this reason that Max saw not only the enchanting blue sunbonnet bowered in the foliage of a tree top hut old Gottlieb Grnner himself, assisting in the harvesting of cherries in those airy heights.

Gottlieb was not trusting his plump proportions, however, to chance twig or casual branch. He had brought two sixteen-foot ladders from the barn and, tying their tops securely together, had set them up stepladderwise beside the tree. With their strong standards and rounds and the extremely wide base thus afforded, Gottlieb felt that he had a support to which he could safely trust his two hundred ponnds of flesh and frailty even at the dizzy height of twelve feet. But an unexpected danger was threatening now, and against this he songht Max's aid.

"If you is come to visit, Max, und ain't bizzy," he began promptly, "I wish you would head me dot sow away. She eats der down cherries and makes troubles. Drive her de fence along. She knows der way. She comes out der harrn below somewheres."

"All right, Mr. Gruner," called Max, speeding forward with alacrity.

Without even a hint of diplomacy or circumlocution he made straight for the grunting porker who, seeing

"Whoa! Whoa! Stop her! Back her! You don't know noddings"

that she was wanted at the barn, was suddenly seized with a desire to go in the direction of the house. Hither and yon beneath the cherry trees they dodged, coming at each circuit nearer the ladder which supported Gottlieb Gruner's corpnlent person.

"Look out dere, Max," called the old man anxiously as the chase came perilously near the base of his support. "Head her de odder vay."

But the sow darted gaily forward, and seeing between the rounds of the ladder what looked like the entrance into a forbidden field attempted to make her escape that way. The space was all too small, bnt having started she pressed forward, carrying the foot of the ladder with her.

"Head her! Stop her!" roared Gottlieb, feeling his pedestal quiver beneath him. "Don't yon know noddings?"

All Max's best efforts, however, only served to strengthen the beast's determination to escape by her chosen route, and she pressed on, drawing that side of the ladder farther and farther out so as to lower the top—on which the old German preserved his uncertain balance—steadily and rapidly toward the ground.

"Whoa! Whoa! Stop her! Back her!" he shouted. "You don't know noddings. You fathead! You lobster!"

Bnt the old porker pursued her obstinate course, and old Gottlieb, as the base was dragged from beneath his improvised pedestal, protestingly descended, steadily, swiftly, and not ungracefully, bearing the pail of cherries in one hand and clutching at the passing branches with the other. As he reached the ground the hog made her escape sideways from beneath the imprisoning ladder and fled forward, still pursned by Max who bore with him a confused impression of the hot hreath of the old man's wrath.

As a kettle sometimes bubbles more noisily for a moment after being removed from the fire, so old Gottlieb's wrath surged even more fiercely when he found himself on the safe surface of the ground without one fifteen-cent-a-qnart cherry spilled or spoiled. From the "fence along" whither the old hog had finally retreated to her place of entrance "the barrn below," Max still heard muttering from the distance the old man's opinion of him.

And as he wandered disconsolately homeward his only solace was the message of apology and appeal which had spoken to him voicelessly from the depths of the blue sunbonnet. Old Grnner certainly did "rile awful easy."

Mr. Gruner was not likely to be easily appeased, for he was one who prided himself on the certainty of his judgment. Before this unfortunate incident he had taken but little notice of Max heyond the fact that he was "a feller who was hangin' around Christine," but in the photographic impression of the young man's character which he had formed during his descent from the heights of the cherry tree he was discovered to be "good for noddings," a loafer, and one who neglected his own business in the daytime to lead the neighhor's hogs into tronble.

"If you cannot drive a hog vat would do mit a vife?" he inquired acidly when Max, with the ardent impatience of youth, songht to gain the father's consent before the waters of strife had subsided.

"I'll save myself the trouhle by keeping my fences in order," returned Max quickly, and that settled it for him.

Gruner was notoriously lax on fences, and now that Max had openly dared to "sass" the old man on the subject it was useless for him to hope.

Strained relations had existed before this between Gruner and his neighbors because of the depredations of his hogs. Now the old man, smarting with the memory of former reproaches and present injuries, proceeded to get it hack on Max by not only positively denying his suit for Christine's hand but followed it up by peremptorily ordering him to keep away from the girl altogether.

For a few days the lovers consoled themselves with stolen meetings in the lane as they went for the cows. After that old Gottlieh, suspecting something, attended to the cows himself, passing Max on the way with nnseeing eyes.

These were hard days for the yonng people. Being denied the privilege of openly visiting his sweetheart, Max took to lingering about near her home when a kindly darkness would veil his presence, to gain in this way a glimpse of the flaxen head hent over a piece of sewing in the light of the parlor lamp or moving from room to room as she pursued her household duties. And long after the light glowed dimly through the white curtains of her little room up-stairs, he would watch, hoping, hoping for the something or the some way which would give him a chance to get on the good side of the old man, who had "riled so awful easy."

Since all things come to him who waits, so Max in his lonely patrol before the home of his loved one saw there one night the light of a lantern moving abont in the barnyard and, coming closer, heard loud puffings and groans of the defeated as portly Gottlieb tried in the uncertain light to catch and bridle one of the frolicsome young horses.

"Is there anything I can do to help you, Mr. Gruner?" he ventured, appearing ont of the darkness in the hope that here was his opportunity come at last.

"Yess, yess," gasped Gottlieb, breathless from his efforts. "Yon is young und can go more fast. Get de doctor, qnick!"

With a bound Max was at the head of a frisky colt, holding its forelock with a grip of desperation as he reached for the bridle with the other hand.

"The doctor!" he cried anxiously. "Is she sick?" for to him there was but one "she" in all the great round world.

"Yess, ah-h-h, so sick!" mourned Gottlieb. "I have done all what I know, hut I fear she vill die if the doctor comes not soon. Ride quick, Max, und I will give you anydings yon say."

"Will you give her to me?" cried Max eagerly as he hnckled the saddle with desperate haste. "Just promise me that, Mr. Gruner, and I will get the doctor here if it kills me."

"Give you herr?" shrilled the old German indignantly. "Such cheek! Such umhudence! He takes such advantage of mine troubles!"

"But I will not take her far," pleaded Max, springing to the saddle, "just to the next farm. You could see her every day."

"Und what good was dat when she was yours?" cried old Gruner, his voice cracking with rage and grief as he apostrophized the night. "Just because she vill die if he der doctor brings not he asks mine five-hondred-dollar mare!"

"Who wants yonr mare?" exploded Max excitedly. "Isn't it Christine who is sick?"

"Oh, it was just Christine what you wants!" cried old Gottlieb with a sigh of relief. "She was all right, I guess. Take her if you wants her, only bring der doctor quick before mine beautiful mare shall die."

But he spoke to empty darkness, for Max like a knight atilt for his accolade had already sped into the night where, in the far distance, his horse's hoofs could be heard pounding down the dusty highway.

E-W

A Beauty Talk with the Farmer's Wife

It is Easy to Keep the Charms That Youth Gave You

By Mrs. A. V. R. Morris

IT ISN'T so many years since you were called the prettiest girl in your native county, and now you sometimes wonder why that beauty has faded. Your share of the farmhouse work is not hard and money is not scarce. There have been no tragedies in your married life, and not many worries, yet your complexion is sallow, your eyes are dull, and your hair is getting prematurely thin as well

Ventilate your hair out of doors and it will not grow gray

as gray. You don't sleep soundly at night, you haven't a good appetite, and often you're mentally depressed. Although far from being an invalid, your health is not good. And without good health no woman, even Venus herself, can long retain her good looks.

Not long ago when a city friend asked if you took enough exercise you raised both hands in horrified protest. Exercise! Half of your time is consumed in doing the housework! But that isn't the right sort of exercise, because it is done indoors. It keeps you slender and wiry, but it also robs your cheeks and lips of their color and it does not induce an appetite for any of the good things which you cook three times a day. When you sit down to the table with your husband and sons you envy them their keen hunger, but they wouldn't have those hearty appetites for fresh vegetables, fowl, and fruit if they were working all day in the house. Their exercise is taken in the fresh air, just as a part of yours should be. And if you imagine that just to go out for an aimless stroll is a waste of time, start some sort of a garden for the cultivation of flowers, small fruits, or fine vegetables, and work at least one hour daily in it. While you're earning a little extra money for yourself, that sort of exercise will restore your appetite and bring back the color to your cheeks and lips. But your face and neck will get brown and freckled instead of white and pretty if, while working in the open, they are not protected from sun and wind by a sunbonnet with a wide front and a deep cape. It is a good plan to wear the sunbonnet every time you go to the chicken run, to the barn, or to the outside dairy; and in the latter place is a cosmetic which any farmer's wife can afford to use—namely, sour milk. Save a cupful of it every day, and at night smear it upon your face, neck, and arms. It will cleanse the cuticle of dust and keep it smooth and soft. More deep lines are the result of grime embedded in a rough skin than are the result of worry and age, and the woman whose face and neck are deeply lined or faintly wrinkled—the terms are synonymous—cannot look pretty.

Have you ever tried sleeping out of doors? The plan is perfectly easy for the farm dweller to adopt, since in her sequestered home she need only place her bed upon the porch and chain the watch-dog near-by. You may imagine that the "night noises" of the woods and the fields will keep you awake. On the contrary, they will lull you into a slumber that will last until dawn, and then you'll get up feeling like a new woman. Your

For a good complexion cultivate your garden

eyes will tell you of how much good the open-air sleep did when you look in the mirror while doing your hair, for instead of being dull and colorless they will be bright blue or brown and young-looking.

Not so many years ago you had pretty hair. It was thick and fluffy, and pretty whichever way you arranged it. But since getting married you haven't kept up the practice of regularly washing it and then drying it out of doors. In your girlhood days you didn't realize that keeping the dust out of your locks was what made them thick, and that ventilating and drying them in the open was what made them bright and lustrous. They would soon begin to get thicker if the rain-water shampoo were regularly

You will awaken bright-eyed and young if you sleep out of doors

given them, and you would be surprised to note how soon the gray hairs would stop multiplying after the open-air drying and ventilating were resumed.

The last time you visited a town friend you would not go to parties because of your rough, red hands and wrists. There is no reason why your hands should be in that condition, for your housework does not injure them permanently. They are chapped because you do not take time to dry them thoroughly or to smear them with buttermilk, and they are red because you forget to rinse them in vinegar after washing the dishes. Buttermilk and vinegar will keep your hands as smooth and as white as those of the richest and laziest woman in the world, but yours will keep young and pretty longer than will hers because the exercise of housework will prevent the muscles from shrinking and the cuticle above them from wrinkling.

Take care of your teeth. There is nothing so racking to the nerves and so destroying to the disposition, and consequently to the beauty, as aching teeth, and the way to keep them sound is to "make time" to brush them after each meal. While your teeth are white and sound you can afford to smile broadly, which will help you to look pretty.

Early Summer-Morning Cooking

By Bertha Bellows Streeter

WHEN the days are hot and the family longs for dainties is just the time that the housekeeper feels least disposed to stay in the kitchen. One good way to overcome the distaste for this part of the day's work is to rise early and prepare some dainty. Cooking when early-morning breezes stir, and there is no one to interrupt, has a fascination.

Serving individual portions of salad in baked shells is a very good way to tempt the appetite in summer. It is an excellent plan to make a number of these cases because they will keep some time if put in a dry place, and when needed it is only a matter of reheating to make them crisp again. Those not used for salads can be filled with a thick boiled custard or with sweetened whipped cream to form cream puffs. For the latter purpose, however, the cheese is not desirable, so the dough should be divided before the cheese is to be beaten in.

Bring one cupful of water and half a cupful of butter to a boil with a teaspoonful of salt. While it is boiling vigorously stir in one and a quarter cupfuls of flour, beating rapidly to free the thick paste from lumps. When the mixture is cool, work in four eggs until the paste is smooth. This rather tedious process may be hastened toward the last by using the Dover egg beater; the paste will then be so thick that there will be no danger of doing more than breaking up the tiny lumps of dough. If you want all the shells for salad, beat in a tablespoonful of grated cheese. The puffs rise better if the dough is thoroughly chilled on the ice before being dropped in balls half the size of one's fist on a buttered tin. Place the balls at least two inches apart, and bake in a moderate oven about half an hour, until they are light and have no damp spots in the middle.

Beef, veal, and chicken loaves are good, as are also the jellied meats, and all have the advantage of being easy to make. These recipes have been tested again and again and, if followed, will give a great deal of satisfaction at small expense.

For beef loaf you can use the flank, neck, or a piece of shoulder just as well as the more expensive cuts. Put crackers through the food chopper until you have a cupful of fine crumbs, onion to make two tablespoonfuls, then two pounds of meat that has been simmered until tender and allowed to cool in its own liquor, which should be just enough to cover. Mix a teaspoonful and a half of salt with the crumbs, and stir all together with the onion, meat, one egg, a tablespoonful of lemon juice, and the strained liquor in which the meat was cooked. Butter a mold, press the meat into it, and bake half an hour until the loaf is nicely browned. Serve cold cut in thin slices and having the plate garnished with rings of hard-boiled eggs or tiny sliced pickled beets with a few sprigs of parsley.

This veal loaf in which the meat is combined with ham is especially good served cold. Put through the food chopper three and a half pounds of veal, half a pound of ham, and onion to make a tablespoonful. Mix a teaspoonful of salt and half a teaspoonful of ground sage into a cupful of powdered bread crumbs, and, if you like, a nutmeg grated and half a teaspoonful of ground allspice. Beat the dry ingredients into the meat mixture and add two eggs. When thoroughly worked together press the meat into a buttered pan, brush over the top with slightly beaten egg, and bake slowly for three hours. If there is but little fat to the meat, baste the loaf occasionally with melted butter.

For jellied veal boil the meat until tender, then pick it fine and heap it lightly in a mold rinsed out of cold water and on the bottom of which has been arranged a layer of circles of hard-boiled eggs. Season the liquor in which the meat was cooked with salt and pepper to taste, boil it down to a cupful, and pour it over the meat. Serve very cold in thin slices.

Chicken in jelly is improved by the use of celery and onion as seasonings. Flavor the stock in which the fowl was boiled with these vegetables to suit your taste, adding salt and pepper also. Soak two teaspoonfuls of granulated gelatin in the same amount of cold water and dissolve in a cupful of the hot stock. Strain this liquor over the chicken meat, which has been cut into fine pieces and heaped lightly in pound baking powder cans as molds. Chill, and when firm serve in quarter-inch slices, garnished with parsley or rings of hard-boiled eggs.

This ginger cream is a treat. Soak two teaspoonfuls of granulated gelatin in the same amount of cold water and dissolve in half a cupful of hot water. Whip a pint of cream until it is stiff, then stir in half a cupful each of pulverized sugar, cold boiled rice that has been made light by being put through the vegetable press, and chopped preserved ginger. When the gelatin begins to set, stir it into the cream, turn the pudding into a large mold or several individual ones, and set aside.

The ginger sauce to accompany this dessert is made by boiling together for five minutes a cupful of water, one-fourth cupful of sugar, and the same amount of chopped preserved ginger. Beat the whites of two eggs well, and pour the syrup over them; then add two tablespoonfuls of lemon juice.

The Community Builder

By the Rev. Harry R. McKeen

Chapter IX

ONE day this preacher had a notion in his head that he was either going to be compelled to whip a man or get a whipping. As is the custom in all well-regulated villages, the post-office is the public gathering place about mail time. Everybody comes. The smart Alec with his coarse joke, the teller of vulgar tales is there; also the practical joker, the loud-mouthed blatherskite, and the "me too" fellow that assents to everything under the sun and giggles and snorts at everything that happens. In this gathering at the post-office there is usually also the bully. In the group that daily gathered to await their circulars, bills, and whisky advertisements was one who, though holding the position of justice of the peace, was looked upon as a "bad" man. He had mussed up a good many people according to reports. He would get drunk and proceed to take the town, usually using a rifle to shoot out lights and kill stray dogs. His principal attainment, however, was swearing. He had no peer in that country. He seemed to know all the hair-raising oaths and had invented a few of his own. It was his special delight to get into a group of folks anywhere and cut loose his profanity. If a woman happened to be about that made no difference, and if a minister happened to be near he put on extra pressure and raised his voice so the parson would be sure to hear, while his "me too" followers would giggle and chuckle and squirm.

This particular preacher put up with two demonstrations of this kind and concluded that he would not do it again without at least protesting. The chance came sooner really than he wanted. He was in the office, seated, talking to the postmaster in plain sight of the crowd outside. The "squire," as he was called, came up and, upon seeing who was there, proceeded to unlimber his arsenal of cuss words. They were a choice lot that any ox driver or mule skinner might well have envied for his vocabulary. In a few minutes the conversation was so shifted that preachers in general were included in the harangue, and finally in a veiled way the one present. It was a case of either say something or run, and the only way out was right through that crowd.

With his teeth almost chattering with fear and his heart doing double duty the minister sauntered out at the door, stood uncertain a moment, walked up to the squire, extended his hand, and said, in not too certain a voice, possibly: "My name is McKeen. I'm pastor of the Congregational Church here. Yours is ——, I believe. I have overheard your conversation for the past ten minutes, and for a man who presents as good an appearance as you and looks like a real sensible man you are the greatest disappointment I ever met. I should think a grown man, with as splendid a family as you have, would be ashamed to think such oaths, let alone belching them out here before boys and young men. You ought to be ashamed of yourself, sir."

"For a man who presents as good an appearance as you . . . you are the greatest disappointment I ever met"

The preacher really thought he was going to be struck. The man's face purpled and he swallowed two or three times spasmodically. His eyes narrowed, and then bulged out with an angry flame. There was murder in that face for a moment, then the eyes fell and he hurried across the street to his office and banged the door, making the whole building fairly rattle.

The minister hurried home to quiet his shaking nerves. It was a stirring experience. The encounter was the talk of the town.

Some time later, possibly two weeks, as the minister was passing the squire's office he was hailed and invited to come in. He almost feared to go, thinking that he was to answer for the previous encounter. After the weather had been discussed and some common matters mentioned, the squire cleared his throat and said: "I want to apologize for using the kind of language I did the other day at the post-office. I'm glad you called me down good and proper. I've been thinking about what you said, and I guess you are right. Now I want you to call me down every time you hear me swear, for I want to quit this damned swearing. See that broken chair over there? I broke that the other day when you went after me. I was so mad I just had to bust something."

He looked at the preacher in surprise when he (the preacher) laughed at the odd way he had put the request.

The squire and minister gradually became fast friends, but many was the time it was necessary to "call him down." The habit of years was not broken off in a day, nor even a month, but progress was made.

At first invitations to attend the church services were scorned, and though he was friendly with the preacher the squire knew a choice lot of hypocrites who made their headquarters in that particular church, and he was very frank to say just who they were and give his reason for so thinking. In some instances the evidence looked like mighty damaging arguments, too.

His wife and daughter attended church regularly, and both joined. Then there was another explosion from the squire in which they and the preacher were given a scoring.

The time came when he attended a service, and though he scorned the idea then, he later admitted that he rather enjoyed it, especially the music.

He almost struck his daughter one day when she predicted "that he would join that church and be glad of the opportunity." She afterward owned up that for a moment she feared him.

A series of special meetings were started and folks were coming in crowds. The squire would come a night and then stay away two or three. His conscience was hurting him. One day the minister called on him in his office and had it out with him. He went over the squire's history pretty thoroughly and showed him just what he had done for his own life, that of his family, and the example he was setting before his grandchildren. It was a scathing arraignment before the bar of his own conscience. In closing the minister told him, "I am done. You can go your way if you wish, but I want you to know the responsibility rests upon your own shoulders. It is a matter you must settle with your conscience and your God."

The next day the old man was assisting his son in building an addition to his home. Two little grandsons were playing about among the timbers. The squire was battling with his conscience and was of course having corresponding troubles with the nails and boards. Every time anything went wrong he swore his best. One of the little boys got in the way and with a horrible oath he put the little fellow into an adjoining room, and with more oaths to emphasize the order told the little chap to stay there. His better nature got the best of him in a few minutes, however, and he gave the lad some blocks with which to play. Directly there was a crash in the adjoining room, and blocks were scattered in every direction by the little feet. Then came a repetition of the awful oaths the squire had been using all the day in hearing of the lad. They sounded hideous from the throat of a mere infant. The lad's mother grabbed him up and was about to punish him severely when the squire's voice boomed out, "Don't whip him, whip me. It's my fault, not his."

Then his arraignment by the preacher came to his mind again. It was a terrific struggle for the rest of that day, but no more oaths. That night he came to church.

He told the preacher weeks afterward that it seemed as though the sermon was all about him. Hot anger ran through him, and he wanted to lay his hands upon the speaker and rend him. When the invitation was given he turned his back on the preacher and audience and at the close of the service went home to keep up the fight. Next day he telephoned the minister to come to his office.

"My God, Mack," were his words, "I've got to have some relief. I can't stand this. Won't you help me?"

"Squire," was the response, and the preacher wanted to be as kind as possible, "this matter is out of my hands. I have talked with you, advised you, and prayed for you. I would be glad to help you if I could, but this is a matter between you and a Higher Power. I'd advise you to go there for help."

That night the old man came to church. His face was pitiable. It showed the awful strain under which he had been laboring. He looked years older. He was ill at ease during the sermon, and when the invitation was given he began the old fight over again. He picked up a book and turned it over and over. When the congregation was singing he had the book open upside down and didn't realize it.

Finally he threw the book down with a bang and came forward. He meant it too. His face showed it, and next day there was a terrible talk about the "squire's having gotten religion." It was a memorable day in that church when he and some seventeen others that had been almost as wicked in their own way were taken into membership in that church.

He was a changed man. Occasionally he would have pessimistic days, and once in a while bad words would slip out, but the old "bully" in him was dead. He was elected as one of the trustees of the church.

One day the preacher asked his daughter how things were getting along at home, whether the squire was carrying his religion into his home and daily life. "Why," she answered, "we even have different food to eat and very different flavoring and sauces to wash it down with!" Then the minister knew that the man had saved not only his own soul but the happiness of those to whom he was responsible.

Was his regeneration worth while? It could only be done in the way the preacher worked.

[TO BE CONCLUDED]

Some Dog-Training Hints for Children—By H. F. Swathmore

THERE are three things necessary for the successful bringing up of any dog: first, a quiet, pleasant voice; second, patience; and third, perseverance.

It is wrong to strike a dog to make him obey, except in very extreme cases. The animal's intelligence is limited, and if, when training him to do a certain thing, the voice grows louder and louder the dog will naturally become confused, will cower down and refuse to obey; while if firmly, without show of impatience, you repeat over and over what you wish him to do he will gain confidence and understand.

My own dog, a heavy-weight terrier of some thirty pounds, came to me at the age of three months about five years ago, and I have had sole charge of him ever since. I began at once the usual "house breaking," and may as well put down right here that in order to train a dog properly every other occupation in one's daily routine will have to be put aside as a secondary matter. If the puppy is exercised outdoors regularly every two hours little trouble will be experienced in house breaking. Give all your time to it for a day or two.

One of the first things I taught this dog, after the house breaking, was to keep out of the dining-room when we were at the table. It took exactly one luncheon hour to accomplish this, but I made up my mind in advance that my luncheon would be more or less interrupted. Before I went to the table I set him down firmly outside the door. He ran in as soon as I was seated and tried to climb into my lap. I took him and looked directly into his eyes, and said gravely, "No, no, Pat," and placed him in the next room again. This performance was repeated more than a dozen times, and each time he looked penitent when I said, "No, no;" but I finally made him understand that I had nothing against him, but wanted him to keep out. Now he sits on the threshold during every meal, and never offers to budge until I snap my fingers.

I have taught him to meet the postman at the door and bring the mail up-stairs; also to bring his collar to me in the morning to be put on. It was quite hard to teach him these two tricks. Many was the time that I walked around the house step by step, very slowly, holding his jaws over the paper or collar till at last he gripped it himself, wagging his tail with pride.

There are scores of theories regarding the feeding and exercising of dogs, which may be all very well with fancy and very highly bred animals, but Pat was brought up on plenty of simple well-cooked fresh food, and he is as healthy and lively a production as can be found anywhere. A great part of this is due to his regular exercise. He runs anywhere from two to six miles every day beside a carriage, and comes home just healthily tired out, sleeps perhaps two hours, then eats his dinner of meat, fresh vegetables, soup, muffins, or dog's biscuit (dry), just as it happens. He has his bowl of fresh water close at hand, and I always let him eat and drink his fill.

These notes from Pat's life may serve as suggestions to some dog owner who is having his first experience. The necessary rules are applicable to any pet dog of rugged breed. They may be summed up in a few words: Be patient; never raise your voice; persist in carrying out your idea until the dog learns what you want of him; feed and water him generously if he exercises sufficiently to counterbalance the appetite. Have his bed in a warm place, and air it every day. Remember he is a dog, not a child, and train and enjoy him for what he is.

E.W

FARM and FIRESIDE

EVERY OTHER WEEK - - THE NATIONAL FARM PAPER

SATURDAY, AUGUST 15, 1914 *5 CENTS A COPY*

ESTABLISHED 1877

LOOK FORWARD! THESE GOOD THINGS ARE COMING!

Farm Tragedies

Some men make explosives for a living, others train wild animals, and still others work on the skeletou framework of skyscrapers. These jobs most people regard as dangerons. Farming has the name of being a safe occupation, and the only way a farmer can die, some people think, is by overwork or old age. Far from it. Farmers are sporting with death and disaster all the time, but the accidents that occur are so widely scattered that we don't easily learn the lesson of "Safety First." With the hope of disappointing the uudertaker we have collected a lot of facts and figures that will be pnblished in the next issue under the heading, "Farm Tragedies—How They Happeu." Try to keep alive just two weeks more so as uot to miss this article.

Aunt Jane and Her License to Listen

These are the days when corporations totter weakly under the touch of a masterful woman. Aunt Jane was a masterful woman. She was cnrious—that is part of the duty of beiug a woman—hnt she was kind. She could handle a runaway and a pistol; she conld also be a pathetic invalid. Versatility is sometimes a curse, but Aunt Jane was too strong a womau to let it curse her. On the coutrary, she used it as a bomb which she exploded nnder the nose of the telephone corporation. Regulations and opiuions were shattered, and the "polite young man—" But you must read about him and Aunt Jane in Farm and Fireside for August 29th.

How to Keep Clean and Well

The germ has come to stay. Of course he has always been with us, hnt formerly he lacked advertisement and we were not conscious of his presence. The medical profession has now given him a bad character and he has become interestiug. He is a hard enemy, and nnless we kill him he will kill us. Nature, which made the germ, has also made the forces which will destroy the germ. Mrs. Talbott will talk to us ahout these, so that we may learn to make our homes abiding places of health and happiness.

Pickles

Who does not like corn and tomato pickles? Two illustrated recipes will delight the housewife.

Insertion of Irish Crochet

An uuusually heautiful design for the decoration of nnderwear and dresses or of household linen will fascinate the lover of fancywork.

For the Little Folks

A whole page of just the right sort of clothes for the little folks in the family will he shown in the August 29th issue of Farm and Fireside. There will be school dresses and good-looking aud yet practical little coats for boys aud girls, as well as afternoou dresses. In addition, there will be illustrated the first hahy's layette. This consists of five very carefully selected garments which were decided upon after consnlting the best baby authorities in America. The set of these five patterns cau be obtained for twenty cents. This set will be of the greatest possible help in solving the problem ahout what to procure for the coming bahy.

Let's Have a Rat-Killing

The 500,000,000 rats in the United States eat up about $100,000,000 worth of feed every year. Besides, they carry all kinds of diseases and vermiu. The rat lives by his cleverness. He isn't wanted around, and knows it; but, like the hobo that he is, he stays and lives off the fruits of our toil. Let's have a rat-killing.

But wait! What is the hest way to go ahout it? Write a letter of three huudred words or less, telling your best method (which you have actually tried) of killing, trapping, or driving away rats. We will pay $5 for the best letter, $3 for the second best, and $1 each for all others puhlished. Every reader is invited to coutrihnte. Contributious should reach the Contest Editor, Farm and Fireside, Springfield, Ohio, not later than August 25th.

WITH THE EDITOR

AS THIS is written the farmers of Servia are leaving their unharvested crops standing in yellow maturity in the fields, and marching against the working people of Austria. Austria has declared war against Servia. Russia is expected to go to Servia's aid, and Montenegro, Greece, Roumania, and other Balkan States seem likely to be drawn into the awful conflict.

If Russia aids Servia, Germany will march to Austria's assistance, and both Austria and Germany will call on Italy to fulfill her treaty agreements and set her armies in motion with Germany's.

Russia will demand that France and Great Britain take her part in the controversy. India may revolt against Great Britain. Turkey will perhaps try to win back what she lost to the Balkan States in the recent war. Millions of men will ravage the fields and cities of Europe. The farms will lie untilled. The poor will fester in poverty still more abject. Great fleets of steel ships will meet and destroy one another. The present map of Europe may go out of date, and new distributions of power take place.

It may be that the thrones of Europe will be upset aud a great system of republics replace the empires and kingdoms. But civilization is likely to be set back, and progress halted. Out of the hate and murder and ravishment and deviltry of war not much good may be expected.

In the end it will be bad for the farmers of the United States. The people who buy our exports will be impoverished, and our best customers bankrupted. War is loss to every people.

But for a while the war which seems probable at this writing will stimulate business in the United States and make for "good times." Wheat, rye, corn, and other cereals will rise in price because of the fact that the grain producers of Europe will be in the armies and not in the fields. While the rest of the world fight we must furnish their subsistence.

Our grains will bring good prices, and not in grains alone will the effects be felt. Armies eat meats, and while the soldiers of Europe are in the fields their meat animals will be slaughtered and their breeding herds and flocks sacrificed. If the war goes on we shall see meats go higher and higher for years.

War consumes horses and mules by hundreds of thousands. Draft animals will go up with meat animals. Automobiles will take their place among the recognized economies.

Soldiers wear out cotton and woolen goods even while they cease to produce them. Cotton and wool will go higher than they now are. All along the line prices will rise. Manufacturing will be stimulated here, and our unemployed will be called to the shops to do the work which the soldiers of Europe would do if they were not wasting their time and lives in campaigning.

War Always Brings Hardships

The war cannot last for years as wars used to do; and after it is over times will be harder all over the world. As farmers we should save our money and get out of debt while the war prices prevail, and prepare for the depression which must follow it. Make the most of the good times. Make every acre produce its maximum. And let us all hope that the war will not extend beyond the territory of Austria and Servia—and that it may be brief. We cannot afford good times at the cost of war.

It is difficult for an American not to sympathize with the Servians in their struggle with Austria. Servia is a kingdom, but the people are very democratic. There is no aristocracy in Servia, and no middle class. It is a nation of farmers. Most of the farms are little affairs of twenty acres or so, divided into fields which may be scattered about among other similar fields in such a way as to make the use of labor-saving machinery impossible. But they are usually owned by the men who work them, and this wide-spread ownership of lands makes the Servian an independent sort of fellow who prefers to farm rather than work in a shop or factory. Therefore manufacturing is not extensive. People who employ themselves on their own lands will not work for the low wages which prevail in Europe.

Servia is a maize country, and the corn crop is the most important. The most valuable farm product is pork, the most important export. It is a good fruit country, and perhaps the greatest country in Europe for plums. Beekeeping is also quite general, the honey being eaten and the wax exported.

Co-operative loan associations, of the sort called Raiffeisen banks, have done the farmers a great deal of good, and if it were not for the wars which have afflicted the region for centuries the Serb farmer would be one of the most comfortable and happy in the world. Co-operation is general. The farmers live in little villages, and exchange work a great deal. The local institutions are often communistic. There is a head man and a head woman in the village, and a good-sized house in which all the people meet in the evening for conversation and amusement, the women spinning or doing fancy work while the children play. Most villages have a band of gypsy musicians. The men's conversation relates mostly to politics, for every man who pays taxes to a small amount is a voter, and the Government is, theoretically at least, under the control of these working people.

Servia Should Be Free

This is the sort of people whose fate is involved in the attack of Austria. They went to war with Turkey only a year or so ago, as the allies of Bulgaria, Greece, and Montenegro, and are proven soldiers. War is in their history and in their blood. Their land has been overrun by all the countless currents of conquest, migration, and military ambition of a thousand years. Roman, Greek, Byzantine, Turk, German, Russian, and other armies have trampled their grain into the earth, killed and driven away their stock, carried off their women, and butchered their men—and all the time the Serbs have kept up their national spirit and their fighting traditions.

Standing alone, we must sympathize with Servia. The only thing that makes some of us doubtful of the event of a victory [continued on page 11]

ADVERTISEMENTS IN FARM AND FIRESIDE ARE GUARANTEED

Under-Inflated Tires

SOME automobile users do uot inflate their tires the full amount in hot weather, under the impression that the heat of the sun and the roads would make a highly inflated tire burst. No reasonable ground whatever exists for this theory.

In a recent test made, tires that had been pumped to eighty pounds in a cool place showed a pressure of only four pounds more after the machine had been run at high speed over hot brick pavements and wood-block pavement covered with hot tar. For all practical purposes this increase is trivial.

Under-inflatiou is always a serious matter, aud will shorten the tire's life. A good automobile tire will stand over two hundred pouuds' pressure to the square inch.

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Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment.

If any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers.

FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. $2.50 per agate line for both editions; $1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2¼ inches, length of columns two hundred lines. 3% discount for cash with order. Three lines is smallest space accepted.

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Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

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WHEN THE LIGHTNING FLASHES

By D. C. Shafer

NOTHING, probably, in all the world causes so much fear and trembling as an ordinary thunderstorm. When the hissing lightning leaps to earth and the noisy thunder shakes the very hills, birds hide in the thickest coverts, wild beasts seek their deepest dens, and maukind trembles behind closed doors and darkeued windows. Nine out of ten of us, brave enough otherwise, are mortally afraid of thunder and lightning.

Now let us see, just for curiosity, whether lightning is really so dangerous. Of course, if it hits us we are goners, but just what are the chances of being struck by lightning in this country? The Weather Bureau has issued a report on this subject covering the United States for the year 1899. It showed that the total number of strokes of lightning causing damage to life and property for that year was 5,527. There may have been a few more not recorded. The number of buildings injured directly or indirectly by lightning is given as 6.236, and their value, $3,016,520. The number of deaths caused by lightning duriug the same year was 563, and the total number of persons injured, 820. Only 1,383 out of 90,000,000—about one chance in 65,000! The number of live stock killed in the field was 4,251, valued at $129,255. One of the insurance companies issued a statement on this subject for the year 1902 which shows that the total number of fires caused by lightning in this country for that year was 3,012, and the damage, $3,396,810.

During 1906 ouly 169 people were killed by lightning in this entire country, aud 30 of these lived in the cities. You will have to admit, for all your fears, that these figures are low in a country now having a hundred million people and twenty million homes. Why, during that same year 763 people died of sunstrokes, 213 were frozen to death, aud 4,395 were drowned! By this comparison lightning does not seem dangerous at all. More buildings were destroyed by fires caused by spontaneous combustion than by lightning. More people died of *beriberi* aud other uucommon diseases than were killed by lightning bolts.

What Lightning Really Is

In 1911, 1,886 buildings were struck by lightning, the greater number being barns. Of these buildings 958 had wooden roofs, 34 were metal, and 39 were slate. The remainder were uot described. Of the whole number only 40 were rodded.

The risk of buildings being struck by lightning is five times greater in the country than in the city, for the reason that they are more isolated.

Now let us see what the electrical engineer has to say about this great natural pheuomenon anyway.

He says, says he, that lightning is only a second cousin to the kind of electricity used for light, heat, and power in our home; for telephoniug aud telegraphing; for wireless, and for driving trolley cars. And just because we are afraid of lightning is no reason why we should be timid about installing electricity in the home. Lightning is *static* electricity. Static means "to stand." Static electricity is the kind that collects on non-conducting surfaces. Rub a hard rubber comb on your sleeve and the friction will cause it to become charged with static electricity. It will exhibit magnetic characteristics, attracting bits of tinfoil, iron filings, lint, and paper. Now *dynamic* electricity, the kind we use to perform work, is always on the move. It will not stand still; it will not collect on anything. When properly installed it is perfectly tame and housebroken and a good and faithful servant. It does not snap and crackle, nor play mysterious pranks, nor go on a rampage, destroying property and frightening honest folk nearly to death.

Lightning is static electricity—the same kind that crackles when you stroke a cat's back. Indeed, this stroking of pussy's fur causes a miniature thunderstorm.

Dr. Charles P. Steinmetz, the world's foremost electrical engineer, has this to say about the nature of thunderstorms:

"In the early days lightning was explained as the discharge of the clouds. The clouds were thought to be positively charged, and the ground negatively charged, the sparks jumping from the cloud to the ground. Speculations were made as to how the clouds became charged, and as then the only method of producing electricity was by friction it was thought to be the friction of the raindrops through the air. That explanation used to appear satisfactory, but with our present kuowledge of electricity it is not correct.

Remarkable photograph of bolt of lightning striking a building

"We cannot consider the lightning discharge as a simple electric rupture in the same way that an overloaded beam may break, but as an equalization of internal stresses, such as a piece of hot glass that is rapidly chilled and thereby full of internal compression and tension strains, suddenly breaking all over by the internal stresses. So with our present knowledge we must consider this as the most probable explanation, that the lightning discharge is the equalization of internal electric stresses in the cloud, and is similar to the splintering or breaking of an unevenly stressed brittle material, like glass. Lightning discharges are the result of the voltage inequalities produced in the clouds by the unequal rate of collection of rain particles due to unequal cloud density.

"In agreement with this is that heavy lightning strokes are usually followed by a heavy downpour of rain; in reality they are preceded and caused by it, but it takes time for the raindrops to come down.

"The static electricity collects on the particles of moisture in the air. When these particles condense iuto raindrops the static electricity becomes crowded for room because there is not as much surface to the individual raindrop as there was on the surface of the moisture particles which went into it. When a thunder cloud becomes overburdened with static electricity it drops off its load on another cloud, or to the earth, and we have a 'shower' of electricity.

"The lightning rod is a great protection, aud I would not like to be in an exposed place without such protection. But you must not expect that one rod on one end of the building will completely protect the other end a hundred or more feet away. There must be enough rods to extend their protective zone over the entire area. The apex of the roof, and other projecting edges, must be protected by rods and connecting wires. That is, like any other apparatus, the lightning-rod protection must be installed intelligently and properly to be effective. But the geueral principle is correct, only it must be rationally applied."

Thunderstorms never occur in the Arctic regions, and seem to grow more severe as we approach the equator. In certain parts of Central Africa the average run of thunderstorms is 250 days a year, yet there are some very curious exceptions. In Sumatra and Java, both very hot climates, there are only 92 storms yearly, and in Borneo only about 50. The gold coast of Africa has only about 60 a year.

It Always Takes the Easiest Path

In Java there is a thunderstorm every day for five months. Perhaps the most astonishing fact in regard to thunderstorms is that the island of Mauritius, which is only 550 miles from Madagascar, has on an average only one thunderstorm in eighty years. Yet in Madagascar the lightning is more destructive than anywhere else in the world, the annual number of deaths being more than 300.

Washington monument holds the record for being struck by lightning. This famous monument has been known to be struck by five differeut lightning bolts in twenty minutes. Nevertheless it has not yet been injured, owiug to its lightning conductors. This apparatus consists of a large aluminum cap connected to the earth by copper rods.

In passing from cloud to cloud, or from a cloud to the earth, lightning always travels the easiest path. As the air during a thunder shower is full of whirl and eddies, varying in the amount of moisture, the lightning follows the path coutaining the most moisture, owing to the greater conductivity. In this way it follows an irregular path. Traveling at terrific speed—more than 180,000 miles a second—it is almost instantaneous.

There are three characteristic forms of lightuiug, zigzag lightning, ball lightning, and sheet lightning. We are all familiar with ordinary zigzag lightning. Sheet lightning, sometimes called heat lightning, is also common. Ball lightning is not so familiar. In the form of St. Elmo's fire it is frequently seen on the top of masts and buildings. Ball lightning varies in size from half an inch to several feet in diameter. During a heavy thunder shower on Mont Blanc a ball of fire as large as a pigeon's egg entered the Janssen observatory. It moved slowly across the room, then retreated, and exploded with a terrific report, giving a severe shock to all present. Ball lightning

Lightning discharges resemble the splintering of hot glass when suddenly cooled

has also beeu seen to drop from the clouds to the earth, but this rarely happens except on the tops of high mountains.

Lightning discharges are bright because the air along the path of the discharge is heated white hot. The discharge, as a rule, really consists of several discharges along the same path, although they appear to the eye as one flash. The first flash usually goes but part way, ending in a branched discharge, and those following bridge over the space between cloud and cloud or cloud and earth. The flashes last from a thousandth of a second to half a second, and a single "lightning flash" is sometimes composed of thirty or more individual flashes. While vivid lightning is sometimes terrifying, it is the innocent and entirely harmless thunder which frightens most of us. Brilliant flashes of light can be shut out, but there is no escape from the thunder. All thunder is the product of lightning. Like any other sound it consists of vibrations in the air. The generally accepted theory is that thunder is caused by the pressure of the atmosphere closing up the hole burned in it by the passage of the lightning. This hole may be more than a mile in length. If such a hole were six inches in diameter the air pressure would be nearly 10,000 tons per mile. It is this enormous pressure, resulting from the vacuum caused by the lightning, which produces the vibratious. And these vibrations, falling upon our ears, are known as thunder.

Thunder is entirely harmless. It is nothing but noise and air and, like most noisy braggarts, is perfectly harmless.

The effects of lightning are varied. It may strike a tree or a building, or even a person, without the slightest damage. And then again, it may shatter the tree, burn the building, or kill the person. The freaks of lightning are past all understanding. A perusal of the daily papers during the sultry days of summer, when thunderstorms are common, will disclose a multitude of strange antics accredited to lightning. It has been known to undress persons, give them a hair cut and a shave, tattoo them with strange marks, remove the filling from the teeth, and do many other pranks—according to the daily press or the imagination of its correspondents.

If a lightning bolt is heavy enough to pass from the clouds to the earth it is certainly dangerous, and should be avoided if possible. No matter what anyone says, lightning rods offer protection to any building on which they are properly installed. The best way to protect a building is to cover it with a uetwork of copper wires, with their terminals buried deep in the damp earth. That is why a concrete building reinforced with steel rods is the safest place during a thunderstorm. The next best protection is secured by having a lightniug rod on every peak, chimney, and high point of the building. These rods should be well grounded in damp earth. Wire fences should be grounded at every fifth post with galvanized ground wire extending into damp earth. As for the number of lightniug couductors on buildings, particularly farm buildings, Weather Bureau experts hold that a terminal 20 inches long should be erected every 20 feet along the ridge of the roof, in addition to short terminal wires on each cupola, chimney, or other prominent point likely to be struck.

It is folly to run and close all the doors and shutters because a thunderstorm is coming. There is no record of lightning ever entering a house by the door or window. It does not follow drafts into buildings. Traveling at a rate of speed sufficient to go seven times around the earth in a second it has no time to stray into open windows or walk in the door. If it strikes the house it will generally hit the gable, the chimney, or the ridgepole.

But there are places to be avoided during a heavy thunder shower. Do not run for the first tree to seek shelter from a thunderstorm. Lone trees in meadow and pasture are extremely dangerous at such times. Keep away from wire fences if they are not safely grounded; and they almost never are. The tops of high hills and exposed points are also dangerous in such storms. If in au unprotected building, keep near the center of the room, away from the walls, water pipes, and beams. In case anyone is struck by lightuing apply the regular resuscitating methods used for the drowned. Keep working at the body for an hour or two until recovery, or until you are certain that life is extinct.

Holding Lightning at Bay

By C. R. Weidle

THERE'S no doubt but that buildings properly rodded with good copper rods are practically immuue from serious damage by lightuing. Of course the rods must be kept iu good repair. Once in a while we hear of a rodded building being slightly injured, but I have never known a building being destroyed by lightning if properly rodded with pure copper cable lightning rods. On the other hand, so many unrodded buildings are destroyed that I consider it hazardous for any farmer owning valuable buildings to let them go unrodded. The ghastly leaping flames from an unrodded barn that was struck and burned to the ground in my neighborhood last season still form a vivid picture in my mind. For a time the lightning-rod theory was considered as a sort of bogus proposition, due mostly to business done by fake lightning-rod agents years ago. This idea is now rapidly dying out.

To be sure, ageuts sometimes charge exorbitaut prices, but if you wish to protect your buildings from lightning you can do so at a moderate cost, besides having a first-class job done. Buy the material and do the rodding yourself, or have someone do it under your direction. One thousand feet of cable and 24 tops can be purchased at wholesale prices which are very reasonable. If this amount of material is more than one man needs, two or three parties can order together at wholesale rates.

When rodding my buildings three years ago, I was able to purchase from a manufacturer at wholesale prices 700 feet 7/16-inch 30-strand pure copper cable, 15 tops complete, and several fancy vanes for house and barn for a little less than $50, including freight charges. This amount of material was sufficient for properly rodding a large bank barn, 64x76 feet, using three groundings, a silo using two groundings, a carriage house, and a dwelling house. Figuring this amount of material at prices charged by agents who rodded a number of buildings in this section at the same time, I made a clear saving of over $100.

Did I get a first-class job? I say, Yes—at least better than some of the agents did for others. The ageuts insisted on placing the groundings 6 feet deep. I put mine dowu 10 feet, where there was plenty of moisture. This is very important during a long dry season. The agents paid no attentiou to metal eave-spouting ou buildings. I had these as well as other metal parts of the roof connected up with the lightning-rod cable, which always ought to be done. I used more points, and placed them only about 15 feet apart on my buildings, and used pleuty of groundings, which is also essential for proper protection from lightning.

For making holes for the groundings a long 1-inch iron bar sharpened to a tapering point was used. The punching rod seut with the lightning-rod material was not suitable for my peculiar hardpan soil. I hired an old experienced roofer who roofed my barn with slate to put up my rods under my instructions. I could have done it myself, but he was more familiar with slate roofs. The cable was run along the ridge of roof, down the facing board of roof to the eave trough, which was connected as stated above, then down the siding, and grounded. No large building should be rodded with less than two good groundings. Large barns should have three or more. I believe failure on this point and the use of too small a cable account for the occasional damage to rodded buildings by heavy bolts of lightning. The cables are not able to carry off all the charge to the ground, so some of the lightning jumps off onto the building.

All manufacturers furnishing lightning-rod material give complete instructions for doing the work. These should be followed to the letter.

A 7/16-inch pure copper cable should be preferred to the lighter weight cables on the market. The company I bought of puts out a 7/16-inch cable only. This company was very strict in having its instructions obeyed. They furnished a guarantee, that should any of the buildings be burned by lightning while rods are in good repair they will return the purchase price of the rods with 6 per cent interest.

Anyone wishing a cheap lightning-rod system can get a certain amount of protection by using galvanized iron cable instead of copper. And rather than leave buildings unprotected I would by all means use this material. But as pure copper contains several times the conductivity of iron, I consider copper the better investment in spite of the difference in cost. Again, pure copper rods are much more durable than iron, being immune from rust, whereas galvanizing cau be depended upon only for a certain period of time.

Weather Wisdom for Ready Reference

Valuable Weather Proverbs

By Calvin Frazer

SOME cynic has remarked that whatever is proverbial is apt to be untrue. Certainly it is a mistake to suppose that all proverbs are true. The fact is that there are good proverbs and bad; and many that were originally good have degenerated, owing to their distortion or misapplication with the progress of time.

Of the weather proverbs so familiar to farmers and out-of-door folks generally, some are valid the world over; others apply only to the places where they originated; while still others are sheer nonsense. In the second class there are several that were valuable bits of weather wisdom in the particular regions of the Old World from which our forefathers brought them, but are more or less of a misfit in most parts of this country. Certain scientific men, such as Abercromby in England and Humphreys in America, have rendered a valuable service in separating the good weather proverbs from the bad, and showing how the former are related to well-recognized processes of nature.

A world-wide proverb (in many versious) is:

> Evening red and morning gray
> Help the traveler on his way;
> Evening gray and morning red
> Bring down rain upon his head.

Contradictory as this saying may appear, it is oue of the soundest of weather prognostics. Theu we have the proverbs concerning a "ring around the moon." Such rings are of two distinct kinds. One, the corona, showing strong prismatic colors, varies with the size of the water drops in the clouds; the larger the drops the smaller the ring. Hence a very small colored ring indicates the probability of rain. The other species of ring, known as the halo, is much larger than the corona, shows little if any color, and is always the same size; but its presence shows that the sky is overspread with lofty ice clouds such as commonly precede by a day or two the arrival of a general cyclonic storm; hence this ring is a sign of strong wind, usually culminating in a spell of wet weather. The popular belief that the number of stars inside the ring shows the number of days before the storm, has no foundation, but may often happen to come true, simply because, with bright moonlight and thin clouds, not more than one or two of the brightest stars are visible in the small area of the sky occupied by the halo.

Among proverbs relating to seasons we have

> Frost year,
> Fruit year,

and

> Year of snow,
> Fruit will grow.

This simply means that if the winter is loug and cold, with plenty of snow, the blossoming of fruit trees is delayed so late in the spring that there is little danger of injury from frost. On the other hand, we have a number of proverbial prognostics of the class represented by the "ground-hog day" superstition, all of which are mere picturesque absurdities. To this class belongs the ancient belief that the twelve days following Christmas are the "keys of the weather" for the following year, each day indicating the prevailing weather of a month.

Many proverbs connect changes of the moou with the weather, but have no foundation in fact, for

> The moon and the weather
> May change together;
> But change of the moon
> Does not change the weather.
> If we'd no moon at all—
> And that may seem strange—
> We still should have weather
> That's subject to change.

The appearance of the moon, however, is of some value as a prognostic. Thus "a pale moon is a sign of rain, a red moon of wind, and a white silvery moon of fine weather" expresses, in a rough way, certain scientific facts.

When all is said and done the daily weather map aud a little knowledge of meteorology are more useful to the farmer than all the weather proverbs.

Signs of Approaching Storm

By D. S. Burch

HERE are a few weather observations which have proven so true that persous not having a better system of personal weather-forecasting may find them helpful. A rainstorm can be expected if dry springs start to flow with no apparent cause, if horses' tracks on a dry road show up wet or damp, if little whirlwinds of dust occur frequently, if chickens begin to "oil up," if flies collect on the outside of screens, if birds become restless and uoisy.

The first two indications are due chiefly to the difference between the barometric pressure in the ground and above ground, and partly to the amount of moisture in the air. When the barometer falls, which is nearly always a sign of rain, it means that the air pressure is lighter. This brings more water in the soil to the surface. Little whirlwinds of dust are also commouly noticed iu regions of low barometric pressure.

The next indication is a provision of nature that gives birds time to spread oil from the glands above the tail over their feathers, thus keeping the body dry in wet weather. The last two are examples of those fine sensibilities with which birds and insects are favored more than human beings.

The amount of moisture in the air (the humidity) is also related to the approach of storms. When moisture collects in large beads on the outside of cold surfaces the humidity is great and raiu may be expected. The oppressed feeling some people have just before a storm is also due largely to the great amount of moisture in the air, which reduces the evaporation of moisture from the skin.

Animals and Birds as Barometers

By H. W. Bigelow

CERTAIN movements on the part of the animal creation just previous to a storm would almost lead us to believe that reasoning faculties were not lacking. The spider, upon the approach of rainy or windy weather, will be found to shorten and strengthen the guys of his web. When the storm is over he will lengthen them again.

Sea gulls predict storms by assembling on the land, but this is merely a search for food. They instinctively know that the rain will bring the earthworms and larvæ to the surface. A similar instinct teaches the swallow to fly high in fair weather and skim the ground when foul weather is coming. They simply follow the flies and gnats which remain in the warm strata of the air.

Swine will carry hay aud straw to a hiding place, oxen will lick themselves the wrong way of the hair, sheep will bleat and skip about, hogs turned out in the woods will come to their pens squealing and grunting, colts will rub their backs against the ground, crows will gather in flocks, crickets will sing more loudly, frogs will croak and change color to a dingy hue, dogs will eat grass, and rooks soar like hawks.

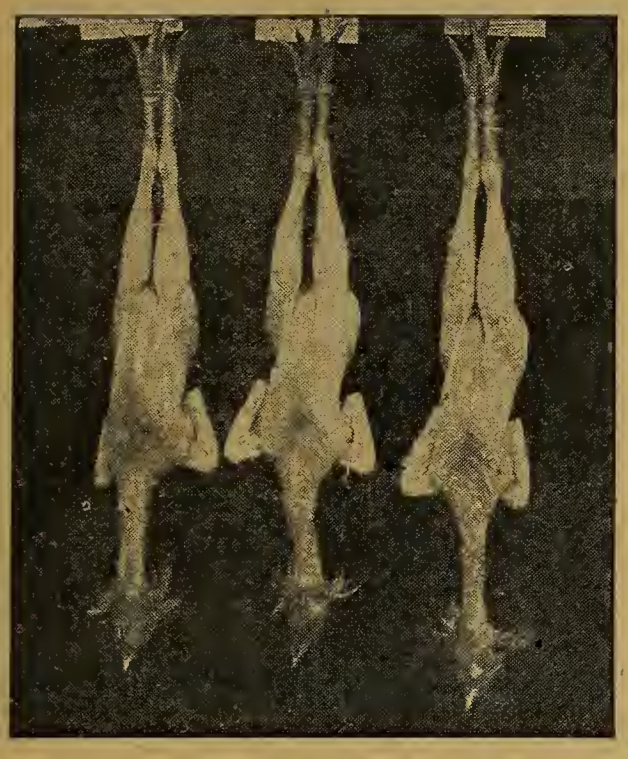
In all probability these many actions are due to an uneasiness similar to that which all who are troubled with corns or rheumatism experience just previous to a storm, and are caused both by the variation in barometric pressure and the changes in the electrical condition of the atmosphere. They are interesting even if they are not infallible as indicatious of the weather.

E.W

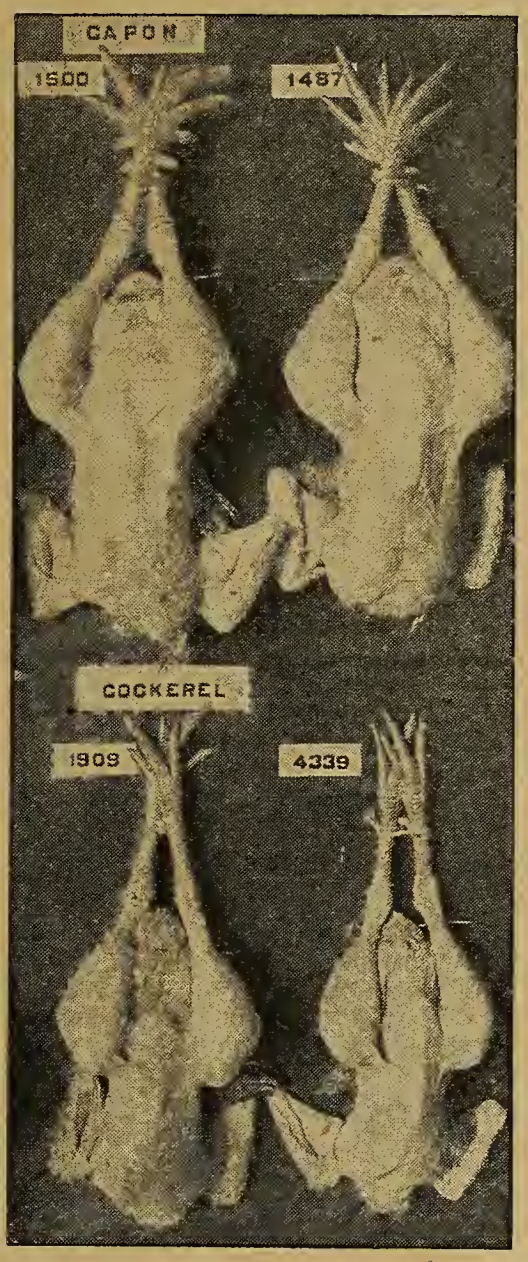
The Smooth Finish for Profit

Birds Gain Over a Cent a Day During a Fortnight's Fattening

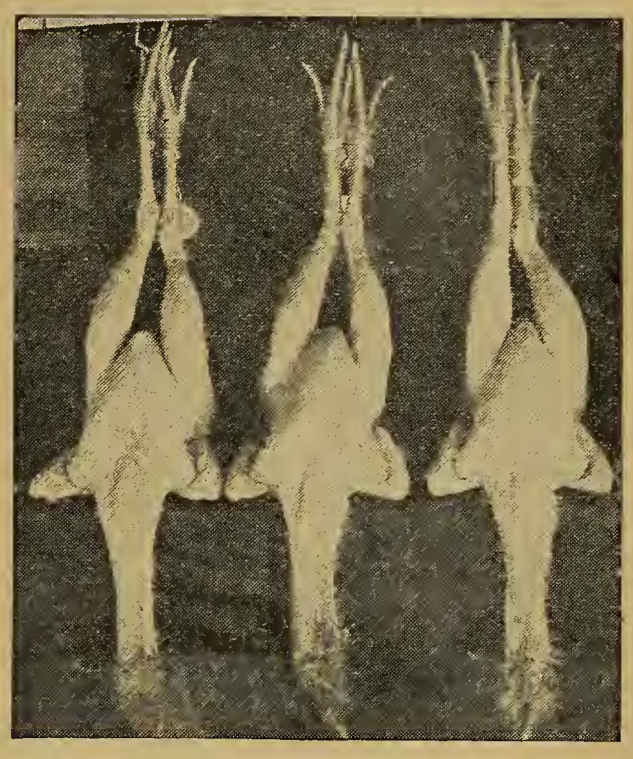
By F. W. Kazmeier



Cockerels from range ready for market



Cockerels below; capons of same age above; worth 20c and 30c per pound respectively



Crate-fattened cockerels command the high dollar

DOES it pay to fatten poultry before placing on the market? Can the busy farmer afford to spend a little of his time in order to get his poultry in the best possible fattened condition on the market? To these questions my experience dictates me to answer, yes. If he cannot profitably fatten poultry he surely cannot profitably grow poultry. Of course it is easy to say yes; but, as the saying goes, the proof of the pudding is in the eating. So here we go. In order to substantiate my statement I will give figures of several experiences I have had in fattening poultry on our farms in the Middle States and Eastern States. It was in the fall that we culled out 70 S. C. White Leghorn cockerels and placed them in a fresh-air slatted-bottom pen. These slatted bottoms were built in sections so as to be easily removed when being cleaned. The slats were two inches apart, and about six inches from the floor. Along the sides we had the old-fashioned roost poles enough to provide about twice as much roosting space as would be required. This was all planned with the idea of preventing fighting as much as possible. In this we were successful to a very large extent, but not entirely so. There was still a little fighting, but not enough to be of any serious consequence. One of the most serious troubles we encountered was the proposition of keeping the pen reasonably cool during the hot early fall days and nights. The front was almost entirely open. In the east end we had a large window, in the west end the 3-foot wide door, and a large 1-foot wide, 10-foot long ventilator in the rear. The windows and doors were fitted with screens, wooden shutters, and black muslin curtains. The house was kept dark as much as possible. In keeping it dark without restricting the ventilation we found the house was cooler and there was less fighting.

In front of the open front we piled a lot of brush to provide shade, to keep out rain, and to darken the interior. The house was movable, and in warm weather was placed in the shade of a large tree.

The 70 cockerels placed in this house September 10th weighed 173 pounds, or a trifle more than an average weight of 2⅔ pounds apiece. These cockerels were taken from a free range, were constitutionally strong and large-framed birds, three factors necessary in a flock to be fattened at a profit. Small and constitutionally weak birds cannot be fattened at a profit. These 70 cockerels were fed on a straight fattening ration for fourteen days, gained 51 pounds during this time, consumed 214 pounds of fattening mash. One died during the fattening period. The cost of the fattening mash was $1.20 per 100 pounds, or a total cost (food consumed by these 70 cockerels for a period of fourteen days at a gain of 51 pounds) of $2.56.

We sold a few before fattening, of the same age and kind of stock as those fattened. For these we realized 15 cents per pound net. Remember, these were taken from the range and shipped direct to the market unfattened.

Two weeks later, although according to the price quotations poultry was a cent lower, we shipped our fattened cockerels to the same market and realized 16⅔ cents per pound net for them.

Cost of fattening, for feed, $2.56; for labor, $2.50; increase in weight 51 pounds, at 16⅔ cents, $8.50; increase in price on 173 pounds, at 1⅔ cents, $2.87. Net profit, $6.31.

The following were the proportions of the fattening ration fed: 30 pounds corn meal, 8 pounds low-grade flour or wheat middlings, and 6 pounds ground hulled oats.

This was mixed with enough buttermilk to make it the consistency of batter. When we were out of buttermilk we used sour milk in its place.

These birds were fed twice a day, as near twelve hours apart as possible, all they would eat up clean; the first week rather sparingly, but the last week all they would make away with.

Absolutely nothing but this fattening mash and charcoal, not even grit, was given. You will note these birds were pen-fattened, and not crate-fattened. Crate-fattening, however, finishes the birds off better, and they make larger gains, but the labor cost is slightly more.

You will notice by the above figures that a labor charge of $2.50 was made. This was estimated, but is the maximum, and where more could have been fattened the labor would have increased only slightly. The labor item is the only one estimated, the rest are taken direct from the ledger and are to be depended upon to be correct.

The above was on a farm in Wisconsin, where feed is a trifle cheaper than in some of our Eastern States. The cockerels were marketed in Milwaukee, where poultry is always a trifle cheaper than in most Eastern markets.

The above experience is such as to indicate that any farmer can do likewise, even though he cannot provide the exact conditions. All that is necessary is to get as near to them as possible.

The Tuxedo market is probably one of the best in the world for poultry products. This market calls for quality alone, and is willing to pay almost any price, especially when coming from a recommended and reliable farm.

Tuxedo itself is about 35 miles outside of New York City on the Erie Railroad, it is a place noted for its grand scenery, and consequently an ideal place for rich New York business men. The town of Tuxedo itself is much like other places, but the rich section termed Tuxedo Park is quite unlike most other places. This park includes a good many hundred acres, and grand and expensive residences. Money is of no consequence in this park. It is a place exclusively for the rich, in fact so much so that no outsider can get past the gatemen stationed at the different entrances, unless he knows the password or has written permission from one of the members of the park. These people send their orders for all kinds of provisions to Tuxedo. Almost any price can be secured for high-quality products coming well recommended. Ordinary grades, of course, net an ordinary price even here.

About a year ago the writer fattened some fancy milk-fed broilers for this market, and here is the way he did it:

When the broilers weighed between 1¼ and 1½ pounds I placed them in a fresh-air colony house. In my case the house happened to be 8 feet square with 2-foot sides. From the floor to the peak of the roof it was 6½ feet. The door was made out of a frame covered with 1-inch poultry netting. These houses were movable, and in warm weather were located in an orchard or woodlot. In my case it was in an orchard.

Buttermilk or sour milk was used to moisten the fattening mash. The fattening mash was of the following proportions: 10 parts dried ground bread (we could get all we wanted this year at $30 per ton), 4 parts white bolted corn meal, and one part oatmeal, mixed with enough buttermilk or sour milk to make it the consistency of batter. To the dry mixture, before adding the milk, I mixed in pepper and salt, about as food is seasoned for the table. I also added about 10 per cent, by bulk, of chopped parsley. Sour milk or buttermilk was always before them as a drink. They were fed all they would eat up clean in about ten minutes three times a day. They were fed until they appeared to slightly lose their appetite, when I turned them off at once.

The above method of feeding gives the broilers that gamey flavor so much desired by the quality trade.

The above fed stock is called on the market fancy milk-fed broilers, and always brings a fancy price. We have realized as much as 75 cents per pound for them in the height of the season.

The plain fattening of broilers simply calls for a good fattening mash mixed with buttermilk, and in addition the birds are allowed all the milk they want. The first week feed very sparingly; the last week the birds should have all they can consume.

We have each year disposed of our surplus stock, and our laying stock not desired to winter another year. We have done this during the months of June, July, and early August. We do this because at this season of the year poultry meat is rather scarce and brings a good price. We easily realize on an average of 5 cents more per pound at this time than late in the fall. The few eggs the hens lay, from the market viewpoint, do not more than pay for the feed. Then, too, we generally are very much in need of the room they would occupy. Stock that we want for breeders, or to winter another year, we do not so dispose of.

During September, October, and November market poultry is a drug on the market, and hence low in price. This is not the case in late spring.

We have fattened some years as many as 2,000 capons, and although we have no actual figures to prove that it pays to fatten capons we surely have come to realize that the following statement is true: Large, well-fattened capons bring several cents per pound above quotations for ordinary small capons. They are in demand and sell fast, while the smaller ones often have to be carried over until the next day for a sale, and you all know what that means. Here are the quotations of a produce commission merchant of New York City for March 18, 1914: Philadelphia, fancy, over 9 pounds, per pound 29 to 30 cents. Small capons, 18 to 20 cents. Fancy milk-fed broilers, 40 to 45 cents. Corn-fed prime, 30 to 35 cents. Fowls well-fattened, 17½ cents; not well-fattened, 10 to 13 cents.

In the fattening of capons there is no question but that it pays. If it does not pay to fatten, then it does not pay to grow them in the first place. The heavier the capon the higher the price per pound.

You cannot fatten lice and fowls at the same time.

A day before marketing withhold all feed (giving water only) to prevent tainted meat by the souring of the contents of the crop or intestines.

There are three ways of fattening: pen-fattening, crate-fattening, and machine-fattening. Most of us would probably get the best results from the first method. That produces good results at the least expense of labor. Crate-fattening, however, produces the best fattened poultry, with the possible exception of machine-fattening skillfully carried out.

It is seldom profitable to fatten for a period longer than two weeks. Never fatten for longer than four weeks.

One good fattening mixture: 1 part ground hulled oats, 2 parts wheat bran, 3 parts corn meal, and 1 part meat scrap.

Another: 5 parts corn meal, 4 parts wheat middlings, 2 parts ground hulled oats, and 1 part meat scrap.

Both of these mixtures are moistened with sour milk or buttermilk to the consistency of batter.

EDITORIAL COMMENT

FARM AND FIRESIDE
The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

WASHINGTON affairs get interesting even in summer. And legislation that affects us does not wait for cold weather. Mr. Welliver, in his Farmers' Lobby discussions, puts us next to live questions of the day. In fact, Farm and Fireside is in touch constantly with our national situations. Any particular query about the national capital or the work there will be gladly answered.

HERBERT QUICK, - - - - - Editor

August 15, 1914

DENMARK has passed a law giving the women the right of unlimited suffrage. Norway has been a woman-suffrage conntry for some time. It seems to be coming. Like the "Voice of the Grass," it might say, "Here I come creeping, creeping everywhere."

ALFALFA is rich in protein. So is cottonseed cake. Corn is low in protein, and something like alfalfa or cottonseed should be fed with it. Which is cheapest? It depends on conditions. A test made in Nebraska shows that the use of cottonseed cake in place of alfalfa in that State increased the cost of the meat and lowered the profits of the feeder. The reason is that the alfalfa can be produced on the farm and the cottonseed had to be brought from afar. A feeding test in Alabama or Georgia might bave shown opposite results. We mnst study onr own conditions, that's sure.

Canadian Oil Stock

OIL has been struck in Alberta, not far from Calgary. The reader may be offered stock in a Canadian oil company one of these days. It will be well to think twice before bnying—and then to refuse. The Port Arthur "News," a Canadian paper, says editorially: "Not one qnarter of the companies with stock for sale could expect to yield their stockholders a cent's worth of profit in return for the risks they have taken." Pretty risky bnsiness then, isn't it?

How About This?

AT THE recent rural life conference at Pullman, Washington, in the course of a discussion of an address on "The Opportunity for the Rural Church as a Socializing Agency," Prof. A. M. Shippee, according to news dispatches, suggested that the rural churches should organize Snnday sports of the sort boys like, rather than either deprive them of the sports or force them to go to town for them.

This set off a display of forensic fireworks on tbe subject of Sunday baseball. One prominent member of the conference stated that the boys would learn a lot of real religion in baseball games so organized.

It is difficult to see how games of this sort, under the auspices of a church, could be offensive to God.

The whole trouble with them is that they are offensive to some people, and a violation of some of our men-made laws.

If they provoke snch heated discussion in tbe free and unconventional atmosphere of Washington, we may expect that our more conservative communities will fail to welcome the innovation with any eagerness.

That the Church may well endeavor to make its activities attractive to the yonng people along lines a little removed from the conventional means of grace may be admitted without going so far as to promote Sunday baseball.

At the same time, it may be conceded, that in a neighborhood in which Sunday church baseball has the approval of the general moral sense it might be played in a truly religious spirit.

The Chinese Egg Supply

FIFTEEN years ago the price of eggs in the Province of Shantung, China, was a dollar for 900 eggs. Now the price has risen to a dollar for 360. Twenty-seven million eggs were exported from this province in 1913, most of which went to England. By a study of the condition of the local British markets for fresh eggs we can judge as to whether or not we need be alarmed at the importation of Chinese eggs.

British poultrymen continue to prosper under free eggs just as British wool growers do under free wool. The Chinese egg producers are pretty good salesmen, and it may be expected that the price there will rise steadily until something like a parity is reached with ours, quality and cost of handling considered.

Few Chinese poultry raisers possess more than a dozen or so hens. They hatch most of their chickens in earthenware incnbators which are heated by the fires which warm the living-rooms and the beds—thus all the heat is saved. We have the word of our consul at Chefoo that old women frequently incnbate eggs by carrying them strapped abont their waists under their outer garments. This is carrying economy to the limit, it would seem. Most Chinese families are too poor to eat eggs even at the low prices mentioned, and therefore the entire product, except that portion used for hatching, is sold. On the average ten Chinese eggs weigh a pound.

Four-Footed Fiends

THE United States Government has a flock of sheep in pasture at Bethesda, Maryland, on which experiments are being made. The pasture is surrounded by a six-foot woven wire fence topped by a barbed-wire spreader—supposedly a dog-tight fence. About July 8th, sheep-killing dogs jumped this fence and killed three of these sheep. Not only were the sheep killed, bnt eighteen montbs of work on sheep diseases went for naught.

One of the dogs attacked a watchman, who knocked it senseless with a wrench, but it recovered and went on its way, doubtless to kill more sheep. The owner of the dog had the nerve to object to the attempt on the dog's life, asserting that nnder the law of Maryland the sheep owner had no right to kill the dog! The exceptional facts in this case bave given it wide publicity; but the loss of his little flock by a farmer here and there is far more important, for these cases, most of whicb are never heard of outside the immediate neighborhood, are what keep the sheep business from thriving.

The Bethesda case is significant, however, in proving that it is very hard to fence against determined dogs, and that some dog owners are somewhat below their dogs in morality. If the Federal Government would impose and collect an internal revenue tax of $25 a year on all bitches, the dog crop would begin to fail in about five years, and the sheep crop correspondingly to flonrish.

Mow the Crop to Save It

SOMETIMES alfalfa is affected by a disease called stem blight, black stem blight, or black stem rot. The stems bear a watery, yellowish appearance along their sides, and afterward tnrn black. The sick plants are stunted in growth. When this disease is observed the best thing to do is to mow the alfalfa at once. If left standing the disease will creep down the stems into the crowns and kill them, root and branch.

Mowing will probably eradicate the disease. It is quite apt to follow injnry to the crop by hail or frost, in some parts of the country.

Goat Venison

THE man who contemplates entering upon the rearing of goats need no longer donbt the existence of a market for his meat. According to the "Live Stock World," "owing to the scarcity of fat sheep, goats found a warm reception" this year in the markets at the stockyards. Yet no goats' flesh is sold in this conntry under its trne name. The explanation of this strange disappearance of the goats on the killing floor lies in the fact that the hind quarters are sold as mutton or lamb, while the fore qnarters go into cans or sausage. This is rather close to a fraud, but it will go on unless stopped by law.

Yet, that goats' flesh is a fine meat the experience of centuries abundantly attests. Did not God command Aaron to sacrifice two kids of the flock for a sin offering? And the children of Israel were given the instruction, "These are the beasts which ye shall eat: the ox, the sheep, and the goat, the hart and the roebnck, and the fallow deer, and the wild goat, and the pygarg, and the wild ox, and the chamois."

While we are not informed as to the present demand for the meat of the pygarg, all the other animals mentioned, save only the goat, are eaten by Americans whenever the chance offers. Why not the goat? Or, rather, why do we insist that when we buy the juicy leg of goat or kid it shall be called mutton or lamb?

Money for Rural Education

WE HAVE heretofore expressed regret at the fact that people disposing of their property in wills to charitable uses seldom or never think of the great need of the public schools for funds, or of the vast public benefits which might come to the world from such wisely guarded donations.

In fact, we know of no State which has provided by law for the acceptance by public schools of such bequests.

We are reminded of this situation by the fact that a wealthy man named Francis A. Ogden recently died at Houston, Texas, leaving, according to news dispatches, an estate of several millions to be "devoted to the education of country children, especially children whose educational advantages are limited."

If this will is so drawn as to permit of the best use of these funds, and the executors hit upon the real need of our rural educational system, the Ogden foundation may be the most important gift to educational uses ever made in this or any other country. It may lift the name of Francis A. Ogden far above that of Stephen Girard, George Peabody, John D. Rockefeller, Andrew Carnegie, Johns Hopkins, or James Smithson as a benefactor of education.

If the Ogden fund is expended in giving to individual country children the same sort of education they now obtain when they have the ordinary "advantages," it will merely draw them to the cities.

If, on the other hand, it is used in giving us demonstrations of the value and success of the "new kind of rural school" of which Roosevelt's Country Life Commission spoke, it may bring about a beneficent revolution in country living. It may turn back the tide of population which sets from the country to the city. It may bring about such ideal educational conditions that city people will move to the country to give their children educations under the best possible conditions, both practical and cultural. It may save the nation from its greatest danger—its over-urbanization.

It may do this by demonstrating a system which we may support by taxation when the benefits are proven.

How will the Ogden fund be spent? Its management is confronted with an opportunity for doing good, or frittering away a possible blessing too immense for estimate.

Crops and Soils

How We Started in Alfalfa

By Mrs. Mabel Bacon

ALFALFA is something new here in southeastern Vermont. We were much interested in reading what others had done, but thought we couldn't afford to try it, as all the articles spoke of heavy fertilizing, inoculating the soil and the great amount of time needed to get the ground in shape.

Well, last year we decided to try our luck on a small scale, and having a small plat of ground (on which we had raised onions the year before) which was fairly rich and mellow we sowed it, first putting on a light coating each of stable manure, old plaster, and ashes, worked in in good shape. We then sowed the alfalfa seed in an Iron Age seed drill, drilling it in rows about 14 inches apart, in the latter part of June.

It came up and grew fine. We wheelhoed it several times to keep it clear of weeds and to keep the soil in good shape. We cut it twice, and it was nearly a foot high when cold weather came. We left this without cutting to act as a mulch over winter. It came through the winter fine. We are sowing more.

A Picture and a Moral

YOU might think this is a winter scene, but it is not. The white portion is drifting sand. Timber is about the only crop such land will grow, and when one crop is cut start another.

The owner of this tract neglected to leave enough mature trees to reseed it. This was a mistake. Leave from 20 to 50 per cent of the trees and the woodlot will renew itself.

Silos—the Experience of a County Agent

By F. S. Bucher

AT NO time has the silo been more popular than it is to-day. At the present time I would say there are about 150 silos in use in Lancaster County, Pennsylvania. While this is a very small number for a county of the size of Lancaster, and for one in which so many cattle are being fed, I know it to be a fact that there never has been a greater number of silos in use. This popularity is rapidly increasing. During the past year I have been either directly or indirectly instrumental in having about 25 silos placed.

There are about 75,000 cattle fattened in this county every year. From figures which I have it has been found absolutely impossible to make any proceeds on this feeding work above value of manure without the use of the silo. Feeding experiments at our own station this year have demonstrated to our farmers that without the use of the silo cattle will be fed in a direct loss, or, in other words, market price will not be received on the farm for grains fed. We have no system of feeding either fat cattle or cows which can adequately compete with the use of silage.

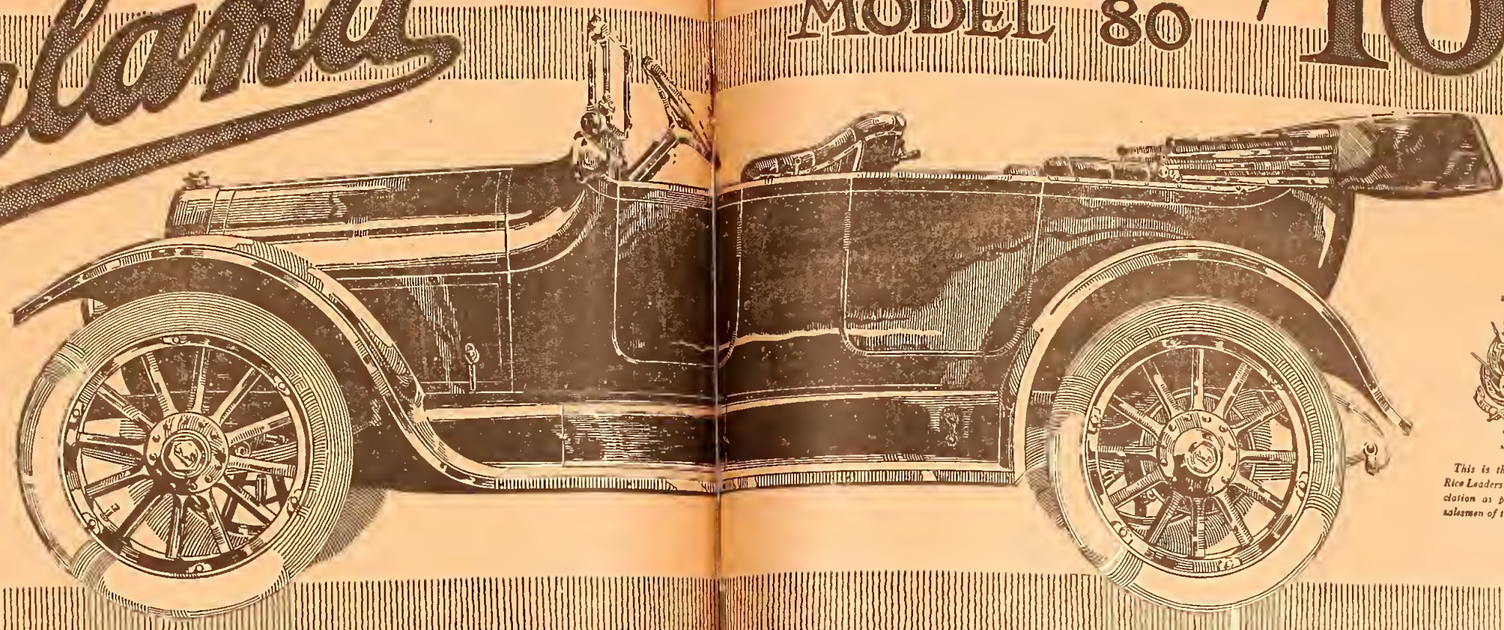
More Lost People

WALTER C. BOLLES, aged forty-two, and formerly a lawyer by profession, also a practical miner, is a lost son to his mother, Ellen M. Bolles. Mr. Bolles practiced law in New Mexico during 1910. Information concerning him may be transmitted in care of FARM AND FIRESIDE.

Alexander O'Donnell, forty-one years old, and last heard from in Michigan twelve years ago, is urgently requested to write to his mother, Mrs. Kate O'Donnell. Correspondence leading to his location will also be appreciated. Address letters in care of FARM AND FIRESIDE.

Overland

1915 MODEL 80 $1075



BY INVITATION MEMBER OF

This is the car selected by the Rice Leaders of the World Association as prizes for the leading salesmen of the world.

The Greatest Motor Car Value Ever Offered

WE have always given more car for less money than any other motor car manufacturer in the world.

We have always given a superior car, a more powerful car, a more practical car and the most economical car.

That is why more Overlands have been bought than any other similar type of car ever produced.

Now, with pride, we announce our latest car—Model 80—the greatest value this factory has ever placed on the market.

We wish particularly to call your attention to the fact that while this 1915 model has innumerable improvements, enlargements and refinements, *the price has not been advanced.*

This season we shall build 75,000 cars! This enormous increase in production again places us in the enviable and supreme position of being able to give still more value for still less money than any other manufacturer.

Following are the facts! Read each paragraph carefully!

Model 80 has a brand-new stream-line body. Its full sweeping stream-lines blend and harmonize perfectly with the balance of the symmetrical design. All visible lines are absolutely clean, unbroken and uninterrupted.

The new crowned moulded fenders, new rounded radiator, new hood slightly sloped, and flush U doors with disappearing hinges, contributing the additional touches of exterior grace and modishness which distinguish costly imported cars.

The new tonneau is much larger—both in width and in depth.

The new cushioned upholstery is also considerably deeper and softer.

This model is equipped with the finest electric starting and electric lighting system. All switches, in a compact switch box, are conveniently located on the steering column. Thus in the driving position, without stretching forward or bending down, you start the car, drive the car and control the electric horn and all head, side, tail, and dash lights.

This car has left-hand drive and center control.

The tires are larger this year, being 34 inch by 4 inch all around. These tires can be quickly detached from the rims which are demountable. One extra rim furnished.

Ignition is high tension magneto, independent of starting and lighting system. It requires no dry cells.

Fundamentally the chassis remains as before. The front axle is larger; the wheels are larger; the frame is heavier and stouter; gears are made of 3½% nickel steel; there are integral grease cups in spring bolts; and other mechanical refinements which are described in detail in our new catalogue.

But otherwise in no possible way could we improve the splendid Overland chassis that is giving such satisfactory service to 50,000 nineteen fourteen owners.

This new Overland rides with remarkable smoothness, taking the ruts and rough spots with the ease of the highest priced cars.

There is the famous, powerful, speedy, snappy, economical and quiet 35 horsepower Overland motor; and a long wheelbase of 114 inches.

This car comes complete. Electric starter, electric lights, built-in windshield, mohair top and boot, extra rim, jeweled magnetic speedometer, electric horn, robe rail, foot rest and curtain box.

This new model is ready for your inspection in practically every city and town in the country.

Dealers are now taking orders. Make arrangements now for your demonstration.

A Few of the 1915 Model 80 Features

Motor 35 h. p.
New full stream-line body
Instrument board, cowl dash
Individual front seats, high backs
Tonneau, longer and wider
Upholstery, deeper and softer
Windshield, rain vision, ventilating type, built-in
Crowned fenders
Electric starter
Electric lights
High-tension ignition
Thermo-syphon cooling
Five-bearing crankshaft
Rear axle, floating type
Spring, rear, 3-4 elliptic, extra long, underslung
Wheel base, 114 inches
Larger tires, 34"
Demountable rims—one extra
Left-hand drive
Beautiful new Overland green body finish
Complete equipment

Send Coupon For 1915 Catalogue—FREE

We have just published our new catalog. There is one for everybody—one for you. This new book describes and pictures in detail our model 80—the greatest Overland. Every one should have a copy of this new, interesting and instructive book. It is an authority. Send the coupon for your copy right now. It is free.

The Willys-Overland Company,
Dep't. 62 Toledo, Ohio.

Please send me your 1915 catalogue.

Name .....

Address (or R. F. D.) .....

Town ..... State .....

The Willys-Overland Company, Toledo, Ohio

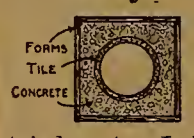
Two passenger Roadster $1050

The Willys-Overland of Canada, Limited, Hamilton, Ont.

Prices f. o. b. Toledo, Ohio

The Headwork Shop

Chimney of Tile and Concrete



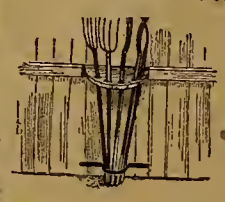
IF YOU wish to make a good safe chimney at a low cost, here is an excellent method that I have personally tried out. I bought three lengths of 6-inch tile, one of them a "T." I then made a form by using boards set on end. The form measured one foot square. The tiles were placed in the center and concrete poured in between them and the form. Some old bricks were broken and mixed with the concrete. Above the roof, brick was laid in regular courses so the work has the appearance of a regular brick chimney. JOHN UPTON.

Oil-Can Chicken Hydrant

THE principle on which the hydrant illustrated in the sketch works is an old one, but this particular device has many advantages over the ordinary pneumatic chicken watering device. It cost me 60 cents, 10 cents for the pan and 50 cents for the oil can. Select a convenient place in the henhouse and make a wire loop which is attached by staples to the wall so it will hold the top of the can. Then make a hook of wire, also attached to the wall, so it will hook into the handle of the oil can. Now take a pan holding about a quart and put it on a block so that the bottom of the pan is about three fourths of an inch from the mouth of the oil can.

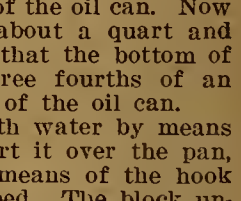
Fill the oil can with water by means of a funnel and invert it over the pan, where it is held by means of the hook and wire loop described. The block under the pan allows for removing it and cleaning it without taking down the can. The height of the block also adjusts the water level. Keep a funnel handy at the well, and also a cork in the henhouse so the opening of the can can be corked when you want to remove the pan underneath. LEE R. KEEN.

Safe Pitchfork Holder



THE pitchfork holder shown in the sketch is made of an inch board cut in semicircular form. Make five holes in it large enough to admit a fork handle, and then nail the board to a timber in the barn or against the wall. Place a piece of iron strap some distance below to hold the handles in place. This holder, while simple, provides a better way than standing the forks against the wall where they are likely to fall over and injure some person or live stock. G. SIEBERT.

A Guard Against Rats



HERE is an absolutely rat-proof method for hanging up meats and supplies. Procure the bottoms of some old fruit cans by melting the solder which holds them. A good way to melt the bottoms off is to place them on a hot stove. Bore holes in the center of these disks and string a few of them upon a cord, wire, or rope upon which the articles are to be hung.

When a rat or mouse attempts to pass upon the rope by climbing over the tin disks the disk turns and throws the animal upon the floor. The sketch shows plainly just how the meats and disks are arranged. G. SIEBERT.

Makes Loading Easy

IN LOADING farm wagons there is too often needless lifting. The sketch shows a handy short stepladder, with bent irons, securely screwed to the end of the ladder, which fit over the wagon-end board. By using a ladder of this kind you can load much easier and the farm produce can be handled with less bruising. MRS. VALENTINE SCHNEIBLE.

With the Editor

[CONTINUED FROM PAGE 2]

of Russia and Servia over Teutonic Austria and Germany is the character and tendencies of the Russian Empire. All of us would like to see democratic Servia free, happy, and unfearing, her peasants prosperous in their co-operation, their Raiffeisen banks, their plum orchards humming with bees, their cornfields, and their herds of swine; but to see her incorporated into the domains of the czar, even partially, is another matter. Russia represents despotism. Her people are of the same stock as the Servians, but their original democracy has been almost extinguished by the Romanoff czars. Germany represents education and progress—and we should be sorry to see Germany crushed along with Austria in the horrible struggle which seems to be coming on.

To see German and Austrian imperialism crushed without adding to the power of Russian imperialism, would be to see a blessing to the world. And, after all, the thing I shall hope to see coming out of this, if the war spreads over Europe, is a crushing of the Austrian and German imperialistic policy, and the ushering in of an era of Home Rule in Europe.

I should like to see the German part of Austria-Hungary divorced from the Hungarian part. I should like to see Slavic Servia, Montenegro, Bosnia, and Herzegovina enabled to set up a government of their own, so that peoples of the same language and religion might be separated from their racial opposites. I should like to see Poland restored. I should like to see all the world-conquest insanity knocked out of Germany to the end that we might have a democratic Germany to lead us in the field of science, to lift us to higher planes in literature, and to develop higher efficiency in living, rather than fighting. Germany ought to specialize in better living, and higher thinking, in many departments of which she leads the world. It seems a tragedy to see the German people so fearfully engrossed in wars, armies, and navies.

And out of it all I should like to see Russian czardom destroyed, and a great republic, or a dozen smaller republics, set up, in which the Russian people might work out prosperity, enlightenment, music, agriculture, and art—the Russian people, not the Russian aristocracy. I should like to see that aristocracy extirpated and abolished.

But I don't suppose I shall see what I should like to see, and therefore I hope there will be no great war.

Herbert Quick

Farm Wit and Wisdom

HOW many of our readers have colonies of purple martins—the house "martin bird"—about the premises? How do they succeed in holding their own against the sparrows? What is the best way of working out the "conservation" of the house martin? Hands up, please!

FUR farming is spreading. A skunk farm has been started near Lucerne, Switzerland, stocked, we believe, with American skunks. The owner of this farm has announced his intention of stocking up with fishers from Maine, fine-haired martens, and American silver-black foxes.

AN ILLINOIS farmer after pasturing fifteen work horses on sweet clover is convinced that it has furnished him as much pasturage of the best and most palatable sort as four times as much land would have given in blue grass. It was green and thrifty all through the drought. And yet there are still people who call sweet clover a noxious weed!

"THE farmer or other landowner," say our national forest officers, "too often sells second-growth white-pine stumpage for less than it is worth because he does not know how much lumber the stand is actually capable of yielding." This timber will often earn a good profit if merely allowed to stand, with perhaps some thinning at the proper time. Owners of white-pine timber lands who are not confident of their own judgment as to its value should take the advice of the state forester, or the Forest Service at Washington.

THE "Journal of the American Medical Association," speaking for the medical profession, seems to have proven beyond a doubt that septic sore throat in human beings in many cases is caused by drinking milk from a cow suffering from garget. At Cortland and Homer, New York, the epidemic was traced to one milkman. Two cows in the herd were found to have inflamed udders. By means of a milk clarifier and technical tests the sediment in the milk was examined and pus germs were found identical with those found in the throats of patients having septic sore throat. Science keeps on working for us.

LESS MEAT

Advice of Family Physician.

Formerly people thought meat necessary for strength and muscular vigor.

The man who worked hard was supposed to require meat two or three times a day. Science has found out differently.

It is now a common thing for the family physician to order less meat, as in the following letter from a N. Y. man:

"I had suffered for years with dyspepsia and nervousness. My physician advised me to eat less meat and greasy foods generally. I tried several things to take the place of my usual breakfast of chops, fried potatoes, etc., but got no relief until I tried Grape-Nuts food.

"After using Grape-Nuts for the cereal part of my meals for two years, I am now a well man. Grape-Nuts benefited my health far more than the medicine I had taken before.

"My wife and children are healthier than they had been for years, and we are a very happy family, largely due to Grape-Nuts.

"We have been so much benefited by Grape-Nuts that it would be ungrateful not to acknowledge it."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

Live Stock and Dairy

Farm Fables—the Cow

IF MY worth much has been said and written. People are now learning that what the voice of The People means to the success of a nation I mean to the farm. This is a serious view I take of myself, of my own worth, but it is justified as I can prove.

From my milk the motherless babe derives sustenance; from my milk the farmer's family and many other families derive butter; from my milk you produce cheese, which millions enjoy.

From me comes the hide out of which you make boots or shoes or harness and countless other useful articles of commerce and luxury.

From me, modest, unassuming, nearly voiceless me, do the farmer folk get their nearest approach to luxury, for without cream you are unable to create cake and other pastries.

And from me also there doth come sordid cash, which, though you may despise, you must possess in this present day of half civilization.

Please have consideration for me. Please feed me properly and generously if you would have me produce rich milk in large quantity.

I am not naturally of unkind disposition. I should much prefer to stand docile to be milked, but please, please learn to perform this operation as it should be performed.

And do not let me go unmilked when I should be milked, for from this kind of neglect grow many of my bodily ills and much anguish and irritation of mind.

Have a conscience, as I have. I do not tear down fences unless I must. If the grass in the pasture in which I am imprisoned is good grass and plentiful I will not tear down the fence which separates me from an inferior pasture—and this is logical and good.

And do not let my winters become dreaded nightmares. Do not lock my head and neck in indestructible shackles and leave me to perish of cold and hunger. Have mercy, master; be thou as tender as thou art strong, and I shall serve thee well. THE COW.

The Best Cow

SOME weeks ago the editor of FARM AND FIRESIDE raised the question, "What is the best farmer's cow?" Not the best cow for the dairy specialist, but for the general-farming farmer who necessarily has "many irons in the fire."

The cow for the farmer who wants to turn forage, grain, and pasture into meat is the cow that will furnish a generous supply of milk, cream, and butter for the home and some for market, also skim milk for the calves and poultry—a cow that will drop good calves which will develop into fairly good feeders and stockers, and by means of all these general-purpose qualities furnish a very acceptable side-line revenue.

The first response to this question, "What is the farmer's cow?" came from Mr. Albert H. DeGraff. In order to give this discussion into the hands of champions of the respective bovine schools of thought, Prof. Thomas Shaw was asked to read Mr. DeGraff's comment and what had gone before, and to speak for the dual-purpose cow.

These comments and opinions by no means furnish the last important word in the economics of this far-reaching question, but they do furnish an intensely interesting and stimulating incentive that should incite FARM AND FIRESIDE readers to furnish the facts that will demonstrate what manner of cow is the one best adapted to the general-purpose farmer's needs.

Mr. DeGraff's Comment

Is not Mr. Quick begging the question in his editorial on the double-purpose cow? Can one get beef cattle that will yield an average of eight thousand pounds of milk a year?

The question in his editorial is about comparable to the following: What would you rather have, a trotting horse which will go a mile in 2:10, or a first-class roadster that was also a heavy draft horse, would give eight thousand pounds of milk a year, lay an egg a day, and sing like a canary? Anyone would naturally prefer the latter, but, as the farmer said after looking at the giraffe, "I don't believe there is such a animal."

No doubt there are occasional sports among beef cattle that are very large milkers, and I know that some strains of Shorthorns are at least fair milkers, as a neighbor has had them, and has had pretty good success with them. On the other hand, I have been culling my dairy for about eight years, and although I did not immediately start raising calves, and thereby lost several years in breeding up, my dairy averages better than nine out of ten in the neighborhood. I took in $104 a head last year, while the best nineteen per cent of the farmers in Jefferson County averaged only $80 a head three years ago. Jefferson County New York, is said to be one of the best dairy counties in the United States, if not in the world.

My cows averaged up about 7,450 pounds apiece, ranging from 5,100 to 9,655 pounds. They are nearly all fairly high-grade Holsteins—three quarters to fifteen sixteenths. They are well taken care of, for grade cows, producing market milk, and receive a balanced ration the year around, including supplementary green fodder when pastures are short.

Show Me These Wonderful Cows

This being the case, I would naturally be glad to "swap" them for beef cattle averaging 8,000 pounds a year. Also, I would be willing to trade them for dairy cows averaging 8,000 pounds a year. I would trade them for hens, hogs, giraffes, or kangaroos giving 8,000 pounds a year. But first I want to be shown the 8,000 pounds a year.

In a canvass of 2,163 herds, in all dairy sections of the United States, consisting of 28,447 cows, the average yearly yield of milk per cow was 4,213 pounds. The average yearly yield of those herds of good dairy type was 5,104, while in the dual-purpose type it was 3,550 pounds. The highest yield of any group was that of 1901 and 1902, in Onondaga County Milk Association, viz., 5,296 pounds. This group, forty-five herds, consisting of 1,023 cows, was almost entirely high-grade or pure-bred Holsteins. The yields of the other groups ranged from the above down to 3,250 pounds.

Show almost any progressive dairyman any breed of cows, the grades of which will average 8,000 pounds of milk per year, and he will immediately get interested.

In conclusion let me say that the Holstein cattle are large and make fair beef, although, of course, not as good as that of beef breeds. However, the difference in value between that of an elderly milch cow about to freshen, and an elderly beef cow, fat, would not be, considering the cost of fattening the beef cow, enough to amount to a whoop when spread over the eight or ten years of the productive period of the two cows in question.

It Can't be Done Profitably

Even if one could get twenty dollars more, which is doubtful, it would amount to less than two hundred pounds of milk a year, and no unprejudiced person will deny that the dairy cow will give more than that much in excess of what the beef cow will give.

One can make as much raising good dairy heifers as beeves, and if one does not wish to fatten the bull calves, which at present veal prices is highly profitable, they would probably make good steers, while grade yearling bulls will bring from $25 up, in this neighborhood.

Breeding the dual-purpose cow is about like cutting down two trees at once, with a double-bitted ax, so as to save the energy of the back stroke. It can be done, but not economically.

Professor Shaw's comments will be given in the next number of Farm and Fireside.

ONE of the most dreaded of diseases in certain Rocky Mountain regions is Rocky Mountain or spotted fever. It is conveyed to human beings by the ticks of squirrels and other rodents, but it is believed to harbor at times in the wool of sheep. The Government is hiring a flock of a thousand sheep in Montana in order to study the disease.

The Farmers' Lobby

Pork, But Not the "Pork Barrel"

By Judson C. Welliver

IF YOU had $500,000 handed to you one morning, with general instructions to spend it within twelve months, and to spend it doing the particular thing of all things in the world that was most interesting to you—

Do you suppose in that case you'd feel under the necessity of cutting out your vacation?

I met a man in that scrape yesterday, and he told the sad story of how, because he had to spend a half-million dollars in the next year, he couldn't possibly stop for a vacation. In fact, he hasn't thus far kept up with his job. He was handed his big bank roll on February 23d last, with twelve months to get rid of it. To date he has spent less than $50,000, but he assured me that if he didn't get it all blown within the year it would be mighty hard luck.

If he doesn't spend the entire half million in the stipulated period he will lose the unspent part. But that isn't the worst of it. If he succeeds in getting his half million spent in good fashion he will probably be handed a million or two to spend in the next year; whereas, if he fails to spend the bunch now in hand he may get nothing at all for the next year.

The man with all this money to spend and responsibility for spending it is Marion Dorset, chief of the Biochemic Division of the Department of Agriculture. If that doesn't mean anything in particular to you—it certainly wouldn't to me—let it be detailed that he's the guy that knocked the hole in hog cholera, invented the serum that being injected into the sick hog makes him well, or, being squirted into the well hog, makes him immune.

Some serum! Some inventor, old Doc Dorset, too! Also, some spender is Doc!

But not much vacationer. Maybe I ought to tell you something about him. Twenty years ago he began working on hog cholera, and it was nearly ten years before he produced the serum that has proved to be both cure and preventive. He was employed in the Department of Agriculture when he finally got the thing perfected; and then it was that he showed what a poor business man he was.

Instead of resigning from the Department, patenting his invention, and proceeding to make a million out of it, he patented it, turned the patent over to the Government for the benefit of the public, and went back to his little job!

There have been acres of people to do the other thing: resign and get away with the swag. But not Doc Dorset. He was more interested in hog-cholera eradication than in getting rich. When the Government and many private experimenters had fully demonstrated that the serum would do the business, and that it was the only cure that would, he began getting offers of big salaries and partnerships in concerns that wanted to manufacture and sell the serum. It was perfectly legitimate and proper business, but Dorset declined all of the offers.

He Could Have Become Rich

A lot of people have got rich making and selling Dorset's serum. Dorset hasn't got rich, but last February Congress appropriated a half-million dollars which he is to spend, laying the foundations for a great nation-wide campaign to put an end to hog cholera. That's why Dorset has decided not to take a vacation this summer. He is sticking right to the job of spending that half million in the way that will do the most good. If he gets it spent Congress stands ready to give as much more as he wants. It gave $500,000 this year, when only $75,000 was asked, so anxious was it to get the work well started. Very probably it will before long be spending as high as $5,000,000 a year on this work.

Before starting to tell how they propose to eradicate cholera let me say a word about the world-wide character of this fight. The hog is the greatest of meat animals; and hog cholera goes wherever he goes. The Europeans accuse America of inventing cholera and sending it to them; we claim that it was first known there, and sent here. No difference. To-day the cholera is known wherever the hog is. It is doing more to make meat scarce and expensive, all over the world, than any other one thing. Just think of that for a moment: it's the absolute truth.

Government agencies in South America, Australia, New Zealand, Germany, Holland, Great Britain, France—almost everywhere there are hogs—are planning, in various ways, for crusades to eradicate hog cholera, just as this Government is planning the same fight under the management of Doctor Dorset. It is going to be a world-wide movement.

"In Germany," Doctor Dorset told me, "our serum is the only recognized means to combat cholera. In Austria-Hungary they have established a huge serum plant at Budapest. It is a government establishment. In Holland the Government likewise is manufacturing our serum and distributing it to the people, as well as teaching them how to use it.

"In Great Britain they are coming to it after a most expensive effort to eradicate cholera by quarantine and slaughter of sick animals. With characteristic British conservatism, they have stuck to the old notions after the rest of the world has taken up the serum treatment. As a result, Doctor Greenwood, one of their authorities, at a recent convention of chambers of commerce, declared that in twelve years the ratio of cholera losses in the kingdom has increased from 15 to 22! The hog raisers are demanding a serum campaign, and they are now getting ready for it.

Why not join the forces of co-operation?

"Of course no other country has anything like the huge problem, in attempting to eradicate hog cholera, that confronts our country.

"How will we get all the farmers to unite in doing it? Where will we take hold? How will the start be made?

"It's a terrific problem to face. There are no clean areas in which we can be assured cholera is and will remain unknown. There are no end of agencies to spread the disease: birds, animals of all kinds, railroad cars, and farm vehicles.

"At the beginning it has been our idea that this first $500,000 should be spent in an experimental way, gaining information as to what can be done, and perfecting an organization through which to disseminate that information. There has never yet been a real campaign of eradication, not even on a state-wide basis.

"At the beginning of our campaign we decided to select a number of typical counties, in various States, where hogs are handled under varying conditions, and carry on a county campaign in each. We have actually begun work in Twin Falls district, Idaho; Kankakee County, Illinois; Montgomery County, Indiana; Dallas County, Iowa; Marshall County, Kansas; Henderson County, Kentucky; Branch County, Michigan; Renville County, Minnesota; Pettis County, Missouri; Gage and Johnson Counties, Nebraska; Allen County, with adjacent townships, Ohio; Maury County, Tennessee.

"Decatur County, Georgia, will be added soon, and a number of other counties will be taken on, making for this year a total of twenty or twenty-five.

"Right at the outset we find that the farmers are skeptical. They doubt whether the serum will do the business. Some of them have the notion that it stunts the hogs; others that it injures the quality of the meat. On all these points we must get to them with the facts that we know will convince them that they are wrong.

"We can't blame the farmer for being dubious. He has been bitten too many times by folks with sure cures. It's pathetic how the average farmer regards the outbreak of the plague in his herd. Long experience has made him cynical about all preventives or remedies. When the hogs get sick he is very likely, like an Oriental fatalist, to sigh and say, 'It is the will of God,' and give up.

"After we get organized in each county for our preventive work we will be ready for business. The Government is making all its own serum. It will provide people to administer it; these will call on farmers individually, induce them to adopt proper sanitary and other precautionary measures, etc. If an outbreak occurs we undertake to get everybody whose hogs might be infected to have them treated with the serum; we don't believe in having hogs treated so long as there is no danger in sight. It's too expensive for the average farmer.

"Next after this work of direct attack on the disease itself comes that of education. In each hog State we want to place an expert 'booster'—that's going to be his exact business. He will be expected to travel around, interesting county agricultural agents, agricultural colleges, farmers' institutes and clubs, commercial associations, and all manner of organizations through which united action can be had.

"The next division of our work is the control and supervision of the establishments making serum. Under the law they can't ship serum in interstate commerce unless they have the license issued by the Secretary of Agriculture. That is only issued after thorough inspection has convinced us that the plant and product are as they should be.

"For this inspection work we have had to organize and train men. We are not yet able to give absolute assurance that serums offered for sale are all right, but we are rapidly progressing toward that point. Why, do you realize that in Kansas City alone there are about thirty establishments making serum, and that eight or ten of these represent investments of $25,000 or more? It's getting to be really a big business."

The Treatment Does Cure

"I don't know how to be emphatic enough in urging confidence in the treatment. Those of us who have seen all the experiments know, know absolutely, know without any doubts, that the thing will and does cure. It is true that 1913 was a very bad cholera year, but there have been very much worse years. In 1897, which was the worst year in the country's history, the losses by cholera were 130 in every thousand hogs. In 1887, the second worst year of the plagues, losses were 120 to the thousand. Down to January 1, 1914, the ratio for 1913 had been 107 to the thousand, and it was slowly falling.

"Some English authorities have attacked the serum, using much the same arguments that are advanced by the doubters and cynics in this country. 'If the serum is a cure, why was 1913 such a bad cholera year?' they demand. Well, the answer is easy: there hasn't been enough serum manufactured, from the beginning down to date, to cover a patch on the whole hog territory; there never has been organization or effective effort. We are getting ready right now for the big test with all these factors at work.

"We are manufacturing all serum we use, in our plant at Ames, Iowa. Every farmer should have a supply always at hand; if kept cool it will be good a year. Nebraska and Kansas are supplying it to their people at 1 cent per cubic centimeter; that means that 20 cents' worth will dose a hog. The private concerns can produce it for 1 cent. We know because we have got our own cost down to that figure, but of course the private makers must add a profit on their business.

"The thing that FARM AND FIRESIDE could most effectively do to help this work is to point out that it is worth while for anyone to try it in good faith. That is enough to win our case for us. The man who tries it, using good serum and following directions, will be won to our side. That's all there is to it."

Before five years the Government will be spending $5,000,000 a year on this work. Good investment too!

E.W

When Nellie Came

What One Woman Did for a Bashful Man

By Dick Watson

TOM ACKLAND leaned against a fence post and watched a clncking hen with her five chickens—four black ones and a white one. He was struggling to recall when he had seen a similar picture. At length it came back to him. Yes, it was on the morning after the great hailstorm seventeen years before, when he had gone out to look at his crops, his fine flax, and splendid wheat, just ready for the binder, and had found them beaten down and destroyed.

Following the thread of memory his mind wandered back to boyhood and his father's farm in New York State. A mile to the west had lived Nellie Barton, whose father had managed, by strict economy, to support her and her mother from the small place that he worked for a crop rent. The girl had not been regarded as a prize from a financial point of view, for all her husband might expect to get with her had been the clothes she wore; yet her fine features and shapely figure had made her the object of attentions from many young fellows with splendid prospects. Since she had also been industrious, could milk, run a binder, and pitch bundles, some of the well-to-do farmers who had wanted their sons to stay and work the place had encouraged them to pay their attentions to her.

Tom was the eldest son of a large family, who had found it hard to wrest a bare subsistence from their stony farm. He had watched better favored young men crowd around Nellie at the neighborhood gatherings, but had felt himself to be out of their class. He had nothing but work; never expected to have. How could he vie with these sons of rich men? He worshiped at a distance. The more fortunate farmers' sons strove with one another to see which could render the most service to Miss Barton, but Tom, who lived nearest, was not looked upon as a possible rival.

It mnst be confessed, however, that Nellie had not seemed to value highly the honors bestowed npon her. Quite frequently she declined the invitation to go home in a cushion-tired bnggy, and rode in the lumber wagon with the Ackland family. When she did this it was Tom's privilege and intoxicating joy to walk with her the mile between their homes.

"Tom," she had observed, as they were sauntering toward her home one night, "why do you always keep carefully away from me when we are out at parties?"

"Oh!—I don't know jnst why I do," he had replied.

"Yes, you do. Yon think yon are not as good as some of those other fellows; but yon are. Fred Holcomb said that you are the squarest and best-natured one of the bunch. I could have hugged him for saying it."

It was a minute or two before Tom had seen the significance of the last sentence. Bnt he did see it at last, and had never forgotten that night, nor the harsh criticisms that were passed on Nellie when it became known that she had "thrown herself away." He scowled now as he remembered them, but smiled again, recalling her answer:

"I chose the best."

With a hnndred dollars, earned by working for neighbors, Tom had come to South Dakota and filed on a claim. It was nnderstood between him and Nellie that she wonld go to him as soon as there were prospects of a living for two, and for any children that might be born. The first year he had managed to save enough, by working for snrrounding ranchmen, to bny a team and a plow. By Jnly of his second year he had twenty-five acres of corn knee-high. There was every prospect of a bnmper crop, and they arranged to marry in the fall.

By the middle of August the outlook was not so good. Drought had set in and the corn began to turn yellow before tasseling out. Large herds of cattle ranged over the prairie. Tom had no money to buy wire for a fence, so he had to stay at home to save his corn. He ate and slept in the field. Sometimes he would take the risk, and do a day's work, plowing or fencing, for a neighbor, but only where he could have a view of his cornfield. Sometimes when doing this he wonld have to unhitch and gallop to save his crop from the inroads of five hundred steers. But in spite of all he conld do, several acres were destroyed, and as the clear, scorching days snceeded one another with no sign of rain, he saw that all hope of a crop was nseless. He gave np in despair, let the cattle eat the rest of the corn, and wrote to Nellie that the wedding mnst be postponed.

But for Nellie's letters, that fall and winter would have been unendurable. Those letters were food and drink to his spirit, and nerved him for another struggle against circumstances. He broke more sod. In the spring fifty acres were seeded, and by Jnly his crops were as good as any to be found in the Union. His letters to Nellie were jubilant.

A rancher who did a little farming offered him the use of his new binder if he would go to the railway, sixty-five miles away, to fetch it. Tom agreed to do this, and after securing a boy to watch his crops and take care of the few chickens he had bonght he started. It was a terrible trip. The sticky gnmbo, the swollen creeks, the washed-out roads, made haste impossible. The Cheyenne was a raging torrent, and he had to wait three days before he could ford it. The return journey, with the heavy binder, taxed all his strength of endurance, but with no great mishap he neared home on the tenth day. As he approached his farm he became conscious of a heavy foreboding, and hurried

Yes, he had succeeded—since Nellie came

his horses, in an agony of fear. Upon arriving, however, he found nothing to justify his sense of disaster; everything was as promising as could be desired. A gentle breeze stirred the acres of golden wheat, just ready for the binder, into graceful waves, which seemed to be bowing him a welcome. He pnt his horses, together with two he had borrowed. into the barn and fed them well, got the binder ready for work, wrote a ten-page letter to Nellie, and went to bed.

Early the next morning he was awakened by a terrific ponnding on the roof of his sod house. Jumping out of bed he opened the door and looked out. Hailstones as large as hens' eggs were falling, striking down every growing thing around. A dry-goods box under which some poultry were roosting was blown over, and the hens were battered flat to the ground.

"Why do you always keep carefully away from me when we are out at parties?"

For nearly an hour it fell. When it stopped he walked ont and looked at his crops. Not a stalk was standing; everywhere he saw desolation and destruction. He leaned against a tree from which the bark and branches had been pounded, dazed by the suddenness of the blow. As it dawned upon him what this mnst mean his mind was gripped by an overwhelming bitterness.

A hen came out of the barn with five little chickens, four black and one white. He was dimly conscious of her anxious clucks, and the complaining chirps of the chickens, as she tried to lead them through the cold slnsh of the melting hail. They were cold and shivering. Four succeeded in following her safely, but one, the white one, was overcome by the cold; its eyes closed, its head sank down; for a moment it chirped feebly, then rolled over. Tom went into the house and tore up his letter to Nellie and wrote another. He told her that it was no use waiting: he would never be able to marry. She had better accept Fred Holcomb, who was still waiting and hoping. He released her from all bonds to him.

By return mail the answer came back.

"Meet me on Wednesday," it ran. "You cannot fight the battle alone. I am coming to help you. I have saved a few dollars; we will invest them in a cow. Be looking for a good, fresh one. Never fear; with me and a cow you will snceed."

She came. He shuddered as he recalled the privations she suffered that winter. For two months all they had to eat was bread and milk, and not enough of that. They succeeded in keeping a fire with wood he collected from the ravines aronnd, but even with a fire it was impossible to keep their rude shack warm some days. Through it all, however, Nellie's faith and courage had never waned. In the coldest days and the times of deepest snow she was planning what they would do in the spring.

In Tom's heart it had been spring all the time. What brighter blossoms could bloom for him than Nellie's smile, and what spring wind was ever laden with so sweet a message as her words of encouragement and love? Nor did the blossoms bloom or the soft wind blow upon barren soil. Tom had the heart of a man, strong to work, serve, and endure, and everything in him that was fine deepened and expanded during that winter of cold, hunger, and privation through which Nellie's faith carried him joyously.

He recalled now how they used to plan the far future on those long winter evenings when the wind rocked their shack. Every castle in the air they built then had been bulwarked by a firm purpose in Tom's heart. The best could never be good enough for Nellie, who had chosen him when she might have chosen ease and prosperity; who had come to him in adversity when she might have waited for him to succeed; who had upheld him when she might have fainted by the way. His conscience told him now that he had never been false to those pnrposes, that according to the power in him he had repaid that great love.

The little hen the likeness of whose brood to the one he had seen on that fearfnl morning had caused him to live the past over again, clucked a note of triumph, for she had found a large worm. After she had divided it among her chickens she led them, the four black and the one white, toward the barn. Tom looked up and noticed that the sun was setting behind the hills. His boy, a lad of fifteen, was riding with one of the hired men to fetch the herd of cows home to be milked. The other hired man was putting silage in the feed boxes. His two girls came, riding on their ponies, from school two miles away. In the finely built house near-by he could hear Nellie singing as she helped the maid to prepare supper. Yes, he had succeeded—since Nellie came.

Thinking Our Way Through

By Anna B. Taft

THERE is a farmer's wife in the Middle West who has worked out the solution of her own problem, with energy and determination enough left to help very materially her sisters to do the same. On being asked what aided her in solving her own problem she replied, "Hearing a few good talks, reading a few good books, and thinking on my problem." The last she suggested is the least done and the most important of the things which will aid the farm woman in her strnggle.

Although this sonnds so simple, it is an extremely difficnlt thing to do when thought is deadened by a long routine of dnties and continuous work with too little leisure. Many farm women are too weary to bother to think their way out, and would rather go on in the same old way than expend energy they have not, to improve it.

There are as many panaceas as patent medicines offered to-day to help the farm woman, most of them holding part of the trnth, bnt none of them touching the heart of it. Modern conveniences and labor-saving devices are advocated; bnt, as a well-known conntry-life authority recently said, mere labor-saving machinery will not solve the problem of the farmer's wife. It will merely give her more time to do more work, unless with bettered conditions her mental attitude is changed. More money will not solve her problem. Indeed, it will only provide her with the means to escape to the town. This result will surely happen unless she has found for herself how to live in her farm home happily, with a normal amount of leisure and a measnre of satisfaction. This is demonstrated again and again in the wealthiest farming sections of the country, where increased values of land lead to retirement from the farm, and a farmer's wife under harder economic pressure takes her place.

It is a fact that no outside agency, however well-meaning, can solve the farm woman's problem for her. To be snre, they may give her a few good talks and supply a few good books, bnt it lies with her alone to "think on her problem." This is the crnx of the qnestion, for nearly every agency working for the betterment of the farm woman has for the vast majority of its members other than real farm women. There is a benefit in showing improvements that are possible, but the solntion will be far off until the farm woman herself thinks through her problem.

E-W

Designs for the Year-Round Outfit

Clothes Equally Appropriate for Summer and Fall Wear

Designs by Grace Margaret Gould

No 2587—Misses' Waist: Raglan Sleeves

14 to 18 years. Material for 16 years, one and one-half yards of thirty-two-inch, or one yard of fifty-four-inch, with three fourths of a yard of contrasting for under collar and cuffs, and one-half yard of net or organdie for vest and upper collar. The price of this attractive waist pattern is ten cents

No. 2588—Misses' Skirt: Apron Effect

14 to 18 years. Material required for 16 years, two and three-fourths yards of thirty-two-inch material, or one and five-eighths yards of fifty-four-inch material, with one and one-fourth yards of thirty-inch contrasting material for the flounces. The price of this pattern is ten cents

No. 2493—Three-Piece Skirt: Front Inset

22 to 36 waist. Quantity of material required for 24-inch waist, two and five-eighths yards of forty-four-inch material and one-fourth yard of contrasting material for the inset. Width of skirt at bottom in 24-inch waist, one and one-half yards. The price of this separate skirt pattern is ten cents

No. 2435—Housework Apron with Cap

32, 36, 40, and 44 bust. Quantity of material required for 36-inch bust, three and one-fourth yards of thirty-six-inch material, five eighths of a yard of twenty-seven-inch material for the cap, and one and one-fourth yards of lace. The apron is made with crossed-over bands in back, which are joined to the bib portion in front. The price of this pattern, ten cents

No. 2493

No. 2574—Wrapper with Pointed Collar

32, 36, 40, and 44 bust. Material for 36-inch bust, six and seven-eighths yards of twenty-seven-inch material, or four and five-eighths yards of thirty-six-inch material, with five eighths of a yard of contrasting material for trimming. This design is adaptable to flannel as well as the thin wash fabrics. It is made with a seam down the center back. Pattern, ten cents

No. 2581—Long-Sleeve Kimono Waist with Sleeveless Jacket

32 to 40 bust. Quantity of material required for 36-inch bust, one and three-eighths yards of forty-inch lace, five eighths of a yard of net for chemisette, three fourths of a yard of contrasting material. For the jacket, three-fourths yard of fifty-four-inch material is required. Price of pattern, ten cents

No. 2582—One-Piece Skirt: Long Russian Tunic

22 to 30 waist. Material required for 24-inch waist, two and three-fourths yards of twenty-seven-inch material, or one and three-eighths yards of forty-eight-inch material, with three and five-eighths yards of forty-inch material for the tunic. The tunic is made in one piece. Price of this pattern is ten cents

IN ORDERING your patterns address: Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York City; Pattern Department, FARM AND FIRESIDE, Springfield, Ohio; Pattern Department, FARM AND FIRESIDE, Room 320, 1554 California Street, Denver, Colorado.

The Child at Home

A Chapter in Which I Find Out Something About Teeth

By Helen Johnson Keyes

THE School of Play, a class for children between two and a half and seven years old, is holding its first session at the home of the Fireside Editor. Billy Bailey is the only child who has not interested himself in the playthings provided. These playthings are designed according to the Montessori principle of developing children through the cultivation of their own instincts and sense impressions. Rosaltha is a little girl eight years old, adopted for six months by the author of these articles for the purpose of establishing her health and her self-respect, which have been neglected by an overbusy mother.

THE something-in-the-mouth habit evidently had control of Billy Bailey. All at once he desisted from chewing my sofa cushion, having found a more succulent morsel in his pocket. It was chewing gum! Of course if Billy Bailey's parents had always permitted his use of gum the child could not justly be blamed for seeking its solace now. Nevertheless, the steady, tiresome, stupid motion of grinding jaws, the vacant look in Billy's eyes as they stared around, seeing nothing, interested in seeing nothing because his brain was put to sleep by the rocking of his jaws, was almost past my endurance. I tried not to dislike him, for of course he was merely the victim of parental laziness. How often I have seen mothers actually force a pacifier—that invention of the devil which leads to adenoids and worse troubles—on a helpless baby! How often I have seen them actually train their children to the chewing-gum and the candy-sucking habits. What is their purpose? Why, to concentrate the child's attention where it does not disturb older people. Then, when the baby grows into a dullard and the dullard develops into a man or a woman whose idea of happiness is physical dissipation, whose fault is it? It is theirs to whom he was given to be trained, theirs in whose power it was to interest him in God's world and in man's works instead of concentrating his attention on habits which are harmful because of their direct physical effects, and also because of their influence in drawing his observation to himself and away from what is going on around him.

"Billy," I said, "gum is positively forbidden; go out in the yard and get rid of it. Then you will be able to play."

He drew up his foot and poked the tip of a paper knife carefully into each eyelet of his shoe and chewed on.

"Billy," I repeated, "obey me."

Just then there was a shriek from Billy and his two hands flew to his face. He had caught his gum in a cavity, and joy was cruelly obliterated in torture.

After I had given him some relief I asked all the children to gather around me. I inquired of each one how often he had toothache and what was done about it. Five of them had suffered only occasionally, and had received treatment from a dentist. The remaining nine had almost constant distress in their teeth, which apparently they accepted as an inevitable consequence of being upon this earth at all. They never used toothbrushes, but intended to do so when they got their complete set of second teeth!

"Well, children," I said, "run out now for half an hour's play in the yard while I cook your dinner. Get fine and hungry, for I am going to have some awfully good things to eat, and plenty of them."

They dashed away with many shouts, and as I prepared the meal I thought hard about this question of teeth. It hurts just as much to have toothache when you are a child as when you are grown up, so why should we postpone toothbrushing for the second set of teeth? Moreover, there are at least ten years between the getting of the first permanent tooth and the last one. Shall we wait until those which were cut earliest are decayed before we begin to preserve what are left? Besides, this second set is affected by the condition in which the first ones are kept, and by the soundness of the gums and the cleanliness of the mouth in childhood. A further argument for care of the teeth is that indigestion is produced by cavities, which give off poisons absorbed by the stomach.

I made up my mind to get the consent of my mothers to the filling of all the decayed teeth by a competent dentist, and then to institute toothbrushing at the School of Play. The question of chewing gum and candy then returned to my mind, and I determined to break up the habit of continually eating by preparing meals which would supply enough sugar in wholesome forms to satisfy the craving for sweets which all children have and which is the expression of a real need.

When my meal was daintily laid out upon the table I went to the porch to call my flock. What a scene it was! The best sight of all to me was Rosaltha leading Billy along the top of a rail fence with a concern actually maternal. Rosaltha was awakening because she had begun to see a use for herself in the world. As for Billy, sound teeth, good feeding, and Rosaltha would make him normal. The best way to improve children is to improve their circumstances.

MOTHERHOOD

By Phila Miranda Parmelee

In deepest watches of the silent night
She goeth agonizing pain's dark way
Alone, upheld by love's resistless might,
And cometh back to greet a holy day,
With face alight as if an angel smiled,
For in her arms she holds a little child.

The Community Builder

Sunday Thoughts for All Sorts and Conditions of Men

By the Rev. Harry R. McKeen

Chapter X

ONE of the pitiful cases in my parish was that of a gambler and drunkard. The minister came very near making a serious blunder with this man before he had studied him carefully. It was hard to tell when he had been drinking. His wife was a loyal member of the church and did her best to live up to her profession. She was very much of a drudge, owing to the fact that there were always many to cook for and a big herd of cows. She attended church only semi-occasionally, and usually wept during most of the service. The man, suffering from the reproaches of his own conscience, went to a physician for help and cure. This physician followed up his prescription by kindly visits. He talked straight from the shoulder and rebuked him for making a slave of his wife and the home unpleasant for his son. "The first thing you need to do," said this doctor, "if you really want to be a man, is to dispose of some of your so-called friends. To them you are a good fellow only so long as you have money to spend for liquor or across the gambling table, but when you are down and out these men will be the first to desert you. Leave that crowd, man. Come to church. Get acquainted with our preacher. Tell him all about it and let him advise you. You will find that church people are the ones to whom to go if you want real help."

"But, Doc, I can't go to church. That preacher would stand up there and just flay me alive. He'd hold me up as a horrible example. He'd condemn me to hell the first shot, and then shut the lid and let me scorch. No, Doc, I'd like to do it, but I can't face the music," was the man's pitiful answer.

"Now look here, old fellow, you are wrong," answered the doctor. "You don't know that preacher. He won't say a word in a sermon that you can take as personal. He preaches straight, but you have nothing to fear."

Finally a Sunday came when he sat in the congregation. The minister feared that some zealous but indiscreet folks would rather overdo the welcoming. So the pastor hurriedly gave a broad hint to one or two level-headed men, and his advent as a churchgoer passed off quietly without embarrassment.

Hay harvest came on, and this man had a tremendous crop but could get no one to stack it. The minister volunteered, and for fifteen days worked early and late in the fields stacking the hay and having general supervision of the work, as the owner was called to another farm much of the time.

In the evenings and during the noon hour these two men came to know each other better, until finally when a shower had delayed operations for a few hours the farmer brought up the subject which had been nearest the preacher's heart all these weeks.

He made a clean breast of his whole life. He told it with dropped head as he sat on a rake seat while the minister in overalls and shirt sleeves sat opposite with his legs dangling down over the back of a mower seat in the shade of the barn.

The minister told him of other men who had done worse. He pointed the way as simply and clearly as he could toward better things. There by the side of the barn this man pledged himself and the preacher and his God that he would lead a different life. And he began at once to do so. It was not easy. "I will not join the church," he said, "until I'm sure I have the better of this thing. I won't bring disgrace on it and myself also."

He made a clean breast of his whole life

The minister urged, but to no avail. For eleven months he fought his fight. He came to church at least once on Sunday. One morning when a class was being received into the church the preacher stopped and said to him, "Don't you think you had better come to-day? I have felt perfectly safe for months about you. I think you feel safe now about yourself. Further delay is not caution but cowardice."

The man rose and very solemnly, very earnestly came forward to make his profession. His wife watched him with a light in her eyes I shall never forget.

Was that worth while? The joy in the face of his wife answered, Yes.

This preacher would be glad to minister a year for just one more such "conversion."

Many of the church officials openly stated that the preacher might spend his time to better advantage making pastoral calls among the members of his flock than laboring with hopeless heretics and degenerates. There was but one case which the minister himself ever thought hopeless, and he feels ashamed of having held that opinion every time he sees into what a true citizen this moral delinquent has developed—ashamed that he should have doubted the reformation of anyone.

The preacher will not soon forget his first impressions of this man. Slender, shrinking, blear-eyed, uncertain in tread, with trembling hands and shaking, weakly voice, the man stood at a store counter and bought a few groceries. Inquiry revealed the fact that he was "baching" in a shack at the edge of the town. The preacher considered him a hopeless case, and scarcely recognized him when they met on the streets.

The revival meeting came on, and one night this decrepit old man came to church and sat way back in the corner. He came again, and in making his rounds the minister called upon him, but the man was away. Through the window the minister saw on the table an open Bible. This aroused his curiosity.

He went back next day and found the man at home but could get very little out of him. He said he believed the Bible; that he knew he ought to do better, but he couldn't.

He was a regular attendant at the meetings, and one night as he went out he grasped the minister's hand in greeting and sobbed, "I can't stand this, I just can't," and hurried away. Next morning he was gone, nobody knew where.

Three weeks later the minister received a letter from him, written in Texas. It contained a strange tale. He had once been a decorator in Chicago. Domestic troubles had driven him to desert his home and to drown his sorrows in the cup that cheers. For four years he had gone from place to place, scarcely drawing a sober breath. He had come to this village hoping to lose his identity and perhaps start over under a new name. The preacher, he stated in his letter, had stirred his conscience, and he was fighting for mastery over himself. Six months, possibly seven, passed. Great was the surprise when he dropped off the night train and announced that he had come to stay. He took his own name and faced the world with a determination to make good. People gave him work and he has prospered. He came into the church and is now one of its leaders. It is an inspiration to see him stand up and speak in a service, or to watch that fine cultured face in prayer.

Has the preacher proved that this type of church and this kind of ministry is worth while?

These instances could be multiplied. As the church touched men's lives they responded to it.

The time has come when the country church must serve the entire needs of its people, or thousands of village and country churches will be closed. The rural church is in straits. Men must think in terms of community service instead of denominational differences if the church is to serve humanity and God.

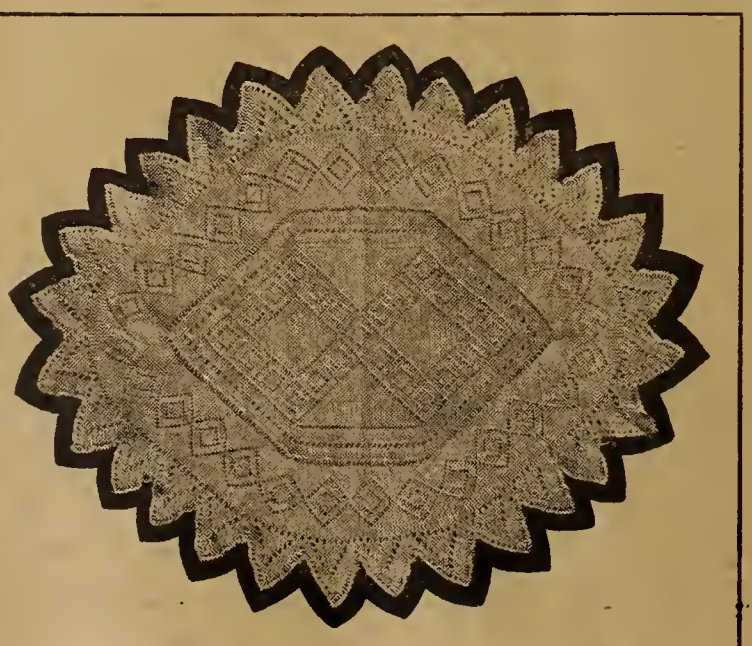
[THE END]

Sure and Simple Jelly-Making

By Rose Seelye-Miller

GRAPES that are a little unripe make the better jelly. Some cook grapes and currants on the stems for jelly, but I know the jelly is not as delicate in flavor. Always stem the grapes, and put in granite or earthenware kettle, place on stove with not too great a direct heat. Use no water, as the more water you put in the more you will have to cook out, and long cooking spoils the color and the flavor of the final product. Cook just until the fruit is soft, then crush and put into a jelly bag (there is now on the market an ideal jelly bag which has a ring to push down over the fruit and gently presses the liquid out). Jelly jellies more quickly if the fruit is pressed a little. Perfectly clear jelly can be made even when squeezing every atom of juice out. An extra straining may be required, but the flavor is fine when the entire juice is used. Measure the juice and allow the same quantity of sugar. Put the juice over the fire, and boil just twenty minutes. In the meantime have the sugar heating in the oven, and when the time limit is up put the sugar into the juice. It will hiss as it touches the liquid, and it takes but a moment to dissolve. Let it barely come to a boil, and skim. Do not let it remain over the fire to exceed three minutes. Have the glasses ready and placed on a folded, wet cloth, and strain the jelly into them. You need have no anxious thought concerning it. If it does not thicken all at once so much the better, as viscid, heavy jelly is not a perfect product. When the jelly has set, pour melted paraffin over the top, label, and set away. This keeps the jelly from getting any harder and forms a perfectly air-tight cover. Jelly should not be kept in the cellar, but in a dry place.

Nearly all jellies are made on the same principle, but currants, apples, quinces, cranberries, and such fruits are merely covered with water to cook, and the juice drained off as above. Apple and currant juice form the nucleus for jellying many other things. Apple is better for most things, as the flavor is so slight it does not detract from the flavor of the fruit desired to jelly therewith. Even peach juice can be jellied with the addition of apple, and it makes an ambrosial-tasting product. Quinces are really better put up with apple juice as a background. Strawberries, raspberries, blackberries, plums, in fact almost anything can be jellied by using part currant or apple juice, and the result will be better than the single fruit alone. Even tomatoes may be jellied by using lemons, or even apple or currant juice will have the same effect, but the lemon leaves no color. Cream of tartar will also act as a jellying principle, but the simple fruit juices mentioned are the best and absolutely reliable. Many fruits will "almost" jelly, and need just a little extra jellying principle, and this is found in large quantities in the apple, and the more acid the better.



We have hot dishes at all seasons from which we must protect our tables. Here is a hot-dish mat easily knit and decorative. For directions send a stamped, self-addressed envelope to Fancy Work Editor, Farm and Fireside, Springfield, Ohio

Green grapes, wild grapes, green currants, gooseberries either tame or wild, all make delicious jellies. White currants make a jelly about the same color as the red ones, and a third green currants in the jellying fruit is an advantage.

With the rule given there need be no anxiety as to the result. It will jelly, and even if it has to stand a week before it hardens so much the better; it will be even more delicate in flavor, but many times the jelly will thicken as it drops from the spoon to the glass. The old method of adding the sugar and cooking down is a poor one; the jelly is dark and frequently acrid. The least cooking possible the better the jelly.

CALVES'-FOOT JELLY—Clean and scrub in water four calves' feet. Cover well with cold water and simmer eight hours. Strain liquid into earthen bowl and let stand until next day. Then remove all fat from surface and sediment from bottom. Put in kettle over fire. Add two inches of stick cinnamon, one pound of sugar, juice of four lemons, juice of two oranges, whites of two eggs slightly beaten, and two crushed egg shells. Mix well, boil without stirring for twenty minutes. Throw in one-half cupful of cold water, bring to boil, stand aside on range closely covered for one-half hour. Pour into bag and let drip without squeezing. Pour into molds and cool.

E-W

FARM and FIRESIDE

EVERY OTHER WEEK ~ ~ THE NATIONAL FARM PAPER

SATURDAY, AUGUST 29, 1914 *5 CENTS A COPY*

E ESTABLISHED 1877

A Rural Social Center

LOOK FOR THESE GOOD THINGS SOON TO COME!

Cheap Winter Feed for Hogs

Just what we all want. And it may be closer to us than we think. Did you ever use silage for the hogs? What was your success? Did the hogs make normal gains? How did it compare with legumes in pasture and in form of hay? There are many viewpoints, it would seem, mainly for the reason that no one has done any work experimenting with silage for hogs, and few have ever fed it that way. Look for the next issue!

What Can You Do on a Small Farm?

No forensic battlefield is more bloody than that on which the subject "Which is the better for the average farmer, the large farm or the small one?" has been fought out. The interesting thing is that the debates usually wage hottest when the debaters come from different sections of the country. Our ideas are formed in part by where we live. Next issue we will present the statements of a Wisconsin farmer of thirty years' experience. If you don't agree with what he says let us hear from you telling why.

Apples to Market

That is where they all have to go. But, if the stories told each year are true, all of the apples that get to market do not place a profit in the pockets of the producer. "That's funny," the city consumer says. But to the rest of us who are interested in the crop and its profit the matter is anything but funny. Marketing questions are always of prime importance. FARM AND FIRESIDE will discuss the various problems as they arise. Watch for one about apples—and other crops.

The Pig's Tail

What relation does the pig's tail have to the profit we try to make off our hogs? This question is not a riddle. To one man it is a serious question, and he will give his viewpoint pretty soon—perhaps next issue.

The Old Question of Winter Eggs

Who would think that it would arise so soon? But it has, and from a dozen different sources. As a result there will be in the poultry department next issue a treatment of the thing that (to the man talking) is the most important of all if the poultryman is to be successful in the winter, the trying time of the poultry year.

The Tooth and the Man

It is often a sad reversal of the Golden Rule when we are forced to do unto ourselves what we have felt it wise to do unto others. This fact is borne in upon a certain man who had an Evangelical tooth. He learned to believe in doctors and flower gardens while he sat under its preaching. The history of his conversion has been written in two chapters for FARM AND FIRESIDE. Coming!

Filet Darning

The lover of needlework will be interested in half a page of beautiful designs of filet darning on net. These patterns can be used for dress trimmings or household linens.

Farm Life Made Lovely

The beauty of sympathy and comradeship with our children and the beauty of system in our daily work are set forth in three important letters written to the Experience Bazaar by friends of all the friends of FARM AND FIRESIDE. The Experience Bazaar is a playground for ideas. Let us all gather there and toss ideas back and forth.

A New Writer

We have a new writer for FARM AND FIRESIDE. She talks straight at the girls. She is a girl herself. She picks up a watermelon or a narcissus bulb, she sees an opossum pass or a child blow a soap bubble, and straightway she thinks of something that happens in the life of girls, something to help and delight them, to make them smile and to make them grow. Watch for what Abbie Graham says about watermelons.

WITH THE EDITOR

MOST of us have felt rather sore when, after feeding a covey of quail for a year, some sportsman from the city has casually dropped into the field with a gun and neatly removed the birds from the possibility of ever gracing the larder of the man who reared the game.

The farmer, had he killed one of the birds the day before the season opened, would have been arrested and fined, although he may have preserved the nests and fed the birds. This has always seemed an injustice to the man who hears the sound of shooting in some remote field while he himself is engaged in making hay, too busy to run to the spot.

My curiosity was edged up some weeks ago at receiving a letter from Mr. John W. Talbot of South Bend, Indiana, on the letterhead of an organization named, "The Game Bird Society," and containing this passage:

How Mr. Talbot Looks at It

The population of England is outnumbered by its pheasants, but when you turn to Canada and the United States you find that foolish persons have caused the enactment of laws which are calculated to prevent the raising of birds. For instance, in the State of New York, which confessedly desires to protect and increase its game birds, the law provides that any person may engage in rearing pheasants and other game birds in the State and may sell them, but makes it a criminal offense to ship into New York any such birds from any other State.

I leave it to the reader to judge whether that law is calculated to increase the purity of the stock or the number of birds in New York.

The State of Indiana allows anyone to rear pheasants and sell them, but forbids any express or railroad company to receive them for shipment! Instead of encouraging individuals to rear these birds, and to sell them to those who are sufficiently interested to buy them for the purpose of stocking lands, this law practically prohibits any effort being made in Indiana to encourage the increase of the birds. I have recently visited the game farm of Helen Bartlett of Michigan, where she is successfully rearing in captivity Ringneck, Golden, Reeves, and Amherst pheasants, as well as pea fowl and other birds of wild nature. She is encouraging the increase of these birds by selling settings of eggs at very reasonable prices. Why should not the law encourage the efforts of persons like Helen Bartlett?

This seemed rather a new note from people interested in game birds. Most of these folk are devoted to the sole object of forcing the farmer to feed birds for city men to shoot. Mr. Talbot's letter was interesting, so we wrote him and asked for more. And here is his answer:

I will endeavor to state the position of this society as clearly as it is within my ability.

This society believes in the domestic propagation of such birds.

While we have never made war on laws guaranteeing closed seasons, we believe that any law is unwise which protects game birds at the expense of the farmer and his crops and to the advantage of the so-called sporting fraternity.

The chicken was at one time a wild bird, but no one will now contend that the number of chickens in existence would be greater if we had a closed season on chickens.

Game and game birds should be protected upon the lands of every man who owns lands, by prohibiting hunting and killing on such lands by any persons other than the landowners, but the land proprietors should be encouraged to feed and otherwise care for such birds and game by giving such owners the right to enclose such game and to kill and sell the same.

I submit that fool game wardens have led fool legislators far from the path of wisdom in legislation by the so-called game-protection route.

No game warden should have a right to turn loose animals and birds to increase and multiply on the crops of farmers and at their expense for the purpose of giving the man with the shotgun the chance to bag something which the soil tiller has raised.

In England more pheasant hens were set on farms by private owners last year than there are human beings living now in the British Isles.

In the United States the many game raisers have done more to increase the population of game birds than all the game laws.

Give the farmer the legal right to raise, sell, kill, and dispose of the game birds just as he chooses, and do away with the idea of passing laws that work expense to the farmer, and you will make game birds plentiful and profitable.

If it ever becomes necessary to protect any bird from extinction we will be among the first to join in demanding laws to that end.

Game Laws That are Unjust

There is a public interest which is conserved by the protection of game birds, for they are the farmers' friends; but the public interest does not account for our game laws. They have been enacted at the behest of the private interests of the sportsmen, in the main.

Mr. Talbot, I suppose, represents another private interest—the interest of the people who are engaged in the growing of game birds for sale.

Personally, I can't see the statesmanship in the game laws which fail to augment the number of birds. Personally, I believe there would be just as many wild game birds in existence, of some sorts at least, if all our game laws were repealed. Not that I am favoring their repeal, but I should like to hear from our readers who believe in the bobwhite, the partridge, the grouse, and the prairie chicken, as to just how they feel concerning Mr. Talbot's views.

This is certainly true—the farmers of the country would feel much more interest in game birds if they were allowed to make a profit on the rearing and selling of them. Certainly it is unjust to people engaged, or desirous of engaging, in the rearing of game birds, fish, or deer if they are to be treated as criminals when they sell the meat they have grown.

Whatever may be wise in the premises, this is foolish. So, I take it, it is unjust for the State to protect deer *for sport's sake* until they have grown so numerous, as they have done in Massachusetts and Connecticut, that they spoil crops.

A friend of mine who has a farm in Connecticut had lost part of a crop in one field. "If those deer come in there again," said he to a game warden, "I'll fix them so they won't come back! I'd as soon have a herd of cattle in there—and I won't stand it."

"If you harm those deer," said the game warden, "I'll make you trouble."

And there you are. Maybe it's just, but I think my Connecticut friend the victim of tyrannical laws.

Herbert Quick

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IN "The Manual of Co-operation," issued by the State Department of Agriculture of New York, M. W. Cole makes the following statements by way of introduction:

"Co-operation is the working together for any desirable end.

"Co-operation is not a new idea. It has been successfully applied to every form of business and life. Our school system and our Government itself are in reality large co-operative enterprises.

"Co-operation in business means any joint undertaking when the undertaking is shared by all engaged in it. A co-operative company divides the profits of its business (after a reserve fund has been created) with *all* who have helped to make that business.

"A co-operative company does not make its members liable for a dollar more than the amount of stock each one holds."

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FARM TRAGEDIES—How They Happen

By D. S. Burch, Associate Editor

"FARM TRAGEDIES"—not a pretty title, is it? Accidents and their results are unpleasant things to talk about, still they are much nicer to discuss beforehand than afterward. Ten years ago I became acquainted with the owner and manager of a splendid dairy farm in Wisconsin. He had a peculiar slogan for his farm, and he liked to quote it to his men. It was: "Guard against precautions." The English in that slogan is bad, and the logic is mixed, but just the same it is a good slogan, for it's one you can't help remembering. It simply means to take precautions against possible accidents in everything you do; there has never been a serious accident on that farm.

Accidents anywhere are bad enough, but the consequences are usually most serious the longer it takes to fetch a doctor or surgeon. One of my earliest farming experiences was on a ranch in the Texas "Panhandle," twenty-five miles from a town and the nearest doctor. In such cases you simply had to be careful. Rattlesnakes often came up to the door of the house, most of the horses were nearly wild, and the cattle were really wild. So in everything I did my first thought was for personal safety, and it was a valuable experience.

According to state experts who make it a business to study such things, machinery accidents are the most numerous and serious of all farm casualties. In one year (1911) in Wisconsin, 94 farmers were badly injured by corn shredders, huskers, and feed cutters. Four of these men died. Altogether six arms were lost, and twenty-three hands were lost. The other injuries were mostly lost fingers and lacerations. The total injuries from that class of accidents in one year were more than those from all the boiler explosions in the State for six years, and all the powder-mill explosions in ten years.

Experience Does Not Protect

Most of shredder and cutter accidents were due to two things: (1) using the hand instead of a stick to unclog the rolls, and (2) lack of a safety lever. Every shredder should have painted on it in front of the operator these words: "Use a stick or else stop the machine to unclog the rolls." And also, "Try the safety lever occasionally to be sure that it is in working order."

The Industrial Commission of Wisconsin says concerning the shredder, husker, and feeder accidents: "Every one of these accidents could have been prevented; every one was the result of carelessness, bad methods, or improperly guarded machines." Most of the new cutters and shredders are made with safety levers and self-feeders. As a result the corn-shredder accidents in Wisconsin in 1913 were about a third as many as in 1911. But even so, two men lost their lives as a result of shredder accidents in 1913, two lost an arm, three lost a hand, and one man had his skull fractured. So even with the most improved machinery, wherever you have rapid motion, cogwheels, rollers, and rotating knives there will always be danger. Ensilage and feed-cutter accidents were second in total number. Gears and knives caused about half of the accidents from those machines. Most of the injured men were experienced in handling and feeding the machines they were working with. One man whose hand was cut off by the rolls of a shredder had been feeding huskers and shredders for fifteen years. Nearly all of the accidents were the result of overconfidence or carelessness; only a few were caused by unskilled handling.

Next to life itself, eyesight is one of the things most highly treasured, and also most poorly safeguarded. A Missouri farm hand of my acquaintance made a practice of carrying with him, when plowing, a small hammer which he used to sharpen his plow point. The farm was stony and soft plow points were used which gradually lost their edge. One day while he was tapping the plow point with his hammer a chip of steel flew off and stuck in his eyeball. Several of us who were working in the field tried to extract it, but it was in too deep. The probings of a bungling doctor, summoned because he was near, made it worse, and finally expensive treatment in the city by a specialist was the only thing that saved the eye. This accident was a rare one, but like many others of different nature was caused by carelessness. A pair of goggles costing 25 cents or less will prevent most of the common injuries to the eye.

Is Your Eyesight Worth a Quarter?

I remember a season of threshing in central Wisconsin in a Dutch community. The Dutch are well known for their frugality, and they seldom fritter away money on trifles, but every man who worked around the machine where wheat and barley beards filled the air wore a pair of goggles. They knew it was good eye insurance and cheaper than doctors' bills.

Common Causes of Farm Accidents

Be especially careful in dealing with the things mentioned below, thereby increasing your own safety and that of those around you

Machinery	Live Stock	Other Causes
Corn shredders	Treacherous horses	Grade crossings
Corn huskers	Ugly bulls	Weak bridges
Feed cutters	Kicking cows	Firearms and explosives
Circular saws	Rabid and ugly dogs	Poisons and disinfectants
Ensilage cutters	**General Equipment**	Oil stoves
Threshing machines	Weak ladders	Dangerous roads
Traction engines	Pitchforks	Rusty nails
Mowing machines	Old harness	Misuse of matches

D. D. Lescohier of the Department of Labor and Industries of Minnesota reports that among the accidents for the year ending June 30, 1913 (the last year for which the records are complete), one man was made totally blind and two others suffered the loss of one eye each.

He says that the number of fatal and the more severe non-fatal accidents in the agricultural industries of Minnesota is at least 1,300 a year. By severe non-fatal injuries are meant amputations, fractures, lacerations, and crushes, besides miscellaneous injuries that result in impaired efficiency for a considerable length of time.

A Weak Ladder Has No Conscience

In Minnesota also, corn shredders led the list of dangerous farm machines. In a two-year period 109 corn-shredder accidents were recorded. General farm implements such as plows and mowing machines caused 146 accidents. Then, in the order of the injuries caused, come wood saws, gasoline engines, feed cutters, and threshing machines. Most of the corn-shredder accidents were on old machines not properly safeguarded. Manufacturers now make it a practice to have the Department of Labor inspect each year's model and order all necessary safeguarding before the machines are put on the market. The present law provides that all machines be fully safeguarded. Next to machinery accidents, falls are second in importance. While not often fatal, they are responsible for many sprains and bruises and much time lost from work.

I was shingling a roof a few years ago, and was using a ladder of doubtful age and strength. It was pretty wobbly, but always seemed safe for "just one more trip." The rungs were badly worn and some of them were "springy." I was in a hurry and didn't want to stop to put in new ones. But a weak rung has no conscience, and before the roof was finished I learned that a rung which will safely hold a man's weight will not necessarily hold him when he has a bundle of shingles on his shoulder. In a report just issued by the State Industrial Commission of Ohio, thirteen very serious accidents were from falls.

Another temptation when farm work is pressing is to use an old neck yoke when you know it isn't safe. Few sights on the road are more terrible than a neck yoke breaking on the steep incline and a loaded wagon with tongue plowing into the ground rushing down on the helpless team. A good brake on a wagon, if the roads are hilly, takes a lot of strain off both horses and harness. At least, you can chain the hind wheels on steep declines, and if you have much hill traveling get a "shoe" to save wear and tear on the tires. Good harness is another means of avoiding accidents. Some years ago I drove a party of prospectors over considerable territory in the Southwest. I had a three-seated rig without a brake. Everything went well until we got into the rocky hills and steep canyons of New Mexico, when on several occasions disaster was averted only by sheer strength of harness in going up-hill, and even when the hind wheels were locked on the descents there was a heavy strain on the holdback straps.

Look Out for John Bull

Fortunately the horses were equal to the occasion, and ever since I have appreciated the satisfaction afforded by knowing the harness is strong. Yet I have seen many teams losing time on the road and in the field while the driver was trying to mend a broken harness without suitable tools or material to work with. I once saw a team of mules break two tugs while trying to get a large load of flax across a ditch and into shelter before a rain. The driver was thrown off the load by the jolt he received, and the flax got wet besides, through no other reason than the weak tugs. Remember that harness usually breaks on muddy roads or steep hills just where it causes the most trouble and danger.

Still another class of accidents is caused by poorly trained live stock, especially horses, mules, cows, and bulls. Some horses have the habit of crowding a man against the side of the stall, an annoying habit and one which if not corrected may be dangerous. Kicking, shying, running away, and stumbling down-hill cause most of the serious horse accidents. Most of these dangerous habits can be cured by corrective training. And above all, remember to speak to a horse before going in back of him in the dark.

A dairy bull that has passed his fifth year is perhaps the one most dangerous farm animal. Plenty of outdoor exercise will help to keep his spirits from getting out of bounds, but anyone who trusts an old dairy bull is gambling with fate. Twenty years ago I narrowly escaped injury by an ugly bull, and the accident constantly recurs with indelible clearness in all its fearsome details. The only safe way to handle a bull is to put a ring in his nose and use a stick with a snap in the end which can be snapped in the ring. A bull handled in this way never has a chance to learn his real strength. Let only one or two men handle the bull, and keep the children away. A bull that has broken through a fence and [CONTINUED ON PAGE 19]

The Country Playground

Every School Yard Has the Space—How to Play Some of the Games

By Clara Comstock

Illustrated by George Varian

NEAR every district school a bit of land may surely be fouud that might easily be turned into a playground and equipped at very little expense. Although the play spirit is not so strong on the farm as in the country as well as in the city. In fact, the country child, owing to his isolation and his almost ever-present chores, knows very little about play, and is therefore more in need of opportunities to learn of its benefits and pleasures.

The city offers all sorts of amusements to its inhabitants day and night; the country very few that tend to develop sociability. A training in group games in early life will lead to the creation of social groups later and a larger communal life, which is necessary if the monotouy of farm life is to be broken up.

How to go about the transformation of the ground available into the place for play is the problem.

To make the playground I suggest that the laud be leveled. Mark off ou it with lime a court of auy size; 35x70 feet is large euough for most of the games, and a smaller court would do very well. Place a post about 7 feet high at the center of each of the long sides of the court. Perhaps the easiest procured as well as the best sort of post would be a sapling brought in from the near-by woods. Procure from a hardware store for 25 cents 6 screw hooks and 4 snaps. On the inuer side of each post place 3 of the screw eyes; the first near the ground, the second 3½ feet above the first, and the third 3 feet above the second. Attach snap hooks to a tenuis net or, if you do not want to go to the expense of a net, to a piece of stout twine or tape, so that the court may be divided by this wheu desired. You now have ready a court for various games. With the addition of a few more inuer lines you may have a tennis court.

A small baseball diamond for the use of indoor baseball may also be laid out on this ground, using the center of one back line as "home." For these various games one must have balls of different sizes. Children who live in the country and enjoy the fuu of the butchering season have material that may readily be used to make these balls. To be sure, they are not lasting, but tney will do very well for beginning. The original cost of the balls, however, from dealers is not large, considering the service they give. The volley ball as it is used in the gymnasium is a light-weight, inflated ball about 8 inches in diameter and covered with pigskin. A ball that answers the same purpose may be made by blowing up a pig's bladder before it becomes stiff and tyiug it tightly so that the air canuot escape. This may be made to last some time by frequent oiling. What is known as an indoor baseball may be made by properly cutting strips of pigskin, sewing them together, and stuffing them with hair and twine. The under and over stitch is the best for this work in order to avoid a ridge. The exact pattern can be secured from an old baseball cover.

The following games may be played by both boys and girls. They are especially good for the development of the chest and the shoulder muscles, and they stimulate the heart and lung action. The country child's muscles do not, as a rule, lack use and development, but they have not been trained to quick reaction and co-ordination. Organized games have, therefore, for him an additional value.

End Ball is one of the less highly organized games, and may well be played by all ages.

It is played with a basket ball. The players are divided into two teams, each occupying one half of the playing court. A space of 3 feet deep is marked off at the back of each half. One third of the players from the opposite team take their position in this space. The object of the game is to pass the ball to one's team-mates statioued in the end space while the opponents act as guards. The game is begun by tossing the ball up in the center of the field between two players, one from each team, who try to bat it to their side. The game is played in halves of 5 or 10 minutes. When one of the end men catches the ball, one point is scored for his team. He then changes places with the one who threw the ball to him. The ball is again tossed up in the center between two other players. The rules of the game are few. One must not walk with the ball, and one must not step over the center or end lines. Failure to comply with these rules constitutes a foul and the opponents are allowed a free throw. The simplicity of the game recommeuds it.

Volley Ball is played with the net or tape stretched oetween the posts from the two highest points. The players are divided into two teams, one playing on each side of the net. Each team numbers off. The players then arrauge themselves so as to cover as much of the playiug court as possible. The object of the game is to keep the ball going back and forth over the net and to make it drop to the floor on the opponents' side. The ball is put in play by No. 1 of either team, who is then called the "server." He stands at least 20 feet from the net and in the middle of the court. He tosses

Hand baseball—the boys like it

the ball with the left hand straight iuto the air about head high, and bats it with the palm of the right hand over the net into the opponeuts' court. The opponents try to return it before it strikes the ground. The best return play is made while the ball is still high in the air, so that as it drops it may be struck with the palms of both hands and easily directed. Thus the play continues until the ball strikes the net or falls to the ground or strikes outside the court. If it stops on the opponents' side of the net the score is 1 point for the serving side. If it strikes outside the court it counts against the side striking it out. If it stops on the serving side no score is made and the ball goes to the opponents. They shall then become the serving side, and so the game continues until a certain number of points agreed upon as the game is made by one side. Each player serves in turn, and he continues to serve until the ball goes by default to the opponents, when the next in turn on the opposite side becomes server.

Volley Tennis is played with the net stretched 3½ feet high between the posts, aud differs from volley ball in that the ball is served from a bounce aud must be allowed to bounce on the opposite side on every serve before being returued. Thereafter it may be returned from either a fly or a bounce. This is a better game for young children than volley ball.

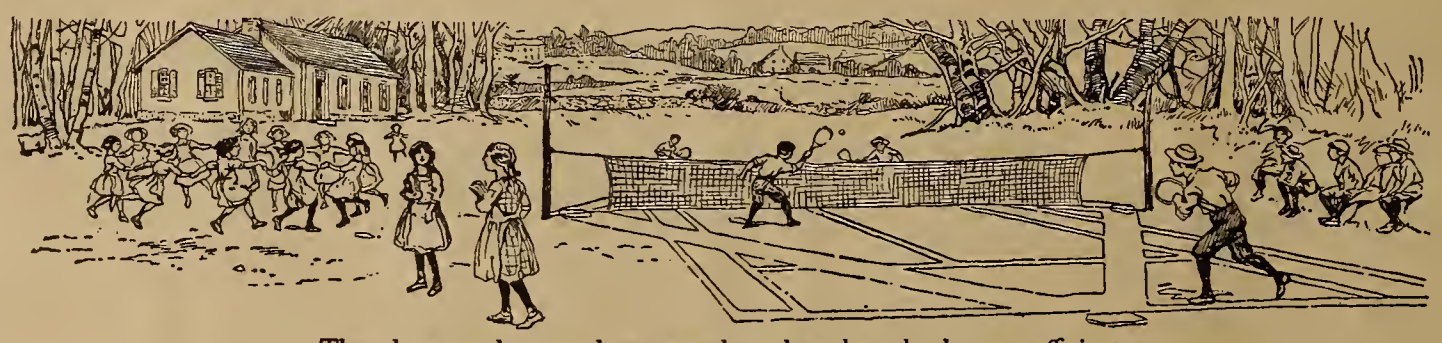
Indoor Baseball—There is no better game for young boys and girls than baseball played indoors or out of doors on a small diamoud, with an indoor baseball and a light bat. The most elementary form of baseball is played with 3 players—a pitcher, a batter, and a catcher—and one base, first base. The pitcher tosses the ball to the batter, who, as soon as he bats the ball, tries to run to first base and back to the batter's base before he can be "put out" by either of the other 2 players. He is "out" if his struck ball is caught on the fly, or if he is touched by the ball in the hands of the other players, or if he strikes at the ball 3 times and misses. When he is put out he becomes pitcher, the catcher becomes batter, and the pitcher becomes the catcher, and then the game continues as before. With more players the game develops into a more highly organized game of baseball. The players are divided into 2 sides and numbered off. When there are 5 players to each side they are assigned to position as follows: Pitcher, catcher, first base, second base, and third base. If there are more than 5 players all others are assigned positions "in the field," so as to cover as much of the playing space as possible. The game begins by one team called A going "to bat," the other called B playing in the field. No. 1 of the "Ins" takes his position at the home plate with the bat, the pitcher of team B tosses the ball with an underhand throw to the batter, the batter strikes at it, and upon the first hit ruus for base No. 1. No. 2 of team A follows No. 1 at the bat, and No. 1 endeavors to run to and touch each base in succession without being touched by the ball in the hands of a player of team B. Each time a batter makes the rounds of the diamond and touches each base and reaches home without being put out, he scores one run for his team. So the game continues until 3 batters are put out, and then the team in the field goes to bat and the batting side goes into the field. A few of the ways to put a batter out are as follows: To catch his struck ball on the fly, to have the ball reach first base before he does, to catch his third strike, and to touch him with the ball while he runs from base to base. Thus the game may be played until the girls and boys are ready for the fully developed game. which should be played according to the published rules of "Indoor Baseball."

Hand Baseball—In hand baseball the players are divided into 2 teams, aud numbered off, 1, 2, 3, etc. One team becomes batters, one plays in the field. A basket ball is tossed by a pitcher to a batter, who strikes it with the closed fist into the field of play and runs to first base, thence around the diamond to the home plate. He is put out by being hit by a thrown ball wheu off base or by his struck ball being caught on the fly.

Kick Baseball—In kick baseball the players are divided as above, but no pitcher is required. All of oue team plays in the field; the ball is placed by the catcher in front of the batter, who kicks it into the field of play and runs to first base, and then around the diamond to the home plate. The rules are the same as for hand baseball.

The plan of dividing the school or club into two regular teams with captains aud substitutes for each makes the playing of these games much better sport and makes better team work possible. Each team may choose a color to distinguish its members. Greater interest may also be aroused by awarding a school or club pennant to the winning team at the eud of a set time of playing.

The equipment for the above games may be purchased at any dealer in athletic goods. The following list gives some idea of the cost of equipment: Basket balls, $2.50 to $6; indoor baseballs, 25c to $1.25; volley balls, $2.50 to $5; nets, $1 to $2.50; bats, 35c to 60c; line markers, $2.



The playground, properly arranged, makes the school more efficient

Don't Hesitate in This

By C. L. Chamberlin

SCHOOLS that hesitate to install a course in domestic training for the girls on account of the expense of equipping suitable rooms should pattern after the Michigan plan of home teaching. The plan now being followed in many small high schools in that State is as follows:

The girls of the high school are divided into four classes corresponding to their grades in school. If necessary each class may be further divided into sections of suitable number to secure best results. These divisions meet once or twice a week at the various home of interested patrons, those who have daughters in the classes or who otherwise feel sufficient interest to open their homes. At the meetings the girls sew, cook, and do other household work, such as washing, sweeping, and dusting. under direct supervision of the teacher and the mistress of the house. A definite outline of the work to be done at each meeting is furnished to the class, also to the lady of the house, so that she may have the right material and utensils ready. The girls do all the work and leave the house in the same condition they found it, washing and drying all dishes and putting them into their proper places.

In the latter part of the course several girls prepare and serve a light luncheon to an equal number of other girls. They visit the grocery stores to learn how to order groceries and the meat market to select cuts of meat, choose fish, poultry, etc. During the summer the work is continued by the mothers along lines laid down by the teacher, a practice to be recommended.

The advantages claimed for this plan are: There is no need of expensive apparatus. The girls learn to cook and do the work in the home, using the equipment found there, and not in a domestic science kitchen, which is always furnished with utensils superior in quality to those found in most homes, and also very much more numerous. In most neighborhoods there are housewives especially known for their skill in certain kinds of work, and by shifting the meeting places the girls meet them and acquire benefit from these recipes and methods. Best of all, the plan brings the school nearer the people and keeps mothers in closer touch with the school work of their daughters. Moreover, many a mother who might resent the intrusion of a domestic-science teacher into her kitchen for the express object of teaching her yet welcomes the teacher who asks her assistance in this work, and profits involuntarily from the experience. The success of this Michigan plau is similar to that resulting iu other States with like ideals. Try it in your State.

F W

Short Stories Told in Pictures

In and About the Farm With the Man Behind the Camera

THE enormous yields of California grapes are known everywhere. But all of California cannot produce such grapes. Few vineyards anywhere can do it. These clusters of Mission grapes were grown in the San Joaquin Valley.

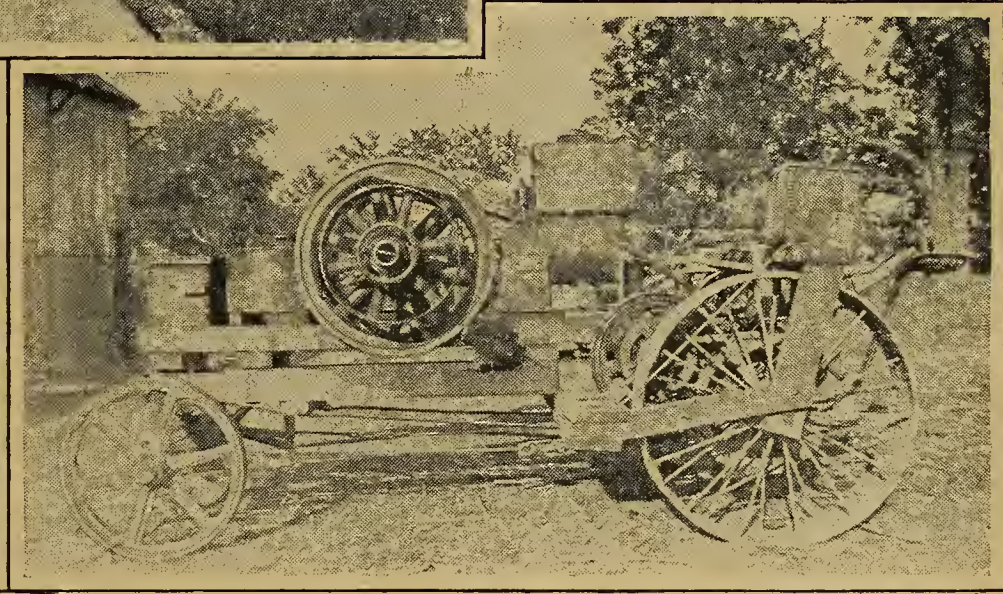
HOW a tornado actually looks. It looks just the same whether the whirlwind occurs east, west, north, or south. This one did its work in Kansas. It may move forward rather slowly, but its whirling speed is great.

A RAINY day is good for the harness—if one has the shop and the tools. A rainy day is good for all farm implements, if one has the means of repairing them. But, better still, a good workshop is useful on any day.

THE great problem with much of the Washington State timber lands is clearing. It costs from $50 to $100 an acre to clear some of this land. This field of peas shows the character of the crops that may be grown on the cleared-off land. The half-cleared native pastures are supplemented in part by the crops of peas, oats, and vetch that grow luxuriantly on the virgin soil. Here, as in many another place, the virgin soil is not appreciated.

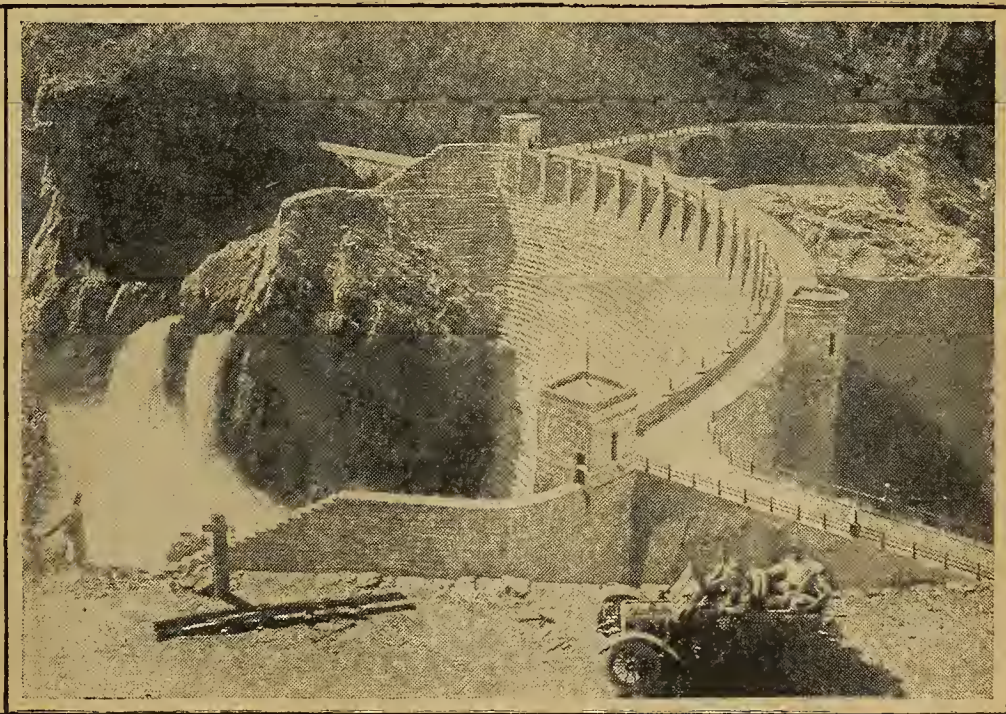
A HEMP FIELD in Kentucky. Hemp is a commercial crop in Kentucky, its fiber being valuable for the cordage industry. In Wisconsin hemp has been used as a "smothering" crop in getting rid of such weeds as quack grass and Canada thistles. It smothers the weeds, and at the same time yields a profit. This picture will convince anyone of its "smothering" qualities. It grows very tall, and bears leaves which cast a dense shade.

Highland Scotch Cattle



A SIX horse-power gasoline engine, some of the parts from an old binder, a few purchased parts, and a quantity of ingenuity are responsible for this farm-built traction truck. It is convenient, the owner says, for odd jobs about the farm. It will pull quite a load, but is not intended for plowing and disking. The scraps of old machinery and the needs of our farms may vary, but ingenuity seems to thrive anywhere. Have you not found it so?

THE majesty of the Roosevelt Dam in Arizona never fails to impress us. This dam makes it possible for crops to be grown on over 200,000 acres of land that would otherwise be desert. And besides that it furnishes water, light, and heat to Phoenix and several towns in that vicinity. The dam itself is of rubble masonry 280 feet high, 235 feet long on the bottom, and 1,080 feet long on top. There are 576 miles of canals leading from it.



EDITORIAL COMMENT

FARM AND FIRESIDE
The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

WE ARE always glad to answer questions. That is what Farm and Fireside is for. If we can't answer the question directly we will see that one of our staff experts in the line of the question gives you an answer. But in a big family such as Farm and Fireside represents, questions don't always go one way. We want our subscribers to answer *our* questions occasionally. Those questions appear in every issue. As you read you will see them. Let us hear from you often.

HERBERT QUICK, - - - - - Editor

August 29, 1914

Something to Blush For

THE average man could not answer if he were asked to define or describe the International Institute of Agriculture at Rome. Very well, a person might be ignorant of that and still be a well-informed man. A greater proportion of us would have an idea of the answer if we were asked about Mr. David Lubin. Mr. Lubin is an American, and he is the founder, through his efforts to serve the farmers of the United States, of the International Institute of Agriculture at Rome. It is a great institute, to the support of which fifty-four nations send delegates. Mr. Lubin is our delegate. He spends all the Government pays him, and much more, in the cause to which he has devoted his life. For more than ten years he has served this cause very unselfishly. What has the International Institute of Agriculture done? Many things, but one we can all understand: it has brought about the first world-wide system of crop reports in history. Prices all over the world are steadied, and the acreage of crops put in to some extent determined by this great system.

It is a good thing for the world when delegates from fifty-four nations meet at stated intervals to discuss the farmers' interests. It is worth very much to the farmers of the United States to have in official reports, scattered broadcast, all the knowledge of the acreage and condition of the crops, east, west, north, south, Eastern Continental and Western Continental, that the grain dealers and millers have.

And now we come to the thing we should blush for. The United States, according to her rank, owes the institute support to the amount of $8,000 a year.

Congress refuses to pay more than $4,000 a year. It is as if we were members of a society in which the annual dues were $8 and we sent in a check for $4.

We should pay our dues, or we should resign from the club.

The only nation, except the United States, which has scaled down her payments to the institute is poor, bleeding Mexico.

Is there a member of Congress who is willing to leave us in such a disgraceful position? The fact that the sum is so small only makes the matter worse.

Measure the Furrow Depth

MILLIONS of acres of land in this country may be described as "a silt loam, medium upland, with a hard clay subsoil." Therefore thousands of readers of this should be interested in the tests made on the Oklahoma State Farm as to the proper depth of plowing for wheat. Aside from the depths of plowing, all the fields were treated alike. Plots disked only, made the poorest yields. The work proves that the man who relies upon disking as the sole preparation for wheat ought not to complain if he gets a poor yield. Other plots were plowed to depths of three, four, five, six, seven, eight, and nine inches respectively. The yields grew better and better until a depth of seven inches was reached, when the deepening of the furrow seemed to give no further benefit. The experience shows that under the circumstances which prevailed, and with that sort of soil, the best depth is seven inches. No harm is done by going deeper, but no benefit is reaped. This of course means an even depth of seven inches.

Most of us when we stand in the furrow and look at the standing land are likely to judge it to be a couple of inches deeper than it really is. But our judgment doesn't make the furrow depth. That can be arrived at only by accurate and repeated measurements.

School Credits for Home Work

IN WABAUNSEE COUNTY, Kansas, we are told, pupils in the schools are given school credits for sleeping with the windows open and going to bed before nine o'clock. This is a part of the work of the county superintendent, Miss Crouch, in the direction of better home sanitation. Probably credits are given for work in killing flies, trapping rats, cleaning up of breeding places of flies and mosquitoes,—if there are any mosquitoes on the watershed of the Neosho and the Kaw,—and other sanitary work. Helping mother, too, is good for school credits in some good schools; and in general the efficiency of a school may be judged according to the extent to which it links itself with the home life. The best school is the one of which every grown-up in the district is a member, and the children merely attending members whose activities are largely those of go-betweens between the folks at home and the organization which meets at nine o'clock every morning under the chairmanship of the teacher.

"The Pestilence Which Walketh in Darkness"

THERE is an outbreak of bubonic plague in New Orleans. At this writing more than a dozen cases of it have been observed. Everything possible is being done to prevent its spread. It is carried from place to place by fleas which infest rats, squirrels, and other rodents. If the fleas could be exterminated there would be no bubonic plague. If the rodents could be exterminated, there would be no carriers for the fleas, and therefore no plague. The matter is very important. This is the dreadful pestilence which came into Europe in the sixth century and lingered there for a thousand years. It is found in some tropical country all the time, and generally creeps into civilization from one of these infected localities in the rats carried by ships. But it flourishes in cooler climates when it once gets a start.

The United States is threatened by it from two directions—New Orleans and California. It has been smoldering among the rats and ground squirrels about San Francisco for years, with occasionally a case among the people. The last great outbreak of this pestilence in Europe was in Russia some thirty-five years ago—in a cool climate. An anti-plague serum was discovered years ago, but it has never been very efficacious. Now, however, it is announced by Doctors Dowling, Seamann, and Bass, who are in the New Orleans fight against the plague, that by the use of this serum in very large quantities it seems to cure the disease. At last accounts it was confidently predicted that all of a group of six patients treated in this way will recover.

If it turns out to be true that a way has been found to cure bubonic plague it will take rank as one of the greatest triumphs of humanity over disease. It will avert from this country a threatened visitation of pestilence. The war in Europe is a dreadful thing, but this victory of peace and healing will do the race more good than the war will accomplish in evil.

The Saddle Horse

THE American Saddle Horse Breeders' Association gets into the field this fall with prizes for the judging of saddle horses at the fairs. For instance, a fifty-dollar silver trophy will be awarded at the Missouri State Fair Saddle Horse Judging Contest.

The saddle horse is not a thing of the past, therefore. In fact, the outlook for breeders is rather bright. The automobile has become a mode of transportation, and a convenience, and is ceasing to be a thing used for amusement. The city man who used to ride for exercise and relaxation is returning to the saddle. He is paying well for good horses. The tendency of farmers to breed drafters has lessened the supply of steeds for our army, and the good saddle-bred horse is ideal for cavalry. In many parts of the country the medium-sized horse is better for the uses of the average farm than is the draft horse. This is especially true of mountainous sections.

Saddle-bred grades make good light farm horses, and will always sell at fair prices if the breeder knows his salesmanship. Saddlers "bred to the purple" are of course for the fancier rather than the farmer.

The Farm Ruled by the Sea

ONLY one thing can prevent the farmers of the United States from reaping the profits to which they are entitled on account of the scarcity of grains in Europe in case of a great war. That one thing is ocean freight rates.

We can calculate on every other expense in the process of getting our export agricultural products to the world's markets, for they are all under regulation. Elevator expenses, railway rates, transfer charges, and commissions are regulated by either law or custom, but ocean freight rates are controlled by the shipping interests only.

Sometimes wheat is carried to Europe from this country for nothing—as ballast in the holds of ships. Sometimes the freight rises to 25 cents a hundred. Every cent of these charges is subtracted from the farm price as a matter of course.

Manipulation of these rates offers a constant temptation to those who may profit by it. It is the one big loose end in our system of marketing.

We may be harmed, too, by an actual lack of ships. If the vessels which otherwise would carry our grains are taken possession of by their governments and used in the war, we may be confronted by a situation in which we shall have millions of bushels to sell which Europe would be willing to buy at famine prices, but with no ships to carry our output. The remedy is hard to suggest.

One may only dream of a time when the producers of agricultural products will possess ships of their own to carry their produce to market. Such great concerns as the Standard Oil Company are quite independent of freight-rate conditions because they have ships of their own and carry their freight to market at cost.

Maxwell "25"

The biggest automobile value ever offered for less than $1,000. Our production of 60,000 cars makes the new price of $695 fully equipped (with 17 new features) possible.

1—Pure-stream line body.
2—Adjustable front seat.
3—Sims high-tension magneto.
4—Three-quarter elliptic rear springs.
5—Tire brackets on rear.
6—Spring tension fan.
7—Kingston carbureter.
8—Clear Vision Wind Shield.
9—Foot-rest for accelerator pedal.
10—Concealed door hinges.
11—Gasoline tank located under dash cowl.
12—Crown fenders with all rivets concealed.
13—Head lights braced by rod running between lamps.
14—Famous make of anti-skid tires on rear.
15—Gracefully rounded, double-shell radiator equipped with shock absorbing device.
16—Instrument board, carrying speedometer, carbureter adjustment and gasoline filler.
17—Improved steering gear; spark and throttle control on quadrant under steering wheel; electric horn button mounted on end of quadrant.

Automobile experts have refused to believe that anyone could produce a full grown five passenger really beautiful fully equipped car—a car with real high tension magneto—a car with sliding gear transmission—left hand drive center control, a car with practically every high priced car feature for less than $1,000.

Here it is. Here is a real automobile. Here is the easiest car to drive in the world—here is the greatest all around hill climbing car in the world. Here is an automobile to be really proud of.

With Electric Self-Starter and Electric Lights $55 Extra.

See this "Wonder Car" at the Maxwell dealer nearest you. Write at once for the beautiful 1915 Maxwell Catalog

Dept. A.G.

MAXWELL MOTOR CO., INC., DETROIT, MICH.

$695

With Electric Self Starter and Electric Lights $55 Extra

E-W

Garden and Orchard

Tomatoes That Yield

By B. F. W. Thorpe

WHICH will you raise, 12 tons or 25 tons of tomatoes per acre?

Plant-breeding experts of the Pennsylvania Experiment Station have been carrying on tomato-growing tests to find the variation in production of different strains of six of the most popular tomato varieties.

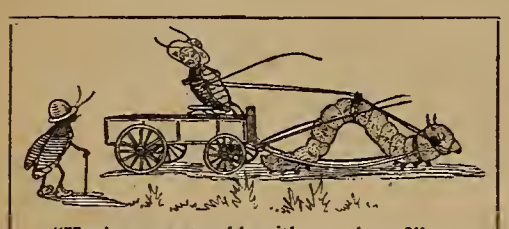
The seed used in these tomato-growing tests was obtained from over twenty seedhouses located in a dozen different States and Canada. The varieties listed were Earliana, Chalk, Jewell, Matchless, Beauty, and Globe, and 24 or 25 strains of each of these varieties were under test.

The astonishing thing about these experiments is that when some strains of these tomatoes were yielding 12 tons other strains were yielding 24 or 25 tons per acre, such variation in yield occurring where the fertilizing and soil conditions were identical.

The variation in yield of many of these tests was of course much less than the maximum difference above mentioned; yet the number of tests where the yields were from 6 to 10 tons per acre greater for some varieties was quite large.

It is recommended by those in charge of this breeding experiment that tomato seed be procured a year in advance of planting from several sources, and a preliminary test made to compare yields. While this adds to the expense and entails labor, yet in comparison with the higher yields that can be procured from some strains of the same variety than from other strains of that variety, preliminary testing is a paying proposition.

More and more it becomes plain that blood and breeding tell, whether it is tomatoes, corn, chickens, dairy cows, or what not.



"Having some trouble with your horse?"
"Yes. Look what he does every time I say 'Back up!'"

Sunlight and Lamps in the Apple House

By Henry Wolfe

I HAVE come to respect Hiram's ways in the running of this orchard, for it is evident that the fates approved of them. Hiram owned it before I did. If he went fishing when he should have been at home spraying his trees, the season was one in which the bugs could not flourish and the lack of poison did not seriously affect the fruit. Since I have been running the place the same fates have shown a malevolent desire. The first year of my control the sun forgot to shine for six weeks, and the fruit could attain neither color nor size. I opened my trees for the second season and plowed and cultivated the ground beneath them. I reasoned that if the season was a wet one my open trees would allow every particle of available sunshine to reach the apples, while if it were a dry one the cultivating would conserve every drop of moisture and thus give me a good crop. I did not figure on the week of hot summer weather in the early spring which brought out the buds and was followed by a full week of hard freezes.

Such things did not happen to happy-go-lucky Hiram, but they came down on me pretty regularly. But this is not a growl, although something like one. My methods, so far as they have had a chance, have been proved out. Despite these disadvantages I have had larger apples and better apples than the place ever raised before. But to-day I am going to tell about some simple rearrangements of the packing house which have added much to its usefulness.

More Apples Than Daylight

In the days when Hiram was at the helm, apples poured into the packing house. Whenever there was a square inch of unused floor space, a barrel of apples came to take possession of it. Sheds and barn were filled to overflowing, there were apples everywhere. The packing-house force was working at top speed, but it seemed as if little headway was made. We were putting into the work more care than had ever been used before, and the box-packing delayed the barrel pack. When we asked for light, a couple of lanterns were brought out. A lantern but emphasized the gloom; it hardly gave enough light to enable us to find the apples, let alone being of any assistance in helping to grade them.

The Arrangement Was Poor, Too

So despite the need for more time and our desire to work we were compelled to shut down long before the day's working time was up. As early as four-thirty, or even four if the day were dull, we had to give up the sorting and packing. On a dull day we suffered from lack of light even at noontime, for Hiram had put but two windows on the south side and one on the east to illumine the whole room. These had been enough for the rough sort of work which was done in his day, but with the careful grading now in force they did not let in enough light.

Even such light as did come in was not used to advantage. The bench was against the wall, and this made alternate spaces of light and dark. Between the windows only reflected light could reach it. The walls were dark-colored and the ceiling grimy. And these were rush days when every moment counted, and I took the lesson to heart. At least four men lost from one hour to one and a half hours per day because of the early darkness. This was a direct wage loss of from one dollar to one dollar and a half each day. The indirect chance of loss coming from delay in the packing and marketing and the risk of freezing the apples in the sheds was impossible to estimate.

We needed light and more light—light from the sun by day and light from lamps by night—more windows, more reflecting surface, more lamps. I began to figure up the wage loss of a single year with a bumper crop. One hour per day for a man for one month spelled 25 hours. For four men this figured up 100 hours, or $25 in money.

The Men's Spirits Were Cheered

Whitewash on walls and ceiling would cost about $2. Four Rochester burner lamps would cost $3.80. Another window would foot up to about $5. Moving the sorting table out from the wall would take a little time, but would add to the light falling on it and double the number of men who could be put to work at it in an emergency, for they could then stand on each side of the table.

These improvements would be a permanent investment yielding a return every year. The direct return in one year of a bumper crop would be at the rate of 200 per cent, for the wage-saving would pay for them twice over. Through increased efficiency and speed a large part of the crop might be saved from frost injury.

Before my first crop was harvested the window had been put in, the whitewash applied, and the bench pulled out from the wall. Every result hoped for was more than accomplished. For the first time in the history of that packing house there was plenty of light. Whenever the sun shone at all it flooded the room. As soon as daylight failed we lighted the lamps, and from walls and ceiling came back all the light that wandered away. We could see as well by night as by day, and the hours of work in the packing house were lengthened to those of a full day. Even the spirits of the men were cheered, for this seemed like business.

The Light That Didn't Fail

When a day of rain followed one of picking we turned the whole crowd into the packing house, strung them along both sides of the table, and the apples poured in a stream at one end, only to pour out at the other all graded for packing. A day's work in the house cleaned up the previous day's work outdoors. There was no confusion and no leaving of jobs because the light failed. A new era had come in on the old hilltop. Hiram did not avail himself of the simplest method of increasing efficiency.

How About It?

IF ALL the apples raised by the State of Delaware this year—estimated at 1,000 carloads—were shipped to New York City, each New Yorker would have less than half a peck for his share. This day's supply would cost at retail two million dollars. In a few years when Delaware gets all her apple trees bearing she intends to ship 2,000 or 3,000 carloads. By that time New York will probably have ten million instead of six million apple eaters. But the significant question is, will the middleman continue to get two dollars of the apple income for each dollar going to the apple producer?

Farm Notes

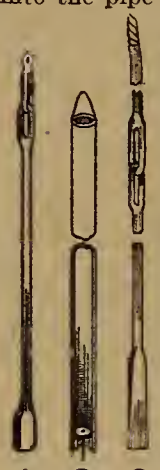
Drilling Farm Wells by Hand

By J. G. Allshouse

A FEW years ago the writer described in this paper a process of drilling water wells by hand. Subsequent interest in the subject was great, and for several months letters came in from all over the country from farmers who wished more specific advice. Here it is:

Fig. 1 shows the rig or derrick and the method of drilling used successfully by the writer to drill a well to a depth of 34 feet, and which is practical for drilling a small hole to 60 feet. The drilling tool is shown in Fig. 2-A. Get a bar of iron about 1 inch in diameter and 5 or 6 feet long. Enough steel should be welded to one end to form a bit as nearly as possible like the regular bit used on a heavy string of drilling tools. In other words, it should have a rather blunt face, about like a cold chisel. The gauge of the bit can be about 2 inches, for starting the well, and may be reduced to about 1¾ inches after the well is cased with 2-inch pipe. On the other end of the iron bar weld a pair of "jars." These are made like the links of a chain, and should have a stroke of from 1 foot to 18 inches. They must be made narrow to work inside of a 2-inch pipe. They are to loosen the tool when it sticks in the hole, as it will frequently do. A few upward strokes usually prove sufficient to loosen the bit. Use a ⅜-inch manila rope tied in the upper loop.

The next thing to be made is the "bailer" or sand pump; it can be made in a few minutes. Take a piece of 1½-inch heavy tin pipe about 3 feet long, and in one end fasten a piece of heavy wire bent in form of a bail. In the other end of the pipe place a dart valve, which is made by driving a wooden rim or core into the pipe to act as a valve seat for a piece of leather through which a large nail or spike has been driven. Fig. 2-B shows the bailer completed. In case tin pipe cannot be procured 1-inch iron pipe can be used; ¼-inch rope is strong enough to use with the bailer.



A B C
Fig. 2

The next thing which will require attention is the derrick. Fig. 1 shows how it is constructed, and also explains the method of drilling. A short rope is fastened to the rope which holds the drilling tools, and the operator pulls back and forth on this rope, thus raising and dropping the tools. The rope should be kept up tight on the windlass, hut as the drill cuts deeper let the rope out carefully a little at a time. When the rope is kept up tight the tools will take care of themselves, and the hole will be cut round and smooth. Have about two feet of water in the hole all the time. After drilling 5 or 6 inches pull out the tools and use the bailer to remove the sediment from the bottom of the well. It will mix with the water and can easily be removed with the bailer. The sand and mud enter the bailer through the dart valve in the bottom.

Success Depends Much on the Tools

Fig. 3 shows a method for drilling to a greater depth. Larger tools are needed than those just described. Two pieces of 1¼-inch gas pipe are first required, one piece 10 feet long and the other 5 feet. Take these to a good blacksmith and have him make from suitable material a pair of jars as previously described. These should have a shank about 1 foot long and loop together like the links of a chain, with a strike or play of 18 inches. Weld the shank of each link into one end of each of the pieces of pipe, and then loop the links together and weld them shut as the illustration Fig. 2-C shows. Now have the blacksmith make a steel bit with a shank about 1 foot long. The gauge can be about 2½ or 3 inches. Weld the shank of this bit into the remaining end of the 10-foot pipe. Now drill several holes in the end of the 5-foot pipe to rivet in the rope. Get a piece of inch rope as long as will probably be needed, and rivet it into the end of the 5-foot pipe. After putting the rivets through the rope, drive wooden wedges around it.

Fig. 3 explains the manner of drilling. The derrick is 15 feet high and the "spring pole" 20 to 25 feet long. The block under the spring pole is placed about 8 feet from the butt end, which is fastened to the ground, and in such manner as to raise the end of the pole over the drill hole about 4 feet from the hole. The rope holding the tools in the well is fastened, when drilling, to the pole by clamps which are arranged to turn on a swivel. A handle is placed on the swivel to enable the driller to pull down and spring the pole and thus raise and drop the tools, and the clamps can be revolved to insure a round hole. If the pole is too stiff at the start, "stirrups" can be arranged in which you can put your feet and help pull down the pole.

The first 15 feet will be the hardest to drill. If the formation is clay you can use a 2½-inch well auger to bore down the first 15 feet; but if it is gravel or stone the tools must be started by the process shown in Fig. 1 until deep enough to attach the spring pole.

How the Spring Pole Method Works

When using the spring pole method proceed as previously described as to keeping water in the hole and removing the sediment with the bailer after drilling from a few inches to one foot. It is a good plan to start the hole with a 2½-inch bit, and after it is down below the

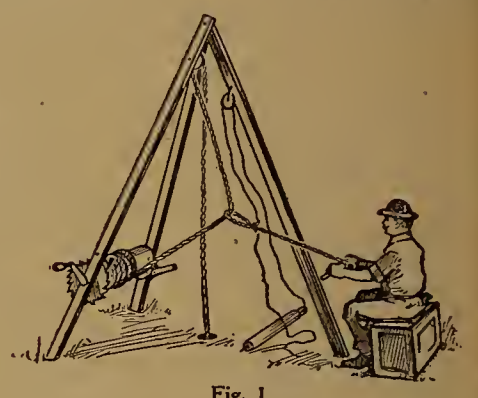


Fig. 1

soft clay put in an iron-pipe casing (galvanized iron is best) to reach below this soft material. Case deep enough to shut off the surface water and impure drainage. This will depend upon how deep it is to the solid rock. Probably one length of pipe 18 or 20 feet long will reach the bed rock and shut off the surface water; it may take less. After putting in this pipe reduce the bit to 1¾ inches gauge, and continue drilling inside the pipe until pure water is found in quantities.

In drilling clay and soft material like shale the bit can be made rather sharp, as in Fig. 2-C, but when you get into sandstone have your blacksmith dress it to a rather blunt face. You may also need to have it dressed frequently when drilling in hard rock, or it will make too small a hole and tend to stick.

My Experience Says "Drill Deep"

In some cases the hole can be started inside of an old dug well. The casing can be put in at once and the drilling commenced. The limb of a tree, if convenient to the well, can be used as a derrick, or the spring pole can be run through the sides of a barn or other building, and the rafters will make the necessary derrick. Drill deep enough below the level where water is struck to insure a basin to hold plenty of water. For instance, if water is struck at 30 feet, continue your drilling until you get down 50 or 60 feet.

You can easily procure iron pumps with cylinders small enough to go inside of a 2-inch casing. If you strike a strong stream the 2-inch well should provide all the water you will need. If you do not

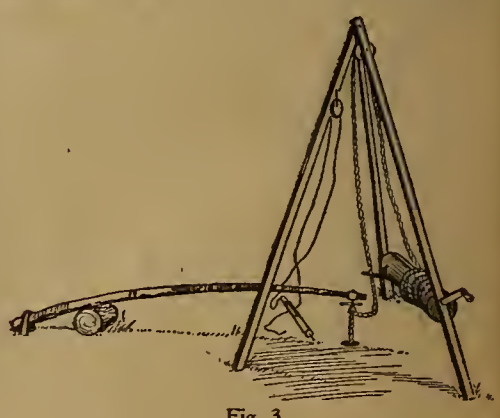


Fig. 3

succeed in finding water in paying quantities at any reasonable depth, you will at least have the satisfaction of knowing that the hole has cost you little, which would not be the case if you employed a well driller and his expensive machinery.

In France a hired man or woman who serves in the same family for thirty years or more is given a medal of honor by the Government, and the time is to be decreased to twenty years. Twenty minutes would be the limit for the farm hands sent out by the employment agencies from some of our cities.

E-W

Poultry Raising

Feeding the Coming Layers

By John L. Woodbury

IT IS my aim (by no means always realized) to bring the pullets along with a steady and constant growth up to the laying period. An interval of stoppage in growth usually results in a greater or less number of fowls of a pinched and inferior appearance, unsuitable for breeders of birds of size.

How and what to feed is a simple matter for the breeder who can give the young stock free range, but for him who must literally "pen them up" it is a very different proposition. I have found no straight grain ration so well balanced that it could be fed chicks in confinement, week in and week out, without causing loss of appetite. The widest possible variety works best with me. I even vary proportions of the different grains and ingredients and system of feeding when it is possible to do nothing else.

After a few days I keep a dry mash before the chicks constantly. I have found the following a good formula to feed chicks between the ages of two and four months: Wheat bran, 2 parts; corn meal, wheat middlings, ground oats, each 1 part; animal meal, 10 to 15 per cent; ground alfalfa, 10 per cent; sprinkling of charcoal and salt. This I feed in open boxes about 6 inches deep. I give what will be eaten up clean each day. It seems to take up the birds' time to get into the boxes and scratch around, and gives them a much better sense of contentment than when fed from slatted boxes or troughs. When I go round with fresh water at noon I take along a pail of the mash and replenish any boxes needing it. At night the boxes are emptied of all residue, which is thrown in with other waste to be scalded up for the adult fowls. This is much better than having larger boxes holding several days' feed, which is sure to become filthy from the feet of the birds. Wheat, oats, and cracked corn in varying ratios are fed three times daily, a portion being spaded into the ground once each day. This induces exercise and sweetens the ground.

Potatoes for Chickens

For green stuff I not only have rape and sprouted oats but sow in the garden a lot of extra beets, turnips, cabbages, and the like, the young plants of which are keenly relished. I believe there is nothing better than potatoes to sandwich in with the grain. I feed them baked, bursting them open with the hand as fed; or I have them boiled and scalded in with bran, a little beef scrap and salt, and other vegetables when I can get them. There is probably not much nutritive value in such feeds, but they are of inestimable worth as appetizers.

I believe there is no one formula so good that it can be followed absolutely in all cases. I find, rather, that different flocks require different care and feed. I study the young birds constantly, and as soon as I see they are not consuming the proper amount of food I make a change before it is too late. I think the more food chicks can be made to eat the better, provided it is fed right and is of the right kind. But a straight grain ration followed indefinitely, invariably means disaster, especially during the warm summer months.

An Amateur's Capons

IN AUGUST 1913 I tried the experiment of caponizing my surplus Barred Plymouth Rock cockerels—51 of them. [So writes a southern Massachusetts poultryman.] They were hatched in May and June and would have been too late to sell as soft roasters to advantage. These had free range till snow came, and were then kept in a new laying house which I had vacant, and fed heavily till sold the first part of April. I originally intended to sell them in February, and I hoped to get them up to an average of 8 pounds, but they averaged only 7½ pounds the 1st of April.

They ate about twice as much grain, meat scraps, dry mash, and mangel beets as hens, and were just as much work to care for except there were no eggs to gather.

From the 51 caponized there finally developed 37 capons, for which the dealer allowed 280 pounds live weight. I wrote to three commission houses in New York City and three in Boston, April 4th, offering to ship capons alive by express. One New York firm did not reply; another wrote, "We have all the capons on hand we wish at present;" and the third said, "Would advise you to ship your capons dressed, and we could get you from 26 to 28 cents per pound." One Boston firm did not reply for ten days when they said, "Live capons won't bring much better returns than live hens—around 20 cents." Another Boston dealer offered "25 cents, if nice." The third Boston firm replied to my letter promptly and said they would pay 25 cents if capons were in good condition.

I shipped them to the last-mentioned firm, the capons leaving here by express at 8 A. M., being delivered in Boston at noon. They immediately sent me a check for 280 pounds at 25 cents per pound, less express charges.

My account with these capons follows:

Expenses	
51 cockerels, at 25c	$12.75
Caponizing, at 10c	5.10
Feed, 7 months	54.00
Labor	14.00
Interest, repairs, taxes on land and buildings	8.00
Express charges	1.70
Total	$95.55

Receipts	
280 pounds live capons, at 25c.	$70.00
10 slips	6.25
4 died	....
Total	$76.25
Loss	$19.30

The capons sold for but little more than cost of grain and chicks. *If* I could have got 28c instead of 25c for them, and *if* they had averaged 8 pounds apiece, I would have been the fortunate recipient of about 15 cents an hour for my labor actually employed in caring for the capons. Of course, as neither one of the "ifs" materialized I did not get the 15 cents per hour for labor, to say nothing of not getting anything for risk of loss by disease or theft or accident, or of no return on capital invested.

EDITORIAL NOTE—Experience counts for a good deal in many things besides caponizing. It is of special interest here to learn the results of an amateur's attempt to make a profit by caponizing his cockerels last year. These facts and figures come from a Bristol County, Massachusetts, poultryman. His loss contrasted with the profit realized by Mr. J. A. Reid (whose account was given in the last issue), who sold his capons for considerably less price, and claims a profit for his caponizing. But his expense account does not take cognizance of the value of his cockerels when caponized. Whose reckoning is nearest right?

ALL swans are not white, although we usually associate the swan with pure whiteness. Australia has black swans and South America has those of mixed black and white, but the English swans, those which came to be known as "birds royal," are white. And added to the purity of their color is their ease of movement while in water, so that now to be as "graceful as a swan" indicates superiority in personal bearing.

Stop Leaks in Eggs

WHERE is the breeder who will breed on an India rubber or aluminum shell in place of the old-fashioned lime-compound covering for eggs?

The eggs with damaged shells known as "blind checks," "checks," "leakers," and "mashed" in the egg trade aggregate an enormous loss in the course of a year's business. These "leakers" are thrown out by the middlemen all the way from the producer to the consumer.

A large proportion of this breakage could be avoided by more careful attention being given to having a plentiful supply of ground oyster shells or clam shells always within reach of the laying hens. The hen that is short of shell material will economize in the thickness of the covering of her eggs, and hens that have to work overtime trying to find shell-making material, do this at the expense of time that should be devoted to their regular line of business.

Not only is the commercial value of thin-shelled eggs less, but the productiveness of the hen is reduced when she is making an unnecessary draft on her system to supply shell material at the expense of her normal bodily requirements.

Feed for Forty Cents a Pound

By B. F. W. Thorpe

FORTY cents a pound for chicken—not capon—roasters sounds attractive to the seller. A few are getting this fancy figure, and more can do so. The fortunate ones do it this way:

Chicks are hatched in October or thereabouts, and are raised in comfortable quarters where they can be kept healthy and busy scratching in dry litter in the sunshine and still be protected from draft and storms at all times.

These birds of the larger breeds are kept growing steadily till May, when they are crate-fattened for two or three weeks for the required fine finish. They are then killed and plucked, leaving head, feet, and entrails for the consumer to pay for, making six to eight pound carcasses for pullets and roosters.

The secret of being able to get these extreme prices for such *de luxe* roasters is to have the tender pen-fattened birds, not over seven or eight months old, to offer just before the broiler season opens up, and when young, fresh-killed roasting stock is practically out of the market. Late May and early June always find a strong demand for such birds in every big city for use at high-class banquets and special epicurean functions. Those who have the duty of providing for this kind of banquets know that the cold-storage stock will not suit the discriminating palate of those who want the best.

In order to reap the advantage of this special demand a poultryman should be in personal touch with the big cities, and should see to it that they arrange with the buyers of this fancy roasting stock to deliver just when the price hits the high mark. This 40 to 50 cents a pound demand lasts only a few weeks.

Valuable in Life—Also in Death

By B. F. W. Thorpe

THE dual-purpose hen gives a good account of herself when she comes to the block. Two Barred Rock hens recently used for midsummer Sunday dinners realized me $1.32 and $1.20 respectively, when sold direct to the consumer for 24 cents a pound.

One of these hens was two and one-third years old, and the other five and one-third years old when killed. The younger hen laid $4.50 worth of eggs (18 dozen reckoned at 25 cents a dozen) from November 1912 to November 1913. The older hen, during her last two years of laying, produced $8.31 worth of eggs (33¼ dozen at 25 cents per dozen).

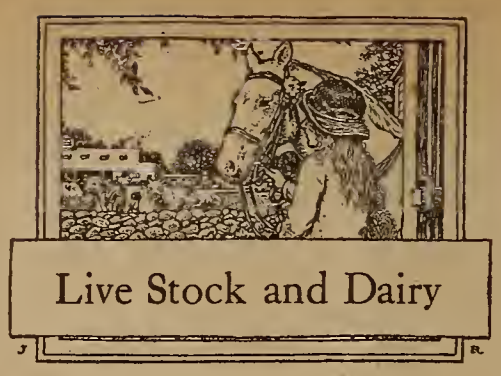
The younger hen, after thorough careful roasting, was said to be tender and toothsome with flavor to match. The older hen fricasseed (in fireless cooker) left nothing to be desired.

In addition to the returns obtained above mentioned from these two hens was fully a pint of oil, in value equal to a pound of lard for shortening purposes.

A Short Egg-to-Egg Cycle

AN EGG laid January 1, 1914, hatched January 21st the Leghorn pullet chick which waxed strong, growing by leaps and bounds until June 2d (131 days from the shell), when her first egg was laid, making her cycle from shell to shell in four months and eleven days.

This precocious pullet is a Pennsylvania product owned by Ellis A. Ballard.



Live Stock and Dairy

Jack Rabbit, Good-by
By Myrtle M. Powell

DOWN in the Texas Panhandle, sometimes referred to as the "plains" country, the farmers have started a movement to exterminate the jack rabbit in the interest of the grain crops. The county commissioners of Hale County have placed a bounty of three cents each on the rabbits' scalps. Several rabbit "drives" have been pulled off near Plainview, the county seat of Hale County, and up to last New Year's Day there had been 9,000 rabbits brought in for the sake of the bounty upon their heads. The choicest ones are first sold to the local produce companies for table use, at five cents apiece, and the ears are then taken "to court" to claim the three cents' bounty. The produce companies have done a big business shipping the rabbits away for food, and hundreds of those not suited for such use have been bought by farmers for hog feed.

Plainview is in the heart of what is known as the "shallow water belt" of the plains country, where for several years past such wonderful development has been taking place on account of the discovery of the "shallow" water and the development of irrigation by pumping.

Pine Tar for Bloat

A HAMILTON COUNTY (Ohio) farmer, M. Morgan, urges the use of common pine tar as a successful remedy for bloat in cattle, resulting from overeating green clover or similar succulent fodder.

A tablespoonful of pine tar has saved badly bloated cattle on the Morgan farm, and a number of others having bloated cattle in the same locality have had equally good success with this remedy, when a veterinarian could not have reached the sick animal until too late to be of any help.

Which is the Best Cow?

MR. DE GRAFF in the last issue took a pretty strong stand, saying that the dual-purpose cow was an impossibility economically. He supported the dairy breeds, Holsteins in particular. We asked Prof. Thomas Shaw to read these statements and then to write for Farm and Fireside his ideas of the question. Here is what Prof. Shaw says:

No doubt the facts stated by Mr. Renick, whom Mr. Quick quotes, are all true, but that kind of evidence will never convince those who believe strongly in the special-purpose cow, and who will not give any place to the dual-purpose cow on the arable farm. We must have accredited milk records, and we must have animals from dual cows grown into beef with some information about the cost. The farmer can give us our side of the question, that is the milk side; but he cannot easily give the facts about the beef side. He can furnish the beef, but what farmer has the facilities that are necessary for keeping the exact records of the cost of rearing a beef steer?

The experiment stations could have worked out this whole question years ago, but they have in nearly all instances looked upon it as a solemn duty incumbent upon them to cry the dual-purpose cow out of existence. Can any reader of your paper point to a single instance in which an experiment station has conducted a fair test on this question? The stations have almost with one voice discouraged the farmers from growing this cow, and while propagating the falsehood that she could not be bred they have been feeding themselves at the public crib. The only experiment station that has given this question a fair test is that at Macdonald College, Quebec, Canada. The results cannot be given here, but they are quite satisfactory.

Editor Quick's discussion is all right as far as it goes. The high-producing dairy cow is all right for the intelligent dairyman, but she is not on the average farm where the farmer is not skilled in the care of so sensitive an animal. It is time we should hear less of records running 10,000 pounds and over. In my judgment, what we now want is a cow that will produce not less than 6,000 pounds of milk in a year, and show the farmer how to breed her instead of forever saying to him that she can't be bred. If the stations had done this long ago we would doubtless have had fifty dual herds for one now. We would have had cows on the arable farm that could help to produce the beef needed.

Holsteins Not a Dual-Purpose Breed

I don't know Mr. DeGraff personally, but I have no doubt he is an estimable gentleman. I am almost glad that I don't know him just yet, or I might not have the heart to say what I will now say:

In the first place his whole letter is a sort of veiled plea for the Holstein breed. They are a good breed, but they are not a dual-purpose breed. Let him keep the Holsteins on their own ground. In the second place, he does not know what a dual-purpose cow is, or he would never have quoted 3,550 pounds as the average production of dual cows. That was the average production of mongrels, and the innocents who took the cow census referred to called them dual cows. In the third place, he seems to be dreaming about the beef side of the question. He seems to think the main profit in beef from the dual cow is the extra weight she will carry when sold as compared with the straight dairy cow.

The dual breeders of England would look upon a man who talked this way as one who had been sleeping all these years, and who had just awakened out of his sleep. The breeders of England know very well that the profit on the beef side comes mainly from the male calves produced reared as bullocks on skim milk and adjuncts during the milk period and sold at the age of two years. They know very well that they will weigh just as much as straight beef bullocks at that age, and that the butchers rather prefer them.

A bullock from a real dual-purpose cow, properly reared, would be worth $100 to-day in our markets. But where is the use of piling up evidence before men who, for long years, have been crying against the dual idea? If evidence were brought to them they would reject it.

Promoted Creameries Again

EDITORIALLY and otherwise, FARM AND FIRESIDE has every now and then issued warning against allowing strangers to promote creameries in growing dairy localities.

Mr. J. L. Thomas of the U. S. D. A. reports that promoted creameries have in the last few years failed at fourteen different towns in Texas. One plant which cost $7,000 has never received a can of cream. We have not been able to learn the cost of all the plants, but probably $75,000 has been taken out of Texas by the creamery promoters, and nothing has been given in return but useless creameries for which the stockholders have been overcharged. The chief trouble has been the lack of a sufficient number of milch cows to support the creameries. Perhaps a lack of good common sense too.

The Keeping Quality of Butter
By H. F. Judkins

THE flavor, body, color, and salt distribution are the four things that determine the quality of butter. On the official score card nearly as much weight is placed on flavor as on all the other items combined. Flavor may be affected by any or all of the steps from the milking process to the packing and storing of the butter.

Sunlight is Free to All

Good flavor in butter begins with healthy cows and clean milk. So much has been said, and so many pictures shown of model dairy barns and model methods of handling cows, that the farmer with average means becomes somewhat disgusted and discouraged with the outlay. But cleanliness need not be expensive.

Any cow stable can have tight, clean, whitewashed walls and ceiling free from cobwebs and dirt, also plenty of light. Windows are about as cheap as blank wall. Why not have some?

There is no necessity for feeding roughage just previous to milking, thus filling the air with dust, nor for the feeding of weeds or spoiled silage which may give their flavor to the milk and hence to the butter. These are seemingly little things and yet they have a great effect on the quality of butter.

The separator has been a boon to the farm buttermaking industry. Although the separator cannot remove the taints that the milk may have absorbed in the barn, it gives us a smooth, even cream.

Storing and Ripening Cream

The proper storing and ripening of cream for churning is also important. Cream takes up odors very readily and should not be stored with anything having a strong odor. Be careful especially to keep it away from kerosene, paints, and fish. The temperature at which cream should be stored depends on the length of time between churnings. This brings up the subject of cream ripening. Cream is ripened or soured by the development in it of lactic acid produced by bacteria.

Cream may be ripened naturally by allowing these bacteria to multiply, or artificially by adding a culture of these bacteria in the form of a "starter." The best ripening temperature falls between 60° and 70° F. During the ripening process, cream should be stirred frequently to prevent lumps of curd being formed and to insure an even ripening throughout. Never mix sweet cream with partly ripened cream. To secure the best results ripen the cream until it has an acidity of about one half of one per cent. The acidity in cream may be ascertained with precision by various acid tests, and approximately by taste and appearance.

Concerning Starters

The jacketed cream vat is the ideal container in which to ripen cream. Anyone making 50 pounds of butter or more a week should have one of these vats. For small amounts of cream the common tall cylindrical cans will do. If you churn every other day, the cream had best be placed in a room set aside for the purpose, with a temperature of between 60 and 70 degrees, and allowed to ripen naturally. If churning is done only once or twice a week the cream had best be kept at a temperature of 50 degrees or below until within twenty-four hours of churning time, when it should be submitted to proper ripening temperature.

The successful use of a "starter" is extremely difficult, and farm buttermakers should concern themselves more with producing and handling the cream under clean conditions than to bother with starters.

The texture of the butter depends largely on the churning temperature, the temperature of the wash water, and the amount of washing and working given the butter. Always wash the butter till the wash water is clear, for buttermilk allowed to remain in it will cause the butter to be rancid or bitter. If the butter is well worked and uniformly salted, no fears need be had as to its good keeping qualities.

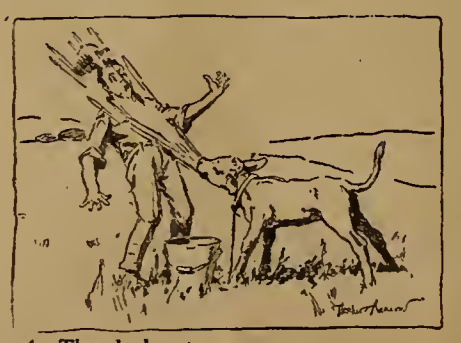
F

School of Correspondence
How to Teach a Calf to Drink From a Pail

1. Handle carefully—

2. Be easy—!

3. Place finger of right hand in mouth; be forceful with left, but gentle.



4. Then look out.

Crops and Soils

When Disking Before Plowing Pays

By R. C. Doneghue, Agronomist

DISKING before plowing is often recommended, and may be advisable when the work can be arranged to accommodate it. Here in North Dakota the harvest season for spring grains begins about August 1st, and fall plowing is started about October 1st. Harvest on the average grain farm is the busiest time of the year. At that time every horse and man available is used to get the crop into shock. If it were possible to provide power for disking the land as soon as the grain was cut, no doubt that practice would be profitable, but it is not practical with labor conditions as they are to-day. Horses and men are not to be had because of the harvest work.

Most of the farms grow only small grain, and the profit from disking would not be sufficient to warrant carrying enough horses through the year to enable the farmer to follow his binder with a disk at harvest time.

A change in the cropping system so that the various harvests would not come all at one time would help to solve the problem. What is needed most is a careful study of the time required by the various crops to mature and a schedule of seeding, so that as few crops as possible will demand attention at the same time.

Likewise, the entire season's work should be considered and the harvest period planned so that there will be as little competition between crops as possible. If horses and men can be used for disking stubble land at harvest time without too great cost, the increase in crop yields will pay for the extra expense on some soils and under certain weather conditions.

For example, in 1911 six plots at the North Dakota Experiment Station were disked August 8th, following the binder. Moisture tests made at the time of disking and at the time of plowing about the middle of October showed that the soil contained the equivalent of 1½ inches more of rainfall than the adjacent plots which had not been disked. If the summer of 1912 had been dry the crops produced might have shown some difference in favor of disking, but of the plots seeded to small grains, two showed an increase due to the disking, and two others showed a decrease. The rainfall in the fall of 1911 was fairly heavy and the disked plots were a little sticky and tough when plowed. Furthermore, the rainfall during the growing season of 1912 was quite heavy, and the soil contained plenty of water during the entire season.

Disking Gives Best Results on Clay

The results of disking before plowing also depend on the kind of soil. Soils containing very much clay are inclined to bake into a crust and shrink so that cracks are formed. If such lands are disked, a mulch is produced and the cracks filled, thus saving moisture. On the other hand, some of the more sandy soils form a natural mulch and seldom crack, so that there would not be as much loss of moisture naturally, and the disking would not be as effective from a moisture standpoint. Some years soils in the semi-arid regions contain very little water after a small grain crop has been harvested. In such cases no water could be saved because the soil contains practically no available water. After an early crop, like rye or field peas cut for hay, has been harvested, disking will loosen the surface enough so that some of the weed seeds in the soil can germinate. Later the young weeds can be plowed under and destroyed. This stirring of the soil also gives the grain which may have shelled a chance to germinate, thus obviating the volunteer grain which might cause trouble in the succeeding crops. The extent to which weeds and grain will germinate in the disked layer will depend somewhat upon the weather. The amount and rate of germination will be greatest when the soil is moist and warm. Many of the weeds growing in the stubble are prevented by disking from going to seed.

Where manure or other organic matter has been plowed under, disking will mix it with the soil, and after plowing the disked layer fills in the open spaces around the manure, keeping it moist and hastening its decay. This is important in the semi-arid regions, as organic matter usually decays very slowly.

Disking Makes the Plowing Easier

Plowing early is usually considered a better practice than to disk early and plow later, but there are exceptions to this rule. For example, the soil may be dry and hard to plow, and if a mulch is maintained by disking the moisture can accumulate so that plowing may be done more easily. In other cases the rush of work makes it impractical to plow, but a team can sometimes be spared long enough to go over the land with the disk. If the land is plowed when too dry, hard lumps may be turned up and much time and effort be required to work these lumps down so that the soil is in a granular condition and suitable for a seed bed. Disking will keep the surface from drying out, and unless the period between harvest and plowing is very wet it will keep the soil in condition to plow well. The mulch thus produced keeps the amount of moisture in the soil more uniform and favors the formation of available plant food for the succeeding crop. The loose layers turned under by the plow on land that has been disked helps to fill in the open spaces which might otherwise be left. A more compact and uniform seed bed can be produced, and crop roots have opportunity for a well-balanced development.

On light soil two strong horses well harnessed will handle the disk well

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IN CHRISTIAN COUNTY, Kentucky, the government farm demonstrator has organized limestone-crushing clubs. Each club buys a crusher which is taken from farm to farm and used in crushing the stone nearest the place where it is to be applied. The cost of quarrying and crushing is estimated at $2 per ton. Ten or twelve of these crushers will be at work this year, and will prepare 10,000 tons for the soil.

Learning Our Varieties

By Harry B. Potter

THERE are as many varieties and strains of corn in the United States as there are counties, and then some. If we are dairymen we will wonder what variety is the one that will give us the best returns when put into the silo.

Perhaps, later, the beef man, the sheep man, and the hog man will use silage more, but at present the dairyman is the one who raises questions as to silage.

The answers to our questions on varieties will, as a rule, come to us from the experiment stations. Ohio is attempting to answer this question for her farmers, and in Bulletin 269 gives the results thus far secured. The bulletin simply gives the facts. It does not recommend any variety as best for the silo.

"The needs of individual dairymen differ," the authors say. They have found the higher percentages of protein, starches, and fats in the ordinary field or dent corn. But they say, "While a ton of this field-corn silage will carry much more nutrients than a ton of the larger or so-called 'silage' corn, an acre of it will furnish less nutrients."

This is good for us to think about, but we need still more enlightenment. The Ohio Station workers sum up the present situation as they see it by saying: "In intensive dairying where it is a problem to secure enough roughage, the so-called silage corn will likely prove more satisfactory. In the corn-belt sections where the problem is to take care of the corn crop, the field corn will doubtless be more satisfactory. Silage made from the latter will not call for the purchase of as much concentrates to feed with it as the former."

After we learn from our station about the varieties, we will have to determine for ourselves whether or not the variety first on the list will grow well on our soil and in our climate. If it does, we may find it profitable to change our seed. If it does not, perhaps there will be some other variety in the list that will be better for us. Just now it is a matter of using what we have, studying our own situation, and then urging our stations to get at this work in order that we may have more definite answer. Perhaps, too, the county agent could help us out.

Cent-a-Bushel Corn Storage

FOR corn growers who plan to feed much of their corn early in the season, or market part of the crop as soon as cured, a crib made as follows will give excellent satisfaction: Lay a row of strong 6-inch fence boards, 12 feet long, on a solid flat surface such as a barn floor, spacing the boards one inch apart. If you want a corncrib eight feet in diameter you will need about 40 of the 6-inch boards. Next, securely staple No. 9 wire to the boards, placing the wires a foot apart. Strong ¾-inch staples should be used, two to each board. The wires, which are really hoops to the big barrel crib, should be 42 feet long, so as to allow enough free wire at the ends to tie crib together after it is set up.

A canvas cover and a solid plank foundation with air spaces for bottom ventilation complete this crib. If the materials are at hand you can make one of these cribs in an hour or two. One of the size described will hold about 500 bushels, and the cost need not exceed $5, or about one cent a bushel for storage. If made over 8 feet in diameter this crib needs ventilation by means of a center flue. When made 16 feet in diameter the cost of material falls to about half a cent a bushel. This crib should be stayed from the outside with guy wires when empty, to keep the sides upright. To provide a place for scooping out the corn, shorten three of the staves about 15 inches next to the floor and close the hole with a trap door. When not in use for corn storage this crib can be straightened out and used for a poultry fence.

Threshing with a Husker

COWPEAS and soy beans grown by Mr. E. Gillespie in Ohio were successfully threshed for two seasons with a corn husker and shredder (Plano, 10-roll size). How fast will the machine thresh these crops? "As fast as I could get the vines to me," is Mr. Gillespie's answer. Peas and beans were broken but little when threshed with the corn husker—much less than when threshed with a small grain thresher even when pieces of boards were substituted for the "concaves."

Storm-Proof Corncribs

WIRE-COVERED or ordinary slatted corncribs are not in favor among some feeders and corn growers who grind or feed most of their crop. To prevent snow and rain driving into the crib I have found the following expedient to give good results:

The sheathing (or wire netting can be substituted) is put on inside the studding with the usual inch-wide air spaces. Then outside the studding the crib is sided without air spaces, the siding being placed vertically to better shed the storm. This furnishes an air space equal to the thickness of the studding between the outside siding and the inside sheathing. Provide air flues at top and bottom of the air space for ventilation.

To bar out birds and rodents put strong wire screening at bottom and top of the flues. The outlay for this outside protection increases the siding cost, but the corn is kept free from snow and ice.

King-Dragged Corn

EIGHTY bushels per acre is one fifth less than the 100 bushel per acre mark so many are striving for. Nevertheless, 1,200 bushels of good corn from a 15-acre field deserves commendation.

Last year G. W. Lundun of Jackson County, Iowa, planted 15 acres of corn, a part being timothy sod and the reminder a new "grubbing." This is his account of growing the corn:

"The land was broken in the fall, and it took a deal of work to prepare the new 'grubbing.' I left the land without working until May 28th, on account of a wet May, when the weeds and clover had grown to a foot in height. I double-disked the land and harrowed same well, then planted well-tested seed corn of Yellow Dent and Boone County White varieties, five to seven kernels to the hill, and at once harrowed the planted corn ground, continuing until the corn was out of the ground two inches. I then corn-plowed same twice, then hoed and thinned the whole field down to three stalks or less to the hill. Following the thinning I plowed the corn the third and last time when it was about two feet high. I believe that many make a mistake in plowing their corn too long as the cultivator tears up the corn roots too much.

"Following the harvesting I went through the corn both ways with a small King drag, ending up this work August 10th with a good dry dust mulch. The land was in excellent condition at the time of harvesting the corn."

THE 1913 year book of the U. S. D. A. is being distributed. Copies can be obtained by addressing your Congressman.

Farm Notes

Sawing Outfit for $1.15

By J. J. Satterfield

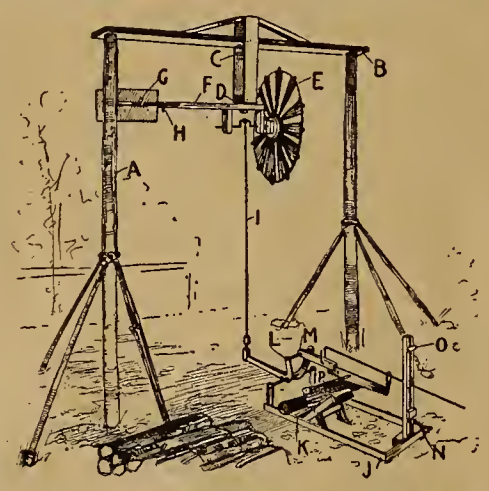
THIS is how I made a windmill that saws all my wood and that cost me only $1.15 in cash besides two days' work. First let us make the main framework. Get for the uprights two large poles (AA), 20 feet long, and a 2x8-inch plank (B), 16 feet long. Spike the beam to the top of the poles. In the center of the beam for a turntable for the wind wheel use two planks (CC), each 6 feet long and 8 inches wide. Nail one on each side of the beam at its center, with 4 feet projecting down and 2 feet upward. From the upper projection run braces to beam to keep beam from sagging. Take a block (D) 2x6x8 inches, spring the lower projections apart, and nail the block in place.

Bore a ⅝-inch hole in center of block to receive a bolt. Now raise the framework, setting the posts in holes, 2½ feet deep, that have been made in the ground. Brace each post on three sides, leaving the space between posts open. Let the braces be long, and spread at bottom.

The Wind Wheel is Easily Made

To make the wind wheel, first cut out two 12-inch disks, at least an inch and a quarter thick, for the hub, bore a ¾-inch hole in center of each. Then make 14 pieces, 1 inch square and 4 feet long, for spokes. Flatten the diagonal corners of each spoke 5 inches from the end. This will throw the rest of the spoke at about 45 degrees angle to the hub. Nail the spokes on one of the disks properly spaced, and place the other disk to match. Nail securely all around the disks; then take a 2x4-inch block and nail it onto the disks with the same size hole as in disk. Cross the grain of disk so as to reinforce the hub. Bore a ¼-inch hole in this block across the center of large hole so as to linch-pin the wind wheel to crank shaft.

To make the windmill blades, take corrugated roofing. Cut so that the corrugations will be crosswise of the blades. Make the blades (E) 13 inches wide at one end and 8 inches at the other end. Reverse the sheet each time you cut across, then your blades will all be alike. Now flatten the corrugations partly out of the blades, but not enough to make them lose their rigidity. Draw a line through the center of each blade, and with short large-headed nails fasten securely to each spoke of the wheel, leaving the spoke projecting one-half inch. Draw two No. 10 wires around the wheel, one on each side of the end of the spoke that sticks out. Twist the wires between each blade until you draw some "dish" in the wheel. This will hold your blades tight in a strong wind.



Sketch of mill showing how it is made

Next get your blacksmith to make a crank shaft. It should be a center crank made out of ¾-inch round iron, with the crank arm 7 inches long. In the end of crank that goes in wind wheel have a ¼-inch hole made to receive a linch-pin bolt, mentioned before. Now to make a hanger for the crank shaft, take a piece of 2x4 (F) six feet long. Fasten wooden brackets to one end of it about a foot apart. Put ¾-inch holes in lower end of bracket for crank shaft to turn in. Then bore a ⅝-inch hole just above center of crank between the two brackets to bolt hanger to turntable. To long end of hanger fasten a small strap hinge (G), leaving one half of hinge to fasten to the rudder. Fasten in the center of rudder.

This windmill saws wood faster than you can split it

Now you can turn the rudder in the wind or out of the wind. Fix a latch (H) to hold sail in position when in use, and out of position when not in use. Throw a long rope over beam of main framework, draw the hanger and sail up to the turntable, bolt the hanger to the turntable with ⅝-inch bolt, using large washer on each end of bolt.

Next draw the wind wheel up with the rope, fasten the wheel on the crank shaft with the linch-pin bolt, attach a long pitman rod to the crank that will reach to the ground with a swivel in the lower end. This swivel will let the wheel turn in all directions when attached to the lever of the saw.

To Make Sure That the Saw Will Work

Now to make the saw frame, take 6-inch boards and make a shallow box (J) 6 feet long by 2½ feet wide, with one end set in about 1 foot. At this open end place a right-angle lever (L) with two upright pieces a foot or more apart to receive the crosspiece of the saw arm. The arm (M) of saw blade can be made from a two-by-four 3 feet long. Rip with saw into the end of arm, insert saw blade, and bolt or rivet it in. Put crosspiece in the other end of saw arm to go into the uprights of lever. The saw blade can be a heavy buck-saw blade or a piece of cross-cut blade. Bore a hole in saw arm just back of end of saw. Take a ⅜-inch rod of iron 5 feet long, bend a crook of 10 inches, insert the short end of crook in this hole, let the rest of rod run parallel with and above the saw to the other end or handle of saw. If this handle stands upright, bore a ⅜-inch hole in it 8 inches from saw blade, pass the rod through this hole, letting it extend 2 or 3 feet beyond the handle. This will stiffen the saw blade, and the projecting rod will make a saw rest for the saw when running idle and a guide for the saw when at work.

To make a slot for the guide, set two pieces upright and ½ inch apart at the outer end of saw frame. Let this slot be 4 feet long, with a piece (N) nailed across bottom of slot for the rod to rest on when the stick has been sawed off. Now lift the rod to the top of slot. Fasten a button (O) to one of the uprights so it will turn across the slot. Lift saw above button, turn button across the slot. Now your saw can run idle while you place the stick of wood under the saw. Now make the sawbuck (K) and fasten solidly to the frame. Put the first cross in middle of frame close to saw blade, fasten the other set to outside of frame. To the back pieces of crosses that stick up bolt "dogs" (P) with short spikes driven in under side. Pull the dogs down on stick or pole. The sharp spikes will hold the stick tight and fast while saw is running. When a stick has been cut, raise "dogs" up, lift saw up to button, put in another stick, and repeat operation. You split while the saw is cutting, and when night comes you will be surprised to see how far you are behind with your splitting.

A Cord of Rat-Tails

ACCORDING to newspaper accounts the farmers in one township in the vicinity of Findlay, Ohio, slaughtered 23,983 rats to make a Buckeye holiday. The local pest of rats called for heroic treatment, and as the Pied Piper of Hamelin seems to be off duty, the people divided into two parties and had a rat contest. They used every method of rat-catching known to the trade, and some which up to that time had been unknown. The army securing the smaller number of rats paid for an oyster supper for the combined forces, and the campaign wound up in mirth and jollity.

We may receive the story that the pile of rat-tails amounted to a cord—eight feet long, four feet wide, and four feet high—with a grain of salt; but the fact seems to be that some rats were killed, and some fun enjoyed. No more profitable work could be done than this.

In northern Iowa, many years ago, one locality had its annual "gopher day," upon which occasion the men and boys divided into two armies, under skilled leaders, went out and killed the striped and gray ground squirrels which infested the fields. These affairs always ended in a jollification, good eating, music, and general relaxation. It did the neighborhood good, and benefited the corn.

The rat we have always with us. There is a knack in catching him. Any squad which will make a study of rat-catching will have an advantage over the unskilled party.

The Abandoned Farm

By Berton Braley

TIME was this shattered house was bright
With love and hope, and laughter too,
At dusk its windows were alight
With warmth and cheer that filtered through;
And when the tired farmer drew
Near to its threshold in the gloom,
His worn face brightened at the view—
Once on a time this was a Home!

Within these walls what plans were made,
What dreams were dreamed of future years!
Time saw them change, and fail and fade,
And wrought the wreck that now appears;
In vain were all the toil and tears,
The tilling of the good brown loam,
The sweat and fret, the hopes and fears—
Once on a time this was a Home!

Time was these fields were rich with grain,
With yellow wheat and golden corn,
But now we see a dreary plain,
Grown thick with weeds and grasses torn,
A sight to mock the mellow morn

Which spreads across the sky's blue dome,
Yet, 'spite of lands and house forlorn,
Once on a time this was a Home!

ENVOY

We know not what untoward fate
Drove forth its occupants to roam;
We only know, though desolate,
Once on a time this *was* a Home!

E.W

The Farmers' Lobby

War!—Is It Ours?

By Judson C. Welliver

"DOES the United States gain or lose by a great war in Europe?"

"What does it gain, what does it lose?"

"What classes in the United States will gain and what will lose, and how?"

I asked these questions of a long list of public men in Washington. Their answers have been as varied as their physiognomies.

"In everything except the actual bloodshed and loss of life the United States will suffer with the countries actually involved in the war," say one class of people.

"It will be the opportunity for the United States to take the world's lead in finance, industry, and commerce. It will make us the foremost power of the world at the beginning of the twentieth century," say the representatives of the diametrically opposite school.

"It marks the twentieth century as America's own era," add these optimists.

"It will be the last great war," say the great majority. "The end of war," say the socialists.

Two of the most interesting expressions were made by two eminent members of the Senate. Said one:

"I believe that the ruling classes in Europe have realized that the time was ripe for some blood-letting; for a great revival of patriotism, of national feeling. They have seen the spirit of unrest growing fast, till it threatened their domination. Nothing will knit the miscellaneous factions and parties together in a given country like a foreign war. The ruling classes prefer to see the common people killing each other rather than to let them go on thinking of social revolution, of more democratic government, of sheer socialism. The people are to be permitted to expend their energies in a war at the end of which they will be ready to come back to their masters and lick their wounds while the masters lay on the lash of heavier taxes and more autocratic government. It means that the forward march of civilization will be stopped; that social, governmental, institutional development will be turned backward at least a generation, probably two or three generations."

That was gloomy enough, wasn't it? A certain plausibility about it too!

But the other Senator took exactly the other view.

"A general war means that half the thrones in Europe will be overturned," he declared.

"It means more republics, organized on the lines of our own. It means more democracy than the world has known before, a pretty general repudiation of debts, the end of vast armies and navies, and government with the real interests of the whole people more sincerely in mind than ever before."

You can pay your money and take your choice—if you like. Personally I didn't choose either extreme. It never seemed to me that human nature had been changed much by great cataclysms.

There have been a good many great wars in the past, and most of them didn't leave a very deep mark on the surface of history.

The philosophy of history is prodigiously interesting, but it has occurred to me that the philosophy that will perhaps help the farmer and the business man to judge the effect of the war on his particular occupation is more practical at this time.

At the outset it is necessary to inquire where Europe is going to get the money to pay for the things it must buy from us during the war. The answer may be surprising.

She will have to get it largely from us.

Just how much will we ultimately gain if we sell more products to Europe but have to furnish Europe with the money to pay for them?

That is just what we will have to do.

And the process of it is very simple. Europe holds a vast amount of investments in the United States: bonds of our railroads, bonds and stocks of railroads, industrials, and all manner of securities. These aggregate billions. They have been sold to European investors in the past because we had a big new country, and needed ready cash to develop it: Europe had the cash.

A great war will make Europe want that money back. Her fields will be trampled over by millions of soldiers. Crops already planted will not be harvested; crops that in a time of peace would be planted will not be. Soldiers must be fed, and so must citizens.

But men who are engaged in the exclusive business of zestfully shooting each other full of lead cannot plow, plant, and reap. The rest of the world must feed and clothe them.

So the first thing that Europe thought about when war seemed certain was the bright idea of selling back to us Americans the securities she had bought from us. She wanted gold, and we had a lot of it.

But America isn't made of gold, despite a fatuous impression that Europe, accustomed to our gilded tourists and their tips, seems to imagine it.

America needs that gold because our own affairs cannot be managed without a reasonable supply of cash. The effort to buy up the bargains offered by the Europeans soon started a stream of gold flowing to the other side. That gave rise to fear of losing too much of our gold.

Even if we get higher prices for what we sell during a great war we must in large part pay for them with our own money.

It is of course profitable to sell a Dutchman a block of stock at $100 per share and then buy it back—it being just as good a stock as ever—at $60. We have made a big profit buying up the bargains the panic-stricken aliens have offered to us.

But it has been taking our gold away from us; and we need that gold.

Suppose Europe's demand for our wheat forces the price up to $1.50 a bushel; who benefits and who is injured—in this country?

The American producer of the wheat assuredly benefits. There is no analysis that can lead to any other conclusion. The man with hogs, beef, corn, wheat, and the other things that Europe must take at the very outset is going to profit. Of course the advance will not all be profit to the farmer. He will have to buy what he buys in a market where higher prices will rule, in sympathy with foreign prices. When a big part of the producing world quits producing and goes to destroying, prices have got to go up. But they will go up for all of us.

That is why the American consumer stands to suffer by an era of war prices. The farmer will get the immediate benefit because his are the things immediately wanted abroad. Farm products will go up while investments go down, because of the rush to trade investments for the farmer's things.

Yet in the early days of the war scare the most important of all American farm products, from the standpoint of international trade, fell fast and persistently in price. That was cotton. Why?

Because, first, our cotton goes largely to the countries engaged in the war. The Germans buy a vast amount of it; and one of the first results of a war was expected to be a blockade of German ports. The cotton could not get into them. The German cotton industry would be largely suspended. Even if the raw cotton should get in, the products could not be shipped out to the German foreign markets: it would be too likely to be seized by hostile naval vessels.

The people in Germany must eat three times a day. It isn't absolutely necessary for them to spin and weave and sell and ship cotton every day. They can afford to take any sort of chances to get food. They can't take such chances to keep their cotton industry operating.

Same for the other countries.

Hence, wheat went sky-hooting upward while cotton went down in price.

The world has been spending its spare cash, and a lot it couldn't spare, for half a century building warships with which to destroy commerce whenever a time like the present should be ripe. So it need not be surprised if its exchanges and industry get mussed up when these dogs of war are turned loose to seek what they may devour.

"But," protests the man whose voice is for war, "if the Germans can't go on making and selling the cotton goods in the markets they have been supplying, isn't that the golden opportunity for the United States to jump in and grab off that business while the Germans are too busy to attend to it?"

It is exactly that.

If the United States can pull itself together and seize the opportunity, it will get a good thing just about in proportion as the war is long and its effects on the commerce of Europe are destructive. But pulling ourselves together for that effort will be a tremendous test of the national nerves.

We can't send our gold to Europe and at the same time use it at home to finance the new commerce that we hope to take away from our European rivals. Neither can we do it if we line up at the bank and draw out the little deposit we have there, and put it away in a sock. The man who takes his money out of the bank now will prove that he hasn't any real confidence in the national capacity to cash in the possible benefits of this crisis.

The great opportunity for American trade expansion as a result of this war is in South America. That continent naturally belongs to us, in a commercial sense, anyhow. We ought to be doing right now most of the business the Germans are doing there.

We will get a huge part of that trade of the Germans, and no small share also of British trade, if we rise to the opportunity, keep our heads cool, and get quick action. That will be true even if the war is comparatively short. It will take a good deal longer for Europe to get over the effects of this war than it will to fight it.

We need to keep our money at home, and to keep it at work.

But there must be ships to get these American goods to the markets we are airily proposing to invade. We have almost no oversea merchant marine. For a generation we have been content with the opportunities that the home market represented; and we have done rather well.

If we haven't had time to build instruments of seagoing transportation, we have on the other hand been able to build pretty nearly half the world's railroad mileage here in these United States. We couldn't do everything at once.

Now to sum it all up:

The Europeans will want our gold, and want it desperately, to pay for their war.

The producers and exporters of our own country will want it to expand their business.

Our own people will want it in order to pay the higher prices that will be marked on the price tags of almost everything.

The shipping concerns seeking to buy ships from other countries and bring them here to sail under the protection of the neutral American flag will want it.

And there is only one supply of the gold.

Therefore, say the wise men of affairs, our opportunity to gain by the war depends on how carefully we hoard and conserve every resource of cash and credit we have. When I say hoard I don't mean to lock up the money and keep it idle: I mean to keep it working for the big interests of this country.

Congress has given us a new currency law which makes it possible for our gold supply to be held more securely in this country than it formerly could be, and that makes a given amount of gold serve as backing for a larger amount of perfectly safe currency. President Wilson and Secretary of the Treasury McAdoo, with the leaders of all parties, in and out of Congress, the bankers and business men everywhere, were very prompt to realize these demands of the situation. They took steps without delay to get the new currency law at work.

They brought forward legislation to facilitate the program of building up our merchant marine by giving the widest privilege to taking foreign-built ships under our flag.

The chance is ours. Will we seize it?

It is, at the last, up to the hundred million of us. If we don't make fools of ourselves by getting scared before we're hurt we will be just about the one nation that will get big and lasting benefits out of the war.

E-W

Don't Give Away the Foodstuffs

By Herbert Quick

THE first effect of the European war is not favorable to the American grain and foodstuffs markets. The lack of ships and open harbors dams up shipments on this side of the water, and causes a temporary glut.

How long this will continue no one can predict. It may have passed by the time this reaches our readers, or it may be at its height. But low prices on this account cannot last. While it does last the peoples of Europe will have to live on the limited supplies on hand, and the demand will be all the more insatiable when freight lines shall be restored. The free and neutral ships of the world will be enlisted in the carrying of food to the warring peoples.

The readjustment will take time, but people must eat and be clothed, and we of the United States must feed and clothe them. Let the farmers keep their heads, and hold their produce for the restoration of freight service. Don't give away the foodstuffs to the speculators. Great fortunes will be made in grains and meats in this eventful year.

Every one of us should resolve to make as much out of his own produce as possible. Keep the cotton, wheat, corn, and meat animals on the farm if possible until the ships begin to ply to the ports of the world.

Ways to Keep Clean and Well

How to Fight the Evil-Working Germs That are Continually Knocking at Our Door

By Mary Hamilton Talbott

MEN as well as women will find great interest in what Mrs. Talbott has written. Germ life is everywhere. How to reach the dangerous germs and prevent their deadly action involves more than a consideration of home sanitation. The barn and its surroundings, all of the outbuildings, the poultry and hog lost, especially if they are near the house, must be kept sanitary. Many of the methods here given for the home can be directed toward the cleanliness of the farm itself. Safety first!

DISINFECTION is a subject with which every housewife should be familiar. The woman who has some knowledge on this subject will save the members of her family avoidable illnesses by the conscientious disinfection of her home.

In enumerating disinfectants the first thing to be said is that Nature has given us the very best disinfectant for all purposes—the sun. Don't neglect sunlight, from the kitchen to the garret, and don't forget that ventilation may be catalogued among "modern improvements." Our forbears received as little of it as of the purifying properties of the blessed sunlight. They nailed down the windows of chambers and living-rooms early in November, and to exclude further the "death-dealing blasts" tacked lists along the window-casings and laid sandbags against the cracks at the bottom of the outer doors. All winter long the women of the family lived and moved and did their breathing in the foul atmosphere thus secured for household use. Why their lives were drawn out to an average of thirty-three and a fraction years will always remain a mystery. So do not forget to ventilate every living and sleeping room, and never overlook the cellar. Remember that, if you are economically inclined, a house flushed with fresh, bracing air is heated much more quickly and at a lower fuel cost than one filled with heavily laden carbonic atmosphere.

Dryness and heat are other useful means to use for combating germs, therefore never allow wet, germ-laden dish and floor cloths, damp towels, and clothing to lie about; instead they should be thoroughly cleaned with soap and water and hung outdoors to dry.

Water furnishes a germ entrance to the household and the human system. Much naturally depends upon the source, and unless one is sure that this is uncontaminated all water should be boiled. The familiar flat taste is avoided by half filling a large receptacle after cooling, and shaking or stirring so that all parts of the water may be exposed to air, for the flatness is due to the absence of air driven out by boiling. Do not trust to a filter, for the average one will hold back the refuse in the water, very shortly to become clogged with a bed of multiplying micro-organisms which pass through the filter and render the very means of purification one of contamination. Notwithstanding the fact that many people contend that the freezing of water destroys the unhealthful germs, it has been proved that they are only kept in abeyance, ready to work harm when the ice melts, so it is the part of wisdom not to use ice in the water but rather to chill the water by placing it in bottles and putting them in the ice chamber. An additional safeguard is to scald the bottles often. And here it might be well to say that boiling water is one of the best germicides. Dishes, bottles, knives, forks, and spoons can be sterilized in boiling water, but remember if knives or other steel instruments are to be thus sterilized the addition of an ounce and a quarter of washing, not baking, soda to each gallon of water will prevent "drawing" the temper of the steel. At any time when a knife blade is to be employed for lancing a boil the steel should first be sterilized by the boiling method.

To supplement the work of the natural agents mentioned above, every careful housewife will use some of the reliable chemicals for disinfectants which have received the sanction of physicians and boards of health. But she must always bear in mind that no disinfectant is harmless if taken internally, and therefore they must be plainly labeled and also kept well out of the reach of children.

In the widest field of household disinfectants, chloride of lime has yet to be rivaled, either in a dry form or in solution. Not only is it most efficacious, but it is cheap and procurable at even the smallest country store. It is sometimes sold under the name of bleaching powder. Every country housewife should sprinkle this disinfectant freely and frequently in the cellar and dark corners of the house and around the outhouses, garbage receiver, stable, and all places where flies are likely to breed, for it is an excellent germ preventive.

As it has been proved that the mosquito is as dangerous as the common fly as a disease carrier, especially malaria and yellow fever, all mosquito breeding places, such as stagnant pools, rain barrels, ditches, and all wet and clogged places, should be looked after as well as those generating flies, for which purpose nothing will be found better than a generous amount of common kerosene, or coal oil, as it kills the larvæ.

Other most satisfactory germicides for household use are carbolic acid, creolin, bichloride of mercury, and potassium permanganate. Carbolic acid is most useful when employed on infected cloths such as sheets, towels, handkerchiefs, etc., which should be soaked for half an hour in a five-per-cent solution, then rinsed and boiled in clear water. It is also excellent to use for disinfecting toilet basins, where it should be allowed to stand for a time before flushing. A good sanitary habit for cleaning day is either to wipe the mattress with a cloth wrung from a solution of carbolic or to use it in a spray. Creolin may be used for many of the purposes for which carbolic acid is found effective. For general use a tablespoonful in a gallon of water will be found to be about the right proportion. The floors and woodwork treated to a monthly washing with this will aid the health of the household. Two ounces of potassium permanganate dissolved in a gallon of water makes the ideal germicide for sink pipes and drains. From a quart to a gallon should be poured down a pipe or drain, according to its size. Crude commercial permanganate will answer.

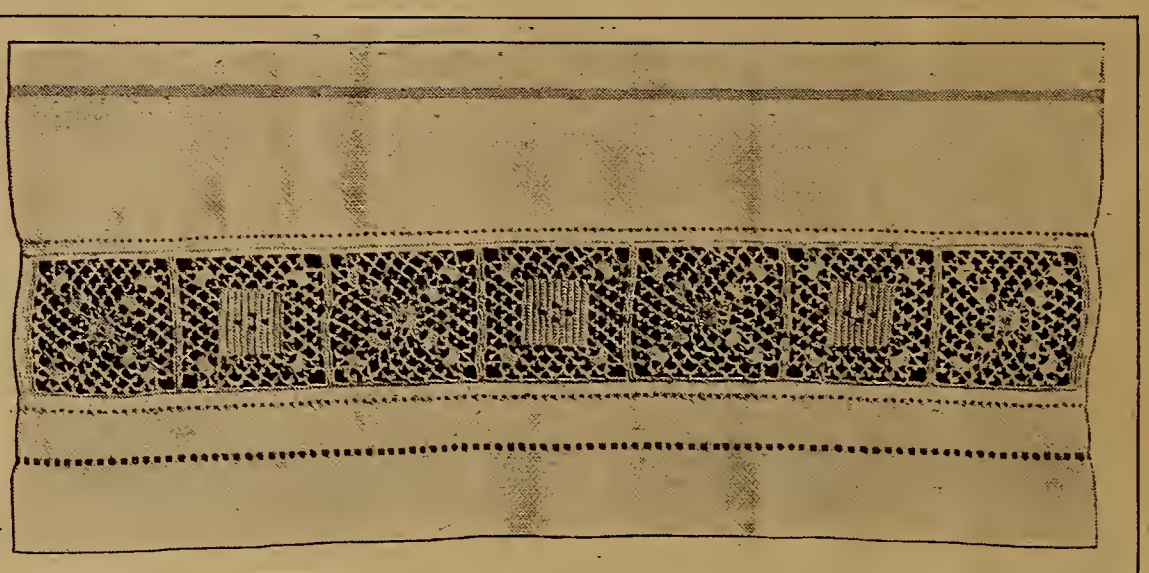
The woman who presides over a household should consider as one of her most important functions the purchase and care of the family food. The campaign against germs should begin outside the home, for the housekeeper is as responsible as the shopkeeper for the menace of dirty stores where the meat is left on the chopping block to collect disease germs from flies and dust, where the cheese is uncovered on the counter and vegetables and fruits are exposed to the dirt from every passing wagon; for if she refuses to buy food under such conditions he would have to mend his ways. Wherever a choice is possible she should purchase only from the baker who wraps and seals his bread. When she has the food in the home as free as possible from germs, what then? The first requisite is absolute cleanliness in the storage place. This is not attained by the use of soap and water alone. Fresh air, sunshine, and whitewash are important aids. Shelves should be washed clean and then dried; but the undue use of water should be avoided, as moisture is one of the chief requisites of germ growth. A cellar may be kept dry by placing in it dishes of unslaked lime, which takes up the moisture with avidity. When the lime crumbles apart, losing entirely its crystalline character, it has become "slaked," will take up no more water, and must be renewed. The ice box should be wiped every day with a dry cloth, and once a week everything should be removed so that the sides, shelves, and drain may be thoroughly scalded with boiling water in which washing soda has been dissolved. The pan underneath should be scrubbed and treated similarly often.

Kitchen methods in many of their details fail to meet the requirements of sanitary science, and without realizing it many and many a housewife and mother is responsible for the cold that "goes through the family" or the epidemic sore throat. The one who does the cooking should never taste the sauce or soup with the stirring spoon. She should also be careful to handle the knives, forks, and spoons by their handles. It sounds like a small point, but it is tremendously important to see that germs are not deposited from the fingers on the parts to be put in the mouth.

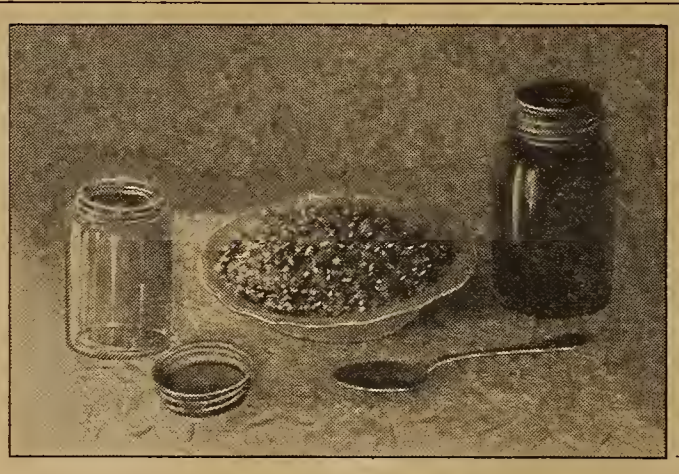
Disinfectants for personal use are as essential as those intended only for household utility, and perhaps nothing equals peroxide of hydrogen for all-around use. There are on the market several preparations, but sold under different trade names. In the case of burns, cuts, bruises, or bites, washing the wound thoroughly with this disinfectant will be found beneficial. It is a good plan to clean the finger nails with this solution, for they are a common lodging place for germs.

Notwithstanding all precautions, illness often finds its way into the home, and when it does the strictest vigilance as to sanitary conditions must be enforced, and disinfection should apply to the nurse and everything in the room, as well as the patient. Clothing, bedding, dishes, and any utensils used should be boiled frequently. All cloths which cannot be so treated should be burned. When it is necessary to take up dust in the room, cloths disinfected with carbolic or creolin should be used. A frequent washing of the hands of the nurse in peroxide of hydrogen is an excellent practice. It is a continual fight to get rid of the germs that do damage and make way for those that are beneficial, but, of course, it pays.

E-W



This crocheted insertion is durable and may be put in a towel without fear of its wearing out quickly. Such a towel makes a beautiful bureau or table scarf. The crochet is not difficult, although its effect is very elaborate and decorative. For directions send four cents and a stamped, self-addressed envelope to Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.



Corn Salad Pickles

TWO heaping cupfuls of chopped celery, two heaping cupfuls of chopped cabbage, one and one-fourth cupfuls of chopped onions, twelve cupfuls of corn cut off of the ear, five chopped red peppers, one and one-half cupfuls of brown sugar, two tablespoonfuls of cornstarch, one tablespoonful of mustard, two pints of vinegar, one pint of water, one teaspoonful of salt.

Let water, vinegar, sugar, and mustard come to a boil. Thicken with the cornstarch dissolved in a little cold water. Then throw in the corn and onions. Cook twenty minutes, stirring so it does not stick at the bottom. Add the celery, cabbage, and peppers.

Boil for about five minutes, and add all of the rest of the ingredients: seal. This recipe makes five quarts if you give good measure. It is highly recommended by those who have tried it.

Tomato Pepper Pickle Relish

SELECT even-sized tomato peppers, cut the tops off as for mangoes, and scoop out the seeds. Boil three minutes in two cupfuls of vinegar and one-fourth cupful of sugar. Take off and drain.

For the relish, four cupfuls of chopped cucumbers, one-third cupful of little green peppers, chopped, two cupfuls of chopped onions, three-fourths cupful of brown sugar, one tablespoonful of salt, one tablespoonful of celery seed, one teaspoonful of cinnamon, one teaspoonful of mustard, one teaspoonful of ginger, one teaspoonful of cloves, one teaspoonful of allspice, three cupfuls of vinegar.

Mix all together, let come to a good boil, and then stuff in the tomato peppers. Place the tops on the peppers, tie them on with cord, fill in jars, and pour the vinegar from the cooked peppers over all; seal.

A License to Listen

A Story About Aunt Jane's Victory Over the Telephone Corporation

By Elliott Flower

AUNT JANE WAGSTAFF has a license to listen to any and all conversations on her niece's ten-party telephone line. The trouble that came to Aunt Jane before she was given this license was primarily due to Mrs. Hiram Hubbell. Others discovered and occasionally complained to one another that someone was giving surreptitious ear to their telephonic confidences, but Mrs. Hubbell was the first to become aggressively active in the matter. Mrs. Hubbell, in spite of her multifarious and exacting duties as a farmer's wife, usually had some time to spare in the afternoon, and she spent most of it at the telephone.

She called up Mrs. Josiah Perkins, or Mrs. Peter Simpson, or Mrs. Heber Henson, or one of them called her up at least once every day. Naturally, it annoyed Mrs. Hubbell to have anyone listening to her confidences, and finally she declared that she was going to find out who it was, if there was any way to do so, and report it to the company.

"Why, I don't never do no harm," objected Aunt Jane when she was convicted. "I don't never repeat nothin' that's goin' to hurt nobody. But I like to know what's goin' on, and there ain't no other way. Here I am, sittin' in the old rockin' chair all the time, unable to move, only with a cane, and I don't see nobody hardly, nor I don't hear nobody, only over the telephone, and I like to know what's happenin', first. Why, I knew the Metzes had a baby before it was born, because I heard 'em telephonin' for a doctor, and I knew when Sue Hopkins broke off with Lem Tolliver, because I heard her tell him not to call no more."

In due time, however, Mrs. Hubbell and Mrs. Perkins, acting as a committee for the incensed subscribers, drove to town and lodged their complaint at the office of the telephone company.

A few days later a polite young man called upon Aunt Jane and explained courteously that complaint had been made of listening on the line, and the trouble had apparently been traced to her telephone. He hoped there would be no more trouble of that kind, for the rules of his company were very strict and the penalty for breaking them the loss of the telephone thus used. The young man was deeply sympathetic, but he had no authority to suspend the rules. A repetition of the offense would result in the removal of the telephone.

"It's only jest loneliness," pleaded Aunt Jane. "Here I be, alone 'most all day, and listenin' at the telephone is like havin' comp'ny in to visit. I get to know what's goin' on—know more'n anybody else—but I don't tell nothin' what hurts. Why, if I was a mind to talk—well. I could tell what Mrs. Hawkins said to Jim Hawkins the time he telephoned he was stayin' in town all night, and how Sally Perkins and Tom Clancy was so near breakin' once that she told him to send her photograft back, and that the Petersons' baby—"

But the polite young man asserted that the company could make no exceptions to its rule, although he personally was satisfied that her listening was perfectly harmless and really almost justifiable.

Still, Aunt Jane was not sufficiently impressed with the enormity of her offense or the serious nature of the penalty. She kept away from the telephone for a day, and then drifted back into the old habit. She did this one afternoon— But now we are coming to the reason for her license to listen.

That same afternoon two other people were occupied in ways that, while apparently unrelated to Aunt Jane's license to listen, must still be considered therewith. The polite young man was driving out to the Cotter farm where Aunt Jane lived, under instructions to make a further investigation and remove the telephone if the trouble proved to be the same this time as last; and Mrs. Hubbell, alone in her home, was baking. Nothing would seem to be more remote from a license to one woman to listen than another woman baking, but you never can tell.

Being thus occupied, Mrs. Hubbell did not hear the door open, and it was not until she saw a pair of very wicked eyes, set in a most forbidding face, observing her that she realized that there was an intruder. Then she promptly ordered him out, but he refused to go.

"Pass out the eats!" he commanded.

"Go outside and I'll give you something to eat," she returned.

"Nix on the outside!" retorted the intruder.

"I'll call my husband!" she threatened.

"He ain't here," laughed the intruder. "I'm boss here now, an' you an' me is goin' to have a nice little time together. First, I'm goin' to feed at the table, like folks, and after that— No you don't!" he cried, making a sudden rush for her.

For Mrs. Hubbell was backing into the next room, and now, with marvelous quickness, she sprang backward and slammed the door in his face. The next moment she had the telephone receiver down and was screaming, "Help! help! help!" even as she tried to get Central. She had barely time thus to call before he, delayed but a moment at the door, roughly dragged her from the instrument, the receiver falling the length of its cord. Then she screamed as only a woman in mortal terror can scream, and struggled and fought as only a woman in such desperate plight can struggle and fight.

Aunt Jane, listening, heard the cries for help. She was quite alone at this time, Mrs. Cotter having gone to the co-operative creamery.

"Sounds like Sary Hubbell," commented Aunt Jane. "There must be something wrong over to her place."

Then came the screams, followed by the noise of the struggle as chairs and other articles of furniture were overturned.

"Sary's in trouble!" decided Aunt Jane.

She hung up the receiver and hobbled into the next room, immediately returning with a magazine pistol. With this firmly clutched in one hand, the other manipulating the cane, she hobbled out and began hallooing as loudly as she could. But her voice was not strong and Sam Cotter was in a far field.

"Sary's bein' murdered," she reflected in her deliberate way, "and somebody ought to go to her."

At the lane gate, beside the horseblock, stood Dan Brown's horse and open buggy. Dan had asked for Sam half an hour before and, directed by Aunt Jane, had gone to the field to find him. The horse, being gentle, was not tied.

Aunt Jane, with some difficulty, mounted the horseblock, climbed into the buggy, laid the pistol on the seat beside her, picked up the reins, and said, "Gid-dap!" Up to this time she had been as cool and deliberate mentally as her infirmities compelled her to be physically, but as the possible meaning of those screams sank deeper into her mind she began to get excited. Her mind conceived a hundred different plans.

She raised the pistol over her head, shut her eyes, and pulled the trigger

It occurred to her that she might have brought Sam in from the field by firing the pistol. It was too late to change her plan now, but she could still notify him that something was wrong. She raised the pistol over her head, shut her eyes, and pulled the trigger.

The effect was electrical. A horse may be very gentle and still object to firearms in his immediate vicinity, especially after being stirred and pained by a generous application of whip. This one objected, increasing his pace so suddenly that only the high back of the seat kept Aunt Jane from being left in the road.

Over in the field, which the road skirted at this point, Sam Cotter and Dan Brown looked up quickly and were startled to see Dan's horse apparently running away with Aunt Jane. They made a rush for the road, where they nearly ran their legs off in an effort to at least keep the rig in sight. Nor were they long alone in the pursuit. Aunt Jane, becoming momentarily more excited, decided that a general alarm ought to be sounded, so she raised the pistol again and blazed away at intervals until she had exhausted the magazine.

Lem Quigley, leading a horse in from pasture, heard and saw and acted. When a woman who has been an invalid for ten years suddenly appears on the highway, her horse on the dead run and she waving a pistol and blazing away promiscuously, one is justified in suspecting that something is wrong and that his services may be needed. Lem mounted his horse and set out after Aunt Jane.

Josiah Perkins was just driving out into the road as Aunt Jane flashed by. "They're killin' Sary Hubbell!" screamed Aunt Jane. Josiah laid on the lash and got under way so quickly that he cut in ahead of Lem. From every side men, with or without horses, came scurrying to the road. One would not have suspected that so many people could be found in the mile that intervened between the Cotter and the Hubbell farmhouses.

Aunt Jane held the lead to the end, and then discovered that the horse was beyond control and could be neither stopped nor turned into the lane that led to the house. "There! There!" she screamed, pointing, as she swept past. Josiah Perkins, following close behind, swung into the lane. "Keep after Aunt Jane!" he shouted to Lem Quigley, and Lem, with never a pause, went on in pursuit. Others coming up followed Josiah.

Mrs. Hubbell was found, bound and gagged, in her kitchen. Her assailant had dragged her there, after overpowering her, that he might have her under his eye while he regaled himself with whatever the larder might afford. But he had been rudely disturbed by Aunt Jane. The approaching fusillade had caught, even commanded, his attention, and he moved with great rapidity out the back door, over a fence, and then on a bee line for the nearest timber, leaving Mrs. Hubbell considerably bruised from her struggle, but otherwise unharmed.

Mrs. Hubbell was relating her experiences to an excited and sympathetic group when Lem Quigley returned with Aunt Jane and Dan Brown's horse and buggy. Aunt Jane was in a state of complete physical collapse, but she rallied quickly under the influence of a few cups of strong tea and a shower of compliments.

She was finally escorted in state back to the Cotter farm. A surprise awaited them there. Mrs. Cotter had returned and was on the verge of hysterics, there being two very excellent reasons for her perturbation. First, Aunt Jane had mysteriously disappeared, and when she sought to report this fact to Sam she could not find Sam. Second, the polite young man had arrived while she was distractedly seeking to solve this puzzle and, after a few questions, had removed the telephone, apologizing profusely for what he was doing but doing it just the same.

This state of affairs at home roused Aunt Jane's ire. After her recent exploit and the compliments following it she was in no humor to permit an insignificant telephone corporation to dictate to her what she could or could not do.

"Sam," she instructed, "you hitch up something in the mornin' and let Lizzie drive me to town. I reckon if I kin rescue Sary Hubbell from a tramp I'm able to make the trip to town, and I want to show that little whipper-snapper dude that he can't come out here and lay down no law for me."

Mr. and Mrs. Cotter, seeing unpleasant possibilities in this determination, tried to dissuade her, but she was firm. "I'm goin to have my rights," she declared, "and you're goin' to have your'n. The idee that a respectable woman can be insulted and tromped on the way I been has got to be busted. What am I, that I can't listen when I don't repeat nothin'? What's that whipper-snapper dude, that he kin shut me away from folks like I had the smallpox? I'm goin' to have that telephone put back or I'm goin' to stir up a row that'll have the President of the United States dancin' a hornpipe!"

"All right, Aunt Jane," Sam agreed. "I'll git out the old carryall and drive you and Lizzie to town myself. We'll start at nine o'clock."

For the information of the reader it may be confidentially stated here that Hiram and Sarah Hubbell, after a conference with Josiah and other neighbors, left for town an hour earlier. That, however, did not deprive Aunt Jane of a suitable escort. There were half a dozen rigs waiting when Sam Cotter drove out of the lane into the road.

"What's all this?" demanded Aunt Jane.

"They're going' to town to see you lay out the comp'ny," chuckled Cotter.

Others fell in as they passed various farms, and late ones kept coming up behind, so it was really an imposing cavalcade when they finally reached telephone headquarters.

The manager, glancing out of a window at that moment, exclaimed, "Holy Smoke! here come your friends now!"

"Yes," returned Hiram Hubbell quietly. "I told you, didn't I?"

"I made all the trouble," added Mrs. Hubbell, "and now I don't care if she listens her ears off. That's the way the folks out there feel about it too."

The manager glanced again at the army that was now forming for the attack. "Oh, well," he said hastily, "rules are rules, and I can't give anybody a license to listen, but—leave it to me!"

Aunt Jane, leaning on the arm of Sam Cotter, led the way. The manager met her at the door, thus strategically shutting off a general invasion by her cohorts.

"Mrs. Wagstaff, is it not?" asked the manager, extending a cordial hand.

"It is, young man," she returned uncompromisingly, ignoring the hand.

"I can hardly blame you, Mrs. Wagstaff, for your feeling of resentment. Through some regrettable misunderstanding your telephone was removed. I beg to assure you that a man is on his way out there now to restore it. You will find everything all right when you get back."

"It's mighty lucky for you," declared Aunt Jane, "but that ain't all. I got to have an understanding—"

The manager cut her off. "Tut, tut, Mrs. Wagstaff," he said genially, "let's forget the unpleasant past. Words are useless anyway. Let actions speak. The telephone will be replaced. Sorry to have put you to so much trouble, Mrs. Wagstaff. Good day."

Aunt Jane was somewhat annoyed to find victory hers before she had even begun to fight, but after being cheered by her supporting army she permitted herself to be assisted back into the carryall.

The manager, meanwhile, was talking earnestly to the polite young man. "Kill your horse, if necessary," he instructed, "but get out there and get that telephone in before she gets home."

"You bet I'll get it in before she gets home!" returned the polite young man.

F.W

Fitting Out the Little Folks for Fall

Designs by Grace Margaret Gould

Drawings by A. M. Cooper

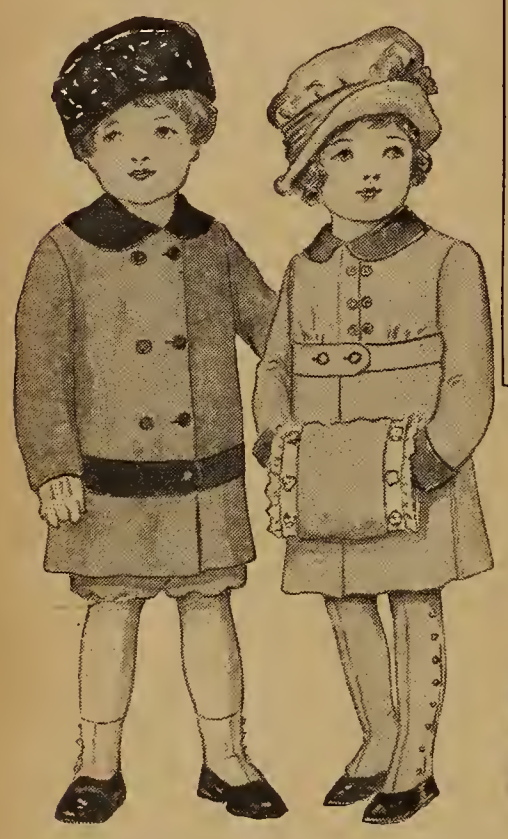
GETTING the patterns of these clothes for children is just the simplest matter. All you have to do is to make your selection at home and send your order in by mail. The patterns are sent you by return mail and you have no hurried trip to town. Stamps in payment for the patterns should accompany the order, which should be sent to the pattern depot nearest your home in order to facilitate quick delivery. The addresses of the three pattern depots are as follows: Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York City; Pattern Department, FARM AND FIRESIDE, Springfield, Ohio; Pattern Department, FARM AND FIRESIDE, Room 320, 1554 California Street, Denver, Colorado.

Wrap designed by Martha E. Davis

No. 2564—Set of Baby Patterns

Cut in one size only. These little garments are most simple, and instead of tight bands at neck and sleeves they are fastened with drawstrings run through casings. The price of this set of patterns, is twenty cents

SCHOOL DAYS have begun, and it is time to select the children's clothes. This page offers a variety of helpful ideas to the mother who wants simple, serviceable clothes that will also be good-looking. There are coats for the little girl, which may be lined or not, as preferred, and made of such materials as soft wool mixture, serge, cheviot, and gabardine, and a coat for the small boy which should be of serge or worsted. The dresses for school are most practical of flannel, serge, cashmere, or gingham, while the little boys' suits may be of serge, cheviot, or gingham. For the tiny baby there is a complete but simple layette illustrated on this page in pattern No. 2564, which can be obtained for twenty cents.



No. 2552—Child's Coat in Two Styles

6 months to 8 years. Material for 4 years, two and one-fourth yards of thirty-six-inch; three-eighths yard of contrasting. Pattern is ten cents

No. 2440—Set of Child's Patterns, Including Hat, Coat, and Muff

Pattern cut from 2 to 10 years. The price of this set of patterns is ten cents

No. 2427—One-Piece Apron with Pockets

2 to 6 years. Quantity of material required for 4 years, one and one-eighth yards of thirty-inch material. The price of this pattern is ten cents

No. 2427

No. 2531—Belted Coat with Sailor Collar

2 to 12 years. Quantity of material required for 8 years, two and three-eighths yards of thirty-six-inch material, or one and one-half yards of fifty-four-inch material, with one-half yard of contrasting material, satin or broadcloth, for the sailor collar and cuffs. The price of this coat pattern is ten cents

No. 2590—Dress: Flounce Skirt

4 to 12 years. Material for 8 years, two and one-fourth yards twenty-seven-inch, three-fourths yard forty-two-inch plain, one-fourth yard lace, seven-eighths yard lining. Pattern, ten cents

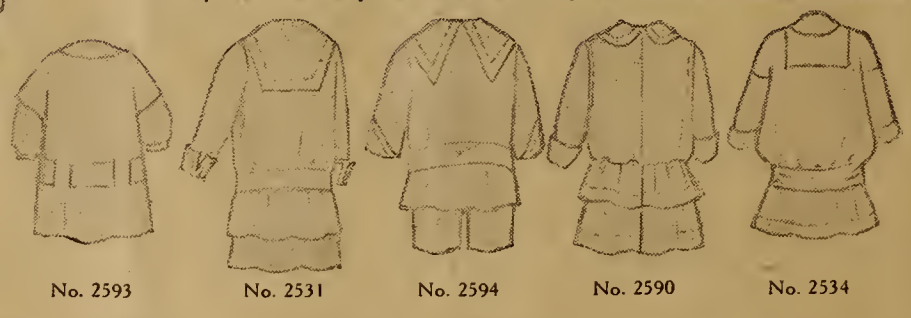
No. 2590

No. 2507—Boy's Oliver Twist Suit

2 to 6 years. Material for 4 years, one and one-half yards of thirty-two-inch material for the blouse and one and one-half yards of thirty-two-inch material for the trousers and collar and cuffs on the blouse. Pattern, ten cents

No. 2594—Double-Breasted Suit: Straight Trousers

2 to 6 years. Quantity of material required for 4 years, two yards of thirty-six-inch material, or one and one-fourth yards of fifty four-inch material, with one-half yard for collar and cuffs, which may be of linen, pique, or plain-toned cloth in contrasting material. The price of this suit pattern is ten cents



No. 2593 No. 2531 No. 2594 No. 2590 No. 2534

No. 2421—Russian Blouse Dress: Kilted Skirt

6 to 12 years. Quantity of material required for 8 years, one and seven-eighths yards of thirty-six-inch material for the blouse, and two yards of thirty-six-inch material for the skirt, with one-half yard of contrasting material, and one-half yard of lace for dainty frill at neck. The price of this dress pattern is ten cents

No. 2593—Kimono Dress with Tucked Guimpe

2 to 8 years. Quantity of material required for 6 years, four yards of twenty-two-inch material, or two yards of thirty-six-inch material, with one-fourth yard of contrasting material for the belt and one and five-eighths yards of thirty-inch material for the guimpe. The price of this dress pattern is ten cents

No. 2440 No. 2421 No. 2552 No. 2507 No. 2553

No. 2553—Boy's Yoke Dress with Bloomers

6 months to 4 years. Quantity of material required for 2 years, four and one-fourth yards of twenty-two-inch material, or three yards of thirty-six-inch material. This dress pattern provides for both long and short sleeves and gathers at the yoke give the desired fullness. Price of this yoke dress pattern is ten cents

No. 2534—Dress with Long-Waisted Blouse

6 to 12 years. Material required for 8 years, three and three-fourths yards of twenty-seven-inch material, or two and three-eighths yards of forty-inch material, with three fourths of a yard of contrasting material and one-fourth yard of lace. The long-waisted effect is fashionable. Price of this pattern is ten cents

The Housewife's Interests

Helps for Washday

By Kilbourne Cowles

WHILE among enlightened people there is no way of entirely avoiding the weekly turmoil of the washtub and ironing board, there are ways, and easy ones too, of mitigating its terrors.

In the first place, a careful study should be made to reduce the size of the washing without interfering with family comfort or lowering the high standard of cleanliness which makes home delightful. A woman who set her mind upon this problem last year when her family moved from a city house to the country found that she lessened the articles to be washed fully one third. She put all the white counterpanes they had used in the city in the bottom of a trunk and covered the beds with gaily flowered spreads made of cretonne. They looked very pretty and fresh, and were used all summer without needing laundering. During the summer she substituted a centerpiece and doilies for the tablecloth, so there was no washing and ironing of those large pieces on the hot summer days, and the table with its lace-edged doilies, so easy to launder, looked exceedingly cool and dainty. Besides, if Miss Baby dropped jelly at her place, or impetuous Brother spilled the gravy, it was not necessary to remove a long cloth.

She began the custom of having the sheets and bath towels folded for the cupboards as they were taken from the line.

Hand towels, pillow slips, and napkins were quickly put through the inexpensive mangle she purchased, and some of the children's coarser handkerchiefs were treated in the same way.

The nightgowns and underwear for all the feminine members of the family were made of the popular white seersucker which requires no ironing, and trimmed with a heavy lace that shook out in the breezes and needed no pressing. Blue and light brown seersucker shirts and blouses clothed the boys on week days, and one starched shirt each for Sundays was the sum of the ironing in that line. The little girls wore colored seersucker frocks, and even their best dresses were made of the soft white crêpe which, like their mother's blouses and gowns of the same pretty and becoming material, were ready to wear when taken from the clothesline.

"I think," said this little mother as she expounded her system, "that the doing away with so much handling of the clothes, the sprinkling and folding as well as the ironing, has done more than any other household reform could have done to iron away what my husband used to call the 'washday creases' in my forehead."

Linking Home and School Together

By Earle W. Gage

THE schools of the State of Oregon have a novel method of co-operation between home and school. It is sure to increase in other States, for it is a co-operative system that will surely succeed wherever placed in action. The work that a child performs at home is credited on his average at school. For doing given tasks in connection with the household work the boy or girl is allowed a certain number of minutes on his or her work at school. When the pupil has earned six hundred minutes by work at home, he or she will be allowed a holiday from school, with the understanding that no one pupil is to receive more than one holiday each month.

This contest is open to all pupils, and lasts the entire school term. At the end of the contest the pupil with the highest standing receives as first prize $3 in cash, and the second $2. But this money is not given outright to the children; it is placed in a local savings bank, and is a present from the district treasury.

Both parents and pupils have become most enthusiastic over this plan, owing to the resultant increase of interest in both home and school work shown by the children. One district school had a 100-per-cent. standard in spelling for one month recently. This was the Spring Valley School, the first Oregon rural school to become standardized—that is, to meet with the state definition of a practical rural school.

It would become most difficult for the average rural school-teacher to determine how best to allow points in a method of this plan. This is the manner in which the Spring Valley school-teacher allowed credits:

Boy winner: Went to bed before nine o'clock, 5 minutes; cut wood, 10 minutes; fed cows, 10 minutes; fed horses, 10 minutes; fed hogs, 10 minutes; fed hens, 10 minutes; collected eggs, 10 minutes; cleaned horses, 10 minutes; milked cows, 20 minutes; total, 95 minutes.

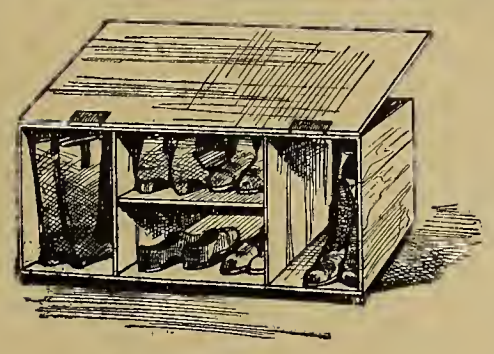
Girl winner: Went to bed before nine o'clock, 5 minutes; made one bed, 5 minutes; turned separator, 10 minutes; put separator together, 10 minutes; fed chickens, 5 minutes; gathered eggs, 15 minutes; washed and wiped dishes, 15 minutes; prepared supper, 30 minutes; total, 105 minutes.

I presume that most of these rural methods of awakening a new interest in the lives of the pupils have arisen from a great need. This was the case with the Oregon plan. The teacher found that she had one scholar who failed to take interest in the lessons at hand. So she said that instead of allowing the usual ten points on lessons, the scholars need do only five problems in algebra, and by doing work at home, as outlined, credit would be given for the five points. To the great surprise of the teacher the pupils returned with the usual ten problems well done, in addition to which they had performed the duties at home as assigned. Thus the co-operative method between home and school saw its dawning day of birth; a great need has resulted in a great method by which home and school are linked together.

This method will help farm boys and girls to learn how to do the little things about the home which they might pass into years of maturity without learning: the simple art of housekeeping; the care of farm stock and implements; the best method of making a home a place for loving and co-operative work instead of a mere shelter. The school and the home must co-operate in their work if the child is to come to his fullest capacity as a citizen.

Box for Boots and Shoes

IN MANY kitchens it is necessary to have several pairs of men's boots and shoes kept where they will be dry and warm. A receptacle for holding them is easily made from a dry-goods box which may be obtained at any store. A convenient size for this box is two feet high, three



or four feet long, and from twelve to eighteen inches deep. For the drop door two matched boards one foot wide and the length of the box, and one-half inch thick will do. Fasten this by two hinges to the upper edge of the front of the box, so that it can be dropped down over the front of the box, shutting boots and shoes out of sight. When opening the box turn the drop door up, back over the top of the box. Four casters can be put on with screws. Divide the inside of the box into compartments to accommodate boots and shoes. Stain the outside of the box. Keep it near the stove, behind it if you can, and by turning the door up the boots will quickly dry out when they are wet.

I. E. B.

Getting Flowers Ready For the Spring

It's Not Too Early Now to Set Plans for Better Ones

By Ida D. Bennett

THE busy season in the garden which is ushered in by the first hard frost does much to rob of its gloom and sadness the season of vanishing bloom and falling leafage. The fact that already we are beginning to work for another season's florescence is inspiriting. At this season, better even than in spring, may changes be inaugurated in the flower-garden, new beds laid or the old boundaries widened. When annuals are out of the way, bulbs lifted and many perennials ready for lifting and transplanting, paths that have proven too narrow may be widened and their boundaries set in new places. Some plants that have done poorly in their present situation may be moved where they will receive a more grateful amount of sun or shade, as the case may be. All this can be better done in the fall than in spring, when there is always an overplus of work and a scarcity of time.

At this season of the year a general overhauling of all the structural work of the garden should be made and fences, trellises and summer-houses put in weather-proof condition for the winter.

Most of the hardy lilies will have ripened their bulbs at this time, and where the clumps have become congested or for any reason are not doing well they may be taken up and divided.

Many of the hardy shrubs may be trimmed at this time, and all may have any dead wood cut away, and all should be given a liberal mulch of coarse manure before cold weather sets in.

All dead plants of annuals should be pulled up and consigned to the compost-heap, as well as all weeds which may have gained a foothold in the garden under shelter of the plants. All dead vines should be removed from their support and burned or placed on the compost-heap and everything about the garden made as trim as in the spring cleaning; this will rob the garden of one of its most unpleasant features—the untidy, wind-swept beds of dead flowers and weeds.

At this season one should keep a sharp lookout for all sorts of insect enemies of the flower-garden—cutworms, chrysalides of various caterpillars and the cocoons of moths; many of these will be found in turning up the soil, and others under any rubbish which exists. Where moles have made an entrance to the garden every effort should be made to trap them; driving them away is but a temporary expedient.

Moles May Not Eat the Roots, But They Make the Channels That Take Away the Water

I have never found it of much use to set traps for moles in the fresh runs made near the surface of the ground; these are feeding runs and may not be visited again, but when one can determine the run which leads to and from their burrows and set the traps there one is quite likely to get the mole. There are usually two or more of these runs, and they will generally be found running toward a tree, the roots of which form a shelter for the home which is a curiously contrived abode of many chambers and galleries. One mole caught in the fall or very early in the spring before breeding-time is worth several later in the season.

Many perennial-flower seeds may be sown at this time, especially seeds of poppies, petunias, sweet alyssum, foxgloves, and the like. It is only necessary to scatter the seed lightly and thinly over the surface of the soil and to press it firmly down with the feet or a board, and nature will do the rest. This fall sowing of seed is more certain of results than spring sowing, and the plants which come up while the earth is yet cool and damp give earlier and better flowers than spring-sown seed.

At this time, too, one may begin to prepare for winter gardening and the care of house plants by getting everything in readiness for them. Pots which will be needed should be thoroughly washed and scalded, drainage material in the way of broken pots and charcoal should be provided and a good compost for potting placed where it will be easily accessible. This should, preferably, consist of one part of good fibrous loam, one part of leaf mold or soil from the compost-heap and one part each of sharp sand and old, well-rotted manure thoroughly mixed. If this is thoroughly baked on the kitchen range so as to destroy all insect life or eggs it will be a distinct gain in the labor of caring for the plants during the winter. A quantity of each of these soils alone should be prepared for special plants, such as leaf-mold for ferns and fuchsias, loam for geraniums and sand for rooting cuttings and for putting under bulbs of amaryllis, criniums, and the like.

All plants wanted for winter blooming should be lifted before frost and brought into the house before fires are lighted, that they may gradually become accustomed to an indoors atmosphere. All shelves and tables for their use should be in place before the plants are brought in and much handling avoided.

All tender bulbs should be dug before touched by frost, but such roots and bulbs as cannas, gladioli, and the like, may be left until late in the season with advantage.

So it will be seen that most of the fall work in the garden is preparatory work for spring, and the more thoroughly it is done, the more smoothly will the work move in the early days of spring when time is at a premium.

How Shall We Build Our Homes?

The Walls, the Roof, the Size and Placement of Rooms All Need Careful Thought

By Mrs. Joseph E. Wing

WOODLAND FARM has been made famous by Joseph E. Wing, farmer, lecturer, and writer. Mrs. Wing has in turn made Mr. Wing famous by her help in the home and on the farm. At least, Mr. Wing gives her much credit for what success he has achieved. The present home (shown below) of the Wings is on the farm where they have met all of the battles of life together. Mrs. Wing here writes from her experience on Woodland Farm

ALL successful country houses have some things in common. They are true country houses. They are not city houses built out in the fields. A country house ought to look as though it grew out of the field where it stands. If possible it ought to be constructed of materials native to the locality. Thus in the mountains the house with walls of logs looks fitting, in keeping with the environment, looks homelike. Log walls make warm walls. There is great possibility of variety in planning and building a log house. It can be made very artistic and set on a good stone foundation. It will endure for a very long time. It may have smoothly plastered walls on the inside just as easily as any other house.

Cobblestones make fine walls, beautiful walls, and they are often available. One can build these walls with one skilled mason. He builds a form as though for a concrete wall, he lays the cobblestones in next the outside, and throws wet concrete mortar behind them. The concrete flows around the stones and holds them secure. As the forms are removed the mortar that has come through so as to be visible from the outside is easily chipped away. Such a wall is cheap and will endure for a thousand years. For a house it would be cold unless one set up studding inside and used lath and plaster, or he could contrive to build an air chamber right in the concrete. With cobblestones my husband built a stable on Woodland Farm. The structure is of about the size of a small bungalow. With the farm labor, aided by two men, they laid up these walls in four days. The stones we had gathered from the fields. There is something pleasant in thinking that a thing built has permanence.

Adobe or sun-dried bricks make good walls. If one can set his adobe walls on good stone or concrete foundation, if he will keep a good roof over them, and if he will coat them with cement plaster, they will endure for centuries. Adobe is cool in summer. It is warm in winter. It is dry and healthful. It is cheap too, and can be made on almost any farm.

Walls That Do Not Need Painting

The adobe wall ought to be plastered on the outside and in, to keep it from the weather. To make cement plaster adhere to adobe walls is not difficult. One begins by driving in many small pegs, letting them project from the wall about three fourths of an inch. Then he stretches over the wall wire poultry netting, galvanized. This he staples to the pegs. The wire should be tight and should cover all the wall and not quite touch it at any point. Let it have plenty of large staples. Common fencing staples will serve. Then plaster, using either Portland cement or lime and sand as you prefer. Thus done, the plaster will never crack or scale off. Roofs over adobe walls ought to have wide projections at the eaves. That throws the drip away from the walls.

The plastered or stucco wall is suitable for the country house. It is beautiful if rightly done. It is permanent. The stuccoed wall needs no paint.

Stucco is of several kinds; the rougher sorts of finish look best for walls of country houses. Many of us have built of wood and are weary of painting. Wooden walls are as easily stuccoed as any. In 1896, I think it was, we stuccoed a farm cottage on Woodland Farm, the cottage in which I then lived. I think it was the first house in America to be stuccoed on the new plan. The men of the household stretched over the house poultry fencing, the common galvanized wire netting, stapling it well. On this they plastered, using a plaster of common lime and sand mortar. The second coat was made poorer in lime than the first. Both were put on the same day. That cottage stands to-day with its walls as perfect as the day they applied the plaster. In the sixteen years it has cost not one cent for paint or repairs. Plaster adds to warmth in winter, adds a coolness in summer.

Brick and stone, for those who can afford them, are always suitable materials for country dwellings or for any others.

What of the form of the farmhouse? I like it not too high, broad and sloping of roof. An honest roof is the thing. The roof gives character to the whole house. A roof should suggest a tent, long, wide, sloping. Do not let the architect cut up the roof into fancy gables; make the roof plain, broad, wide, reaching out well, with projecting gables and generous eaves.

The material of the roof? That must depend on costs. I prefer red tiles to all other materials, but with me red tiles are cheap. I do not like metal roofs for the country: they are too harsh; they do not harmonize with the homeliness of the landscape. Shingles are everywhere available. If in a dry climate they check badly, dip them before laying in raw linseed oil. That will almost entirely prevent their checking. A little red color in the oil will give a red stain appropriate for a farmhouse roof.

The country home, as the country school, should be true to the country

The foundation walls will usually be best made of concrete. This material is now cheaper than almost any other for such use, and concrete can be applied by the farmer's own labor. Cellar walls of concrete are best. If there is fear of water entering the cellar, lay a tile drain just outside them, and between the walls and the earth put clean gravel. Do not put water-bearing clay right against concrete cellar walls. Concrete walls are not usually water-tight.

Put the cellar under all the house. It adds much to the warmth of the house. In the cellar you will install perhaps some sort of heating apparatus. I like the combination of hot water and warm air best of all. In some situations steam is better.

Avoid the Dark Cellar

Put enough light in the cellar. If it is light and dry it can be used in many ways; one can have a workbench there, and tools. There the boys can do things on winter evenings.

Make the cellar stairs very easy to climb.

Heat the house as you like, by furnace or steam, but do not omit the open fire in the sitting-room. There are grates built to conserve heat and to ventilate a room. We have two of these in our home and seven on Woodland Farm. They are very satisfactory indeed. They can be had to burn wood or coal or any other material. In mild weather such a grate gives all the heat that the house needs; in cold weather it assists the other heating apparatus.

All buildings can be made artistic and useful

Now a few words about the construction of the fireplace. Make the chimney big, give it capacious throat, and have the size the same all the way up. Thus built it will not smoke. Let the chimney come out through the roof, generous, big, suggesting warmth within, suggesting all manner of fine blazes upon a glowing hearth. Nothing more adorns a country house than a generous chimney.

Now let us go up-stairs. Observe, first, that the ceilings are low. Low ceilings are to-day the "style;" happy that it is so. The low ceiling looks better: it gives to the room an air of coziness and homeliness. It is cheaper to build a house with low ceilings, and cheaper to warm it. Let the windows be set high. That will insure good ventilation in summer; the open fire will care for that in winter. A height of eight to nine feet is right for the ceilings of the lower story of the country house. The upper story may have eight-foot ceilings. There, also, have the windows put in high to let out the upper layers of imprisoned air.

There is indeed a mighty good argument for the low ceiling in the living-room, on the ground floor of the house. It makes possible the easy stair. Between the climb of eight feet and the climb of ten is a saving of four feet. Make the stairs very easy to climb, of low rise and broad tread. Make the stair steps of good hard wood of some kind.

Concerning the up-stairs rooms: No doubt some of you will prefer the bungalow, all on one floor. Such houses are convenient for the housewife. They are, however, more costly to build than the house with part of the rooms on the upper floor. There is room under the roof that most of us will utilize because we cannot afford to discard it. Make the upper hall a light one. It is a common blunder to have a dark hallway. Make the closets big. If there is room make them four by six feet. A small window in a closet is a good thing; it can be darkened if the housewife is fearful of the sunlight fading her garments. If shallow closets must be used make their doors double ones, opening out the entire front of the closets and giving easy accessibility to all the garments.

As to the bedrooms, I had rather have plenty of small ones than a few large ones. By using the sleeping porch you will not be much in the bedrooms anyway, except to undress and put on your pajamas.

The bathroom comes next. I am more and more struck with the fact that people build bathrooms needlessly large. Who desires to stroll in his bathroom?

The Small Bathrooms are Ideal

Some of the nicest bathrooms that I have ever seen were small ones, say six by seven feet. I once enjoyed a bathroom that struck me as being about right—large enough, easy to keep clean. This room was five by six feet. It had a built-in square tub across one end. At the other end was a window (a small one), lavatory, and closet. The floor and sides were of tiles. The fixtures were good. I could see no reason for desiring more space in the room, as it adjoined my bedroom and I there disrobed. My plea is that you make plenty of bathrooms, put in two or three if you can afford it; then let them be small ones. Use the built-in tubs that rest right on the floor. They save much housecleaning labor. For the boys, why not build shower baths?

The best water-supply system for the country house is perhaps the system of compressed-air service. With this system the tank is in the cellar where it will neither freeze in winter nor become warm in summer. It can be pumped by hand, by wind power, or by gasoline. The wind is by far the cheapest power for pumping.

Screen the house. Screen every place where flies can enter. Flies are much more than an annoyance: they are a menace to the health. Typhoid is carried by the fly. Infantile paralysis is carried by the fly. There are other diseases, nearly as fatal, the contagion of which is spread by the house fly. Screen with care. If possible, screen porches as well as windows.

Considering the country house as a whole, let me suggest that it be not too large. Fine although the big, roomy country house may be, with its broad halls, its spacious rooms and its air of largeness, it is better for the housewife to have the smaller house, more easily cared for. No matter if it is a bit crowded as the children grow up, they will very likely soon go away from you, and maybe the first you know you will be left alone, you two, in the big house. A big empty house is a terribly lonely thing.

Herein is a strange thing: homes are taxed. Remember that when you build you cannot conceal your house from the assessor.

After we had built and equipped a modest eight-roomed house on Woodland Farm, costing about $4,000, we were amazed to learn that our tax was raised $75 per year. That was the penalty we paid for being in the business of raising a family of boys. Whether we accept entirely the principle of the single tax or not, it seems clear that homes should be exempt. A man with family is not more able to pay tax than the rich bachelor, but less able; yet he is made to pay more because his home is taxed. This is wrong in principle. Abolish taxes on homes.

E-W

Worth-While Fruit Exhibits

By Clarence M. Weed

I HAVE been going to agricultural fairs and fruit shows for so many years that I am beginning to feel like hedging when I state the number. I became actively interested in them years ago when the Michigan State Horticultural Society was in early vigor under the leadership of Charles W. Garfield, T. T. Lyon, and other enthusiasts, and ever since in the Middle West and New England it has been my pleasure to attend these local, state, and national shows.

I can't help feeling, however, that the fruit and vegetable exhibits in these shows have by no means advanced as they should have done in a quarter of a century. They certainly have not kept pace with the actual progress made in horticultural practice. About the only new competitive feature is the exhibit of apple packs now generally found in a show of any size. Otherwise there are the same monotonous plates of selected apples, plums, pears, peaches, grapes, and other fruits, the same big pumpkins and potatoes, and the same dissatisfaction that John Smith's plate received a first prize when anyone could see that Sam Brown's plate was "equally as good."

Even the Premium Lists Are Not Read

Now, these fairs, first and last, cost the people many a pretty penny, and their chief excuse for being lies in the claim of their educational value. The side shows are doubtless educational in a worse than useless way, but the fruit and vegetable exhibits lack the interest of variety and the real values of competition in horticultural processes.

Last season I helped judge the school-garden exhibit at a local fair, and it seems as if some of the plans adopted to make these children's exhibits of real value might well be introduced into the adult departments. The attempt here is to bring out distinctly educational features, so prizes are offered for the best hill of potatoes to include all the tubers, the best yield from a measured rod in a potato row, the best apple yield from a tree cared for by a boy, the best yield of corn from a given area, and other similar items—all of which presuppose intelligent effort on the part of the young exhibitor.

Now, any man who has trees enough can get five apples of a given variety which are large and more or less perfect. Such apples are likely to be accidental products and may sometimes be found in a neglected orchard. The awarding of a prize to such an exhibitor is not a sure sign that he is the best orchardist represented in the show, and the prize itself is no special incentive to orchard improvement. But suppose some prizes like these were offered:

Best total yield from a 7-year-old apple tree.
Best total yield from a 10-year-old apple tree.
Best total yield from a native tree top-worked ten years.
Best total yield from a renovated tree, first or second year.
Best barrel of fruit, "orchard run."

The fruit in each exhibit would generally be grouped into number ones and number twos, and would be certified by some disinterested person. The percentage of wormy and scabby fruit would of course be considered by the judges, as well as the quantity and quality of the apples.

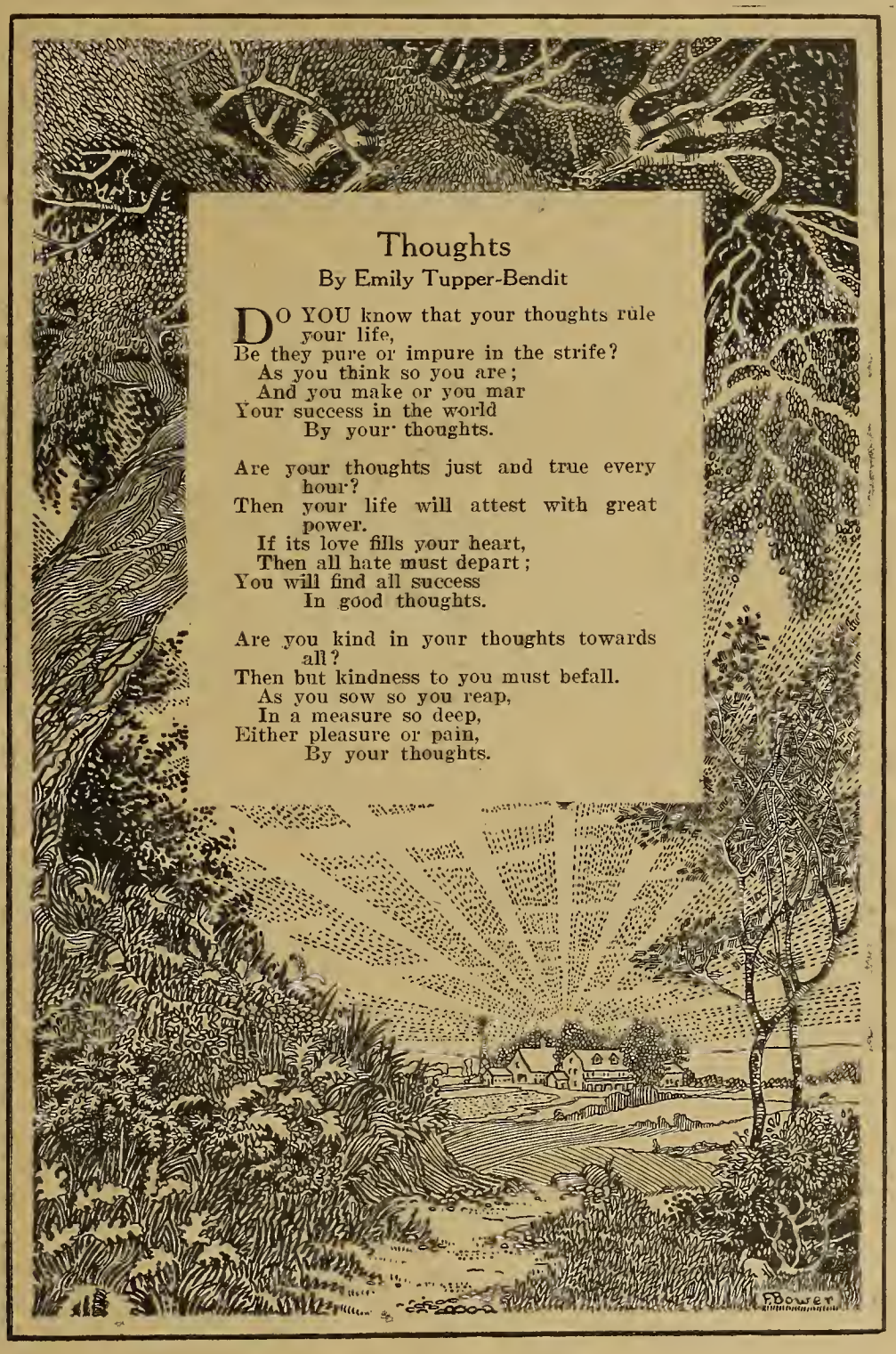
Substantial premiums along these lines would stimulate progress because the exhibits would be real tests of orchard skill. They would involve competition in all phases of orchard management, and would to a great extent eliminate the element of accident which now so largely governs many of the plate exhibits.

Similar prizes could be offered for peaches, pears, plums, grapes, and other large and small fruits.

Opportunities for this sort of discriminating premiums are especially important among the vegetables. In general the award should be based on the total yield of a unit of production, as a hill of potatoes or sweet potatoes, or one plant of tomato, squash, melons, or beans, or a given length of row of carrots, beets, parsnips, and other root crops. All this would tend to test agricultural skill and add greatly to the interest and value of the fair. Another line well worth taking up would be that of collections of varieties for special purposes. A good prize for the best set of varieties of apples or other fruits for the home orchard grown by the exhibitors would help the public to plant intelligently, and would lead to interesting discussions of the real values of varieties. Another such premium for the best set of varieties for market, grown by the exhibitor, would also be worth while, and would lead to real knowledge of market conditions.

Incentives to Real Progress

One great advantage of all these exhibits would be that they might be made the basis of talks of great value by the county advisers and extension lecturers. This is a line, in fact, that should especially appeal to the county agents who might be of great help in bringing about progress in the directions I have indicated.



More Lost People

JULU J. NOBLE MAGEE, thirty-eight years old, left Salem, Oregon, about eighteen years ago. Any news of her will be gladly received by Mrs. Sarah McCann, care of FARM AND FIRESIDE.

Chester Wallace, who left his home at Anderson, Indiana, the winter of 1912-13, is tall, has rather dark complexion, blue eyes, and dark hair. He is about twenty-five years of age. Information concerning him will be appreciated by Granville B. Lecke.

Hollas Jenkins, who left home in 1903, is a lost relative to his brother Terrel Jenkins, who last heard from him in New Orleans several years ago. Any information concerning his whereabouts will be highly appreciated.

New Books

STANDARD CYCLOPEDIA OF HORTICULTURE, by L. H. Bailey, is without doubt the most authoritative and valuable work on the identification of plant species and cultivation of the plants found in America, our new island possessions, and in Canada, of any now in print. This cyclopedia is entirely new and distinct from the one published by Dr. Bailey fourteen years ago. All who have had access to his "Cyclopedia of Horticulture" and "Cyclopedia of American Agriculture" will be eager to have this new horticultural work. Volume I, now off the press, has six hundred pages and seven hundred figures. Macmillan Company, New York City. Price, $6 a volume.

THE FARM WOODLOT, by E. G. Cheyney, is an unusually complete and attractive new book. It not only describes and illustrates all the important trees and their habits of growth, but gives tables, including such things as the fuel value and weight of dry wood, rate of growth of different trees, and rules for measuring the hoard feet in standing timber. The book contains 337 pages and is published by the Macmillan Company, New York City. Or, if you prefer, FARM AND FIRESIDE will get it for you. Price, $1.50.

THE WHITE WHIRLPOOL is now in book form as a revised reprint of the series of articles under the same title appearing in FARM AND FIRESIDE early in the year. It explains the manner in which all lines of the dairy business are so closely linked up, and shows why producers and consumers have not been able to get closer together. Illustrated. 93 pages. Published by D. S. Burch, Springfield, Ohio. Price, 50 cents, postage paid.

Farm Tragedies—How They Happen —Continued from Page 3

shows signs of ugliness is best dealt with by several men armed with pitchforks, and if he has not already been ringed the sooner it is done the better.

The advantage of dehorning both cows and bulls greatly outweighs the objections. The best way is to begin when the animals are calves and rub lunar caustic on the "buttons" from which the horns start. This is cheaper and more humane than the use of dehorning shears or saws after the horns have grown. Hornless herds show less disposition to be quarrelsome, and a man is free from the danger of being hooked by heads that are innocently but dangerously tossed about.

The Boy That Boiled Kerosene

The fictitious hired girl who poured gasoline on the fire and who has been immortalized in vaudeville jokes and songs has perhaps by her example saved many lives. Kerosene and gasoline are both used in such large quantities that we have good reason to wonder why the explosions and fires from them are not commoner than they are. One Wisconsin farmer boy made a practice on cold mornings of putting on his slippers, next starting the kitchen fire with the help of kerosene, and then finishing dressing. One morning he thoughtlessly left the kerosene can on the stove, and when he finished dressing he was terrified to hear the kerosene can boiling merrily and a fire roaring under it. With unwilling heroism and a long poker he lifted the kerosene can off the stove, but not until he had hurled it into a snowdrift did his heart slow down to normal speed.

Fuel oils themselves are not so very dangerous as liquids. But when exposed to the air the mixture of their gases with air is highly explosive in the presence of a flame, spark, or anything hot enough to ignite it, especially lighted lamps, candles, pipes, cigars, cigarettes, and of course matches. Some kerosene and gasoline stoves are as safe as a cake of ice, while others may "blow up" on slight provocation. The safety of an oil stove lies in its construction and the way it is used.

A good rule is to keep all combustible oils in a fireproof place by themselves, in a pit in the ground if possible, and fill all lamps and stoves only in the daytime. Also keep matches in metal boxes where rats and mice can't gnaw the heads, thereby starting a fire.

The Gun That Didn't Go Off

Field accidents are too varied for all of them to be mentioned, but here are a few examples. A hired man rested his pitchfork, tines up, against a load of hay. The driver, as was his custom, slid down the side and the pitchfork went through his stomach. He died in fifteen minutes. One of the narrowest escapes I ever had was cultivating corn with a riding cultivator. Rabbits had been a bad pest, and I carried with me a double-barreled shotgun, loaded of course, but the hammers were down. In trying to clean off one of the shovels with the butt of the gun one of the hammers caught and snapped up against the cap of the shell, making a good-sized dent in it. The barrel was pointing toward my head all the time, but the blow of the hammer was apparently not quite hard enough, for the gun did not go off. That was the only time I knew that gun to miss fire.

Poisons and Old Drugs

Let us not forget the poisons either. Only last summer a neighbor getting up in the night for medicine took some corrosive sublimate disinfectant by mistake, and but for prompt and skillful medical treatment would not have lived to warn others to keep poisons out of the medicine cabinet. Never take any medicine in the dark. Better still, let all "medicines" alone except those freshly put up by a skilled druggist, and if you are harboring a collection of old medicine bottles whose contents have been only partly used throw them away. They're dangerous. Paris green, wood alcohol, carbolic acid, and others in their class belong in a secure place under lock and key.

One of the most needless and therefore one of the saddest accidents I have ever known was due to a weak bridge. It was a ramshackle wooden affair, fairly safe for light vehicles, but it broke to pieces one night when a threshing crew tried to cross it. The traction engine fell on the engineer, pinning him down and burning him to death before help could reach him.

The death list at railroad crossings is a problem that our commerce commissions are doing their utmost to solve, yet over 1,100 persons were killed last year by steam trains at grade crossings, and about four times as many more were injured. Add to this the accidental deaths at traction crossings, estimated at 200 annually, and you have enough people to populate a good-sized town—if they had lived. And a letter just received from W. J. Meyer of the Interstate Commerce Commission at Washington contains figures which show that the number of persons killed and injured at grade crossings has been several hundred greater every year as far back as the records go.

Everyone Can Help in This

The most talked-of method to stop the slaughter is to demand investigations, reforms, and laws. Good. And in the meantime, and afterward too, let us individually be more careful, stop taking chances ourselves, and also more zealously than ever watch over the safety of those in our charge.

FREE TEN-DAY TRY-ON

Ruthstein's Latest Triumph

SAVE $10 to $20 a year on shoe BILLS

ADJUSTABLE LEATHER TAPS

Make My "Steels" INDISPENSABLE to Every Man and Boy for Every Purpose

"Steels" mean All-day-comfort to Every Man or Boy. Can be worn from sun-up to sun-down.

"Steels" do not absorb barnyard or stable filth and odors. Easy to wear—Easy to clean.

"Steels" protect the Man or Boy who can't pick his steps—make him tireless and sure-footed.

"Steels" keep the feet dry and comfortable in all weathers—Protect the Health the year 'round.

"Steels" with Adjustable Leather Taps can be worn at all times and places. They do not sweat the feet.

Health, Comfort and Economy Demand that You Wear "Steels" The Lightest—and Only Absolutely Waterproof—Workshoe

The World's Greatest Workshoe

Twelve years of untiring effort and the expenditure of a Fortune have enabled me to produce a workshoe that surpasses all others for Comfort, Lightness, Protection, Practicability, Service and Economy—Absolutely Waterproof under all conditions—in all seasons—from season to season—for town or country.

It cost more than a half a million in cash to bring My "Steels" to their present perfection and make this offer and announcement to you today. I recently spent one hundred thousand dollars to improve my "Steels"—make them more comfortable—improving every part of the shoe—and to increase my capacity to meet the tremendously increased demand. My latest TRIUMPH Adjustable Leather Taps—make my "Steels" the Only Practical, General Purpose Workshoe.

Saved Millions for Workers

My "Steels" have saved to workers more than twenty million in shoe expense alone, and many Millions more in doctor and drug bills—in loss of time from sickness or bad weather—because no man nor boy need fear to wear my "Steels" in the roughest storm—summer or winter—rain, snow, sleet, slush or mud.

Now, My "Steels" will save countless Millions more for the men and boys who see this advertisement—who will wear my "Steels."

My Steels—Best Health Insurance

Here is the only all-the-year-around workshoe ever invented. The shoe for every season—Cool in Summer—Warm in Winter—Dry and Shapely—always. They never Harden nor Waterlog, Scald the feet, Warp, Twist, or Leak.

My "Steels" absolutely protect the wearer from Rheumatism, Lumbago, Sciatica, Coughs, Sore Throat and other "wet-foot troubles."

My "Steels" are Foot-form-fitting—always keep their original shape. The Steel Sole is a Natural Arch Support. Nothing to Rub nor Chafe. Sure prevention and relief for Corns, Bunions, Callouses, Chilblains, and all Foot Discomforts.

My "Steels" are altogether the Best Investment you can make, Best for your Health—Best for your Comfort—Best for your Pocket-Book.

Leather-Tapped "Steels"—My Masterpiece

The Adjustable Taps of my New Model "Steels" are of firm, solid, special Process Leather, firmly attached to the wonderful sole of thin, wear-resisting, springy steel that has made my "Steels" the World's Greatest Workshoe.

Leather Taps Instantly Replaced

Then, when worn, the Leather Taps are Instantly Removed—Instantly Replaced by anyone—at home. The cost of New Taps is small—but 40c, for a full set of better-wearing, more solid leather than is ever put into the best all-leather workshoes. They last three times as long as any other taps.

The Ideal General Service Workshoe

Here—At Last—is the Ideal Shoe for every Man or Boy. Not alone for the Farmer—not alone for the Dairy, Stock or Creamery Man—the Fruit or Vegetable Grower—but for Everyone who Works or Plays—Indoors or Out—in City, Town, Village or Hamlet—Forest or Field or Range or Road or Pavement—on Mountain or Plain—in Factory or Mine—for Mechanic, Laborer, Soldier, Shopman, Sportsman—for every man who Does Things—for Every Worker.

My "Steels" stand Alone—Supreme—The Greatest and Best General Service Workshoe the World has ever seen.

"Steels" in All Sizes for Men and Boys

"Steels" run in same sizes as ordinary leather shoes and rubber boots—and in all heights. Sizes for Men 5 to 12. 6, 9, 12 or 16 inches high—for Boys, Sizes 1 to 4, 6 or 9 inches high.

You Must Try My "Steels"

You cannot begin to realize the True Value of my "Steels"—you cannot know the height of Shoe Comfort, Economy and Protection—until you try and wear my "Steels."

This Book FREE

Let me send this book to you by mail, postpaid. Read it and learn more of this great shoe with the sole of steel—the shoe with the light, springy, airy "step"—the shoe that rests your foot naturally and comfortably—always holding its perfect shape—never a "run-down" heel, broken arch, warped sole, worn toe, twisted uppers, or cracks or leaks. Before you think of buying a pair of workshoes, get this great book of shoe facts and learn about this wonderful, foot saving sole of seamless steel. Do not think of turning this page until you have sent for this free book.

You know, and I know, that the day of the Leather Workshoe is passing—that you must find something better—more Comfortable—more Lasting—more Economical—that leather workshoes are getting lower in quality and higher in price every year—that cheap workshoes are cheaply made—that even the most expensive will not last one full season.

My "Steels" are higher in grade and lower in price than any other workshoe—three to five times better value for less money.

Try "Steels" Ten Days at My Risk

I have spent a Fortune to MAKE GOOD every claim and every statement made for my "Steels." You cannot prove their worth to you unless you try my "Steels." You cannot profit by my years of effort if you lay aside this paper before writing to me.

I do not ask you to take my word nor the unstinted praise of the Million wearers of my "Steels." I'm Asking you to TAKE YOUR OWN JUDGMENT—the evidence of your own Senses.

Just TRY my "Steels"—just send the Coupon or a postal—ask for my FREE BOOK—ask for FREE DEMONSTRATION—FREE TEN-DAY TRY-ON—in your own home—on YOUR OWN FEET.

DON'T lay this paper aside until you have done what I ask—for your own good—for the sake of your Health and General Prosperity. You already know my reputation—ask any Banker—any Express Company or the Publisher of this Paper—they'll tell you I am absolutely reliable.

"Steels" for Boys

The Easy, Light, Comfortable, Waterproof, Healthy Shoe for Boys. The "Knock-about" Shoe—the Sensible, Long-wearing Shoe. The Greatest School—the Greatest Play Shoe—the Greatest All-around Shoe for REAL BOYS. No more Wet Feet. No more hot, heavy "arctics" or rubber boots. No more danger of colds or Sickness. Keep your feet "powder dry" in any kind of wet, damp, sloppy, snowy weather. My "Steels" are best to SHAPE YOUNG FEET and avoid the foot-troubles of later life. Show this to Mother! She knows what's best for you. "Steels" will save her hours of worry.

Send Postal or this Coupon

N. M. RUTHSTEIN, The Steel Shoe Man,
Dept. 21, Racine, Wis.

Dear Sir:—Please send me, postpaid, your free book "The Sole of Steel" and full particulars of your Free Ten-Day Try-On Offer without cost, risk or obligation to me.

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FARM and FIRESIDE

EVERY OTHER WEEK - - THE NATIONAL FARM PAPER

SATURDAY, SEPTEMBER 12, 1914 *5 CENTS A COPY*

ESTABLISHED 1877

FARM AND FIRESIDE AND THE WAR

A new world is coming into being.

This great world-war will not leave things anywhere on the globe as they were before.

Newspapers, magazines, and books will appear, devoted to the spelling out of the meaning of the war and what it will do to the American people.

But none of them will have in mind the effects on the American farmer.

FARM AND FIRESIDE will assume as its special duty the task of interpreting these great changes to you — the American farmer. It is better equipped for this task of interpretation than any other paper. This issue is offered as a sample to prove this statement.

Markets are changing, and will change more.

Old markets will be closed and new ones opened.

Our business of farming is attacked in the American Congress by unbalanced or designing men seeking to do the impossible for the American consumer. In times like these no interest is safe from demagogic and visionary legislators.

The time-tried old FARM AND FIRESIDE will be on guard, to guard the farmers' interests, to spell out the meaning of this chaos, and to make the dark places light and the crooked places straight.

Don't miss a single number!

WITH THE EDITOR

THERE are people who do uot believe in public schools. Herbert Spencer, I believe, was opposed to the education of its citizens by the State. He thought the public school socialistic—and of conrse it is. So are pnblic roads. Whatever we do collectively, using the Government as the tool with which we do it, is socialistic. But we have come to approve or disapprove of things nowadays, not because of the theoretical objection that they are socialistic or iudividualistic, but for reasons relating to their practicability.

Will they work? Will they promote justice and equality of opportunity? If they do we are likely to be for them. The Maryland law providing for the grindiug of oyster shells as a lime application for the lands of the State, the lime to be furnished at cost, is socialistic. I suppose; but we are quite ready to take chances on the priuciple of the thing's poisoning our institutions so long as the State fnruishes us cheap lime with no injustice to the taxpayers—and if we pay what it costs no taxpayer is iujured.

So of the public schools: we stand for them, and for their uplifting to a higher plane than they have ever reached, not because they are socialistic or individualistic, but because they work. And if they don't work as well as we think they should, we vow to keep improviug them until they do!

When I first glanced over a letter from a good friend of Farm and Fireside, Mr. Henry Cramer of Virginia, I jnmped at the conclusion that he is one of the rare persons who oppose the whole system of public schools on principle, and after reading more carefully I made up my mind—bnt why uot let you make up your minds as to what Mr. Cramer thinks? Here is his letter:

> I always read your page, Mr. Quick, with much interest and profit, but wheu you compared onr average school teacher with our hired men on the farm you could not have been wide awake. [Possibly not, even Homer nodded occasionally!—H. Q.]
>
> Where did you get the idea that it takes more of *anything*—time, money, work, intelligence—to make a good teacher or any other professional than it takes to make an equally good farm worker?
>
> If the one spends a thousand dollars and a few years at a teacher factory it is certainly not as much as the other spent who has a lifetime of learning and practice back of him.
>
> Our farm laborer has made of himself a useful man. He brings forth wealth. This we cannot say of the average teacher. He should start with the natural or God-given sense of justice and help our children develop it; but what does he do? For instance, Johnny takes a stone to help build his playhouse. "No, no!" says Teacher. "Johnny, that stone belongs to Willie. If you want it you must get it from Willie." Then, according to our perverted human laws, the teacher tells Johnny how he may legally acquire title to the stone by negotiations with Willie.
>
> But Johnny's natnral and right reasoning is about this way: "What did Willie do to that stone to make it his? He did not make the stone. He has done uo labor on it, or made any special thing of it. Willie had it before I did, but he had discarded it. . . ."
>
> Then Johnny is apt to give up to the teacher's statement, and his God-given sense of justice is warped. But this is not enough. The teacher tells him the stone belongs to Willie, the land belongs to his parents, this or that part of the earth belongs to a king, and in this way divides all natural resources among many men and calls the hodgepodge geography.
>
> If we ask the teacher to tell Johnny something about natural geography, or what God is doing and has done with the earth, we find he knows nothing about it.
>
> As Johnny grows he will begin to wonder how he and other things came here. He will want to get acquainted with the cause of all things which we call God. What more natural than that he should go right to God's works, or nature, and there seek and get acquainted with God, aud through his works learn to love and follow him? Bnt Teacher shoves nnder Johnny's nose a book made by ignorant men and filled with absurdities, and says, "This is God's word and will."
>
> No, no, friend Quick, when our teachers have learned their work as well as onr farm workers have learned theirs they will get all the pay they are worth. In subsequent paragraphs of your article you seem to take back much of what you said above, but few will understand—too much riddle; speak plainer!
>
> It is a rainy day, and you touched a vital place—that's the reasou of this letter. The intention is to help.

Mr. Cramer is not opposed to public schools, that is plain. He himself writes a better letter in penmanship, spelling, and punctuatiou than the average professional man can write. He writes on a nice printed letterhead too, giving the name of his farm, and the post-office address. His is no protest of ignorance against intelligence and the spread of intelligence. What he asks for is not lower wages for teachers but higher teaching for wages.

And I am with him up to the hilt in that demand. I don't believe, as he seems to do, that the average teacher brings forth no wealth. By no means! Step across the line between the United States and Mexico and you will step back three hundred years in all that makes for material progress.

What makes the difference? Our system of common schools. Poor as they are, inefficient as they are, far as they are below what intelligeut people know they should be, the commou schools, taught by the kind of teachers condemned by Mr. Cramer, make all the differeuce between Texas and Chihuahua, or New Mexico or Arizoua and Sonora. It is well to criticize, but it is also well to remember while we criticize that vast body of achievement on which we stand which gives us the poiut of view from which to see the defects we condemn. Mr. Cramer can see what is wrong in our schools by the light they have sent forth. But I believe he is right when he says that when teachers have learned their work as well as farm workers have learned theirs they will get all the pay they deserve. This doesn't mean, however, that teachers should get no more in salary than do farm hands. The oue is a public matter, the other a private one. We do not legislate as to the efficiency of farm hands. That is a matter to be settled between employer and employed. We have uo way of controlling farm-hand efficiency. But teacher efficiency is a public matter. And good wages sometimes must precede efficieucy.

Moreover, the teacher must plan aud originate and carry out the rearing of a crop of citizens. The farm hand does not usually plan or originate anything. He simply follows the plaus of others. He may possess brains, and the more he possesses the better hand will he be. The citizen crop is more important than the coru or cotton crop, for ou the crop of citizens depends the sort of coru and cotton crops we shall have a generation hence.

The teacher's work is more important than the farm hand's, the farmer's, the lawyer's, the doctor's, the preacher's, or anyone else's. Therefore I sympathize keenly with Mr. Cramer in his impatience with the poor, shabby work so many of these most important people are doing.

Herbert Quick

IN THE NEXT ISSUE

A Message from Mexico. Not the story of some writer who has uever seen the country, but an account of the farmers of Mexico by one of them. The author of this account is L. Gutierrez de Lara, and the story he tells shows how strongly he senses every problem now before the Mexican nation. The reason is plain. Mr. de Lara has suffered and fought with his people for the liberties they are trying to get. When Mexico was still in the iron grip of Porfirio Diaz, Mr. de Lara was plotting a peons' revolution against him. He was once imprisoned in the United States for violation of the neutrality laws. He is a man of fine education and culture. His story, written for Farm and Fireside, is a sympathetic treatment of the plight of the Mexican farmer.

Pin-Money for Farm Women. Mouey is always desirable, always in fashion. How to make more of it is an ever-present question. We will have two valuable suggestions.

Rats May Be Caught. But how? That is the question hundreds of our readers are answering in their letters to us as this issue goes to the printer. Of course we cannot print all of the suggestions given, but in the next issue we will do our best to give the top uotchers. This is but one of the contests conducted in our Headwork Shop. Others are iu constant progress.

Does Dynamite Pay? Well, if you will wait a bit, Mr. C. M. Weed will tell you whether or not it paid him to dynamite the holes for plantiug trees. Then you can decide for yourself.

Junk! Junk! Junk! What a lot of it there is, and how much of it we fail to use because we think it is nothing more than junk. The Chicago "Live Stock World" gives the following peculiar incident:

> After a life spent in accumulating scrap iron John Rush died on his farm near Junction City, Kansas, leaving a scrap heap forty feet high and covering seven acres. He was never known to refuse to buy a bit of iron offered him or to sell even the smallest piece.

Of course this man was poor because he was wealthy in junk. And if we do not guard against the junk-pile habit we may be like him. How to take advantage of the scrap pile is the question that will be answered in the next issue.

Breads Made of Vegetables. Why do we housewives ever ask despairingly, "Oh, what can I get to-day?" If we keep our eyes open there are new, cheap, and nutritious dishes constantly brought to our attention. Breads made out of vegetables! Now isn't that a good idea? Just read the recipes and you will want to try them, then make the breads and you will want to ask your neighbors in.

ABOUT ADVERTISING

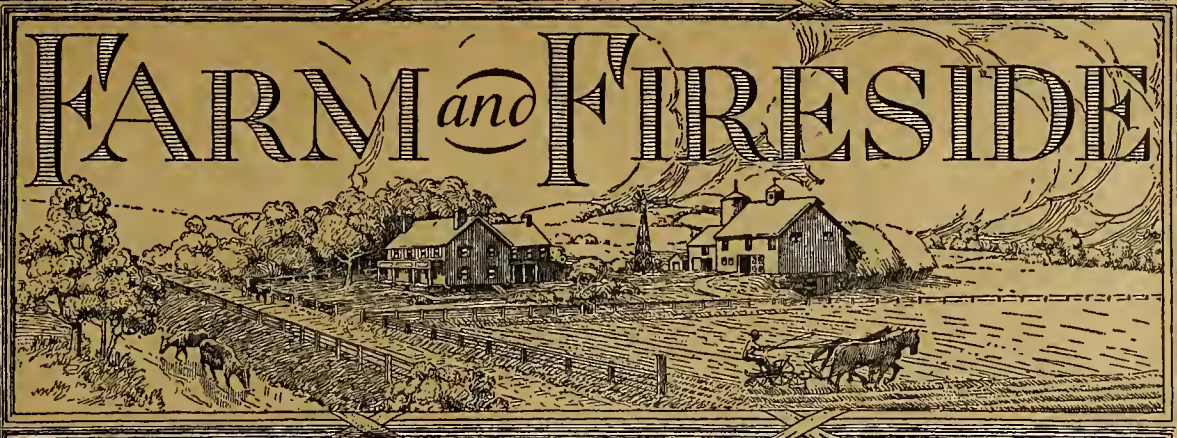
FARM AND FIRESIDE does not print advertisements generally known as "readers" in its editorial or news columns.

Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment.

If any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers.

FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. $2.50 per agate line for both editions; $1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2¼ inches, length of columns two hundred lines. 3% discount for cash with order. Three lines is smallest space accepted.

FARM and FIRESIDE



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Cheap Winter Feed for Hogs

Why Not Silage? And if We Use Silage, Why Not a Special Hog Silage?

By Herbert Quick, Editor

HE WHO would make profits by meat production must solve the problems of economy in feed. A good deal is said about the balanced ration, but at the bottom we balance the rations for our live stock so as to save money in feeding. And we do save when we feed properly.

The silo has no value at all unless it is a money value. The production of meat is a cold matter of dollars and cents, and nothing else. Winter is the season which is likely to boost the feeding expenses above the profit line, and stockmen who can solve the problem of economical winter feeding have taken the greatest single step towards live-stock profits. The silo under most American conditions is the greatest thing ever invented for keeping cheap winter feed. This article will be devoted in the main to suggestions for the use of the silo in the wintering of hogs, although it will touch upon some other phases of economical winter-swine husbandry.

Summer Pasture the Year Around

What is the secret of the success of the silo? Is it not merely this, that the silo is a big can in which the summer pasture adapted to the feeding of cattle and sheep is put up for winter? The summer pasture usually siloed is corn and occasionally some other things. Corn silage is just the thing for the ruminating animals with their large stomachs, but while it has been fed in small quantities to hogs it has not been much of a success in that line. Carmichael of Illinois informs us that he knows of only a very few farmers who pretend to use silage for their hogs, and those who do, use corn silage. Most of the silage fed to hogs is corn silage, and is given them more as an appetizer and to vary the monotony of winter feeding than as an important part of the ration.

In Henry's "Feeds and Feeding" it is stated that "May of the Kentucky Station found that hogs receiving shelled corn and corn and soy bean silage made larger gains than those fed shelled corn alone, 100 pounds of silage equaling 22 pounds of corn in feeding value." At the Ottawa Experimental Farms, "clover and alfalfa silage invariably proved useful, and corn silage was fairly well eaten. The addition of some dry meal to the silage caused it to be eaten quite readily. Clover, alfalfa, or other legume silage should generally prove more satisfactory than silage of any other kind. Silage from the corn plant is both too woody and too low in digestible matter to serve with any satisfaction as a feed for swine that are being maintained."

It has seemed to the writer that Dean Henry is right in believing that while corn silage is a poor hog feed, the same is not true of silage made from clover, alfalfa, cowpeas, soy beans, peanuts, Canada field peas, and other legumes, or of rape. These crops are the best summer pastures for hogs. They are rich in feeding value and have not so much crude fiber in their composition as corn. Hogs will do well on them in summer with very little grain. Why should they not do just as well upon them in winter? If they can be put up successfully for winter feed for hogs, why can we not make the silo as useful to the hog raiser as it is to the cattleman?

There is Not Much Evidence

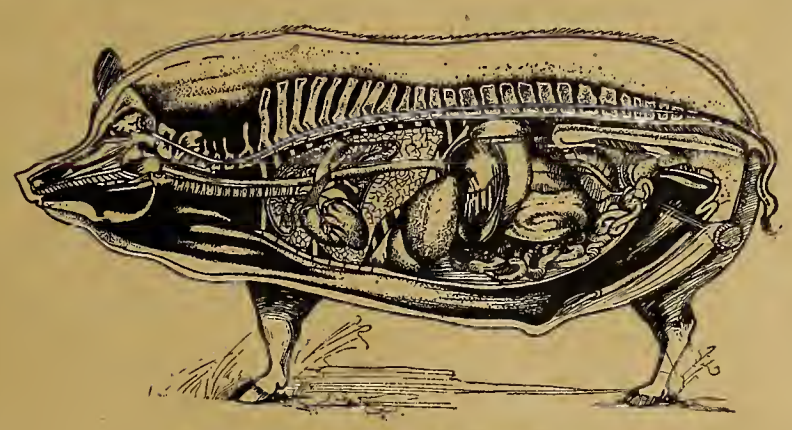
For the purpose of developing this idea we sent out to the experts all over the United States a letter asking what had been done in the way of testing legume silage with hogs, and whether or not the idea was thought worth considering.

None of the experiment stations have done any work at all in an exact way on the subject, but whatever has been done seems to be favorable to the idea. True of the Nevada Station gives us the results of some experience. He says: "At the University of Nevada we have used alfalfa as silage successfully for a number of years, and have fed alfalfa silage with marked success to brood sows. This work was not carried out in a laboratory way, and we have nothing available except the statement of our experience that the sows learned to eat the silage readily; that they thrive, and successfully raise good-sized litters of strong, healthy pigs. The usual amount of grain, of course, was fed in connection with the silage." I do not understand by this that the sows were fed as much grain as they would have needed if they had had no silage.

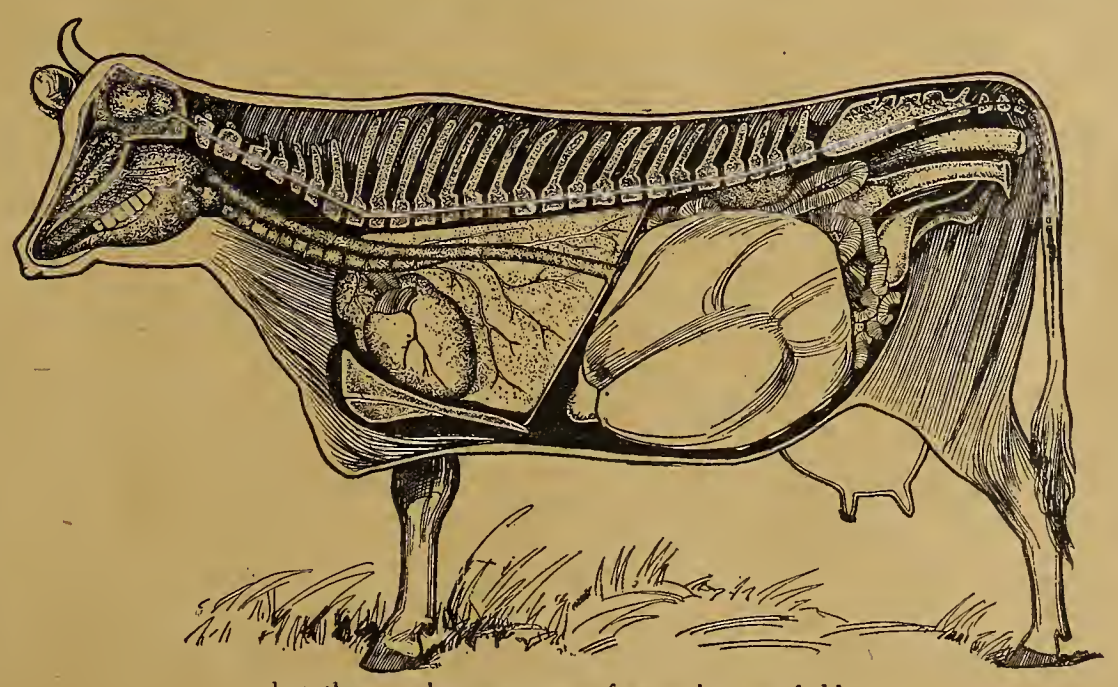
The Hogs Liked Clover Silage

Flint of Montana informs us that he has fed some clover silage, but the quantities consumed were never recorded. He adds, "The hogs seemed to like the clover silage very much, and did well on it. We are contemplating work of this kind in the near future." Cochel of Kansas has seen alfalfa silage fed to hogs with good results, but he adds, "there was no record kept of it, nor do I know of any place where I can refer you for information." Carmichael of Illinois tells us of one farmer who has given small amounts of legume silage to his hogs for two seasons, but this particular farmer is not very enthusiastic about it. Thus it will be seen there is very little experience on which to base an opinion, but what there is seems to be in favor of this feed for hogs.

The opinions of such competent men, even when they have had no experience, is very interesting. For instance, there seems to be a very wide-spread belief on the part of the animal husbandry experts that it is either difficult or impossible to make good silage from leguminous crops unless they are mixed with corn or some similar forage. Thus Willoughby of Florida says: "The trouble with pea vines and beans in the silo has been that they get slimy and strong, so that cattle do not relish them. It may be that hogs would not have any objection to such material." Iddings of Idaho tells us that "in the southern part of the State last year several farmers found that they did not have enough corn to fill their silos. They had a great deal of alfalfa, and the upper portion was filled with alfalfa. In some cases this was put in very green and came out very wet and sour, and while the animals ate it readily they did not seem to like it as well as the corn silage." In spite of the sour and wet state of this silage, Iddings informs us it was fed to hogs and gave excellent results, especially with brood sows. Cooley of Rhode Island writes: "About the only thing that might make the experiment of feeding ensiled legumes and rape impracticable would be the difficulty of saving such feeds in the silo if cut when containing a high water content. While to advance more towards maturity would increase the chance for such saving, the silage might become too woody for the hogs."



See how small the hog's stomach is—



—but the cow has mow-room for much more fodder

I Believe Good Legume Silage is Possible

Mumford of Missouri is confidently of the opinion that "none of the crops usually employed for hog forage in the summertime can be depended upon to make good silage when stored in the silo without mixing with some other material. It is of course possible that we do not yet know all there is to be known about storing various forage crops in the silo. We may learn to make good silage from soy beans, cow peas, rape, etc." Minkler of the New Jersey Station says: "Our experience with alfalfa in the silo suggests that the fermentation incident to ensiling is so intense that probably its usefulness as a feed has deteriorated." Simpson of New Mexico says: "Of course it has generally been the opinion that good silage could not be made from these crops, and also that with some of them there was no advantage in making them into silage instead of hay." Johnson of West Virginia says: "The general fact seems to be that these crops are too watery to make a good quality silage. The trouble seems to be to get enough dry matter in the ration when feeding a silage made from these crops." In spite of these views, however, I believe that good silage can be made of leguminous crops.

Some years ago H. F. Ring of Baldwin County, Alabama, made excellent silage of cowpeas. The writer saw this silage in the process of feeding, and it was certainly as dry and palatable for cows as any corn silage he ever saw. Mr. Ring attributed this good condition to the fact that he waited before ensiling until the cowpeas were matured—until many of the pods were yellow. Iddings of Idaho suggests that alfalfa can be ensiled without a silo by putting it in large stacks, fresh from the mower, and letting it go through the stack-burning process. The outside hay becomes compact, forming an air-tight layer, and the inside goes through the true siloing process. This process is used in the West where there is little rainfall.

Alfalfa Silage for Cows

Cooley of Rhode Island placed finely cut alfalfa in the silo in June 1911, and fed it to dairy cows in the August following. "By that time," he says, "a fairly high acid content had developed, and in color the alfalfa was much darkened, but the cattle seemed to relish it and responded." Wheeler of New York advises us that alfalfa silage was used in 1913 at the Geneva Station, and that pea-vine silage has been used in that vicinity considerably during recent years. Minkler of the New Jersey Station has had considerable experience with leguminous silage, and suggests "that the fermentation incident to ensiling is so intense that its usefulness as a feed has probably deteriorated; however, where alfalfa or cowpeas or rye or soy beans were mixed with green corn at the time the silo was

E-W

filled, utilizing, of course, a relatively larger percentage of corn, the silage was exceptionally palatable and nutritious." Smith of Minnesota also states that "the chief difficulty in converting such material into silage is that plants rich in protein deteriorate more in the process of ensiling than plants rich in carbohydrates, like corn. This is due to the breaking down of the albumenoids during the process of fermentation. I should not advise the making of silage from alfalfa, as the last cutting, which is usually used for swine, is usually harvested at the time of year when it is not damaged by rain." On the question of whether or not legumes will make good silage we have the additional testimony of John Y. Beaty of California, who reports that many farmers in California have found that they can get good results by the putting of alfalfa into the silo. He speaks especially of the experience of A. W. Foster, who puts the last cutting into the silo in the same stage of development as when it is cut for hay. "Silage," says he, "is always kept in splendid condition, and the cattle have eaten it with just as much relish as if it had been green alfalfa."

The facts seem to be that while there have been some failures in putting legumes into the silo, there have been so many successes that there is no reason to doubt that it can he done so as to produce good silage.

Will it pay to put up such silage for hogs? Of course this silage could not take the place of grain. It would not do for a fattening ration. The most it could do would be to take the place of pasture during the winter season, and if it could do that successfully it would certainly justify the erection of a hog silo for the man with a large number of swine, unless, as Hills of Delaware suggests, the cost of ensiling is prohibitive. There seems to be no reason why it should cost any more to ensile leguminous crops than to put up corn, and it seems to me that it is worth while for any farmer who is in position to do so to try the plan out.

What Does it Cost to Ensile Legumes?

Many of the experts, while not informed on the question, believe that it is important. Several of the experiment stations inform us that they are intending to undertake some test work on this subject. One says: "The questions you write abont concerning supplementary crop for silage are very important in this State, and should by all means be worked out. An animal husbandry man in an Eastern State says: "I think the problem might well be worked out in this State." Another says: "I recognize the logic of your statement." Burns of the Texas Station says: "If the making of silage from the different legume crops, rape, etc., could be done with success, it certainly would be a great factor in the cost of producing pork. It is a line of work that certainly merits thorough investigation." Another says: "I shall certainly keep this in mind, and at the first opportunity shall endeavor to do some test work along these lines." Faville of Wyoming writes: "I agree with you that the problem is an important one, and I hope soon we may be able to throw some light on the subject." Smith of Mississippi, Garrigus of Connecticut, Smith of Minnesota, and other animal husbandry experts write in a similar vein. Carmichael of Illinois says: "It is very true that the legume silage may be much more valuable than the corn silage for hogs. This we are not prepared either to affirm or deny." Corbett of Maine says: "Of late I have had this very question propounded to me several times. I see no reason why silage such as you mention cannot be made an ideal winter hog food. King of Indiana says: "I do not know of any trials having heen made of siloing forage crops for hogs. It looks on the face of it, however, that it would not be an impossible task to secure excellent feed for hogs in winter hy siloing a forage crop. This should he a subject worthy of investigation by the experiment station having opportunity to do so."

Some of these experts feel that under their conditions there are other things more available for winter feed for hogs than alfalfa silage. Thns Caine of Utah writes: "In this section we can grow roots to such good advantage that we worry very little about winter feeding of hogs, for the roots furnish the succulence, and furnish it very cheaply." This investigation has led me to believe that it will pay us all to consider carefully the growing of root crops for the winter feeding of hogs. Fuller of the Wisconsin Station writes: "As a substitute for your idea I should like to suggest that, to serve the purpose which you are trying to meet, the mangel, usually called the sweet mangel, is a most excellent succulent food for swine in winter. A breeder near-by Madison winters his brood sows almost entirely on the sweet mangel, giving only an ear or two of corn per day in addition to these roots. While there are no experimental data on the use of this particular mangel, I am convinced it is a very valuable food, and in our new hog house, about to be constructed, we are making a root cellar for the purpose of storing this sort of winter feeding." This practice of feeding root crops to hogs in winter having succeeded in localities as widely separated as Utah and Wisconsin is well worth the attention of swine growers everywhere.

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> "I see no good reason why silage from legumes should not be profitably fed to hogs during the winter months. The argument that it is too bulky does not hold good as I see it."—Jordan of Louisiana.
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> There seems to be no doubt that silage made from legumes is far better as a winter feed for hogs than is corn silage, but whether it is as good as legume pasture in summer is not yet settled. Neither can it be said yet whether or not such silage is better than alfalfa hay, but there are many reasons for supposing that it is better.

Willoughhy of the Florida Station reports an experiment there in which sweet potatoes and cassava were put in a layer of about one inch thick of each of these crops about halfway down in a 26-foot silo, and made splendid silage, which was eaten with a relish hy the dairy herd, but ordinarily root crops can be preserved more economically than in the silo. Many of the animal husbandry professors are inclined to think that alfalfa hay is just as good as a winter feed for hogs as alfalfa silage would he. These reports are mostly from the West where the last cutting of alfalfa is put up in dry weather and in splendid condition. Mayo of the Virginia Station writes: "The objections which occur to me are: the silage is sour and the hogs only eat relatively small amounts of it, as it does not seem to agree with them unless fed with a relatively large amount of other food. Unless one were handling a large number of hogs it would not pay to pnt up clover or other nitrogenous plants, as the waste would be too great. I think that more extensive experiments are needed along this line, but from a practical feeder's point of view I do not think the prohabilities are favorable."

Anything Green is Good for Hogs

Wilson of South Dakota believes that a little silage of any kind is good for hogs during the winter months. "Anything of a green nature," says he, "is excellent for hogs, and especially during the wintertime." Mumford of Missouri says: "A fact which must be taken into account is one that has to do with the physiology of nutrition as applied to the hog. The hog has a very small stomach. He suffers more than any other domestic animal from the results of excessive fermentation in the alimentary canal. It is possible for this reason that silage in any form may never prove to be a desirable roughage for swine." Mumford believes it is better to feed legnminous hay to hogs without silage made from any crop. Minkler of New Jersey suggests: "As to whether this practice would be practical, it occurs to me that swine during the winter season do not especially require succulent feed; at least, corn-belt farmers should arrange to dispose of the bulk of their market hogs prior to the first of January, and they could not in any event afford to feed such silage products to their fattening animals, for such feeds would be too bulky and non-fattening. As for brood sows, it is my judgment that alfalfa hay in racks, and ear corn supplemented with either skim milk or tankage solution, is even more desirable than succulent feeds, and the alfalfa can he cured and stored to hetter advantage and with more economy."

Another view is taken by Jordan of Louisiana, and others. Jordan says: "I see no good reason why silage from legumes should not be profitahly fed to hogs during the winter months. The argument that it is too bulky does not hold good as I see it, for it is essential to develop and distend the alimentary tract of the growing pig in order that it can consume and convert into pork a large amount of grain when being finished for market."

There was much of agreement in what the various live-stock authorities over the country said on the question of legume silage and the possibility of its use for hogs, and there was mnch disagreement. Where the disagreement was radical that fact was usually due to two things: the cropping systems snrrounding the work of the men were different, and neither had done any real work along the lines of our inquiry. However, pretty definite ideas had been formed as to the use of alfalfa and similar crops for silage, hut as to the use of rape in any way other than directly from the field we could get very little information.

Very little discussion was given in our letters from these gentlemen to the matter of putting rape into the silo. Simpson of New Mexico suggests that there is entirely too much water in rape to make good silage, but Evvard of Iowa regards the subject of preserving rape for winter feeding as a very important one because of the fact that it cannot be made into hay. He says: "Of all the hog crops that grow with us, rape is perhaps the richest in protein on the dry-matter basis. Practically we find that hogs on rape require less supplement when fed corn than when pastured on any other crop. Not even Queen alfalfa is to be compared with rape in this regard."

Rape is Like Skim Milk

Evvard intends to do some work with rape and alfalfa. He says: "We have chosen rape because it cannot be made into hay. It is either a question of pasturing or feeding as a soiling crop or making into silage. One theoretical possihle handicap in the making of rape silage is that it may be on the skim-milk order; namely, very wet. I am not sure that with rape one conld walk into the silo without going to the bottom. In three analyses made in June on rape, the entire plant showed respectively 92, 92, and 88 per cent moisture on the field basis. This is almost like skim milk. The field samples of alfalfa, on the other hand, show only ahout 75 per cent moisture, which is some 5 to 10 per cent more than we figure to he present in good corn silage."

Rape being so largely composed of water, I should like to suggest to some of the experiment stations that the experiment be tried of putting rape into the silo with matured corn or corn fodder, letting the rape take the place of the water which must be added in such cases. Rich in protein as it is, rape with corn might make an excellent silage; but I should not advise any farmer to try it nntil it has been worked out experimentally.

I do feel, however, that the matter of making silage of such crops as cowpeas, soy beans, clover, alfalfa, field peas, and the like is one that any farmer is justified in experimenting with. These leguminous crops have been successfully made into silage and fed to cattle and sheep, and in several well-authenticated instances to hogs. While there are some theoretical objections to the feeding of silage to hogs, in practice it seems to work, and any silage which is left over in the silo from hog-feeding can be used for other live stock. I shonld not advise any farmer to build a silo especially for hog-feeding unless he is operating on a very large scale. The small farmer would scarcely lose anything hy trying the experiment if he has the silo and is not using it for corn, and even if he is doing so he may give the matter a partial test by mixing the legumes in with his corn silage, and watching the resnlts when he feeds it to his hogs. There seems to be no douht that silage made from legumes is far better as a winter feed for hogs than is corn silage, hut whether it is as good as legume pasture in summer is not yet settled. Neither can it be said yet whether or not such silage is better than alfalfa hay, but there are many reasons for supposing that it is hetter. All of us should prepare in future some cheap winter feed for onr hrood sows and young hogs, and while waiting for the experiments and tests of legume silage we might nse mangels, and perhaps such root crops as sugar beets, sweet potatoes, and cassava, where profitahle, as a source of succulence.

E-W

He Was Tired of Farming

By Chas. B. Driscoll

BOLD Cincinnatus, plowing corn, receives a special wire which says:

"Rome calls you, Brother, and sure her need is dire! Come on at once by motor and save us from our foes. Your Ancient Pal, Augustus."

And Cincinnatus goes.

So reads the story in the books. Now listen while I tell the truth of that old fable, which I have studied well.

"Giddap!" yelled Cincinnatus. "I'll tan your ugly hide!" He hit the off mule with a spade. You surely would have died if you had heard this Roman Knight belaboring those mules. He'd lost his temper, cracked his voice, and broken all his tools.

This wealthy Roman pool-hall man plowed corn just for a fad. He had inherited a farm and auto from his dad. The shortest way around his waist of late had grown apace. His doctor, chef, and tailor man were smitten with disgrace. A slender form was stylish then. His front was out of date. When Cincinnatus saw the doc, the doc said "Amputate!"

So Cincinnatus bought a farm. Two days of plowing corn had made him cuss the afternoon on which he had been born. His hungry mules refused to move; his pride would not permit that he should call the hired man and then and there admit that he had failed to have his way with those unruly brutes. And so he pulled his whiskerettes and scowled down at his boots, the while he tried to fix a scheme by which he might retreat and yet deny to all his chums that he had met defeat.

An army tramped along the road. It Cincinnatus spied, and in a sudden burst of glee he climbed a tree and cried, "Here, Julius, take these gentle mules and tell my wife good-by! I'm going to war for ancient Rome, to fight, perchance to die!"

He climbed the fence. He looked not back. The Roughneck Rome Brigade elected him its leader. His weapon was a spade.

Now when the war was over our hero bold returned. The mules were old, the plow was sold, his wife in tears, he learned.

This is the real story of one of Rome's brave boys who reaped a crop of glory where he had sown but noise. It's not the way you've read it in story books of late, but give me this much credit: I've told the story straight.

Ten Years on Forty-Seven Acres

What Mr. Fisher Has Done Shows the Value of the Small Farm

By E. Nordman

MR. AUGUST FISHER, now thirty-seven years of age, began farming on his own account ten years ago. At that time he bought the farm of forty-seven acres which he now owns, going into debt for every bit of it. His ideas of farm life are much the same as mine. That is why I like to tell what he has done.

I believe that forty to eighty acres of good land are ample for any one family. The more any one farmer has over this amount the worse off he is. Where one family attempts to farm a quarter section or more of land the work is usually spread out so thin that real effectual labor is out of the question. With a small farm, however, intensified farming can be practiced. The owner can keep it all in a high state of fertility and tilth. He can get results.

Mr. Fisher's work on this forty-seven-acre Dunn County, Wisconsin, farm points to this truth, at least for Wisconsin.

During a farmers' institute in Mr. Fisher's town last winter he invited our institute corps to visit his farm about one mile from the town. By this means we secured the story of his accomplishments, which story, I may add, was corroborated by the townspeople and his immediate neighbors.

The Farm House Burned, Leaving Them in Need

The year before Mr. Fisher purchased his farm he rented it, and during this time the farmhouse burned while the family was away. The only property of any kind which the family saved was the clothes on their backs. We may be sure Mr. Fisher and his young wife did not have the brightest prospects to start out with. This makes what they have accomplished in ten years the more remarkable.

They are raising five children, the oldest of which is nine years, all as bright and healthy as any children you ever saw. A house and barn have been built, both of which are well suited to their needs. The house is a ten-room structure, built and planned throughout with a view to promoting the health, comfort, and happiness of the family. The cow stable and barn will house all the stock which the farm can feed, and will store the hay and straw. A permanent silo has been built, large enough for a good supply of silage.

Another very handy building was constructed two years ago. This contains the dairy, and another room in which Mrs. Fisher does the laundry work with the same gasoline engine that drives the cream separator. There is a water system on the farm that supplies all the buildings from a cement cistern built in the ground on an elevation not far from the house. In addition to these improvements Mr. Fisher installed an electric lighting system a year ago; the power for operating this is also furnished by the gasoline engine in the dairy room. All buildings are lighted by electricity. In addition to the foregoing, Mr. Fisher purchased an automobile last fall at a cost of more than one thousand dollars.

Now remember, please, that all this has been accomplished in ten years on a forty-seven-acre farm, not all under cultivation, and that without incurring any debt except the one thousand dollars which Mr. Fisher borrowed from his father, and which he used in the beginning when he was buying the farm.

Mr. Fisher has had two principal sources of income—his dairy and hogs. He had eight cows besides eight or ten heifers when we were there, and he sells about twenty hogs each year. His cream checks at a local creamery have been about one hundred dollars per month from the eight cows. Practically all the feed for these and his other stock is produced on the farm. To grow this feed Mr. Fisher practices a three-year rotation of corn, oats, and clover. Most of the corn is ensiled. The oats is threshed. Only about one third of the clover is cut, the rest being left in pasture.

Aside from the permanent improvements recounted above, Mr. Fisher's expenses are very light, as he and Mrs. Fisher do all their work except silo-filling and threshing. To get the help for these jobs he exchanges work with his neighbors at times convenient for all.

Mr. Nordman is a successful Wisconsin farmer and an efficient farmers' institute worker. He speaks after thirty years' experience with farms, farm life, and farmers

The gasoline engine does the washing too

His dairy and his hogs have built up the farm

An important item for consideration right here is that while Mr. Fisher has been extracting all this wealth from the forty-seven-acre farm it has been growing richer each year and producing a constantly increasing amount of feed. Now the question is, Had Mr. Fisher purchased a larger farm to begin with, would he have done any better or as well as he has in the present instance? He himself says that he has all the land he needs, and that more would probably be a detriment to him, and I believe he is right.

All this brings out another thought: I think it will be quite generally conceded that such men as Mr. Fisher are among the most important factors in society to-day. Yet what is society doing to encourage and promote the work of such men as he? Aside from the work of our agricultural schools these men are hindered instead of helped by the State.

In the first place, after Mr. Fisher had decided to be a farmer he was obliged to pay a speculative price for the land he bought, and after he went to work and began to accomplish things the tax collector came along once each year and forced him to pay taxes in proportion to the good he was doing. If Mr. Fisher had bought his forty-seven acres of land and held it as a speculation, or if he had farmed it poorly, the State would apparently have liked that sort of thing, and to reward Mr. Fisher would have let him off easy on taxes.

He Paid Taxes in Proportion to the Good He Was Doing

But inasmuch as Mr. Fisher is putting his land to such good use the State seems to be displeased, and in effect it fines him for every additional improvement he makes. They don't do it that way up in northwestern Canada, nor in Australia, nor in any other place where people know the value of good farming to the community. In such countries persons are taxed only on the value of their land in its unimproved state. This method proves a wonderful incentive to farmers and others to put their land to its best use. When the people of this country wake up and remove the restrictions that now hamper the industry and enterprise of its people, the August Fishers will be much more numerous than they are at the present time.

Movers Are Poor Farmers

UNDER the title "Do American Farmers Move Too Frequently?" the Department of Commerce has issued a circular which shows that too frequent shifting results in poor crops and a general run-down condition of a community. The figures are based upon census reports. Over half the farmers in the country at the time of the census, 1910, said they had occupied their farms less than one year, and more than another million had a residence of less than two years.

Share tenants were the most shifting class. They moved about eight times as often as farm owners. In the sections where the greatest amount of moving took place the crop yields were the smallest. Corn was the crop used as an example, but this effect would be even more evident if live stock had been considered, and live stock is essential to the best farming.

The condition of roads, bridges, fences, and farm buildings was poorest in regions where the most moving was done.

The usual reasons given for this condition were, first, that the tenant leaves the repairs for the next tenant to make and, second, that the tenant is usually in a poor financial condition to make such repairs even if he were so inclined.

No official recommendations have been made to correct the trouble. Work people that move have a good reason for doing so, and the big job on hand is to remove the causes. The causes are to be studied by the landlords, since tenants have little to say as to underlying conditions.

The Dime That Ushered in a Bank Account

By Lillian Grace Copp

MY SISTER and I are alone in the world. Both of us are just beginning to get within sight of the ladder of success in our vocations. Though I have been "on my job" every week in the year the pay was so small through the long apprenticeship demanded that it seemed quite impossible to save even the smallest amount.

Unfortunately my sister's work is of the kind that has "seasons," and between the closing of the summer season and the opening of the fall one is a long period of loafing.

It was after one of these intervals that I determined to start a bank account. The money must be saved in some way, but as we hired no work done that we could do ourselves saving became a problem. Yet I felt sure that if we could manage the first ten dollars the rest would be comparatively easy.

The day I made the resolve was the evening for our semi-weekly visit to "the movies." Convinced that one evening a week for this sort of entertainment was sufficient for me until I was in better circumstances, I went over to the mantel and picked up a peculiar mug-shaped receptacle made from the wood of Mount Chocorua. I was keeping it as a souvenir from a friend who had climbed the mountain a few weeks before. I dropped my ten cents in, declaring that before they were removed they would attract as many dollars. On my sister's return that night she laughingly added her dime, and instead of sitting two hours in a crowded hall we took a long tramp that sent us to our work the next morning with rested nerves and renewed ambition.

In the middle of the forenoon a friend dropped in to get some points about the work which formed our vocations. In place of furnishing the ideas gratis, I offered to give her an hour's practical assistance once each week for fifty cents an hour. She gladly accepted my offer, taking her first lesson that forenoon. I dropped the fifty cents into the mug, and the game of saving became fascinating.

There were two points on which I was firm: I would not take money from my regular income, and I would not go without necessities for the purpose of swelling my fund. Every cent earned by outside work, however, was to be saved solely for the bank account. Notwithstanding my previous ideas of economy I had spent forty cents each week for candy. This I cut down at once.

The Hat I Bought Saved Me Money

It chanced that one of the lodgers in the house was a milliner who detested letter-writing and who had just passed an anniversary. She agreed to make my hat if I would write less than a dozen letters acknowledging her presents. The work on the hat saved me two dollars, and as the letter-writing was done with "odds and ends" of time that would otherwise have been fruitlessly squandered I felt that the two dollars rightfully belonged to my growing account.

The daughter of one of my sister's customers was to be married, and when three weeks before the date set for the wedding the bride-elect sprained her hand, the addressing of two thousand invitations became a serious matter. She inquired for the address of someone she could employ evenings, and my name was suggested. I worked four evenings addressing invitations, for which I received nearly eight dollars.

By this time my sister had become as interested as myself, and all money received for working overtime, however small the amount, she gave to me. As she averaged about four hours' overtime each week, the eighty cents was of material assistance, as also was the thirty cents she saved each week as her share of treats and "movies."

I did not count the money for nine weeks, then my receptacle was full to the top. I turned it onto the table, a veritable silver shower of dimes and quarters, aggregating in all more than thirty dollars. It was money that neither of us had missed, and money that would have been frittered away had it not been for my resolve. I itemized the savings so that I might know just where and how it had been possible to save so much in so short a time. The table below gives the detailed account:

Lessons	$4.50
My sister's overtime	7.20
Addressing invitations	7.65
Saved on hat	2.00
Prize money	2.00
Lunches	2.70
Saved on "movies" (10c each weekly)	1.80
Saved on treats (20c each weekly)	3.60
	$31.45

The next two months we hope to accomplish even more, for after starting, it is easy to see the opportunities of taking in an extra dollar. It is a pleasure to discover the little leaks.

E.W

EDITORIAL COMMENT

FARM AND FIRESIDE
The National Farm Paper

Published every other Saturday by
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YOU'RE on the jury. Ever realize how many decisions of different kinds you make even in a day? And we know you like fair play.

So when you see any opinion advanced or statement made in FARM AND FIRESIDE that seems to you unfair or biased, speak up and say "Fair Play!" This issue, and every other issue, is open to criticism or approval in more than half a million homes besides your own. It's so easy to condemn on appearances Give us your views and reasons on the other side if you think only one side has been given. Even if you have only something nice to say, send it along.

HERBERT QUICK, - - - - - Editor

September 12, 1914

Grain Shipments Move

WHEAT stopped moving when ships ceased to sail at the outbreak of the great war. We stated then that farmers should hold their grain and other produce, as the stoppage would be only temporary. On August 19th the railways lifted their embargo at many ports. The ships had begun to arrive. The elevators will be rid of their surplus, and the wheat will move. It is to be hoped that freight rates across the sea will leave a fair portion of the high prices to the wheat growers.

Cut Off the Farmer's Market

THE farmer may be excused if he feels that he can scarcely afford to pay the expense of letting his European customers starve in order that his American customers may feel no annoyance or suffer no pinch. Such a policy is neither morally nor economically sound.

The Constitution of the United States forbids taxes on exports. The men who drew that instrument evidently thought that, while it is a perfectly correct thing to levy a tariff on imports, it is never proper to make the man who has something to sell abroad pay the privilege of shipping. Thus for more than a century we have paid taxes on goods coming in, but have sent our goods abroad freely.

An export tax has some advantages. For instance, when we pay for shipping goods out of the country we know exactly what we pay. The duty, every cent of it, comes out of the price we get.

Congressman Keating of Colorado has introduced a constitutional amendment making export duties legal. We need pay very little attention to that, except to make a note of the fact that Mr. Keating has introduced it.

The resolution of Congressman Vare of Pennsylvania, however, has teeth. He has offered a bill in the House not to allow Congress to hinder exports by levying a duty on them, but to stop entirely the exportation of food supplies as contraband of war.

For fifty years the farmers have voted for high import duties. They have done this to build up manufactures in order that their home market might be bettered.

But the home market will not yet consume all their produce. It will not consume the meats, the grains, or the cotton. "Last week," said Mr. Vare, "Armour & Company received a contract for 5,000,000 cans of meat. Dealers everywhere feel that the warring nations will pay big prices for food, and they are withholding the necessaries of life from the American people."

The plan of Mr. Vare seems to be to keep the farmers from getting any benefit from such orders.

In other words, when the home market promises to be exceptionally good for the farmers it is his plan to make the home market lower by destroying all others.

Yet certain Congressmen seem to favor cutting off our foreign markets at this time of world-wide food scarcity. Will the farmers calmly submit to this? Should they? We think not.

Mr. Vare's bill is an evil thing, and must not, in a time of excitement, be allowed to receive consideration unchallenged.

Sugar

THIS war in Europe has embroiled in it the greatest sugar-producing countries of the world. Most people, because we hear so much of Cuban, San Domingan, and Hawaiian sugar, think of that commodity as the product of the canefields of the tropics. But since 1840 beet sugar has, through government aid rather than its own cheapness, been driving the cane sugar out of the world's markets. In 1840, 96 per cent of the world's sugar was made from cane. Since 1900 from 60 to 70 per cent has been derived from beets.

The beet-sugar countries involved in the war are Austria-Hungary, Belgium, France, Germany, and Russia. It so happens that they are also the producers of more than half the world's sugar. A few figures will emphasize this.

In the year 1900-01 beet sugar constituted 67.61 per cent of the world's supply. In the seven years from 1902-03 to 1908-09, the average production of beet sugar of the world was 6,332,455 tons. Of this enormous tonnage the five great nations involved in the war produced nearly 90 per cent. It will be seen, therefore, that their percentage of the world's sugar is nearer sixty per cent than fifty.

How much will their produce fall off? Their armies are completely mobilized. They have been considering such labor expedients as that of teaching the children and city laborers how to do farm work, the older people acting as teachers, in order that the fields may not lie untilled. That they can produce any large percentage of their quota of sugar seems impossible. And Germany, and her ally, Austria-Hungary, which produce alone more than a third of the world's supply, are cut off from the seas, so that as things now stand they could not sell their surplus if they had a surplus.

Sugar must be high, one would think. The sugar lands of Louisiana will probably make their owners more money for a year or so than ever before. The beet growers of the United States should expect higher prices for beets than they have been getting—they should take that matter up before they plant another crop. We shall all suffer in the increased cost of sugar—let such of us as produce either cane or beets consider carefully the matter of getting our share of the consumer's dollar.

How to Sell

TWO great avenues of marketing our produce have opened up to us. First we have the parcel post, and next the new system adopted by some of the great express companies for the purpose of meeting the competition of the parcel post. Farm and Fireside has arranged to put before readers everywhere both these things. Mr. D. G. Mellor, manager of the Food Products Department of the Wells Fargo Express Company, will present the side of the express companies, and Postmaster-General Burleson is to tell us about the parcel post. These articles will tell us just how the produce from many farms is being marketed, the costs and the profits. Don't miss next month's issues!

Who Is Thy Neighbor?

WE ARE all descended from Europeans. Our cousins, brothers, and uncles are at each other's throats in the most dreadful war of history.

Let us not forget, however, that we are Americans. Let us not take sides in such a manner as to offend our neighbors.

If you are a German and your neighbor is a Belgian, visit him and show that you are still his neighbor. Be more friendly than ever. If you have never been his friend, make friends with him now.

If you are a Frenchman and your neighbor is a German, an Austrian, or a Russian, your duty as an American is to show him that you look upon him as your neighbor even more than ever.

Germany, or Austria, or Russia, or France may be to blame for the war, or all may be to blame, or the mistakes of the past may be chargeable with this awful war, but the man on the next farm is not to blame, no matter what the government of his old home may have done.

The common people of the Old World nations are not to blame—they are the victims of this war, not its cause. They are helpless pawns in the game played by monarchs and statesmen. Let us pity them, one and all. Let us not hate anyone, least of all one of the neighbors. Let us draw closer together in neighborship, and whatever horrors come to our knowledge let us remember of every people that they know not what they do, and forgive them.

This is our country. We must live in it, and we are glad of that, more than ever before. We must live in it together. We should so live now that we may live in friendship and amity after this war is over. It will be over soon, but our neighbors will live near us for a long time.

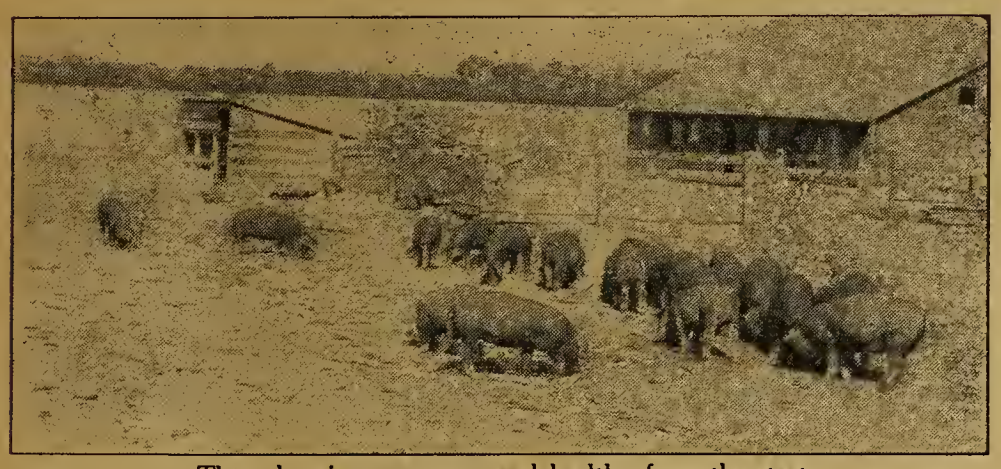
The Cotton Situation

THE cotton mills of France and Belgium have shut down. Belgium has been overrun by the armies of Germany, and every able-bodied man capable of bearing arms is in the Belgian army. France has called all her soldiers to the colors. Probably the French mills will be unable to run, even though the German invasion be checked. These mills annually buy about 3,000,000 bales of our cotton. Our greatest customer, Great Britain, is sending her soldiers to the battlefields of Belgium, France, and Germany, and has more than half a million men under arms. This does not call for any such proportion of the working population as are in arms on the Continent, and the British mills may run, as they always have done, war or no war; but in such an unprecedented struggle this cannot be confidently reckoned upon. And yet the world's need of cotton goods will be greater than ever. Poverty rather increases than diminishes the wearing of cotton—and poverty is already upon these peoples. In the face of these conditions the task confronts the American Government, the American bankers, and the American cotton industry to avert the ruin which temporarily threatens the farmers of the South. If we, in a time of profound domestic peace, cannot devise means to prevent the sacrifice of our wheat, our cotton, and our other staples which for the time only are unable to seek the markets which potentially exist for them, we have little to boast of in the matter of national efficiency.

That the lack of demand is only temporary is indicated by the fact that Japanese cotton mills, about August 20th, placed an order for 2,000,000 bales, in the expectation that Japan will make the goods for the Chinese trade, most of which has heretofore been furnished by Germany. The question is, Have we the national gumption to meet the situation? It is a test of American capacity, which must be met.

Putting the Curl in the Fall Pig's Tail

By Clement White



Then the pigs are strong and healthy from the start

WHAT the exact relation is between the profits a pig brings in and the kind of curl he has in his tail has never been officially determined. But my observations support the commonly accepted advice that you ought to get the curl well developed while he is still young. The pig with a limp, drooping tail seldom has a good appetite. With a sad expression upon his peaked face, he watches his more hardy brothers, sisters, and cousins while they eat.

How to Start the Curl

Start the curl as follows: From the day the pigs arrive feed the sow judiciously. Do not try to hurry things along by feeding her too much. The usual feed for the sow that is raising a litter of fall pigs is corn with some other element to make up a balanced ration. Corn is the stand-by. It furnishes energy along with nourishment. But something should be fed with it. Alfalfa hay is good to keep the animal in condition and help digest the more concentrated feeds, or alfalfa may be omitted and clover hay and silage fed in its stead. Meat meal or tankage is greatly superior to shorts for feed in cold weather. It can be fed dry, and therefore does not get all over the sows and their pigs.

The quarters in which the fall pigs are kept need to be dry and sanitary. The greatest danger is the surface water which may creep under the hog house during some heavy autumn rain. The sow and her pigs should always have an abundance of dry, clean bedding.

Fall pigs seldom get as much exercise as those raised in the spring. This makes them more susceptible to thumps. Young animals easily become too fat. They should be kept growing rapidly.

Along with the slop, the pigs should have corn chop or shelled corn. Feed no more than they will clean up.

After they have been away from their mothers three or four days the pigs need to run on pasture. Alfalfa is preferable.

Make Them Grow Rather than Become Fat

Make an automatic feeder which will run the feed out without waste. A good mixture is 70 per cent corn chop, 25 per cent shorts, and 5 per cent tankage. This ration along with the green pasture will keep the young animals growing fast.

The best hog raisers get their sows in good condition before the pigs arrive

The slop can be dispensed with a little at a time; the pigs will soon grow accustomed to getting along without it.

During the coldest part of the winter if the animals show a disposition to stay in their house continually they should be run out on bright days and the doors shut. A pig loves comfort and will not always take the amount of exercise best for him and the curl in his tail.

Young pigs will learn how to eat and drink before they are weaned if they are given a chance. Partition off part of the pen and have a creep hole under the partition just large enough for the pigs to run back and forth. In the partitioned division keep a shallow trough for milk. Near it provide another trough for a dry mixture containing 70 per cent corn chop, 25 per cent shorts, and 5 per cent tankage. The pigs will eat and drink what they want, and will get their systems accustomed to the different feeds.

When the pigs are weaned and are put in a pen by themselves, give them a slop for the first few days at least. This slop should contain shorts and tankage. A pound of tankage daily is enough for twenty pigs when they are first weaned. This amount is gradually increased as the pigs grow larger, until a pound is fed daily to every five or six pigs. Four times as much shorts as tankage is a good general rule to follow.

Mix the ingredients until the slop is about the consistency of cream. Water may be used, but milk is better.

F W

Horse Problems

Treating the Near-Balker

By David Buffum

A NORTH CAROLINA subscriber tells this story: "I have a mare that doesn't work well to a wagon. If I have a good load on the wagon she wants to trot up every hill she comes to. If things don't go well she balks. I can start her, but she will go by fits and jumps, not regularly. She seems to be stiff in her hind legs, and her knees swell some."

From your description of the way your mare behaves I think it very probable that there is something about your harness or other rigging that may be uncomfortable for her. A great many horses, for instance, become balky on account of an ill-fitting collar who otherwise would never have acquired the habit. In examining your rigging the collar should first be considered. The so-called Scotch collar is much the best kind for heavy work, and with a horse that shows any inclination to become balky it should be used in preference to others. I am not saying that other kinds of collars are not good ones; almost any style of collar, if nicely fitted, serves its purpose well, and I have used the ordinary leather collar for all kinds of work with perfect success. But as the Scotch collar is undoubtedly the best and easiest for the horse for heavy work it should be used when the horse shows any tendency to become balky.

Most Collars Fit Too Loosely

Now as to the fit of the collar. I think it is safe to say that ninety-nine out of one hundred of the collars in use are too large. The collar should fit so snugly as to leave just room for the hand between its lower part and the horse's neck, the latter pressing a little upon the hand. This is the best rule that I know of, though the matter may be expressed a little differently by saying that the collar should be as small as the horse can wear it without shutting off his wind.

Also examine your mare's shoulders carefully to see if they are in any degree sore, and if they are use some one of the various gall cures, in paste form, that are sold in the market. Most of these gall cures are good, and are intended for use while the horse is working.

If your mare's shoulders are not sore and she has a well-fitting Scotch collar, and all the rest of her harness is nicely fitted and comfortable, I think she will soon get over the balky inclination that you mentioned, provided only that you use her in a horsemanlike manner. To this end be always very quiet and deliberate in your movements when with her, saying or doing nothing to excite her, and giving her her own head as much as possible when starting or pulling a load. Her loads for quite a while should be rather light, gradually increasing them as she behaves better.

If your mare could be kept in a box stall with about six inches of sand on its floor, and above that a little litter, she would doubtless improve somewhat in regard to the stiffness and swelling of the limbs that you mention. A tendency of this kind is always aggravated by the horse being kept in an ordinary stall.

Tonic for Run-Down Horse

By Dr. A. S. Alexander

"I HAVE a fourteen-year-old work horse weighing about 1,400 pounds," says a reader in Oregon. "For nearly a year he has been getting poorer in flesh in spite of extra care and feed. In hot weather, in the middle of the afternoon, he gives out, and if not unhitched and rested staggers around. But the next morning he is all right again, apparently. The horse has also been troubled with worms. His hair is rough and shows that he is not in good health."

The best way to handle such a horse is first to have him clipped at once. Then work him in the cool of the morning and afternoon. Shade his head when at work, and allow cool drinking water in small quantities often when at work. Give the drinking water before feeding, not after meals. Allow free access to rock salt. In hot weather do not feed corn; feed whole oats, wheat bran, and hay. He will do better if not allowed to pasture grass when there is work for him to do. Keep the stable clean, darkened, and well ventilated.

Give the following tonic, which will kill the worms, as well as brace up the animal. Mix together equal parts of dried sulphate of iron and powdered saltpeter, gentian root, nux vomica, and fenugreek. Of this, mix one tablespoonful in the feed night and morning. Add salt if he does not care for the drugged feed. Continue for ten days; then skip ten days, and if necessary repeat the treatment. Avoid feeding hay from low, wet land, as it infests horses with worms. They are also contracted on old, close-bitten pastures where horses have grazed.

Dangers in Dual-Purpose Crosses

By Howard B. Cobb

DIFFERENT breeds of cattle are best adapted to environments in which they have been bred for generations, and they attain the best results, both as to physical well-being and profit-producing ability, in proportion as they are able to utilize the feed provided for their support. Cattle imported into this country are usually special-purpose individuals that are imported for some particular need, and after entering their new environment they must be surrounded as far as possible by conditions similar to those which they have left, and must also be provided with grazing lands or stored feeds like unto what they have been accustomed to, if the most profit is to be made out of them or their product.

However, it is also of prime importance that special-purpose cattle be kept where their products can be best utilized or marketed, and for this reason there are several different localities that are best adapted for the respective breeds. For instance, the Holsteins with their abundance of milk flow are kept profitably near some good whole-milk market, and the butter breeds can be taken into all localities regardless of market conditions, provided the farmer prefers the special butter cow and has a farm adapted to her needs. Likewise, the beef breeds are most profitably kept where feeding and grazing conditions are such that they can produce their kind to the best advantage.

Beef Cattle Preferred for Large Tracts

Provided breeds of cattle are to be kept in all localities regardless of soil conditions or topography of the country, farms can be divided into several classes, owing to their size, ability to produce

A pure-bred Guernsey sire. Such an animal begets milking qualities only

feed, and the economic needs of the farmers themselves. In our own locality here in the hill section of southeastern Ohio can be found various conditions under which cattle are kept, and in consequence several different breeds and strains of breeds are kept.

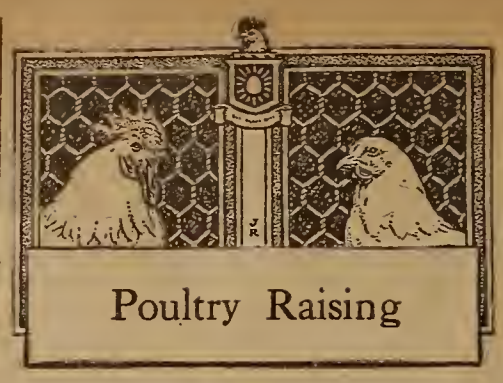
With a corporation and an estate in possession of more than 10,000 acres each, and both desirous of handling and breeding cattle as one of the most important farm operations, it is plain that strictly beef breeds are the most practical cattle for them to possess. And the managers of these two blocks of land graze this class of cattle. Wherever there is plenty of feed and grazing land and it is impossible to milk cows, the beef breeds will always find an economic place. And they will be more profitable in the future than any time in the past.

There is another class of farmers in possession of quite small tracts of land—from 40 to 80 acres—and they are numerous, that have not the feed to provide for the big breeds of cattle in the most profitable manner even though they are willing to milk the mothers of all the calves they raise. This class can and does handle the Jerseys and the Guernseys, profitably feeding their stock silage, selling the cream or butter, and feeding the skim milk to calves or hogs. With highly developed pure-bred or grade herds such farmers can profitably turn what feed they do raise into cash, more so than if they attempted to raise steers for beef.

Crossing Pure-Breds is Foolish Practice

There is a third class of farmers that possess from 200 to 400 acres of land and plenty of feed and pasture for the production of beef cattle. And while a great many of them do not care to milk many cows and would rather go out and buy weaned calves or stock cattle than bother with dairy work, there are quite a number that could and would breed, if given the opportunity, a milking strain of some beef breed rather than handle either the strictly beef or dairy types. Some of these farmers will not touch any of the dairy breeds, and others are attempting to cross dairy and beef breeds and get dual-purpose cows. Any number of Holstein-Durham or Holstein-Angus crosses are in evidence, and also beef breeds crossed with Jerseys can be found. Quite often the cows produced by such crosses are fair butter and milk producers, and their calves are usually fair beef animals; but everyone knows crossing pure-bred cattle leads to nowhere.

The dual-purpose cow, either of Durham or Red Poll stock, would be a much more profitable animal for this class of farmer; and though dual qualities are harder to keep from generation to generation than would be either quality separately, still would not the breeding of pure-bred dual-purpose cattle with producers behind them on both sides for generations be better than breeding crossed cattle that would have no fixed type? There are permanent strains of dual-purpose cattle in this country that produce milk testing over 4 per cent and are also of good beef type. Dual cows producing 6,000 pounds of milk in twelve months containing 250 pounds of butterfat, and also producing a good blocky calf, would be of better service to us than any crosses we could produce.



Poultry Raising

Cockerels Go When They Crow —Is He Right?

By Fred Grundy

WE SELL all cockerels just before they begin to crow, because they are then at their prime as first-class "springs" and bring the highest prices. The profit on them is also largest at that time. After they begin to crow and their combs develop they increase in size and weight more slowly, and rapidly deteriorate in table qualities and market value.

We sell all but a few of the very best—most vigorous and best marked and shaped. These are held for development, and as soon as they show their qualities—real shape and colors—the breeders are selected from them, a few more than actually needed, to provide against accidents, and the others marketed at once.

Every bird that is not increasing in market value, or is not held for egg production, cuts profits every day it is held. Hence everything that is not required for a specific purpose is sold when it pays the largest profit for the food it has consumed.

We have in years past held several hundred cockerels which appeared too valuable for breeding purposes to be sold in market, put a fair price on them, advertised them, and sold most of them. But after deducting the cost of food and care, advertising, shipping boxes, stationery, stamps, and time consumed in correspondence there was very little left on the profit side, so we quit the cockerel business.

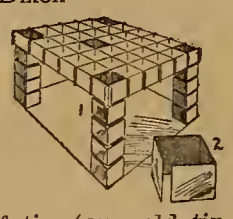
Every year hundreds of people procure a few sittings of eggs from some much-advertised breeder and imagine that every bird hatched is some high class, and they sell them as such, or advertise them as such. Probably one bird in twenty-five is really a good bird for breeding purposes, and the rest fit only for market. Hundreds of cockerels sold from much-advertised yards are not fit for breeders. When in Australia last winter a leading breeder near Melbourne showed me a cockerel he had procured from a New York breeder for a long price, and it was a miserable specimen. I felt ashamed to think that a "noted" breeder in my country would send such a bird to a foreign land. I have been bit hard myself several times, and I could sincerely sympathize with the Australian.

For these reasons, and some others, we have always raised our own breeders. By so doing we had the choice of several hundred whose breeding we knew for several generations. We never keep a cockerel that is not needed for a breeder a day after it reaches its best market size and condition, and that is just before it begins to crow. To do otherwise is to lose money, and not many care to do a losing business if they know it.

Our method of breeding and using breeding cockerels is different from those of other poultry raisers. We keep only about one third as many cockerels as others do, and we manage them so as to obtain their maximum efficiency. In short, we use our cockerels so as to conserve their strength and vigor by mating them our way with only such hens as we desire to breed from. The others—the market-egg producers—never have a cockerel with them.

Protecting Egg Shipments

By C. E. Dixon



I HAVE been successfully shipping eggs by parcel post, using a new scheme to prevent breakage. Of course it works as well if the shipment goes by express.

Take a flat piece of tin (any old tin can pounded out flat will do) six and one-fourth inches long, two and five-sixteenths inches wide (be careful of the width). Make a mark across exactly in the center. Make another mark one and five-eighths inches on each side of the center. Bend at each of these places so as to form a square (see 2 in illustration), having corner open. Make five of these tins for each of the three bottom layers in the egg case, making four for the two top layers.

Now place half a dozen sheets of newspaper in the bottom of the crate and one division pasteboard on top of the paper. Put in a tray and in each corner put one of these tin cubes. Place one tin in one of the four center places and fill the tray with eggs. Put pasteboard on top. Repeat.

The two top layers need only the corner tins. This adds about two pounds per double crate to the weight, and will make the trays last several times as long, besides saving the eggs.

I have had a crate of fifteen dozen thrown from the platform of a street car to pavement ten feet away and about two feet down, and no eggs were broken. The same treatment without the tins in the same crate broke four dozen and four. These tin cubes build up a solid column in each corner and in the center, supporting each layer of three dozen eggs direct from the bottom of the crate independently of the eggs underneath, which otherwise would have to bear the weight of the eggs on top of them.

Was the Blackhead Controlled?

IN THE issue of Farm and Fireside for April 25th we published the sour-milk treatment for the prevention of blackhead in turkeys, and other poultry digestive troubles. Any turkey raiser's experience who followed out the sour-milk feeding and other recommendations contained in the article mentioned will be gladly received.

Using Water Glass a Second Time

WE HAVE received a number of inquiries asking whether the water-glass solution for preserving eggs can be used more than once. In most cases, and for small quantities, its re-use is not worth while, because the cost of fresh water glass is less than the value of your time required to do a good job in purifying it. But purification is possible, and on large amounts of water-glass solution is well worth while. It is a satisfaction to be able to give the opinion of a practical chemist. Prof. Louis Kahlenberg, director of chemistry at the University of Wisconsin, who gives the following explanation for the benefit of Farm and Fireside readers:

There is no reason why the water glass should not be used over and over again except for the fact that the eggs are usually dirty and contain organic matter on the outside. This of course will remain with the water-glass solution to a considerable extent, and by repeated use of that solution will accumulate. To purify it, strain the dirt out by filtering through clean absorbent cotton. When the water glass has set to a jelly you will of course have to heat it up (as a rule with the addition of some water) in order to make filtering possible.

A good way to filter water glass is shown in the sketch. Use either a glass or graniteware funnel, the larger the better. Line the inside with a thin layer of absorbent cotton, putting a plug of it at the bottom. Wet the cotton thoroughly with water and then pour in the water-glass solution.

Chickens Have Sense

By M. K. Hays

AN AMUSING incident happened last summer. I had a fine flock of chickens in an old garden adjoining the yard. I cared for them, and as it happened no one else went about them for weeks. I was in the habit of taking the fresh air and sunlight remedy—not wearing a hat. One day I went toward the gate with my hat on, and the entire flock took to flight. Relieving myself of the "scarecrow" I again went into the yard, and the excitement immediately ceased.

Chickens are quick and alert to every noise, object, and movement. They observe the situation before they venture.

Chickens love and trust their master. They watch and wait for his coming. They understand every movement he makes, and know the general contents of the different vessels he carries. They are intelligent, are they not?

How a Bad Egg Looks

THE bad egg is being shoved into a corner these days. The U. S. D. A. has made with much pains a colored chart showing a dozen views of eggs fresh and in various degrees of badness. These pictures show just how the egg looks when examined through a candling apparatus, and also after being broken into a glass saucer.

The chart makes perfectly clear just how to successfully candle eggs, the kind of light and easily provided candling devices necessary. While these charts last, readers of Farm and Fireside can get one without cost by writing to the Division of Publications, Department of Agriculture, Washington, D. C.

Garden and Orchard

A Boost in Time

WE STILL have a lot to learn about feeding plants and trees. This has been again sbown by experiments carried out in the spring of 1914 by Mr. F. H. Ballou in a hungry Ohio orchard.

He found that spreading nitrate of soda on the surface of the ground as far as tbe apple-tree branches extended, just as the pink of the blossoms was beginning to show, resulted in a heavy setting of fruit. Tbe untreated trees of like age and condition which blossomed equally full, set scarcely any fruit.

The effect of feeding the nitrate of soda to the trees was apparently to give just tbe needed vigor at the critical time to develop the young fruit that otherwise would have failed for lack of a "boost" not witbin the power of the impoverished tree or soil to supply.

Making the Most of the Apples

By Inez Tweedy

WE GOT good pay for some special work given to our apple trees and marketing the crop grown in 1913.

These extra dollars have changed our ideas about the value of an apple orchard in Illinois as a source of income.

Careful pruning of the apple trees during the spring of 1913 was followed by spraying with lime-sulphur before the buds opened. Later spraying for insects and fungous diseases followed just after the blossoms fell.

Two of our most successful sellers were "Sops of Wine" and Benoni. Both varieties ripened irregularly, and were picked when just right in coloring and maturity. Two hundred half-busbel Climax baskets of the fancy grade were shipped to a Cbicago commission merchant. These apples sold for 60 cents per basket, netting us 47 cents per basket, or 94 cents per bushel, shipped direct from tbe orchard.

The second-grade apples were shipped in bushel boxes and barrels, and sold about equally well according to grade.

Our orchard is small, but when handled as we have described, and special care is taken in growing and marketing tbe fruit, it furnishes a satisfactory side-line income.

Benonis, well packed, were good sellers

A most important part of the work is the packing.

The time required to make several pickings just when tbese dessert varieties were right in coloring and maturity increased the returns nearly one half when sbipped in baskets for the fancy trade.

New Facts and Old Ones

A NEW use has been discovered for cactus. A section foreman on the Arizona Eastern road invented the scheme of planting a bed of cactus in the place of the ordinary railway-crossing cattle guard. It is said to be a success—no thanks to the Burbank spineless production.

THAT dead twig on the pear or apple tree is probably caused by pear blight. It will live over winter in tbe affected branch, and be carried about the orchard by insects next summer. Cut off every one of these blighted limbs at least a foot below the lowest point of disease and burn them. This is the only way known to control pear blight, which is a very bad disease.

THOUSANDS of gardeners and tobacco growers stand helpless in the presence of tbe cutworm, wben a little effort would solve the difficulty. Poisoned bait will do the trick. Green clover cut up and sprayed with arsenate of lead will get them if scattered over the ground. So will a mixture of Paris green and bran made into a mash and left in small balls where the worms will find it. Fall plowing is a good preventive.

Farm Wit and Wisdom

Condensed and Modified From Various Sources

SPEAKING of advertising, L. L. Klinefelter of New Mexico offers a Scriptural text which we are unable to locate in Holy Writ: "Whoso bloweth not his own horn, the horn of that man shall not be blown, world without end."

IOWA, the most distinctly agricultural State in the Union, is reported as buying automobiles at the rate of 400 a day. The majority of them are purchased by farmers.

ACCORDING to the "Journal of the American Medical Association" when a child is cross-eyed it is a mistake to await treatment until a later age. A cross-eyed person uses only one eye, and the eyes become defective by such unnatural use. Not more than half the cases require an operation. Glasses furnished by a skilled oculist will effect a cure in the other half. Where the operation is necessary it should be undergone, and thus save the child from a life of severe humiliation and perhaps of ill health.

MOHAIR does not go begging these days as is shown by the sales of three mohair "pools" in Kansas and Pacific Northwest States. A mohair pool of 5,000 fleeces brought 28½ cents in Kansas, and two pools of 15,000 pounds and 30,000 pounds sold by farmers in Oregon brought 27½ and 28 cents a pound respectively.

AN IOWA man advertised "tested seed corn" for sale. A farmer bought the seed and it failed to grow He was obliged to replant, and was damaged by the setback. He sued the seller of the seed corn, and got a judgment for $250 damages. The court held that the advertisement of the seed as "tested" amounted to a guaranty that it would grow. The case has been appealed to the Iowa Supreme Court.

SHEEP-KILLING dogs cost the State of Pennsylvania at least $50,000 for the year ending December 31st, according to Harrisburg advices. This covers only the direct damage and the reports actually made. Much direct damage is known not to have been reported. The indirect effect of the dog nuisance is much greater. For instance, twenty years ago in Venango County, the wool clip ran to 100,000 a year, but has now fallen to 10,000 pounds. The decrease amounts to over $20,000 a year in the one county, and is attributed mostly to the driving of the sheep out of business by dogs. The community would have been better off, surely, without any dogs.

THE "baby beef" steers on which feeding tests were made at the Illinois Agricultural College were fed this year 238 days. They were bought for $8.85 and sold for $9.95 on the Chicago market. The lot which proved most profitable under Illinois conditions were fed on corn, cottonseed meal, and silage. Alfalfa fed in addition to this ration did not affect the rate of gain, but increased the cost of the gain. Oat straw added to the above ration checked the gains, increased their cost, and reduced profits. The substitution of alfalfa for silage in the middle of the period cut down the gains, reduced profits, and increased the cost of gains.

A PUBLICATION of the Reclamation Service announces that there were at the time of sending out the bulletin 464 farms of from 40 to 80 acres in area open for entry in the irrigation projects of the United States. These lands have water for irrigation, and information about them may be had of the statistician of the Reclamation Service, Washington, D. C. They are in the following States: Idaho, Montana, Nebraska, South Dakota, and Wyoming. A settler on one of these farms should have about $2,500 in cash.

SEVERAL States are now operating labor bureaus, and through them furnishing hands for farms. We shall be glad to have our readers who have had dealings with these bureaus write us as to their efficiency and the efficiency of the hands they are able to furnish.

COMMERCIAL rubber does not come from tropical jungles any longer. Most rubber nowadays comes from carefully managed plantations. These plantations are relatively near shipping points, and the rubber from them is cleaner and better than the wild rubber. The business has been profitable.

"COMMERCIAL fertilizers," says A. G. McCall, an Ohio authority on scientific agriculture, "are a good thing, but the farmer either does not get the right kind of fertilizer for his land or does not get the worth of his money. Many farmers buy nitrogen when they could better raise it in the form of clover. Others purchase a so-called 'complete fertilizer' which costs them much more per pound for the plant food than if the different ingredients were purchased separately and mixed at home." This is sensible fertilizer talk.

NOVEMBER 1st, Delaware will swing into line with her North American-International Egg-Laying Contest, to be held at the State Experiment Station at Newark. The contract is for three annual contests of not less than 100 pens in each contest.

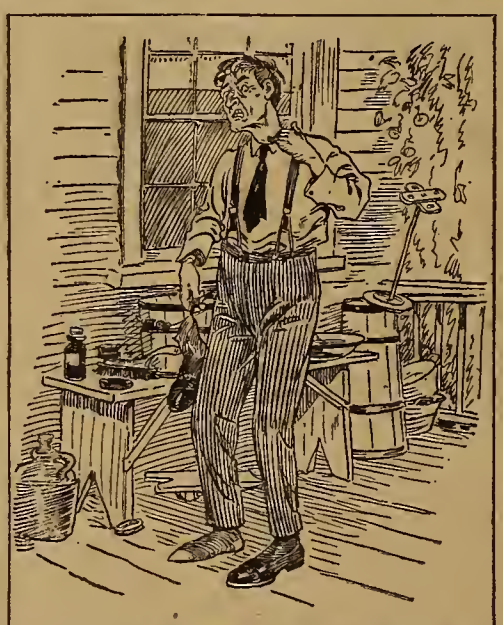
THE animal husbandman of the Arizona Station, F. W. Wilson, recommends that hogs pastured on alfalfa be ringed. What has been your experience, Mr. Swinebreeder? Have your hogs rooted up the alfalfa, and what do you think of ringing?

A KANSAS farmer has put out on 25 acres a grove of 30,000 catalpa trees which in ten to fifteen years will give a valuable crop of fence posts and telegraph poles. He apparently believes in speculating on "futures."

THE dates of the 1914 Dairy Show have been announced as October 22d to October 31st inclusive, at Chicago. Particulars as to exhibits and conventions may be secured by addressing the National Dairy Show Office, 817 Exchange Avenue, Chicago, Illinois.

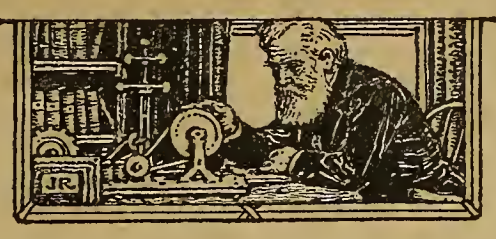
THE preliminary classifications of the Panama-Pacific Exposition have been issued in pamphlet form. The premiums amount to $175,000. In addition to the usual exhibitions there will be wool sorting and grading demonstrations, and an international egg-laying contest which will begin this November. Particulars may be secured by addressing the Department of Live Stock, Panama-Pacific Exposition, San Francisco.

THE steer-feeding tests at Brookings, South Dakota, show abundantly the value of corn silage. Steers fed on silage alone gained 2.4 pounds a day. Those fed on oil meal and silage gained 2.69 pounds, on cottonseed meal and silage 2.08 pounds, and on dried distilled grains and silage 2.49 pounds a day. It was found that shelled corn and silage do not make a good feed. At the end of the test, steers fed on this combination were eating 27 pounds of silage a day, and 17 pounds of shelled corn, and their gains cost $8.22 a hundred pounds. Silage was valued at $4 a ton. The cheapest gains were made on dried distilled grains worth $24 a ton fed with the silage. These gains cost $5.50 a hundred. The best cattle were finished on the oil meal and silage at a cost of $5.86 per hundred pounds of gain. The cottonseed meal was not found as good there as oil meal, either in rate of gain or cost of gain as a supplement to silage. Despite the success with the dried distilled grains, Director James W. Wilson pronounces oil meal the best concentrate to feed under South Dakota conditions to steers. He believes that a profit is in sight under any conditions which can be anticipated in South Dakota, in feeding cattle on silage and some supplement. "The old custom of stocking cattle through the winter," says he, "will soon be a practice of the past. The gains on grass through the summer will be maintained, and an additional gain equal to the one made on the grass will be secured in the winter by feeding silage."

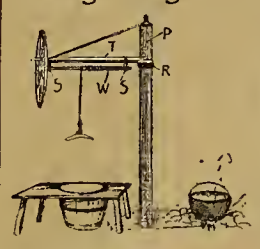


"Got some old ragged collars that 'most rub my neck in two of Sundays. Guess I'll take a look at my boss 'collars an' see that the critters don't have to suffer similar"

The Headwork Shop



Hang Hogs with This Derrick



SET a pole (P) 8 inches in diameter in the ground so that 5 feet of the pole is in the ground and 12 feet above it. Put a 1-inch iron pin in the top so that it extends 4 inches above the pole. Then put an iron ring, just a little larger than the pole, over it and fasten securely with bolts or screws. This ring (R) and the iron pin are the means of supporting the derrick.

Now for the windlass get a round pole (W) 6 feet long and 6 inches in diameter. Fasten a rope in a hole bored through the middle. Fasten an old buggy wheel to the end of a pole. Now make two iron straps (S) to go under the windlass and fasten them to a timber (T), one end of which is shaped to rest on the iron ring, and the other end is supported by an iron brace fastened to the pin at the top of the post.

Make a hole in the end of the beam that supports the windlass, in which a stout wooden pin can be placed to keep the windlass from unwinding when you are through lifting. The derrick swings sidewise so you can heat your water in one vessel, scald your hog in another, and put him anywhere you want without the usual tugging. A. P. WEBSTER.

Tie for My Jersey Broncho

I PAID $150 for a pure-bred Jersey cow. The cow seemed very gentle, but imagine my horror to find when I brought her home that she would both horn and kick. I was in southern California at the time, and I believe that, without exception, she was the worst cow that ever drew breath on the Pacific coast. She was a regular broncho, so to speak.

I took a holdback strap and put it around her left hind leg just above the hock. Then I crossed it and fastened it around the other leg, making a figure 8. With this strap on she never offered to kick, and became the best cream and butter cow we ever had. B. H. SLAGLE.

When the Staple Won't Hold

TO FASTEN a wire to a post that is decayed and will not hold a staple, use No. 12 annealed wire (baling wire) and wrap it around the post. Coil the ends on the horizontal fence wire the same as telephone wire is fastened to the glass insulators. If the post is in very bad condition, wire may be wrapped around twice and then fastened, thus keeping the connection from slipping.

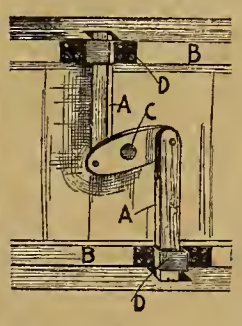
A. B. WOLEY.

Pick Stones While Harrowing

A HANDY way to gather scattered stones on plowed fields, and without much extra work, is to attach a strong box to the harrow and while harrowing pick them up as they come in the way and unload at the end of the field. This saves a deal of annoyance in plowing and possibly a break in machinery later on.

S. E. RHINE.

Door That Stock Can't Open

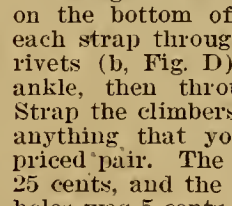


THE sketch shows an excellent method of fastening a barn door so that it cannot be opened by horses and cattle, nor can it be blown open by the wind. It is made on the same plan as a door of a safe. This door fastener can be used either for single or double doors. If double doors are used the fastener is attached to only one door, closing over the other door to hold it shut.

The pieces A A are 1 inch thick and 1½ inches wide. The length depends on the height of the door. B B are cleats at top and bottom of door, and D D are strap-iron sockets through which A A easily pass. C goes through the door, and has a knob on the end so that the door can be opened from the outside. A hasp can be securely fastened to the knob and thus permit the door to be locked with a padlock. Sockets are made at the top and bottom of the door-frame to receive A A, thus holding the door shut when the ends of A A are forced into the sockets. But when the handle is turned, thus drawing A A out of the notches, the door can be opened.

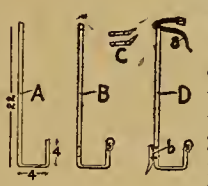
HOMER B. BLACKSTONE.

No Cut Feet Here



THE sketch shows the kind of fence that ought to be used for the horse paddock if you have barbed wire on hand and want to use it. Use smooth galvanized wire for the bottom strand and the rest barbed wire, and your horses will be less likely to get their feet cut. Woven wire is of course still better, but more expensive. JESSE RAHN.

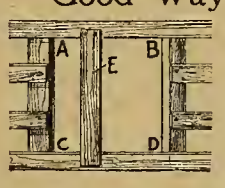
Serviceable Home-Made Climbers



LET me tell you how I made a pair of climbers for 30 cents. I got two new pieces of buggy tire 1¼ inches wide and 30 inches long. Eight inches from one end I bent them at right angles, and then four inches from the same end I bent them again so they appeared as in Fig. A. Then I drew out the short end and bent it over and put a small ring on it. I next procured two pieces of steel tire each 5 inches long. These I bent to make spurs as in Fig. C, and also drilled two 3/16-inch holes in them. Then on the first pieces I drilled two holes near the bottom to correspond with the holes on the spurs. I made another hole an inch from the top of each climber. The spurs I riveted on with two 3/16-inch rivets 1 inch long after I had put a small burr on each rivet between the spur and the main part of the climber. I then took two pieces of strap (a) about 1½ inches wide, put buckles on one end, and riveted the straps to the top, putting on the same side as the spurs.

Taking two old hame straps, I put one on the bottom of each climber. I put each strap through the opening between rivets (b, Fig. D), then around back of ankle, then through ring and buckle. Strap the climbers on and you can climb anything that you could with a high-priced pair. The two pieces of tire cost 25 cents, and the charge for drilling the holes was 5 cents. GRAY WARRINGTON.

Good Way to Sort Hogs



NEARLY every farmer has difficulty in sorting a bunch of uneven hogs for market, and I have had my own troubles in this line. Last year I hit on a plan by which my hogs sort themselves. I have cut out as small a number as eight out of fifty-six, with no trouble at all, in the following way.

Make a hole (A B C D) in the fence of the sorting yard large enough for the largest hog to go through. Then take a board (E) and nail it on up and down as shown in the sketch. You may have to experiment a little to get it just right, but in the end your smaller hogs will all go out and you will find all your large hogs left in the pen. The next time you will know just the right size to make the opening. W. B. ELLSWORTH.

No Leg to Kick With

WHEN we settled on our claim here in Montana in the fall of 1910 we bought a cow of a rancher. The next spring when we commenced to milk her she began to kick. We got a strap two inches wide, with a buckle on one end and plenty of holes in the other, and strapped her right front leg up. Just lift her leg and bend it up as if putting your hand to your shoulder, and then put the strap on tight. That will make her stand on three legs.

The first time she fell down, and she has never offered to kick since. Before we got her the rancher said she always got her "daily lickings." Now she doesn't need them. EDGAR L. LOCKWOOD.

Live Stock and Dairy

Blue-Blooded Dairying

THE "lowing kine" have had their day,
For now we talk a different way.
For instance, Where's her pedigree
And veter'nary's guarantee?
Bring out her records all in terms
Of butterfat and milk and germs.
Has she been milked by human hand,
Machine or both, and will she stand
Without high jinks at horn and tail
While dancing tangos in the pail?
How fussy is she with her "eats"?
Does she insist on sugar beets,
Or will a single ration do,
With once a week an oyster stew?
Has she learned how to rear her calf
By Montessori, with a staff
Of dairy experts near her stall
To answer to her beck and call?
There was a time when cows were kine,
But now they've got so superfine
That each one has a family tree.
It's getting pretty deep for me.

More Work, More Feed

By David Buffum

IN A FORMER article in Farm and Fireside, I mentioned a ration for a draft horse. A subscriber who is interested in rations found by comparing it with a feeding standard for a draft horse in a book on agriculture that the two rations did not agree. For others who may be misled by rations from different sources, I will explain that we who try to tell about horses, only set some guideposts to point the way. But these guideposts are of but little value unless common sense and judgment are used in the application of their directions.

The amount of feed depends upon the individuality of the horse and the work he is doing. The particular ration referred to above indicated the kind of feed and the relative proportions for a particular work horse. It also recommended that if the amount had to be increased more oats should be fed, leaving the carbohydrates in the ration the same. If any standard prescribes a certain given amount to be fed a horse of a given size, regardless of attendant circumstances, it is a pretty poor rule to follow. The folly of a fixed standard should be apparent. Oats are mainly depended upon for strength and nervous force, corn meal and molasses for keeping the animal in good flesh. These were some of the feeds in the ration. The amount of oats was left elastic, to be determined exactly through the intelligence and judgment of the reader. A horse should always be fed according to the work he has to do.

The Escutcheon in Dairy Cows

By Fred Telford

BUYERS and owners of dairy cows have long been searching for some reliable and easy means of telling the worth of an animal. Testing the milk requires time, labor, and rather expensive machinery; in addition, it tells nothing about the duration of the milk flow. Therefore many attempts have been made to find some means of determining the period of lactation and the amount and richness of the milk by external markings on the cow.

It is generally believed that the necessary information can be gained from what is called the escutcheon—the growth of hair on the back part of the udder, extending out on the thighs and toward the vulva. A man named Guenon seems responsible for this belief. About 1850 he asserted he could tell by the shape of the escutcheon the amount and richness of the milk, the duration of the flow, and the kind of offspring that would be produced. He described several types of escutcheon, each with many subclasses, and gave to each a fanciful name. The dairymen of his time placed great confidence in his claims; and the escutcheon to-day has a place on the score cards of twenty-six out of thirty-seven agricultural colleges in the United States, and likewise on the score cards of the Holstein-Friesian and Guernsey breeders' associations.

To what extent can the worth of a dairy cow be determined by the escutcheon? It seems that until very recently no comprehensive test has ever been made. Apparently modern dairymen have been willing to accept Guenon's claims as valid without testing their merit. The Vermont Agricultural Experiment Station, however, a few years ago made some tests that must be interesting to any farmer who pays attention to the escutcheon and the claims of Guenon.

Tests were made upon 58 cows belonging to the experiment station herd, and upon about 30 cows from two other herds. The milk flow was considered for various lengths of time, depending upon how long the record of each cow had been kept. In no case, however, was the time less than one year, and it was as high as twelve years. The milk was weighed daily and analyzed regularly for fats and solids. The experiment station herd was at times subjected to influences that might have affected the milk flow, but the other two herds were managed and fed just as any good dairy farmer would keep his cows.

The man in charge of the tests carefully studied the Guenon system, classified the cows tested according to Guenon's classification, and made predictions as to the amount of milk and the period of flow for each cow. Of the 58 cows in the experiment station herd, only 3 gave the exact amount of milk predicted and remained dry for the time predicted; and only 8 were reasonably close to the predictions. The milk from some cows was 15 pounds daily less than the predictions, and for one cow 27 pounds daily above the prediction. One fourth of the cows varied from the prediction more than 10 pounds daily, and a half more than 5 pounds daily. The results with the other

The dotted line gives the shape of the escutcheon on this cow

30 cows were similar; several that should have been poor milkers, according to the escutcheon, proved to be fine milk producers, while several that the escutcheon showed good were poor milk producers.

In the face of these results it is hard to put confidence in the claims of Guenon, made over half a century ago, when means of determining good dairy cows were much less perfect than now. In fact, there is no escaping the conclusion of the man who made the tests: "These results show nothing more than chance agreements." Not only farmers but also agricultural colleges would seem to be perfectly justified in disregarding the escutcheon when attempting to judge the worth of a dairy cow.

Ration for Horse with Heaves

By Dr. A. S. Alexander

A WASHINGTON subscriber writes me as follows: "I have a horse seven years old, weighing 1,350 pounds. He shows symptoms of heaves, but some days he heaves much less than at other times. At times he is so bad I can scarcely use him. The trouble seems to be mostly in his throat and nose. His teeth have been examined, and the trouble does not seem to come from them. The heaves are most serious when he is driven on the road, and least noticeable when he is doing slow work like plowing. I am feeding him well, and always dampen the feed. What shall I do?"

In summer feed grass alone. In winter, feed wet oat straw in preference to hay. Do not give any bulky feed at noon, and do not work the horse soon after a meal. Feed whole oats and wheat bran, dampened, and also allow carrots or other roots to regulate the bowels. Give half an ounce of Fowler's solution of arsenic night and morning until one quart has been given; then if the distress has greatly abated gradually discontinue the medicine, taking a week or more to the work. If no relief has been given, continue the medicine.

The symptoms seem to indicate heaves; but it should be remembered that glanders may cause similar symptoms, and that a diseased molar tooth often is the cause of a discharge from the nostril. It would be well to have another graduate veterinarian examine the horse.

Farm Notes

Mr. Kingbird—Fighter

By Edgar S. Jones

FEW birds eat as many varieties of insects as does the kingbird. He may be seen on nearly any afternoon sitting on the limb of a tree waiting for the appearance of an insect, which he captures on the wing. More than 90 per cent of his food consists of beetles, caterpillars, flies, spiders, and grasshoppers.

He is a natural fighter, and makes his attack on the larger birds when they are flying by alighting on their backs. A crow that is being assailed by this little pugilist is seen to twist and turn in the air and to increase his flight. The crow usually calls loudly for help, but this little fellow that is not much larger than an English sparrow does not pay any attention to the cries for help, and often puts to flight crows, hawks, jays, and other birds of prey, but he seldom disturbs the smaller birds.

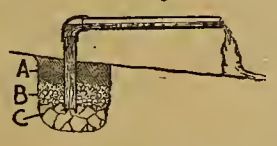
He is a policeman for the orchard in that he drives away marauders that would destroy the eggs or young of the song birds. After we have watched one of his aërial battles with a hawk or a crow our admiration for him increases.

The kingbird is also known as the bee martin.

The upper parts of the body are a grayish slate color. The crown of the head is a darker shade and has a concealed orange crown patch, while the breast and upper parts are a light ashy color. The tail is black, but tipped with a white which is very noticeable when the bird is flying. The eggs are white with small brown spots on them.

No Mud About the Spring

By H. F. Grinstead



SEVERAL years ago I used a spring for stock watering and for house use in summer. It was in the bed of a small branch, and was very difficult to keep clean. A joint of tile came well above the surface, but this would fill with dirt and trash after every hard rain. I finally devised a plan for utilizing the water without the annoyance of the mud about the spring or having it fill with dirt.

The tile was removed, and the spring cleaned about three feet deep. Then stones (C) were thrown in till a foot of the depth was filled. A short piece of pipe to which was screwed an elbow and a longer piece of pipe to carry off the water was put in position with the lower opening well down among the stones. The horizontal section of the pipe at the elbow was at the same height as the water usually stood in the tile. After the pipe was in place smaller stones from the size of your fist down to the size of a hen's egg were thrown in. This layer (B) kept the smaller gravel which was put on top from rolling down among the larger stones into the water.

After the layer of gravel, clay (A) was shoveled in and beaten down around the pipe. Then a few large stones were placed around it to keep stock from trampling the clay. The clay effectually stopped the escape of any water through the soil, so that all of it ran out through the pipe. A trough at the end of the long outlet pipe caught water for the stock, while a bucket held under the pipe was always filled with pure water.

New Books

ELEMENTARY EXERCISES IN AGRICULTURE, by S. H. Dadisman, principal of the Rollo Consolidated School of Illinois. This book is for the instruction of children in the grades. It is principally a laboratory manual. It should well serve its purpose. Well illustrated. The Macmillan Company, New York. 50 cents.

HOME WATERWORKS, by Carleton J. Lynde, is a well-illustrated book dealing with the science of water supplies and the methods of applying to the needs of the farm the principles given. It is more academic than practical. Sturgis and Walton Company, New York. 75 cents net.

A really comprehensive discussion of successful modern orchard management has been needed. The need has been met by a practical and attractive book entitled PRODUCTIVE ORCHARDING, by Fred C. Sears. Mr. Sears has done more than merely to make a study of orchard management. He has developed and experimentally operated a relatively large commercial orchard while instructor in Pomology at the Massachusetts Experiment Station. Three hundred pages and profuse illustrations. J. B. Lippincott Company, Philadelphia, Pennsylvania. $1.50 net.

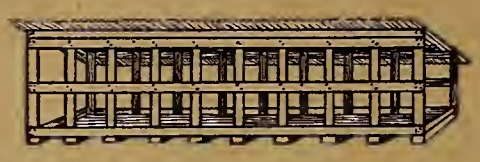
Crops and Soils

Woven-Wire Corncrib

THIS practical, economical crib, that can be built almost while the wagon waits, is constructed as follows: Make a foundation of short posts placed four feet apart, with tops 15 inches above surface of the ground. The number depends on the length of the crib. Put inverted pans over posts to keep rats out.

To make the crib use 2x6s as sleepers on which to place the flooring. Make the front of the crib 8 feet high and the rear 6 feet. At the top, bottom, and middle of the studding spike 2x6 planks or strong boards to thoroughly brace the crib; these brace planks extend lengthwise of the crib and also across the end.

The inside planking at the bottom,



middle, and top serves as a support for strong small-meshed wire which takes the place of slats or walls. By using small-mesh wire this crib is made rat-proof. If the crib is 12 feet in length some inside bracing is necessary to keep the sides from spreading, and there should also be doors at both ends.

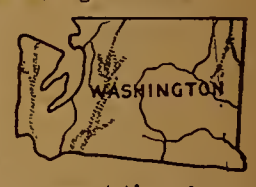
Cribs of this construction have been built for about $10, and have a capacity of 1,000 bushels, which is only one cent a bushel for storage.

How to Kill Smut

WAS your small grain smutty this year? It will probably be worse next year, then, unless you treat your seed grain for smut. For wheat smut put a pound of 40-per-cent commercial formalin in 30 to 40 gallons of water, and after giving the seed a ten minutes' dip, drain it and dry thoroughly, just as you would dry any wet grain. Or pile the grain on the floor, and sprinkle the formalin over it until it is thoroughly wet. Leave it in a close heap, covered with burlap or blankets, for twelve or fourteen hours, and then spread it out and dry it. It will not dry well if more than two inches deep on the floor, and it must be raked or shoveled over often while drying. Unless the drying is carefully attended to the seed will be damaged. This treatment will kill the stinking or covered smuts of wheat and barley, the head smuts of sorghum, milo, feterita, and Kafir, and the loose smut of oats. It will not kill the loose smut of either wheat or barley.

Alfalfa in Rows

By George Severance, Agriculturist



IN THE State of Washington we have a large area devoted to wheat-farming where the rainfall ranges from 8 to 15 inches per annum. Up to the present time farming has consisted almost solely of wheat-raising. As a result the soil is beginning to be badly depleted of humus, which has already resulted in a greatly lessened water-holding capacity and in some sections a tendency to drift.

This is rapidly forcing the farmers to appreciate the necessity for some soil-improving crop that will renew the humus supply and increase the nitrogen supply. The uncertainty that attends wheat-farming under such dry conditions is also forcing many farmers to appreciate the advantage of diversified farming. Hence, not only the Experiment Station, but the farmers as well have been experimenting to determine what crop or crops may be best adapted to this dry region for both improving the soil condition and providing means for keeping more live stock.

At present alfalfa seems to be one of the most promising of the high quality crops. The Experiment Station has grown alfalfa at Ritzville, where the rainfall is a trifle over 12 inches per annum, and at Connell, where the rainfall averages about 8 inches per annum. Farmers throughout the entire dry belt have grown small patches.

It has been a matter of quite common observation that where alfalfa has been seeded very thinly, and the soil has been cultivated, that it has made a vigorous, healthy growth. Where it has not been seeded thinly and has not received cultivation, the growth has not been nearly so satisfactory. A small plot at Ritzville, surrounded by a cultivated patch, showed a very markedly increased growth at the outer edge of the plot. Recognizing the extreme importance of conserving the moisture and also the difficulty of cultivating broad-casted alfalfa after it has grown several inches in the spring, several parties have begun the practice of seeding in rows so that it may be cultivated several times during the spring, if necessary, without injuring the growing plants. Wherever tried this has been giving excellent results. This is particularly true when the alfalfa is left for seed.

I do not believe, however, that this same practice would apply to the more humid sections, where the growth would become very rank if seeded so thinly. It is likely that the same practice may be followed advantageously in portions of other States where the rainfall is not sufficient to mature a full stand of alfalfa.

The Size of an Acre

By H. A. Bereman

WHAT is the most valuable acre on your farm? Are you growing certain crops just because you have got the habit? May there not be a better crop suitable to your soil? What is an acre really worth anyhow in productive power? If you could so treat your land as to make it yield twice its former bounty, would that not be high finance indeed?

Where Not to Use Manure

MOORE of Wisconsin advises against the use of stable manure or much other fertilizer in planting fruit trees. An excessive amount of plant food about the roots of the young tree will tend to make the root growth smaller. The roots go no farther than is necessary for food, and if the food is found close to the root, the growth will be too limited for the top.

Water under normal conditions of planting should not be used in setting out the tree, but if used it should be poured in before the top soil is drawn about the tree. Otherwise the muddy surface of the soil will bake and the tree will suffer more from want of water than if no water is used.

THE FARMERS' LOBBY

Wartime Prices and Opportunities

By Judson C. Welliver

"PEOPLE expect to eat three times a day. They buy new clothes a few times a year."

That was the sententious phrase in which Edwin F. Sweet, Assistant Secretary of Commerce, answered my question, which had struck me as a poser.

We had been talking about the effects of the foreign war on business in this country, especially on agriculture; and I had asked:

"Why does wheat go skyrocketing upward while cotton bumps downward ten points at a time?"

It is perfectly plain that Europe's armies need clothes as well as food; we have the cotton, and all the world wears cotton, whether in peace or war.

Yet as soon as the war scare was fairly on, wheat went upward and cotton downward.

Secretary Sweet's reply apparently covered the ground. The first thing folks think about when they face such a stress as that before Europe now, is eating. They can wear their old clothes quite a spell; they can't wear yesterday's dinner.

Mr. Sweet is in the wheat business. He's a lawyer in Grand Rapids, and served a spell in Congress. He's also a farmer in North Dakota, where he has a thousand-acre farm; and he is Assistant Secretary of Commerce here in Washington, running the big department while Secretary Redfield is away on his vacation.

I tried to get him to express an opinion about wheat's prospective price, but he was canny. It wouldn't be proper for a man in his position, I guess, to seem to advise people to put an upset price on wheat at this time. He wanted to know what I was doing with mine.

The Demand for Cotton Will Come Back

"Expecting to get $1.50 a bushel for it," I said, "and not expecting to hold it till May for that price either."

We had a big crop of wheat in Maryland this year. To be specific, I have threshed ten acres of mine, and it turned out 31½ bushels to the acre.

And still some folks have the impression that there aren't any good farm lands in the East!

The most I can say as to Mr. Sweet's impression concerning my $1.50 wheat theory is that he didn't look shocked, and didn't advise me to sell at $1.49. I didn't ask him whether he intended to hold his own, but my guess is that he will do just that.

But to get back to the question of wheat and cotton.

Mr. Sweet was inclined to be optimistic about the cotton prospect. "It's a question of making it possible for the cotton producers to hold their cotton until the demand comes back, which it must do," he said. "They are thinking just now about things to eat, because that's a daily problem. So grains and meat go up. They are not so excited yet about cotton. It must be made into cloth before it can be used. The Southern people haven't the financial reserves that Northern ones have; they raise crops whose value is to a great extent pledged and used before they are harvested, and when the new crop comes on at a time when the price is suddenly pounded downward it's a mighty serious affair for them.

"The administration is going to do everything possible to help tide the South over this situation. Money, as I understand, will be deposited where it will be available to meet the necessities of people without sacrificing their crops. I don't know what consideration is being given to the plan of establishing depositories for cotton, issuing certificates against it, and making these available as a basis for issues of money as certain other securities now are available. I doubt if very serious consideration has been given to that, or will be necessary."

Secretary Sweet observed that cotton, while it was the biggest and most pressing difficulty that the Southern farmers confronted, was not the only one.

"Just yesterday," he said, "a member of Congress from South Carolina came in greatly disturbed over the tobacco situation in his section. He has received word that his people had learned that the big tobacco concerns were going to withdraw their buyers from the field, fearing that a drop in prices was impending, and realizing that if they should buy at higher prices, and later a generally lower level should be reached, they would be badly stuck. We looked into that situation, and were informed by one of the big tobacco companies that while it expected to be cautious it did not anticipate taking its buyers out of the field. As to tobacco, like cotton, it seems probable that conditions will improve soon. The whole business world will get adjusted to war circumstances. Prices will be higher generally; that is perfectly inevitable when the world's requirements are increased and at the same time its producing capacity is decreased. There may be some exceptions, but in general they will be only about such as to prove the rule."

Sugar May Reach Fifteen Cents

I asked Mr. Sweet what he thought would be the effect of the war on the American sugar industry and on the supply and price of sugar generally.

You should have seen him smile!

Sweet is a Democrat, coming from the biggest sugar-beet State in the Union—Michigan. But he doesn't believe in a duty on sugar.

As a Democratic Congressman he voted for free sugar, and the fact was used against him in his campaign for re-election. He told his sugar people that he had done what he believed right, but he was defeated.

"It was generally believed," he said, "that when the protective duty was taken off, the Louisiana cane industry would be ruined, and that a good deal of the beet-sugar manufacture would be killed. For myself, I always believed that in some sections where it had the protection of freight rates in a local market the beet-sugar business would be safe enough. But that was to be determined by experience.

"Now, however, there is no longer uncertainty. Sugar has gone up from 4 to 8 cents a pound, and I see some extremists prophesying that it may go to 15."

"Then you don't expect the American sugar industry to be injured at all?" I asked.

"Injured? It'll make more money than ever.

"Why," continued the Secretary, "there isn't a cane-sugar mill or beet-sugar factory in the country that can't earn big profits now, and probably for a long time to come, without protection.

"The reason is simple. Germany is one of the greatest sugar-producing countries in the world. Austria-Hungary and France are less, but important producers. Germany has supplied most of the British requirements for sugar from her beet establishments. That supply is cut off in an hour—the hour in which war was declared.

"What is the consequence? Britain becomes a competitor for the cane sugar of Cuba, which has supplied most of our requirements for a long time, aside from what we produce in this country, Hawaii, and Porto Rico. Cuba has had just about enough to supply us, though the average consumption in this country has been growing very fast, especially of late years.

"Now Britain must go elsewhere, and bids for Cuba's stock. You can see what it is doing to prices in our market."

Considering that the whole world produces only eighteen millions of tons of sugar a year, and that seven millions of that comes from the countries now at war, is it any wonder that fifteen-cent sugar is predicted by many people?

People have been worrying vastly about how we would get our goods for foreign markets when we have no ships, and so many ships belonging to the warring countries are not safe on the high seas. Secretary Sweet had views on that subject, but something else was worrying him more.

"In this discussion about seizing the markets in South America, the Orient, and other parts of the world now supplied by Germany," he said, "they seem to lose sight of the greatly increased home market we have to fill before we can send things away. The finest stroke American business could perpetrate would be to seize this home market, and seize it so firmly that we could keep it in all the future. After we have taken it once we would keep it more easily than we could keep any captured foreign market. There would be more profit in it, and more national independence in being able to supply it.

There'll Be Ships, Never Fear

"For instance, take dyes, cotton, and cotton cloths. It always seemed ridiculous to me that we raise most of the world's cotton and then ship to other countries a big bulk of what we raise, to be manufactured. Even the part we ourselves manufacture has to be finished with foreign materials: the Germans provide us with nearly all the dyestuffs we use.

"So it appears that we raise the raw cotton, send most of it away to be manufactured, and keep the remainder to make up at home; and when it's woven into cloth we finish it with German dyes!

"There will be no German dyes for us after a month or so; supplies on hand will be exhausted. What are we to do then?"

"Why not make our own?" I inquired innocently.

"No reason at all," was the reply. "There's no mystery about them. We could make them; only, like so many other things that we ought to do, we've never bothered to do it. Now we've got to, and we will. I learn that interests are already organizing to take up the manufacture on a big scale.

"That means capturing a big home market. It means that in future we will make our own dyes, our cloth industries will be more independent because we make them, and we will have this big business in our own hands instead of having it make us tributary to Germany.

"You see what I mean, now, by capturing the home market away from the foreigners?

"We supply a big proportion of the copper that is used in the electrical industries of the world, but we are so innocent as to let them have our copper metal instead of keeping it here and making this country the headquarters of electrical manufactures. There's another great opportunity for seizing a home market away from the foreigners.

"Before we're done with this tremendous, revolutionary economic experience precipitated by the war, we will be realizing how much more we could do and ought to do for ourselves; and we'll be doing it too, because we'll have to.

"So far as concerns ships to send our products abroad I am not greatly worried about that. The hungry man is going to hustle for something to eat a good deal more enthusiastically than somebody else will hustle for the privilege of selling food to him. That's the way with the nations. We are very anxious to sell our grains and meats, but not half so anxious as Europe will be to get them, especially if the war is long.

"The upshot of it will be that the other countries will provide ways to move our products, to insure them, and to convoy them safely to the other side. Of course we are going to do everything possible for ourselves in this regard, but even if we didn't the foreigners could be relied on to do everything in their power to open access to our stocks of provisions and other necessaries.

"I don't anticipate that there will be a very long delay about establishing the means for getting our shipments handled to Europe; and that means that the market for our farm products is assured. As to South America, there will be a somewhat different situation; and that situation affects our chance of selling manufactured goods in countries heretofore supplied by the countries now engrossed in war.

"Right here in the Department of Commerce we have just been making an inquiry to learn how many vessels of American ownership there are on the Great Lakes, adapted to ocean traffic, that could be brought out to supplement our ocean-going fleet. We are informed of a list of twenty-eight vessels of over 1,000 tons—probably averaging about 3,000 tons—on the lakes that could be brought out through the Welland Canal and the St. Lawrence River into the Atlantic.

"The fleet of the United Fruit Company does not now sail under the American flag, but we learn that that company is considering putting it under American registry in the near future.

"The greater security which the American flag would give to vessels on the high seas in the present exigency causes American controlled companies to consider adopting American registry and flag."

Like all Democrats, Mr. Sweet was disposed to extract considerable satisfaction from contemplation of the economic conditions which the war has brought about. He referred especially to wool and the sheep-raising industry.

Ask for Goods Made in America

"When the tariff was taken off wool," he observed, "most people believed it would be a serious blow to the production of sheep and wool in this country. The Democratic defense was that people needed woolen clothing more than they needed a woolen industry.

"But the expected failed utterly to happen. Wool began rising instead of falling in price as soon as the tariff act passed. The real explanation was that the whole world was short of wool; it was a universal condition, and in the face of a world-wide shortage of such a staple, tariffs and bounties and the like are swept into insignificance.

"Wool has been going up and up, and the sheep and wool industry is coming back as fast as it can. It will keep on coming.

"And wool is another illustration of the great opportunity now open to Americans of capturing their own home markets from the foreigners. Did you ever stop to think how almost ridiculous it is for an American to go into a shop, buying a suit, and to have the tailor drag out, right at the beginning, 'something particularly good and just the fashionable in imported wear?' That's the invariable experience; the imported woolens are always pushed at us. Why shouldn't we be making as good woolens as anybody else?

"Can't we make them? Of course we can; and now that we are in the way of having to do it we will, see if we don't."

Mr. Sweet isn't belittling the opportunity for expanding our foreign trade; but he thinks, and I have been finding a lot of people in Washington who agree, that the greatest permanent benefit to the country would be gained if Americans would reconquer their own markets now held by the foreigners.

Another step in our national independence

The Tooth and the Man

An Adventure in Finding His Wife's Viewpoint

By Alice Louise Lee

In Two Parts—Part I

ONE warm evening in late May, John Mason sat tipped back in the easiest porch chair, with his feet on the railing, contemplating a large, round, healthy moon swimming among a sea of foamy clouds. He was not altogether happy for two reasons, one of which lay in his mind, the other in his mouth. The trouble in his mind had caused him to bite down hard on his cigar holder, and this had raised trouble in his mouth. Just under the cigar holder lay a tooth which had, up to date, ground nobly all things that came its way. On that date it had become a trifle sore, just enough so that Mr. Mason was aware of its existence when a piece of hard food interposed between it and its chewing mate above. Otherwise he forgot it.

His mental disturbance was caused by his wife. She had stolen a few moments from the care of John Mason, junior, to come out on the piazza and proffer the request she had made annually for six years. It concerned the plot of ground at the left of the house. In front was a tiny lawn that Mr. Mason kept in order by the sweat of a good-looking face. The plot at the left Mrs. Mason—unreasonable woman that she was—desired him to fill with rosebushes and rows of gladioli and a wistaria arbor and other nonsense, if not by the sweat of his own face then by means of hired sweat.

Mr. Mason had just finished pointing out to her gently but without reservation that she could not expect him to put in so much work after his long day at the office. The lawn was all he could attend to. As to his hiring it done, that was out of the question. He explained why fully, for Mr. Mason believed in being a model husband. He always confided part of his financial joys and all of his financial sorrows to his wife. When he finished, Mrs. Mason was fully persuaded that she must postpone, till another year, the great pleasure of utilizing that plot of ground. Mr. Mason knew that her tears were falling, and he was relieved when his five-year-old heir awakened and began a monotonous cry which he had kept up since noon with slight intermissions:

"Ma, my l-e-g aches so! Boo hoo!"

Mr. Mason transferred his cigar holder to the other side of his mouth and rubbed his cheek thoughtfully at the roots of that protesting tooth. It at once ceased to protest, and Mr. Mason forgot it. It had a neat, round gold filling in the top and was destitute of a nerve. That is, there was no nerve inside of it. There were plenty surrounding it.

Two hours later Mrs. Mason came to the door followed by a harrowing wail, "Oh, Ma, my l-e-g aches *so!*" She spoke hesitatingly, knowing the strength of Mr. Mason's principles. "Johnnie's leg aches so, John, that I think we better call Doctor Brown."

Mr. Mason arose, threw away his cigar stump, and entered the house. He laid his hand soothingly on his wife's arm. He spoke kindly. "Dear, you are tired out. I'll go talk to the boy. He must learn to bear his childish complaints without so much fuss. Why, if we called in a doctor whenever one of the children had a leg ache or a headache or the colic we would be bankrupt!"

Mr. Mason proceeded to "talk to the boy;" that is, his soothing voice could be heard whenever John, junior, stopped to catch his breath in order to yell in a louder key that his leg did ache. Oh, it did ache! Mrs. Mason did not talk. She applied hot water and mustard plasters and all the home remedies passed down to her by her mother and Mr. Mason's, especially the latter.

At midnight the ache in the leg ceased, and John Mason, junior, slept. As John Mason, senior, arose from the side of the small bed he sneezed twice. As he was wearily preparing for bed he sneezed again.

"Must have stayed out on the porch too long—confound it all!" he thought as he retired to the bathroom and reached for his tooth brush, "And with this tooth inclined to be sore—"

At that moment the brush slipped from his upper ivories and landed squarely on top of the neat, round gold filling. Mr. Mason arose in the air simultaneously. When he came down he blinked hard and then, turning on the light, looked long and earnestly into his mouth by means of the bathroom mirror. The tooth was all there. It was a nice-looking tooth, the first grinder at the left-hand corner of his mouth. It was a broad tooth, which lay low and was firmly wedged into the jaw.

Mr. Mason sneezed again. "That's it," he said aloud, "I've caught a little cold and it's settled in that tooth. I shall have to be careful a few days."

The next day was Sunday. Mr. Mason had always enjoyed his Sunday programs. He was wont to sleep an hour later than usual, take his bath leisurely, eat a good breakfast unhurriedly, take a walk, go to church, exchange yarns with his neighbors, eat a hearty dinner, and feel at peace with all the world. On the Sabbath in question a few new numbers were destined to be inserted in the day's program. He awakened an hour too early. The birds were singing and the sun was shining. The day promised to be a cheerful one, more cheerful than Mr. Mason. He sat up hurriedly under the impression that someone had dug into his left cheek, clutched the jaw, and hung there all night with a death grip. His next impression was that he had set his jaws together with a twenty-five-pound pressure on each jaw and had let them stay locked for hours. He crawled out and went into the bathroom. Raising the curtain he looked earnestly at his face. The left side was exaggerated in the vicinity of his lower jaw. He opened his mouth and gazed fixedly within. No, the tooth with the neat, round gold filling described no greater altitude than its neighbors. Mr. Mason was surprised. He bit down on it cautiously, grunted, opened his mouth again, and looked within. He could have sworn it stood at least two inches high. He felt like swearing anyway.

He ate breakfast in a martyr-like calm while the three children threw illuminating side lights on the subject of his affliction. John, junior, who had fully recovered, informed him that "no toofe could ache like a l-e-g—'cause why? It ain't so big!" Then he clamped his tiny white teeth on a piece of dry toast in a way that made John, senior, wince. He was eating sloppy toast on the right side of his mouth and chewing in the careful, thoughtful manner so ably advocated by Horace Fletcher.

"Anyway," proclaimed Ada Mason, aged eight and given over at brief intervals to vocal stomachaches, "Daddy ain't going to make any fuss about his tooth as you do about your leg. Why, Daddy could have his tooth sawed right off without making any fuss at all or asking for the doctor!"

"I guess you had better put on that poultice"

Ordinarily Mr. Mason's self-esteem would have swelled under this honest praise from his offspring. Now nothing swelled except his cheek. He felt his wife's eyes on him, but he did not look up as he carefully inserted a piece of toast into the right side of his mouth. He began to wish he had not been so firm with his wife and children in the matter of home remedies. Of course it would be difficult for them to distinguish between minor ailments such as they were subject to and the overwhelmingly major ailment of an ulcerating tooth. It was in order, according to Mrs. Mason, to speak of it in the progressive present participle for twenty-four hours. She knew because she had had ulcerated teeth.

"There's nothing to do, dear," she told Mr. Mason soothingly after breakfast, "except to keep snug and warm and apply heat to your cheek. When you can't stand the pain any longer I'll apply your mother's favorite poultice. She always said there was nothing like it to draw pain."

A moment later Mr. Mason stooped hastily to recover his handkerchief which lay on the floor. Far more hastily he came up without it. The tooth with the gold filling had snapped in two at the roots. He not only felt it to the end of the topmost hair on his head, but he had heard it—a sharp metallic click that must have been audible to his wife, filling the hot-water bag in the kitchen. He extended a trembling forefinger and hunted for the round gold filling. It was still there in the same old place. He stood so straight that he leant over backwards waiting for that tooth to stop breaking in two, but it didn't stop. It broke every time his heart beat.

"I guess you had better put on that poultice," he mumbled weakly when Mrs. Mason returned.

She looked astonished. "Why, my dear, the tooth has just begun. Your cheek isn't very much swollen yet, and the poultice would hurt worse than the tooth. It's in the nature of a counter irritant the poultice is, and I don't dare apply it until there is real need. Perhaps after I get home from Sunday school I'll put it on."

Mr. Mason made no reply. He looked at his wife through a haze—the tooth had just begun! Heavens and earth, where would he be when it ended! He sat down on the couch and held the scalding hot-water bag gingerly against the constantly breaking portion of his jaw. Outside the open window he heard his children bragging to the neighbors' children that their daddy could be sawed up into little teenty tointy bits without making a fuss or having a doctor. They had no idea, the dear children, that they were tightening the halter about their unheroic daddy's neck.

As soon as Mrs. Mason departed cheerfully to church Mr. Mason ascertained by sundry tests that he could not lie down. A horizontal position brought a thousand-pound pressure to bear on the roots of the tooth with the neat, round gold filling. Furthermore, it was not a steady pressure. It was a sledge hammer wielded in some mysterious way by each beat of his heart. Mr. Mason had never observed before just how regularly his heart beat nor how frequently. He felt that now, when he was sitting perfectly still, one beat in two or three minutes would be sufficient for his general health. This would do away, he estimated, with about five thousand six hundred forty-nine blows per hour on his jaw. He experimented with a view to slowing down his heart. He held his breath until his head spun around. Heart still on its job. Then he breathed long and slowly and evenly. No good. Then he pressed on his left ribs until they threatened to cave in. This proceeding had the effect of making his heart thump stronger and faster than ever, and at every thump the roots of the gold filled tooth were torn from their sockets, the jaw was splintered, and the splinters driven outward through his expanding cheek.

When Mrs. Mason returned from Sunday school she deemed it prudent to keep the children away from Mr. Mason's room. His tongue was badly swollen, but he could still use it for purposes of speech, and he had reached a point where he felt there were many appropriate things which might be said on the subject of ulcerating teeth.

"After dinner, dear, I'll apply that poultice your mother recommended," said Mrs. Mason sweetly.

"After dinner," swore Mr. Mason to himself, "I'll have the doctor."

But he didn't. Circumstances intervened in the person of his nearest neighbor, Ben Jarvis. Jarvis was a wit. At least Mr. Mason had always considered him as such until this memorable Sabbath when he breezed in at the bedroom door, took one look at the inmate, and then, falling weakly against the door jamb, roared in the most senseless, irritating, exasperating, unsympathetic way. Mr. Mason could neither lie down nor sit up. Therefore he was in the morris chair bolstered up by sofa pillows, one of which was wedged behind his neck, throwing his head forward in a way calculated to mitigate the pressure at the roots of the tooth, but not calculated to add dignity to the appearance of Mr. Mason. From above a semblance to a human jaw he glared at the intruder.

"If ever I saw a door knob where it wasn't needed," gasped Jarvis, "the same is ornamenting your lower countenance. If only you knew how you look!"

Mr. Mason knew. He had spent some time at different hours that day finding out. He was at present sitting on his wife's hand mirror to keep it out of Jarvis' sight, and it didn't make easy sitting either.

"Now," continued Jarvis, wiping his eyes and becoming really sympathetic, "a doctor could give you something—but then, no use to mention a doctor to you, you're so set against 'em."

"Oh, yes," chimed in the partaker of some of his joys and all of his sorrows, "there's no use of saying 'doctor' to him. He couldn't be persuaded to have one."

Couldn't he! Mr. Mason would have ground his teeth but for the fact they were being ground without his volition. As it was, he stonily witnessed the approach of Mrs. Mason, a dish of hot stuff, and some bandages. [TO BE CONTINUED]

Times Haven't Changed Much

"IT IS at times worth while to gain wealth by commerce, were it not so perilous; or by usury, were it equally honorable. Our ancestors, however, held, and fixed by law, that a thief should be condemned to restore double, a usurer quadruple. We thus see how much worse they thought it for a citizen to be a money lender than a thief. Again, when they praised a good man they praised him as a good farmer or a good husbandman. Men so praised were held to have received the highest praise.

"For myself I think well of a merchant as a man of energy and studious of gain; but it is a career, as I have said, that leads to danger and ruin. However, farming makes the bravest men and the sturdiest soldiers, and of all sources of gain is the surest, the most natural, and the least invidious, and those who are busy with it have the fewest bad thoughts."

Written by Cato the elder, Rome's grand old man and farmer-senator, who died in 149 B. C.

W

The Experience Bazaar

A Meeting Place for Our Readers—A Place to Talk

HERE are some letters about making farm life attractive to boys and girls, reasonably easy for women to understand, and therefore companionable to the entire household. What do you think of them? What can you add to them?

DEAR FIRESIDE EDITOR: Some men praise their sons highly for everything they do, and brag of their doings and sayings to others, and defer to them at home and abroad, until the lad gets the "swelled" head. He is treated as a kind of small king for whom it is impossible to do wrong or make a mistake; and such boys grow up into insufferable prigs, snobs, and blow-horns.

Other parents do not praise, help, or consider their boys at all, and treat them surlily, or with as much harsh tyranny as if they were either an inferior race or actual slaves. This class becomes the tramp, the drunkard, or the outlaw, unless he has good natural stamina. Take the advice of Josiah Allen's wife and "strike a mejum." Give them a voice in questions that arise and, if mistaken, kindly point out the mistake. Be firm in ruling, but not overbearing or mean. Be just. Teach them that boasting is execrable.

For many years I have seen both methods tried out, and the colors run true every time. Too much headway ruins either colt or boy. When they do and say pretty much as they please they never amount to a row of pins; and when they are ground down to absolute slavery they amount to less. A boy hates to be called down before his playmates worse than a man hates to be knocked down before a crowd of ladies. When you give a seemingly harsh order give the reason why, and have a sensible reason; but do not be too "bossy."

The boy would sooner go fishing with Dad than to have to sneak away alone. Boys like to have some money to spend, but see that they understand the meaning and use, not abuse, of money. Too little makes a felon or a miser, and too much a profligate or a criminal.

C. E. D., Maryland.

DEAR FIRESIDE EDITOR: While reading the article in the May 24th FARM AND FIRESIDE on "Better Babies on the Farm" it seemed to me that something on ways to keep them on the farm after they were no longer babies would be helpful.

We have three girls, aged fourteen, twelve, and nine. They were born on the farm, and have lived all their lives so far on the farm. And it is our greatest desire to keep them contented and happy here. From the time they were old enough to play and invent their own play their preference has been for little "play farms." These they fenced and cross-fenced, stocked with cardboard horses, cows, and goats, and decorated with fields of clover, wheat, and corn. They even built little barns for themselves. So when, two years ago, they began to talk about their own money and how they were going to farm when they got big we decided not to wait until they got big, and might change their minds, but to encourage them to begin their work right away and grow up with it and so learn to love it.

To begin with, we gave each one a walnut tree. Each was to take all the care of her tree and have all the nuts to do with as she pleased. Each one was given a small garden plot, and although they did not make much the first trial they realized a little ready money, learned considerable about gardening, and were greatly encouraged to try for more next time.

The next year the results of their work brought them a little over eight dollars each. And this year they began their farming with renewed vigor; each put out a good garden—pumpkins, squash, popcorn, tomatoes, and radishes—raised a fine crop, and took several prizes at the local fair.

In addition, one has a fine pig ("all my own") which she worked hard to earn. Each of the other two owns a calf which she bought from her own savings. They have all learned to cook and bake, and even the youngest can cook a good meal and make good bread.

They are all happy, contented, healthy girls, and would not go away from the farm to live if they were given a choice. Next year they plan to add a dozen gooseberry bushes apiece, a larger field of popcorn, and a larger and better garden.

This is the way we are trying to keep our girls on the farm. A. N. A., Oregon.

DEAR FIRESIDE EDITOR: We hear so much of what some people call "farm drudgery," and we see so many farmers' wives who leave the impression with one that they really are farm drudges.

Of course I know there are some women who have to drudge, as it were. They are compelled to perform their household tasks, care for the children, cows, and poultry, besides helping in the field. These women have my sympathy, and every day I thank the Giver of all good things that He gave me a husband who has some consideration for me and does not expect me to do the work of two women in our home, besides the work of one man in the field.

But there are women who make drudges of themselves. And still they never seem to accomplish very much. There is always a pile of sewing and mending to be done; their homes are never in order, and one meal with its soiled dishes crowds upon another. There is never a spare moment for reading or resting of any kind. An occasional trip to town to get household supplies constitutes their only recreation. And we wonder why farmers' wives are overworked!

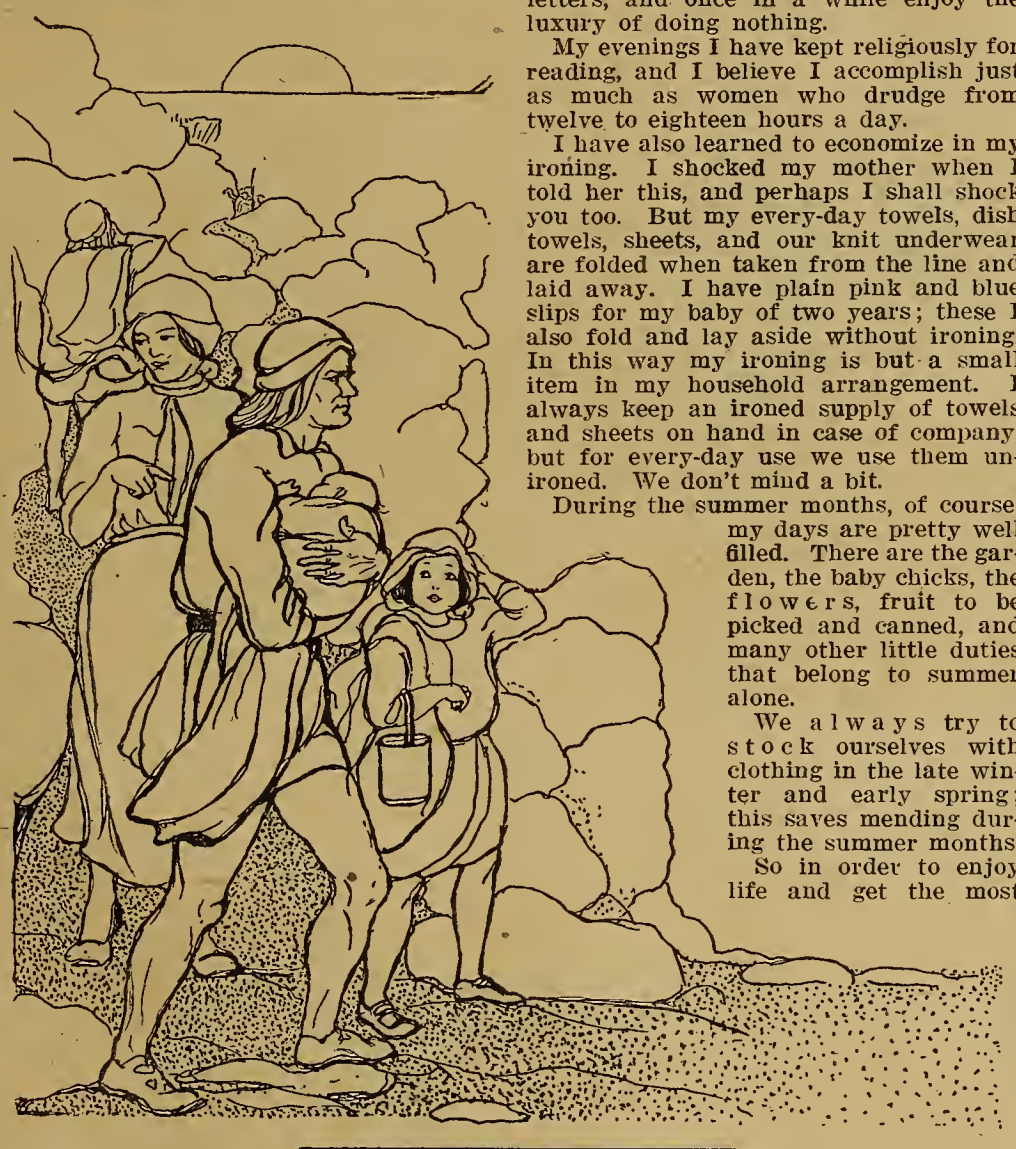
I have lived and worked upon the farm for only three years, but in that time I have learned to "let my head save my heels." And I have also learned that in order to be my best and do my best I must have time for reading and have some little recreation.

I have learned to plan and systematize my work. When I arise in the morning I know just what I want to do. I know that breakfast comes first, then the feeding and care of my chickens, then the straightening up of my house. First the dishes and separator, then the bedrooms and living-room.

My baking and scrubbing always come in the forenoon, also churning, washing, and ironing. These latter I plan so that they never all fall on the same day. Then in the afternoon I mend, sew, write letters, and once in a while enjoy the luxury of doing nothing.

My evenings I have kept religiously for reading, and I believe I accomplish just as much as women who drudge from twelve to eighteen hours a day.

I have also learned to economize in my ironing. I shocked my mother when I told her this, and perhaps I shall shock you too. But my every-day towels, dish towels, sheets, and our knit underwear are folded when taken from the line and laid away. I have plain pink and blue slips for my baby of two years; these I also fold and lay aside without ironing. In this way my ironing is but a small item in my household arrangement. I always keep an ironed supply of towels and sheets on hand in case of company, but for every-day use we use them unironed. We don't mind a bit.



During the summer months, of course, my days are pretty well filled. There are the garden, the baby chicks, the flowers, fruit to be picked and canned, and many other little duties that belong to summer alone.

We always try to stock ourselves with clothing in the late winter and early spring; this saves mending during the summer months.

So in order to enjoy life and get the most and best out of it, and in order not to be an overworked farmer's wife, one must plan the work, must have a system to follow each day. Let first things come first, and leave the last until last.

I have learned, last but not least, that if I do a good day's work my work must first be put in order. No matter what it is that calls, garden, washing, or fruit-canning, if I work in a calm, cheerful way I must first get my house in order, then I am on the right track for the day.

H. W., Michigan.

Watermelons

A Fable for Girls

By Abbie Graham

HAVE you had the good fortune to go to a big camp meeting in summer, when you were small enough to take your dolls and let them camp too; when you were not old enough to think very seriously, but old enough to swing out over the creek on grapevines and eat wild grapes and watermelons? Can you ever forget the smell of the torchlights and the breath of the fresh-cut hay in the aisles and around the mourners' bench?

Best of all to me were the watermelons. Our mother always made us long oilcloth aprons to keep our camp-meeting dresses clean when we ate watermelon. In the course of the hot summer afternoons watermelon time would come, and we children would begin, "I'm going to have the top slice." The reason we wanted these top slices was because we thought all the heart was right there. We couldn't see underneath.

When we cut watermelons at home now, we often laugh about those watermelon days. We do not clamor any more for top slices because we have found that there is heart all around the melon.

But do you know that there are children growing up into girlhood and girls growing up into womanhood who do not realize that there is "heart all around"? Haven't you seen girls who think there's only heart in the social side of life? They crowd other people out to get that slice, and leave the other all untouched. Some girls only find heart in the physical slice. Some mothers have to cook supper because some girls stay off late playing basket ball. They have strong bodies, but they, too, leave much untasted. Strange—isn't it?—that some girls want to do nothing but study and read! They just fuss over the intellectual slice. I have even known girls that have just found heart in the spiritual part of life. Perhaps you have too, and you called her "goody-goody."

These four slices then make up a girl's life—the social, physical, intellectual, and spiritual. There's heart all around.

Sour-Sweet Apples

IN THE July 18th issue of FARM AND FIRESIDE a short article was published on the subject of combination apples, one side being Baldwin, the other Pippin. A thirty-year subscriber writing from Long Beach, California, has a story which is even more interesting.

"In my boyhood days," says our California friend, "my father had a large apple orchard in Ontario, Canada. One tree in that orchard had a limb that bore apples one side of which was sweet and the other side sour. The sour side was red, and the sweet side a much lighter shade. I remember distinctly standing under the tree and tasting the apples side about, but finally the sour taste prevailed over the sweet. Father said it was done through grafting or budding a sweet and sour bud together."

Some Ways to Bleach Linen and Remove Stains—By Louise E. Dew

"TO BLEACH linen and keep it white," says a woman who knows, "something more than sunshine and fresh-air drying is essential. Both the average washing fluid and bleach are deleterious, and all good housewives avoid their use. There are formulas, however, which are harmless, and which can be easily and quickly made at home. Two of these, Javelle water, which is an excellent bleach, and a washing fluid which extracts dirt without undue rubbing, are indispensable laundry adjuncts.

For Javelle water, use one pound of bicarbonate of soda, over which pour one quart of boiling water. Boil for fifteen minutes. Remove from the stove and add one-fourth pound of chloride of lime, free from lumps. Stir until dissolved; let it settle, drain, and strain. Bottle for use.

For the washing fluid, use one pound of lime, two pounds of washing soda, one pound of borax, and five quarts of water—cold water by all means. Bring to full boiling, after which add five quarts more of cold water. Allow this liquid to settle, then strain it. When using, one teacupful to a half boiler is sufficient. Add a half cake of laundry soap, shaved fine.

If a garment is stained with ink or fruit juice, or if colors have run, as in the case of a white middy blouse or waist with a colored collar and cuffs, Javelle water will bleach to its original whiteness. To use, take a small quantity of the liquid and dilute with an equal quantity of cold water. Wet the spots in cold water, and "sozzle" the garment up and down in the diluted Javelle water until the stains disappear. Wash at once in suds and rinse well.

Anyone who has ever experienced the annoyance of having a wash gown apparently spoiled by colored basting threads left in the seams by a careless seamstress will be glad to know of Javelle water. A handsome white China silk dressing gown with red silk collar and cuffs, when laundered, was streaked with red stains which no amount of rubbing would remove. One application of Javelle water was effectual.

A white linen suit with old-blue trimmings, when laundered, turned a pale indigo in coloring. It was pronounced hopeless by laundry experts. Javelle water restored it to its original whiteness. Collar, cuffs, and trimmings were of course removed in order to boil the stained dress. Before adjusting again, they were carefully washed, and the color "set" by a generous infusion of salt in the rinsing water.

The same effect could have been reached by the sugar-of-lead process. Five cents' worth of sugar of lead dissolved in a small pail of water will set colors very satisfactorily. Only be sure that the material is perfectly clean before putting it in the solution to soak for a half hour, as the "lead water" will also set the dirt. It should be dried first without rinsing, then rinsed, if the best results are desired. Subsequent launderings of the foregoing suit did not injure the garment, which was thereafter left intact.

Both of the formulas given are excellent for bleaching a faded garment white. Delicate-colored gowns in particular, which are otherwise in good condition except for their faded, perhaps streaked, appearance, may be bleached pure white. The price of a new gown is often saved by this method of treating it.

Again rises the question of the harmfulness of the bleaches. The secret lies in careful and thorough rinsing. If this caution is heeded no injury can possibly be done to the most delicate fabric.

The quantities given in the two formulas are rather large, but they can be easily divided; smaller amounts should be made in the same proportion. Both the Javelle water and the bleach will keep indefinitely, and large quantities are recommended for the sake of convenience and timeliness.

What One "Signboard Day" Did

By Harry N. Holmes

THE State of Maryland has set a worthy example for the rest of the Union in passing the Roadside Tree Law and beginning its enforcement with a popular "Signboard Day."

Why not? Why spend millions of dollars improving roads to facilitate travel and yet permit the beauty of these roads to be marred by unsightly billboards and advertisements?

The State Board of Forestry and other organizations in Maryland aroused public sentiment and secured from the Legislature a most excellent law "conferring upon the State Board of Forestry power to plant trees along the roadside, to protect roadside trees, to establish one or more nurseries for their propagation, to prohibit the unauthorized placing of advertisements and other notices on the public highways or on the property of other persons, and to provide a penalty for the violation thereof."

To secure the co-operation of a large number of public-spirited citizens, June 20th was designated as Signboard Day for the purpose of a state-wide movement to tear down billboards, posters, and unauthorized advertisements within the right of way of public roads. Official badges and letters of instructions were sent to people recommended by well-known citizens for voluntary wardens. These instructions may well serve as a model for other States.

Instructions for Tearing Down Advertisements, Signs, and Posters on Signboard Day—Saturday, June 20th

VOLUNTEER WARDEN: You are authorized under the Roadside Tree Law, section 9, chapter 824, Acts of 1914, to tear down any billboard, poster, or advertisement upon or within the right of way of any public road within the State, and it is hoped that you will exercise this authority, acting under the following instructions, to eliminate advertisements and unauthorized posters from the roadsides as fully as possible. Please read carefully the following instructions:

1st—*Be sure of your ground.* This law authorizes you to tear down every billboard, poster, advertisement and unauthorized notice *within the right of way of any public road.* Most public roads are 30 feet wide. This, however, is not a safe guide, but in most cases there is either a fence or some property line marking the limits of the roadway. Where any such line exists it is safe to tear down advertisements, etc., outside of this property line and within the roadway. If there is no such line clearly shown and a billboard or sign constructed at some expense is in question, ask the property owner if it is on his land. If it is not on his land tear it down. If it is on his land, find out if he has given permission to erect it and if he wants it preserved. If he has not given permission to erect the sign and consents to its being torn down, this should be done at once, because the law states that in addition to eliminating billboards and advertisements from the public roads, that it is a misdemeanor to place them upon private property without the written permission of the owuer thereof.

2d—*Be thorough in your work.* June 20th has been designated as Signboard Day for the purpose of enlisting the co-operation of people throughout the State in tearing down unauthorized signs and posters on public roads so that there may be a general cleaning up on that day. You should, therefore, co-operate with others in your section, taking certain roads or a certain portion of a road, making yourself responsible for cleaning it up completely of all billboards and posters not authorized by law. The law itself provides that it shall be a misdemeanor for anyone to place billboards and advertisements along the public roads, and the State Board of Forestry will enforce this law, but it is important to start with a clean slate.

3d—*Legal notices not to be torn down.* This includes such legal notices as are required by law to be posted in public places, such as notices of registration, of election, or any notice issued under the name and title of a public official. Do not destroy signboards erected along the public road for the purpose of showing direction, distance, speed limits, or other notices relating specifically to travel along the roads, *provided* these signboards carry no advertising matter. If they carry advertising matter the advertising portion should be eliminated if it is not an original part of the sign, but if it is part of the sign the whole thing should be taken down.

4th—It is understood that you are voluntarily enlisting in this work for the sake of doing a public service without expense to the State. The badge which is furnished you is a recognition of this service, and you are expected to wear it conspicuously on Signboard Day as an emblem of authority. Be careful to keep within the law, but do your work fearlessly, effectively, and report results.

F. W. BESLEY,
State Forester.

STATE BOARD OF FORESTRY,
Baltimore, Maryland.

Signboard Day was a great success. Fully two thousand volunteer wardens did most effective work, and many thousands of ugly signs were destroyed. While the law did not permit an attack upon billboards erected on private property with the consent of the owner, the campaign aroused public sentiment to such an extent that great pressure is being brought to bear upon landowners who allow signboards on their property. Advertising companies making a business of placing such signs are greatly worried, and one of the biggest companies operating in Maryland has had to lay off a number of its men.

Why Not a Nation-Wide Movement?

This clean-up is only the beginning. Muslin posters calling upon the people to protect roadside trees and to tear down signboards are being placed along the roads so that everyone will feel a personal responsibility. Forest wardens will be sent out to finish the cleaning up. Any attempt to restore such signs will be liable to fine and prosecution, as it is now a misdemeanor under the new law.

Maryland's success is an inspiration for a national movement. People generally have an interest in preserving the natural beauty of the landscape unmarred by hideous posters, and they need only an opportunity for a concerted expression of this sentiment. None will deny that the attractiveness of good roads is immeasurably increased by shade trees with the advertisement nuisance eliminated. It has been hinted that many signs not to be reached by the law may be effectively screened by judiciously placed trees.

IT IS said that if houses for bluebirds are placed out in the sun the bluebirds will use them, while the sparrows will not. Sparrows prefer shady places as perches and nesting grounds.

Paper, the Housekeeper's Friend

Practical Devices That Make the Work About the Home Easier

By Mary H. Talbott

IN WOMAN'S workshop, the kitchen, an excellent article and something quite new is the paper dish rag. It is really more nearly perfect for the purpose than anything I have used. It does not become greasy, carries no lint, and has a surface that cleans glass and china without leaving streaks and grime behind; it is non-absorbent, and therefore does not become slimy, and is always in a sanitary condition. Hot water does not dissolve it, and under practical housekeeping conditions it lasts several weeks. These rags come in packages of six at a cost of ten cents.

Paper toweling should be in every kitchen all the year. The common towel as well as a common drinking cup is a carrier of disease. These can be bought for thirty-five cents for a roll of one hundred and fifty towels. They can be fitted with a roller at very small cost. Aside from the use for which they are primarily designed, these towels are excellent for polishing windows, glassware, and mirrors, and they form a convenient substitute for the insanitary mop cloth for wiping up spilled liquids.

Paper Cups for Jelly

As familiarity with them increases, most housewives will use the paper cups which are now made for jelly, baking custard, and so forth. They are made of pure wood pulp, are antiseptically treated, with lids to fit, and come in sealed cartons. Much time is saved in making jelly, and scalded fingers from handling hot glasses are unknown. One simply pours the boiling jelly into them as they sit on the table, slips the covers into place, and they are ready for the shelf. Dirt and dust cannot settle on the top, and the necessity for sealing later with paraffin and tin covers is done away with. The simple little disk cover completely seals them. These cost less than glasses, and though they can be used but once their convenience and reliability make them about as inexpensive. Custard baked in them for the children's school lunch is excellent.

Newspapers and flour and sugar bags are invaluable in the work of the kitchen. When blacking the stove a paper bag pulled over the hand like a mitten will afford protection from smut, but even before starting the blacking process paper will help. A piece of newspaper is splendid for removing the grease from either a coal or gas range. A folded paper bag carried in the apron pocket is handy for handling hot or smutty utensils and, unlike the cloth holder, can be discarded at the first hint of dinginess.

I line my garbage pail each morning with a fresh newspaper that is folded to fit snug, for by doing this the garbage does not come in contact with the pail, and this saves the daily scrubbing otherwise necessary. For those who seek "the easiest way," irrespective of expense, there may be purchased bags which are regularly made for the purpose of fitting into garbage pails. They hold all garbage which has been properly drained and do not leak nor soften and burst with ordinary use.

The Meals are Easily Prepared When Paper is Used

Before starting to prepare a meal I always spread a sheet of paper on the kitchen table, and thus save myself the necessity of constantly washing it.

The ice blanket which now comes for preserving the ice I have found has reduced my ice bill almost half. These cost ten cents each and last a week.

Not only is paraffin paper indispensable to the proper packing of luncheon and picnic boxes, but I always wrap it around the remainder of a roast or fowl before putting it away, to prevent drying out. And also when used on the cut surfaces of left-over fruit, such as grapefruit, lemons, watermelon, and the like, it excludes the air and aids preservation.

Many fastidious housekeepers, on account of the reduction in laundry bills and saving of table linen, are now substituting paper tablecloths, napkins, tray cloths, and doilies for ordinary daily use. The cloths are made of pure white soft paper, and each one will keep clean and look well as long as will one of linen.

It Is a Matter of Economy, Too

The laundryman charges ten cents to launder a linen tablecloth, so the paper ones are really less expensive, as twelve can be bought for a dollar and may be burned after using. Many housewives make it a rule to use paper napkins with the fruit course and when serving oily fish. That they are preferable to linen ones for picnic and school use is beyond question, as they can be thrown away as soon as their mission is filled. I have used them and paper doilies for breakfast and luncheon, both winter and summer, and found a big difference in the laundry work. The cost was negligible. Under fried fish, sausages, meat balls, and the like paper doilies are really a necessity, as the paper absorbs the surplus fat. For a few cents a dozen simple and beautiful designs can be bought. A recent development is a large-sized paper dinner napkin, so thick and soft in texture that many families are adopting it for use on all but formal occasions.

The desire for fresh linen in the bathroom for the sake of health as well as appearances can be gratified by the use of the absorbent towels which come for bathroom use at the same price as the roller towels for the kitchen. A most excellent toilet cleaner now comes made of paper. It is soaped and gritted, and treated with a strong disinfectant, and though a tong-like device made for handling it is purchasable one can get along very well without it. The use of this paper is especially desirable in summer when cloths so soon acquire a disagreeable odor. The paper, being destroyed at once, affords no lodging place for germs, as is the case with brushes and rags. For cleaning stains on the porcelain tub or basin absorbent paper is better than a cloth, and I have found it excellent for cleaning paint from hard surfaces when moistened with turpentine.

What to Use When Traveling

Instead of rubber sheeting, which is ordinarily used for the protection of the baby's mattress, the mother who is looking out for a sanitary and cool substitute will find a paper nursery blanket most desirable. It is impervious to water, does not become limp and tear, and is really more hygienic than the rubber. It is very inexpensive, costing but ten cents each.

In traveling there are many articles of paper which add to one's comfort and sense of security against contracting diseases. Packages are put up which contain stiff paper combs and an assortment of towels, wash cloths, and napkins which can of course be thrown away after use. No one who values his health will use any but his own drinking vessel. Paper bags for this use can be purchased for ten cents a dozen and take up no more room in one's grip than a letter.

"Up-stairs and down-stairs and in my lady's chamber" has paper found its way. A great saving is effected by the substitution of damask paper sash curtains for those of muslin, and of bureau covers of the same material in all bedrooms. They are artistic in design, crisp and dainty in effect, and the cost is less than is charged for laundering. In summer homes and camps these are simply ideal, for they serve their purpose for the season and do away with the necessity for packing them away.

An All-the-Year-Round Hat Protector

By Georgina C. Davis

FOR driving or automobiling I have seen no more practical and attractive hood than this design. While it can scarcely be called a hood, the comfort and snugness suggested by that word make the term most appropriate and applicable. This comfortable headgear is easily adjusted to fit a large or a small hat, and is a complete protection to the head, face, and neck without being in any way cumbersome, which alone has served to make this design very popular. One can be certain when wearing this hood that no wind, however strong, can disarrange the hat or the hair, and with the face veil in use the wearer is well fortified against both wind and dust, with the additional comfort of warmth in proportion to the thickness of the material used.

The Materials, and How to Make It

The design illustrated is made of light blue China silk with pale blue chiffon face veil. To make one of these hoods one requires a yard and a quarter of China silk, one yard wide; five eighths of a yard of chiffon veiling, half a yard wide; two yards and a half of number one and one half satin ribbon; three quarters of a yard of white flat elastic; one spool of sewing silk; two hooks and two eyes.

The hood proper is half a yard in depth. Measure off one-half yard of the silk and stitch one strip of the ribbon across the entire width. Below this, about half an inch, stitch another strip of the ribbon. (This ribbon is stitched on both edges in order to allow the elastic to be drawn through, narrow elastic being used.) At the top of the hood stitch a hem of about half an inch. The silk below the last row of ribbon is divided into half to form ties, by cutting it up from the center of the bottom edge to within a quarter of an inch from the

ribbon mentioned. Across the bottom of the ties thus formed stitch an inch hem, and on the cut edges of the ties put in a quarter-inch hem. If the chiffon face veil has no border, form border by putting in an inch hem; at the top put in a half-inch hem, and on both sides a quarter-inch hem. Through the hem on the top of the hood and that on the top of the face veil run a half yard of the ribbon, tying the ends, which will bring the bow between the hem of the hood and the hem of the face veil, on one side. The hood can be adjusted by letting out or drawing in this ribbon to suit the hat. Run three eighths of a yard of elastic through each of the strips of ribbon, thus forming the neck. Fasten well at each end. On the right-hand side sew a hook on the edge of each end of the ribbon; on the left-hand side sew eyes to correspond with the hooks.

The hood is most easily adjusted by first pinning the top of it—that is, where the ribbon is drawn through the hood and the veil—to the crown of the hat, somewhat toward the front. (This pin can afterward be removed when the veil is on, to suit the wearer.) Pull down the face veil, pinning on each side to the hat. Keep the sides of the face veil under the hood, and fasten the latter under the chin by means of the hooks and eyes.

When the face veil is not in use it can be draped or plaited very gracefully with the aid of a few pins on each side, across the front of the hat, the hood afterward being fastened under the chin.

The ends of the silk can be tied in front, or crossed in front and tied at the back or on one side, forming a further protection to the neck.

Take the Precaution

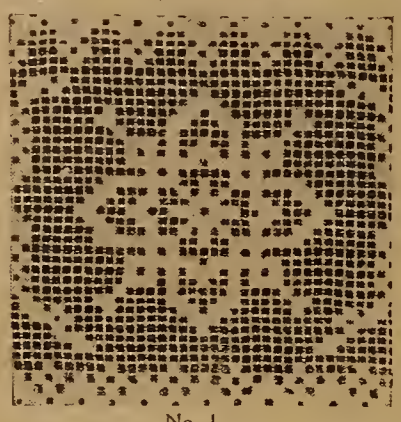
ALL wounds should be disinfected, whether they are in the flesh of man or animal. This gives a chance for a clean job of healing, and it may save from death by lockjaw. If the wound is not an open one it should be opened with a lance or clean sharp knife. Then disinfect thoroughly. The antitoxin which has been discovered for lockjaw—tetanus antitoxin—does no good unless used at a very early stage of the infection. For all wounds disinfect early. It pays.

Filet Darning on Woven Net

Quaint and Beautiful Patterns May be Worked on Garments and House Trimmings

By Virginia B. Jacobs

ALTHOUGH filet lace is generally popular at the present moment, few women care to spend the time making the net, a tedious task even to the expert needlewoman. Nor is it necessary to do so, for the woven, square-meshed net which is obtainable in most shops that sell lace-curtain materials will answer the purpose quite as well, provided the thread is heavy and the mesh fine.



No. 1

This makes a pretty pincushion-square

This net can be ordered by mail from the large stores. It costs one dollar a yard, but, as it is forty-eight inches wide, it takes but a small piece for quite a great amount of working material. On this net are darned or woven the quaint and beautiful patterns that are characteristic of this variety of lace. The patterns may he copied from bits of real old lace, or the simple designs that come for cross-stitch work may be used. The net comes in black and white.

In working use a large-eyed needle and a single strand of smooth, lustrous, rather heavy cotton thread for the filling.

How to Work

Let us look at a simple little ornament such as is frequently used in the center of a large design (No. 1). Notice how all the weaving runs in the same direction; all the stitches in the pattern have been worked across from side to side. This makes it important to count the squares in straight rows when you are copying a pattern, for sometimes as many as a dozen squares may be woven in and out in one continuous row, side by side.

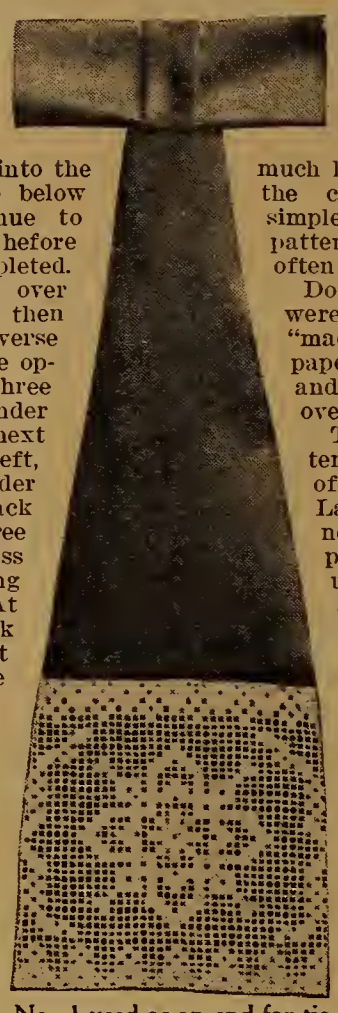
The wrong side of the canvas is held upward while working. This keeps the lower or right side smooth and free from inequalities that come from extra stitches and joining of new threads.

Begin to work by sticking the needle into the center of the square (a) that you are to weave, as shown in diagram No. 3. Pass under the mesh line at the left side of the square. Draw the needle through, letting a short end of thread remain, which will later be covered and held securely when the darning is finished. Point the needle in the opposite direction, and pass under mesh thread (C) at the right. Reverse the needle, and pass again under B. Reverse and pass again under C. So continue, until the square is filled evenly and smoothly; four to six stitches will be sufficient, according to the size of the space and the size of the thread.

No. 2

When the first square is filled, pass the needle into the center of the next square below the first one, and continue to weave back and forth as before until another square is completed.

Now pass the needle over mesh line B into square c, then under mesh line A. Reverse the needle and weave in the opposite direction, across three squares, passing over A, under B, over C, under D. The next row goes across to the left, over D, under C, over B, under A. Continue in this way back and forth till the three squares are woven, then pass into f and fill the adjoining three squares (f, g, h). At some point in your work you will find that the next part of the pattern to be done does not adjoin the square that you have just finished filling. When this makes it necessary to cross work, slip the needle through the stitches of the completed squares close to the mesh line, and you will be ahle to conceal the stitches which carry the thread over to the point where the pattern continues. In a similar way threads are finished off and new ones begun.



No. 1 used as an end for tie

After choosing a design, plan out the simplest way to work it (see No. 4). Here a simple zigzag line was first worked, then the opposite line crossing it was done, with the addition of the extra squares in the design at the intersections. Such a method of working keeps the weaving continuous and will prevent the constant need to skip spaces and to join in new threads, which roughens the work.

The mesh canvas is stiff enough to he worked upon directly, but if you prefer, the work may be basted over a piece of oil-cloth or heavy paper. You will find it very convenient when working a large ornament to stretch the canvas securely in the ordinary emhroidery loops.

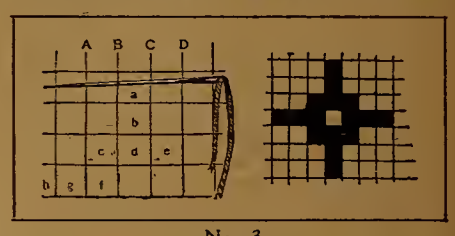
The patterns for the filet lace work out so much larger than the diagrams in the cross-stitch books that a simple method for making your patterns the size of your work is often advisable.

Do you remember when you were a little girl how you "made money" by putting a paper over a penny or a nickel and then ruhbing it over and over with a lead pencil?

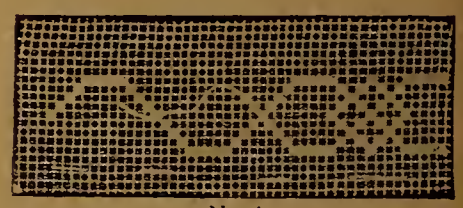
The plan for copying patterns is just a grown-up idea of the same childish practice. Lay a piece of the foundation net on a hard surface, and pin over it a sheet of thin unglazed paper. Rub over and over this with a piece of shoemaker's wax—the round flat cake that is used for polishing, not the lumpy kind that is used for waxing threads.

The paper will soon be cross-barred in the exact reproduction of the foundation mesh. On this you now mark in ink the simple figures and details of the patterns chosen, making whatever alterations you desire. This gives you a *working pattern the same size as your material.* If you like, you can place this under your canvas while working and so save much time counting squares and spaces.

A simple medallion such as shown in No. 1 will make a handsome end for a necktie or pincushion top. If you wish, a central design may be inserted, or an initial may be worked in the open space of No. 1. Or you can cut a yoke pattern in stiff paper, and after planning how to fill the required surface you can work an exquisite guimpe. To make it the net must be hasted on a stiff paper pattern of the correct size and shape, with small



No. 3



No. 4

A good border for a curtain

stitches taken close together, particularly around all the edges, which should be hasted both inside and outside, and the same careful hasting should be done around each figure of the design.

When Your Watch Stops

By Bolton Hall

WHEN your watch stops and you have no compelling wish to assist the jeweler, lay a sheet of white paper on the tahle, open the works, hold the watch with the open works downward over the sheet of paper, and tap the case smartly on the paper, or tap the watch with a lead pencil.

You wlll surely be surprised to see the amount of dust or sand that will fall out on the paper. While tapping turn the watch every way so as to give the dirt a chance to fall out. If the watch will start again it will probably go for a long time.

If it won't start, then probably one of the springs is broken.

You need not wait till your watch stops either. Try it now, especially if you have been automobiling or to the seashore. A watchmaker chum of mine showed me that trick: he died recently. If everyone had known it he would have died in poverty long ago.

Chicken and Its Variations—By Carrie May Ashton

THERE is no fowl or game which affords greater diversity in its methods of serving than chicken, nor one which is more appetizing. A good old-fashioned way which we children thoroughly enjoyed for supper, after a cold winter day at school was

STEWED CHICKEN—Mother took a young chicken of not more than four or five months, and after jointing and washing it thoroughly ruhbed salt over each piece and placed it in a stewpan with just enough hot water to cook. When half done, one cupful of hutter was added, the kettle covered, and the chicken allowed to stew slowly until tender. No other way ever tasted as good as that which Mother used in the days of our childhood.

CHICKEN CUTLETS—Boil a chicken, removing it from the kettle before it is quite tender. Take the best pieces and spread with soft hut not melted butter, and then dip in heaten egg and powdered bread crumbs. Fry until brown in a little butter in a hot pan and serve on slices of toast.

PANNED CHICKEN—Select chickens four or five months old. After dressing, cut them through the middle of the back, wash thoroughly, wipe and ruh inside with salt. Pour an inch of boiling water into a roasting pan, with three heaping tahlespoonfuls of hutter, lay the chickens flat, with breasts uppermost. Cover tightly and watch carefully, hasting and adding water when needed. In an ordinary oven an hour and a quarter is sufficient for cooking them. When ready for the table, spread with hot butter. Make gravy as for any chicken dish.

CHICKEN OMELET—Beat four eggs vigorously with a fork. Have ready a very smooth frying pan with a piece of butter in it the size of a walnut. Shake until melted but not hrown. Pour in the beaten eggs, sprinkle with salt and pepper. As soon as it begins to thicken sprinkle over it a cupful of finely chopped cooked chicken moistened with a tiny bit of cream. Roll and serve.

CHICKEN ON TOAST—The remnants of cold chicken, if chopped fine or run through a meat grinder and mixed with sweet cream to which has been added one teaspoonful of cornstarch and allowed to cook until it thickens a little, is delicious served on slices of toast for lunch or supper. Add salt and pepper to taste.

CHICKEN HASH—Cut fine a quart or more of cold boiled potatoes (do not chop) and put them in a hot frying pan with a tablespoonful of butter which has been melted but not hrowned. Let them cook slowly, loosening frequently with a spatula. After they are partly browned (adding more butter as needed) add a pint or a quart of cold chicken cut fine, and cook fifteen or twenty minutes longer, salt, and add one-half cupful of sweet cream and a teaspoonful of chopped sweet green peppers. The quantity of chicken used in this recipe may vary according to the amount on hand.

CHICKEN CROQUETTES—Boil a chlcken until tender. Cool before removing the bones and all skin, then cut fine. Make a cream sauce of one-half cupful of cream, one-half cupful of chicken stock, one heaping tahlespoonful of flour, one teaspoonful of salt, two dashes of pepper, and one tahlespoonful of chopped parsley. Add the chicken to this and set away to cool. Shape in croquettes, dip in heaten egg and dry hread crumhs rolled fine, and fry in deep fat a golden-brown. Serve with Spanish Sauce made as follows: One cupful of chopped or canned tomatoes, one cupful of stock, one tablespoonful of butter, one and one-half tablespoonfuls of flour, one-half teaspoonful of salt, one-fourth teaspoonful of ground cloves, a dash of red and white pepper, a clove of garlic cut fine, two pimento-stuffed olives cut fine. Cook only long enough to thicken.

CHICKEN PATTIES—Line muffin tins with puff paste, and hake. Have ready a pint of cold hoiled chicken cut very fine, and season with salt, pepper, a tablespoonful of chopped parsley, two tablespoonfuls of butter, one cupful of cream, and one heaping teaspoonful of cornstarch. Heat the cream and thicken with the cornstarch moistened in a little milk, add the parsley, and last the butter and chicken. Cool before filling patties, and return to the oven to reheat when ready to serve.

PRESSED CHICKEN—Select a large fowl, boil slowly until very tender so that the bones will slip out easily. Salt when it begins to cook. Take out the chicken and cool, remove bones and every particle of skin. Dissolve half a hox of gelatin in one-half cupful of cold water, and pour over it a pint of the hoiling stock in which the fowl was cooked, to which has been added four tablespoonfuls of hutter. Lay the chicken in a mold and pour over it the gelatin and stock. Set in a cool place until the following day before slicing. Garnish wlth parsley.

SCALLOPED CHICKEN—Make a white sauce of one tablespoonful of butter, two tablespoonfuls of flour, and one cupful of milk cooked smooth (douhle this rule if a larger quantity is needed). Fill a casserole with alternate layers of chopped chicken, well seasoned, and the cream sauce, adding parsley or minced green peppers if liked. Sprinkle fine dry hread crumbs over the top, over whlch is poured melted butter. Cover, and bake nearly an hour, then uncover and brown.

QUEEN'S CUP CHICKEN—One pint of cold hoiled chicken, diced or chopped. One tahlespoonful of butter, two tablespoonfuls of dried bread crumbs rolled fine, one-half cupful of chicken stock, two eggs, salt and pepper to taste, and one fourth of a nutmeg grated. Melt the hutter, add crumbs until it boils, then add other ingredients. Fill small cups two thirds full, and bake twenty minutes in a pan of hoiling water. Serve with Béchamel Sauce made as follows: One tablespoonful of hutter melted but not browned, add one tablespoonful of flour, one-half cupful each of stock and cream, one-half teaspoonful of salt. Mix thoroughly and let it come to a hoil, then stir into it the salt, two dashes of pepper, and the well-beaten yolk of one egg.

VEGETABLE CHICKEN—Four pounds of chicken, one green pepper, four medium-sized potatoes, one-half pound of lean ham, one pint of stringed beans, one quart of tomatoes, one pint of grated corn, one-fourth pound of grated cheese, one-fourth pound of butter, one large onion, salt. Draw, singe, and cut the chicken into cuhes. Put into the hoiling water with the sliced onion and diced ham. Cover the saucepan, and let it simmer for an hour and a half. Then add salt, peeled and sliced tomatoes, diced potatoes, stringed beans, and green pepper chopped. Cover again, and simmer one hour longer. Cook your corn separately. Cut the hutter into squares and roll them in flour and add them to the stew. Then add your corn and sift in the grated cheese, and add the beaten yolk of an egg. Stir five minutes and serve. Be careful that this stew does not scorch. Have a moderate fire, and stir from the bottom. Fresh vegetables are preferable. Canned ones may be used.

W

Bulbs for Winter Blooming

By Ida D. Bennett

THE forcing of bulbs for winter flowering is a simple operation, as the bulbs are prepared for just this purpose, and it is essential only to pot them in good mellow soil, water thoroughly, not forgetting to label them with the name and date of potting, and set them away in a cool, dark place, preferably a cellar, until they have completed the necessary root growth, when they may be brought to the warmth and light of the upper regions. No special soil is required except one that is mellow enough for the easy passage through it of the soft roots of the bulbs. The bulbs should be placed so that the tip of the bulb is just below the surface of the soil. A single bulb should be put in a three-inch pot or a larger one if the bulb is very large, and three or more bulbs in a five-inch pot. Leave sufficient space—a half-inch or more above the soil—for watering, as bulbs forced into bloom out of season require considerable water during the blooming period.

Working for Christmas Flowers

From two to three months will be required for the majority of bulbs to make sufficient root growth to produce a satisfactory bloom, and if successive plantings are made at intervals of ten days or two weeks a succession of flowers will be enjoyed from Christmas until Easter.

One will find, on studying the catalogues, that there is a great variety of bulbs to select from, but it must be remembered that, while any or all of them are desirable when in bloom and usually satisfactory in the hands of the professional, not all of them are dependable in the hands of the amateur. The inexperienced will do well to make their initial efforts with such reliable sorts as the hyacinth, crocus and narcissus.

Certain of the tulips may usually be depended upon to bloom, but one should beware of the late bloomers, selecting, rather, such sorts as the Turnsoils, Duc Von Thol, Imperator, Rubrorum, Murillo and Titian, all of which force well; the single Duc Von Thols give a greater range of color than the double forms and show white, pink, rose, scarlet and crimson shades.

Hyacinths Live Like Tulips

Hyacinths require practically the same treatment as tulips, but only one bulb should be placed in a pot, and this should be kept as near a temperature of fifty degrees as possible. When brought up for flowering it will be better to place it, until the flower-spikes are fully developed, in a room where the temperature does not rise much above sixty degrees. By keeping in a cool room the blooming plants of all sorts of bulbs, the period of bloom will be greatly prolonged.

To those not familiar with the names of the different varieties it may be helpful to suggest those which may be relied upon to give satisfaction. Of the white shades one may select with confidence La Grandesse, Mme. Van der Hopp, Baroness Von Thyll and L'Innocence. Of the pink varieties, the Norma is one of the best for early forcing. The Moreno, Charles Dickens and Gigantea are also fine. King of the Blues and Queen of the Blues are, as their names indicate, the best of their class, while among the yellow shades Ida, King of the Yellows and Yellow Hammer are safe selections to make.

Don't Overlook the Jonquil

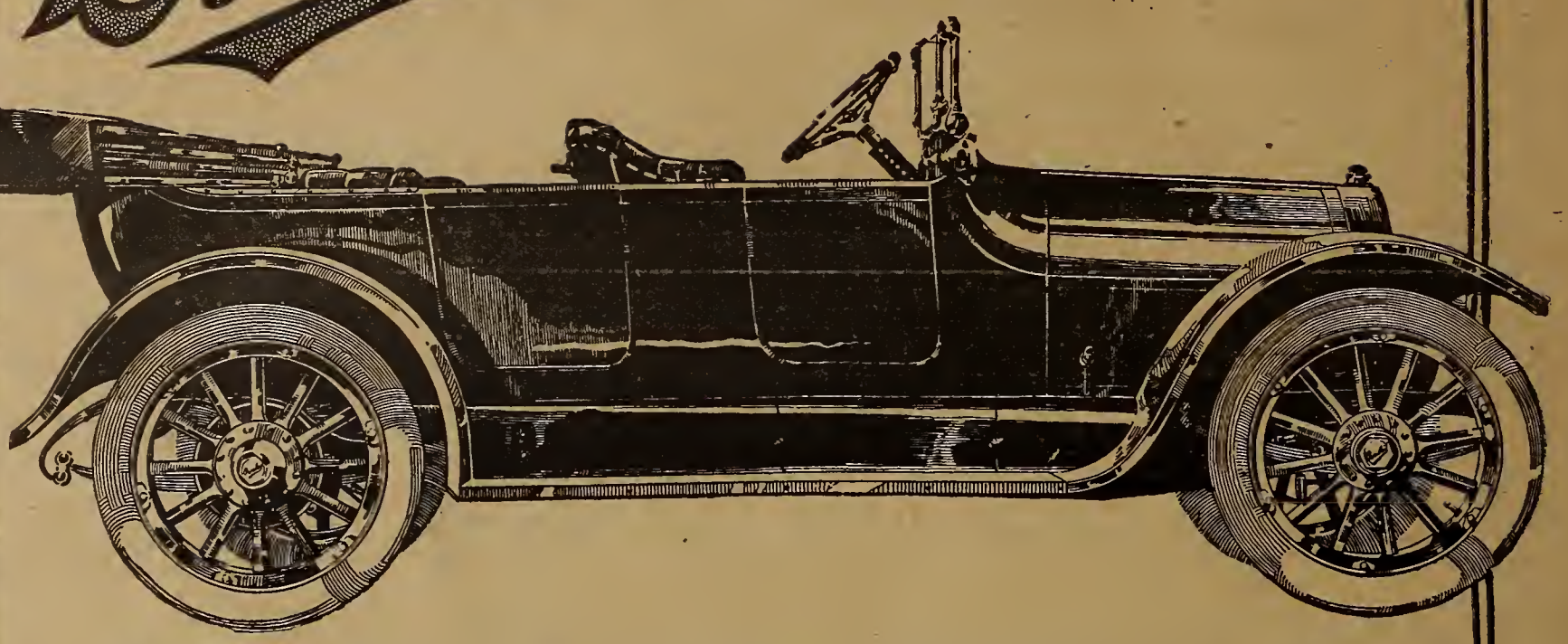
But the most satisfactory bulbs for the amateur, or for anyone else indeed, are those of the narcissus or jonquil or daffodil. Plant a window-box full of Von Sion, and though November skies may lower with forbidding gray clouds and the sun refuse to shine from week-end to week-end, yet you will have a window full of sunshine. For planting singly in pots the trumpet-flowered varieties are unsurpassed, and they may be used with charming effect to brighten up masses of foliage. Nearly all the trumpet sorts are desirable, but the finest and largest-flowered varieties are the Sir Watkins, Horsfieldi, Empress, Emperor, Giant Princeps and Glory of Leiden. The paper-white narcissus is beautiful and fragrant and has the merit of producing its flowers in clusters instead of in a single, stately bloom, as is the habit of the trumpet sorts.

For planting in low, shallow pans or pots the crocuses are delightful, and if the giant forms of the bulb are selected a succession of bloom will be secured.

If one wishes to grow the lily of the valley, then prepared pips should be purchased of the florists, as those lifted from the garden beds are very uncertain and unsatisfactory. These should be planted, a dozen or more pips together, in pots of sand, light soil or sphagnum moss, setting the pips about a half-inch above the surface of the soil. The pots should be plunged in beds of ashes or sand out of doors and brought in as needed after they have received a good freezing.

Overland $1075

MODEL 80



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FARM and FIRESIDE

EVERY OTHER WEEK ~ ~ THE NATIONAL FARM PAPER

SATURDAY, SEPTEMBER 26, 1914 *5 CENTS A COPY*

E ESTABLISHED 1877

Seeing the County Fair

WITH THE EDITOR

THE hired man, as a rule, isn't heard from. He is not much addicted to telling his troubles in print, but we know that he has them all the same.

We are prone to discourse on the difficulty we have in getting good men, but if we paid more attention to the matter of giving our men good employers it might help the situation to some extent. Mr. William H. Plohr, an Ohio reader, calls upon us to forget about the war in Europe—which, by the way, is sure to affect the matter of farm help—and consider the hired man, how he toils and spins, and is not arrayed a bit like Solomon in all his glory.

I have been a reader of your paper for some time and often wondered why the employee never answers the employer! An employer says he had to give up raising stock because he could not get the help. I am a farm employee and left to take up a more profitable job. We working men do not care to work for our board and listen to the continued hard-luck story of our boss while he is trying to get 16 to 20 hours work per day out of us.

My solution of the help problem is this: Where practical I would pick out a good man, married preferred, and give him such an interest that he will be willing to do his work right. Lack of money keeps many in the city who would be glad to farm on shares.

Lots of us have left farms because when our eight months' contract ran out in the fall we had no place but the city to go. Nobody wants us in the winter. The farmer says, "I have nothing to do but the feeding, and I can do that myself. But if you want to stay and help I will give you your board." And then the boss sits by the fire and figures out what to do so as to be sure you get in full time, feeding, hauling manure, chopping the summer's wood, building fences, and the like, and the first thing you know off you go to the city to become part of a machine.

Next you meet some lassie from the country who has left for nearly the same cause, and it is go and get married right off, and go in debt for part of your furniture. You cannot leave your city job till it's paid for, and all the while it is buy this and that.

You finally begin to find out where you are at, and wonder why you are getting farther away from the farm than ever.

Perhaps you have been blessed with children. They are all small; nobody wants your brats in their house. Then it's go in debt for a house on a parcel of ground 50x60 feet or less, but never what you want if you were raised on a farm.

Mr. Plohr here touches the deepest instinct of the human being, the very basis of human society, the thing without which we should never have risen

above savagery, the thing which if it is lost to us will take away the prop which keeps us from sinking again to savagery—I mean the irresistible instinct which calls upon us to marry and rear families. Is the hired man to be always kept below the marriage line? Is he not as much entitled to a house, a wife, and a place in the sun of human society as the city workman?

Just think of the difference between city work and farm work in this matter—the greatest matter in all the world when, as Mr. Plohr says, "you meet some lassie, and it is a go." The wage worker in the city can find a flat, or a cheap boarding house, or some sort of place where the two may live. The wife, while things are in the "two stage," can continue her employment. They can live together and love each other. True, as Mr. Plohr says, when the children come troubles are apt to come; but love's young dream is only a dream for a while, and Nature stops the ears of lovers to the words of caution. Say what you may, if, as Tennyson says, "'Tis better to have loved and lost than never to have loved at all," or if it is better to have wedded and found marriage a sea of troubles than never to have wedded at all, the city gives the poor young man the best chance.

What we must come to, if we are to remain on this basis of dear land and only a part of the farm workers able to possess it, is a recognition of the fact that the men employed on our farms should be somehow placed in a position which will compete with the dubious offerings of the city. A cottage for the hired man, with a garden and a place for poultry, has solved the problem for many a farmer. It should be considered by every steady employer of farm labor. Such a home, with steady, year-after-year work, offers the very opportunity of which Mr. Plohr next speaks.

It has now become almost impossible to get back to the farm; and yet there is a place you are longing for and a man that needs you if you could find them. You and he are in the same boat and do not know each other, and who will introduce you? He reads the papers of his section of the country and you the daily of your city. Yet you never get acquainted. You pay the price of advertising two or three times in your home paper, then give it up as lost and stay in the city.

What we need in each State, with connections to all other States, is a farm employment bureau where the farmer and his helper can meet through the U. S. mails. The farm owner who wants help can then send in his name and the kind of a man he wants, stating the wages or share he would give, and the laborer could be listed at what he were worth or knew how to do. It should be in bulletin form for free distribution, the same as other agricultural data. So please start something going along this line. Maybe by the time my children's children are old enough to work on a farm we can get each State to act in co-operation with each other. Then we will not need to lament over the stopping of the illiterate and financially embarrassed foreigner or immigrant.

It isn't necessary for us to "start something" along this line, because it is already started. Wisconsin has the best state labor bureau, I think, and it finds it necessary to get closer to the men and the jobs than contact by mail. The United States Commission on Industrial Relations is at work on the matter, and something good ought to come from the deliberations of that commission. Every State should study Wisconsin's way—not her law so much as her way of administering it. And then every State should try to surpass Wisconsin.

But laws won't cure the matter—at least labor bureau laws won't. If each well-to-do farmer will try to solve the problem himself on the basis of the recognition of the necessity of the farm hand and his sweetheart for a home and a household, much more will be accomplished than any law can do.

Herbert Quick

Coming—In the October Tenth Issue

STARTING with a splendid cover by McClelland Barclay the October 10th issue of Farm and Fireside will be full of interest.

And not interest alone, but also profit for the farm worker.

D. G. Mellor, manager of the Food Products Department of the Wells, Fargo & Company Express, has told for us the story of the express companies, or rather we should say that his article deals with farmers, truck gardeners, and poultrymen who have used the express companies in order to get more money out of their crops. But are we all familiar with this new form of marketing? Some are, and of them this story is written.

How does the war affect the price of paint?

This has been a common question during the last few weeks. But it may be equally important to know how to buy and use paint economically and get the best results, whether war is going on or not. Of that D. S. Burch, Associate Editor, will talk in the coming number.

And then for the women there will be discussions of home-making which will help to solve the problems of daily life upon the farm. One of the most interesting of these will be an article by Mrs. Alice Preston Mills about ways in which useless and uncomfortable rooms may be made into sunshine traps and hold together the members of the family in true companionship and the spirit of home. Efficiency in work and restfulness in leisure are the keynotes of this article.

When you have finished reading what Mrs. Mills has to tell you will say, "I wish Farm and Fireside would have more of such articles." But we knew you would say that. So we have arranged with Mrs. Mills for the discussion of several home problems like this, and you will get them as you get Farm and Fireside.

And as you are anticipating the next issue, do not forget the story. In this issue will appear Part I of a story by that master of the short story, Edwin Baird. It's called "His Own Daughter," but it tells a good deal about a father who saw little use for either aëroplanes or lovers.

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What the Mexican Farmers Want

By L. Gutiérrez de Lara

Mr. de Lara

IT IS fortunately hard for the American to understand the Mexican situation. "Fortunately" because our difficulty arises from the fact that during the lifetimes of most of us we have had no civil war, no taking away of property by force. The last instance of the sort in the history of the United States dates from the Emancipation Proclamation which confiscated the most valuable property of the people of our Southern States just as great landed estates are now being confiscated in Mexico. But Mr. de Lara's article, which we are delighted to have the privilege of publishing, will throw a flood of light on the terrible problems which confront the farmers of Mexico. Mr. de Lara is a Mexican and a revolutionist. He has striven and suffered for his views, and had he fallen into the hands of the Federal faction in Mexico his life would not have been worth a farthing. A very different story would be written covering this subject by any one of the leaders of the Diaz school of political action, but we are here giving the opinions of the Mexican farmers themselves. Mr. de Lara is the author of a book entitled "The Mexican People," published by Doubleday, Page & Co., a very valuable contribution to this vexed subject. His book, as well as this account, shows how intimately he has been associated with the Mexican farmers' problem.

THE revolution comes from the peon—he who is most vitally interested in the possession of the soil which he and his ancestors have many years been tilling for masters.

We have been hearing much of the peon class in Mexico on account of the revolution. Perhaps it is but natural for us to fall into the erroneous idea that all the poor of that country belong to that class. Besides the peon there is the other exploited laboring man—he who works in the mines, the factories, on the railroads, and the city artisan. But the ranks of the revolution are not made up of the latter.

We know now what the past of the peon has been—misery, starvation, slavery, and humiliation.

What future will he make for himself after the destructive period of the present revolution is over? To foretell this we must understand how the small farmer in Mexico has conducted himself.

has told me of his endeavor to analyze the soil according to his limited knowledge, his purpose being to take every advantage of the composition of the soil. Men of such high ambition and intelligence! What may we expect of them when the Department of Agriculture is reorganized for the sole purpose of assisting the farmer in his endeavor to make mother earth produce.

Famine in a Land of Plenty!

Hindered as the peon has been in the past by lack of modern tools and scientific knowledge, he has taken advantage of every inch of ground to make it productive. To-day where the small farmer exists we find the most delicious variety of vegetables and fruits. He has the climate, fertility of soil, and to a certain extent the water, and, yes, the intelligence. Now give him the opportunity and see how abundantly the markets will be supplied with the most delicious tomatoes, big white onions, sweet corn, string beans, chickpeas, and all the other well-liked vegetables.

Thirty-five years ago there were in Mexico about one million small farmers, and in spite of the lack of systems of irrigation then, there is no record of a cereal famine in the country. It is very significant indeed that since the beginning of the last twenty-five years, and coinciding with the despoliation of the small

A cocoanut grove; Mexican huts in the foreground

farmer under the Diaz rule, cereal famines began to appear periodically every year, and became more and more acute until within the last decade these famines became so intensified as to produce great suffering among the poor all over the country. The Government, ignoring the real cause of these famines (which was the lack of cultivation of the lands due to the establishment of big landlordism), endeavored to remedy the lack of crops by the importation of corn from the United States. And Mexico is essentially a corn-producing country!

Besides work on this vegetable-producing land (intensive cultivation) we have extensive cultivation in the south, or hot lands. The production is larger and richer, but the crops are harder to cultivate because of the intense heat.

This work exists on the large haciendas, or plantations, of coffee, pineapple, sugar cane, rubber, bananas, tobacco, rice, about thirty varieties of different tropical fruits, the vanilla bean, and hemp. These plantations may remain unsubdivided due to the extensive crops and the machinery necessary for their cultivation. The peon, being the owner of a patch of land somewhere else, will refuse to work on these haciendas for low hire, and this will force the development of modern machinery.

The purpose of the present struggle in Mexico is to secure the distribution of the large haciendas that should by rights be subdivided.

First, the hacendado, as the great landlord is called, has been driven out of the country at the point of the bayonet. He dare not return, for life is dearer to him than land; but to the peon who loves the land which he has been cultivating this land is dearer to him than life. Was he not ready to give up his life for it when he shouldered his rifle and joined the ranks to fight for it? Was it for any certain and ambitious individual that he was eager to make such a sacrifice?

Having driven from the field the large landowner, the peon continues to cultivate the same piece of ground that he had been cultivating for his master for years, with this difference: he is now keeping the products of his toil. And this is the patch of land that he wants, not the land that some other peon has been cultivating. When peace has been established and the peon has a voice in the government, he will demand that the Department of Agriculture sees that he has a recorded legal title to his land.

There are now millions of acres of fertile irrigated lands in Mexico, enough not only to supply the three million heads of families among the peons who live there but several million farmers from Europe or the United States who are willing to go to Mexico.

The readers of FARM AND FIRESIDE appreciate the splendid social element represented by the small farmer. In Mexico we count on this social element in the future to be the backbone of the nation. We expect the small farmers to show to the nation their physical power through the production of the necessities of life by the intense cultivation of the land. But more than this we expect them to implant their healthy, sane, and honest spirit upon the future national soul. This was done in 1857 to 1861, and it will be done again.

The Plea of the Common People

We have these great hopes in Mexico, and must depend upon having the same spirit prevail in the United States.

If the small farmers of the United States are able to make their influence felt in this country, there will follow in consequence a sane and honest policy; but if they let the absentee landlords, industrial speculators, and financial gamblers take the land in the country, they will crush not only the American small farmer but will make their evil influence felt all over the world.

No matter how ignorant of politics

I have seen them—sturdy, puritan, honest fellows

In the first place we must take into account the deep passion of the Mexican tillers of the soil for the land.

I have seen them—sturdy, puritan, honest fellows, who stand all of the hardships of life with tremendous power of resistance, who bear with resignation the loss of their beloved ones—crying like children when they have been evicted from their small patch of land.

This great passion of the Mexican farmer, or peon, shows itself sometimes in a strange way. I have watched him prone upon the earth nearly motionless for hours and hours, scratching the ground with his fingers. At my inquiry about his peculiar action, he

Hauling corn—a staple product in Mexico

the farmer may be, his material interest as a producer is such that he makes the only foundation of social justice which is wanted by the common people everywhere in the world.

What is needed by the small farmer, financially, physiologically, and socially, is naturally needed by the common people in direct contrast to the wants, needs, and ambitions of the financial gamblers and absentee landlords.

Let the small farmer place upon the community his simple and practical ideas of politics and his complete control of the land: then will there be abundance of social wealth, with social justice, at home and abroad.

The Headwork Shop

Rats—How to Lose Their Society—Use the Methods Here Described and Even the Wisest Will Go Blindly to Their Fate

My Rat-Heaven Trap

TAKE a large barrel that will hold water. Nail a small post in the center, only half the height of barrel, and set barrel where most rats will pass. Fill barrel half full of water, just to top of post; then put in a thick layer of corn silk, cottonseed, or some substance that will not become wet and sink soon. On top of this put a layer of corn meal.

Mr. Rat likes corn meal, and when he sees a barrel half full of it, he hops right in. He can't hop out, but he finds the top of the post and crawls on it to keep out of the water. His brother comes along and sees him sitting in the middle of all that meal and in he hops, and so the meeting continues. J. B. SIMMS.

Oyster-Supper Rat Hunt

OUR village was overrun with rats and the rats did damage in every way a rat knows how, which are many. We chose two leaders whom we called captains, and each captain chose his men. We had fifteen on each side. The side showing the fewest rat tails was to serve an oyster supper for all. The hunt was to last a week.

We drew boundary lines about a mile from town in each direction and no rat caught or killed outside of the boundary line was to count. Otherwise we were to catch all the rats we could any way we could. We used steel traps, box traps, deadfalls, barrel traps, ferrets, dogs, guns, and clubs. In the excitement rats were often seized in bare hands and killed.

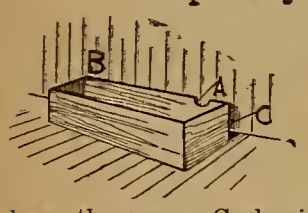
At the end of the week three disinterested parties counted the tails and announced 338 for one side and 332 for the other. We had killed 670 rats in a week. I was on the losing side, and my share of the oyster supper cost me 70 cents, but counting the supper and the fun the money was well spent. E. R. YOST.

The Terrier the Rat's Terror

WE KEEP poultry, and for a time the rats killed large numbers of our baby chicks. After experience with all kinds of traps, poisons, and cats we have found that two rat terriers are the best means of getting rid of rats. For several years no rat has made our place its permanent abode. The dogs are always on the lookout, and when a rat is found there is a lively time.

When a rat is located under the woodpile or around the chicken coop one dog will dig after him while the other stands back and waits ready to pounce upon the prey. The dogs save us many dollars every year in actual value of grain and chickens the rats would destroy. DON MOON.

Trap They Don't Suspect



TAKE a large box and cut a notch (A) large enough to admit a good-sized rat. Remove all the boards from the top of the box and place the box in a building where rats are thick. Put the corner B against the wall, but have the corner C about three inches from it, leaving a V-shaped opening behind the box. Now put some food in the box and lay boards on top of it.

Do not disturb it for a few days until you see the rats are going there. Then whenever you go near the box take another box and block up the opening between the corner C and the wall. Give the trap box a thump and the rats will run out of the opening (A) behind the box. Then with a stick kill them from above. This simple and inexpensive trap is the best I have used. I killed 57 in three weeks. WAYNE T. GRAY.

Your Share is Five Rats

THERE are on an average 30 people and 150 rats to the square mile in the United States. This makes 5 rats to be killed by each person. Our family of three is therefore responsible for the killing of 15 rats, but in the past seven months we have killed exactly 208. One wire rat trap and 6 steel traps did the work. The wire trap was baited with ear corn and kept covered with an old blanket. At one time we caught 8 rats with the wire trap, and 4 rats was the largest record with the 6 steel traps. The steel traps were set on top of corn in the cribs where rats were working. After 4 or 5 days of good trapping with steel traps your luck may cease. To bring it back wash the traps thoroughly in hot water. The rat question is a serious one, but if everyone would do his share and kill 5 rats, there would be none left. O. A. RENAHAN.

Scorched Rat Gives Warning

I KILLED a rat and held him over the fire till well scorched. Then I hung him up where the rats were most troublesome, and in two weeks not a rat was in sight, and I have never seen any since. JOHN ZOLLER.

No Nests, No Rats

THE best way to keep rats away from your corn and other feeds is a rat-proof crib or storehouse made for the purpose. If you use wood set your storehouse high enough above the ground so your dog can go under. Clean up all the litter around the place and the rats will have no place to raise their young. We used to have lots of rats, but since cleaning up the piles of old lumber the rats have left us. T. M. EMBERTON.

Let the Rat-Killing Begin

IN THE name of humanity let the rat-killing begin. Rats carry disease, they eat, waste, and defile farm products. This page tells how others have solved the rat problem. Bear in mind that you should first destroy all nesting places, shut off their food supply, and finally kill them. Trapping is usually better than poisoning because you can bury the trapped rat. Poisoned rats that die in their nests may be a great annoyance. The experiences here given are the prize-winners in the contest announced August 15th.

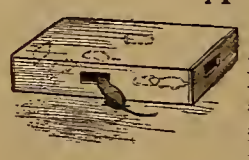
1st prize ($5.00) has been awarded to "My Rat-Heaven Trap" by J. B. Simms (Alabama)

2d prize ($3.00) to "Oyster-Supper Rat Hunt" by E. R. Yost (Ohio)

All others win $1.00 each. When the same or similar methods were given by several contestants the prize was granted to the best-written contribution.

Several correspondents have spoken very highly of a number of commercial rat poisons, viruses, and traps. Most of these articles are effective and scientifically prepared as the result of long study. To persons interested in them, we will furnish the names of the most highly recommended preparations and traps.

A Renter's Way



AS I am a renter and move every few years, I always find plenty of rats on the new place I go to. But I have never failed to get all of the rats on any place I have lived.

I make a box 3 feet long, 2 feet wide, and 10 inches high. In each side I cut a 3-inch hole 5 inches from the bottom of the box, so that when the box is half full of ear corn the rats can easily get into it. On top of the corn I put half a dozen steel traps and cover the top of the box with boards. The rats never seem to suspect that this picnic ground for them is a trap. FRED SCHULZ.

How to Bell Rats

PROCURE a dozen little toy bells used for children's play lines, a spool of wire, and any trap to catch them alive. Bait the trap, and catch as many as you can and let them get really hungry. Then empty the rats into a barrel or box from which they cannot escape.

Put on a heavy leather glove, reach in, grab a rat by the back, and with wire fasten the bell on the rat's neck and turn him loose. Do the same with all you have caught. In two days not a rat can be found.

MRS. ABBIE J. LAYMAN.

The Ferret Method

BUY or borrow a ferret. Take your ferret to the place where the rats are worst and place him at the entrance to a hole. He can go anywhere a rat can, and after he has entered a hole the rats will start to leave their home. Then get after them with dogs, and in a short time you will have the rats killed. To prevent their return in barns and outbuildings, place in the holes some of the nest that the ferret has slept on and you will have no more rats as long as the smell of the ferret lasts. O. B. RUSSELL.

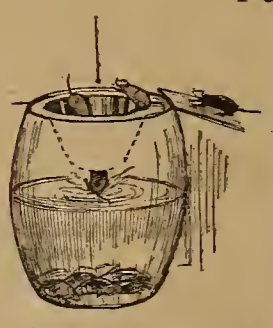
Swinging-Lid Trap

I HAVE found no method for catching rats to compare with a barrel trap provided with a swinging lid. Take a large barrel and make a disk which is two inches less in diameter than the original barrel head. Make holes in the sides of the barrel two inches below the top and exactly opposite so that when the disk is pnt in place it will balance and remain flat.

The lid should be of light material not over half an inch thick and be suspended so delicately that the weight of a mouse on the outer edge will tip it. Grease the lid well and fasten a piece of bait near the middle. The rats will try to get the bait, and in so doing tip the lid and fall into the water. This trap is always set day and night.

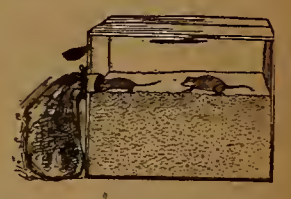
Before using this trap the rats at my place were so bad that we couldn't sleep. After one week with the trap described the barrel was nearly half full of dead rats. D. S. McDIVITT, SR.

Funnel Slide



TAKE a good barrel with one head out, make a steep tin funnel to fit tightly over the top of the barrel. Make a hole 5 inches across in the center of the funnel. Now take a string, tie it to something above the barrel, and let it hang down to the middle of the funnel about 3 inches above the hole. Tie some cheese on the end. Put a few boards from the top of the barrel to the ground so rats can climb up. In trying to get the cheese the rats will slide down the funnel into the barrel. Have the barrel half full of water and they will drown as they fall in. I have caught as many as 66 rats in one night with this trap. MELVIN WOODRUFF.

One Peck, First Catch



YEARS ago the rats were bad about the place. In the granary was a large wooden box nearly full of wheat. It was covered with loose boards, and the rats got in easily. I made a round hole in the box just even with the top of wheat, removed both ends of a tin tomato can, stuck it through the hole, nailed it fast, and then on the outside fastened a grain sack. After dark the boys ran out to the granary and tightened the boards on the box. The rats finding their usual exit closed ran through the tin hole into the sack. The first catch was over a peck. MRS. H. J. HORNBY.

Use Steel Grain Bins

WE HAVE fought rats for forty-five years with all conceivable methods, and mostly with indifferent success. Last fall it seemed that they had conspired to clean us out. In desperation we installed a galvanized steel granary. Our grain is now sweet and clean. Mr. Rat is a gourmand. Shut off his victuals and you lose his society. GEORGE F. BROCKWAY.

Lay Concrete Floors

LET every farmer who is troubled with rats destroy their breeding places by laying concrete floors in hen houses, hog pens, and all places where rats can get under and make themselves at home. Do this and rat troubles will be a thing of the past.

Concrete floors and walls are cheaper and far better than wood since they last for years and wood finally rots and has to be replaced. CLARENCE SCHWANEBECK.

Milk and Arsenic Feast

RATS like new milk just as well as cats do. Make a trough that will hold two quarts of milk and long enough so a goodly number of rats can get to it at one time. Place in a building where the rats make their headquarters, and at a certain time each evening treat your family of rats to a drink of new milk fresh from the cow. After a few evenings they will be on hand peeking out of every hole and corner anxious for their treat, and as soon as your back is turned will pitch into it like a lot of pigs.

After you have kept this up for a couple of weeks, and they are no longer suspicious, dissolve half an ounce of arsenic in a little warm water and add to each quart of the new milk. Given in this way it goes directly into the circulation, and behold you have a rat-killin'! R. G. DRYSDALE.

Cross-Cut Paper

HAVING tried nearly every method of killing rats, here is the one I can recommend. Take a barrel that is water-tight at least halfway up. Place a large rock in the bottom of the barrel and pour in enough water to almost cover the rock, leaving enough of the rock exposed for one rat to sit on. Over the top of the barrel, instead of a head, stretch a piece of heavy paper, securing it by a cord passed aronnd the barrel just below the top hoop.

Dampen the paper with a sponge so it will be tight when dry. On the paper place bits of cheese or meat for several days in succession. The rats will get accustomed to come there for their regular feed. As soon as they have developed sufficient confidence to come regularly, cut a cross in the middle of the paper and bait as before.

The first rat will drop into the barrel and take his place on the rock. The next one that falls in will fight with the one in the barrel for the place, and the commotion will attract the others, which will soon be tumbling in. There are no survivors to tell the story, and the method keeps right on working as long as the rats last and the paper keeps good. I have often caught as many as 20 in one night. DANIEL PROWANT.

None-Such Fried Sponge

I HAVE tried all the traps, poison, and ordinary methods for catching rats, but have never had anything to compare with fried sponge. Cut up a sponge into pieces the size of your thumb and fry these pieces in hot meat grease.

Place them where the rats are thickest and they will eat the pieces of sponge. When the grease has been digested out the sponge swells up and kills them. I have tried this myself, and a great many friends have tried it and all pronounce it a splendid way to kill rats. MRS. DELLA WILSON.

Plaster Cast Kills Them

RIDDING farm buildings of rats is a constant problem. Poisoned grain is dangerous to poultry, and must be used with great care. Here is a simple, cheap, and easy method.

Mix two thirds of a teacupful of plain cornmeal with one heaping teaspoonful of plaster of Paris and a level teaspoonful of granulated sugar. The rats eat the preparation and a plaster cast is formed in their stomach which kills them quickly.

Four or five meals will wipe out the largest rat families. If the rodents do not eat all of the first meal throw away what they leave and prepare a new mixture. Keep it dry and away from poultry and pets. RAY YARNELL.

EW

When Junk Sits in Judgment

Its Verdict is Often a Mental Jolt That Will Save You From Future Follies

By D. S. Burch, Associate Editor

AN OLD negro farmer watching his porkers at the feeding trough remarked, "You snah am hogs an' whoevah invented dat name didn't have to be very smart, 'canse anybody wonld know yonah was hogs." Jnnk is about the same kind of a name. No other expression is quite so expressive. It is a word you don't have to learn. It just comes natural because junk conldn't be called anything else.

And unless yon examine each article in a junk pile separately and recall its history, you could almost be convinced that the theory of spontaneons generation was correct after all. Ever hear of that theory? Here it is, and it's not a bad-sounding one either. Philosophers, doctors, and all learned men believed it less than one hundred years ago. "If you leave a basket of old rags," they said, "in an empty room, you will after a few weeks find it full of young mice." "And if you leave a piece of meat in a warm place for a few days yon will find it fnll of maggots." They believed that by some mysterious process the mice and maggots were spontaneonsly created or "generated;" that was the word they used.

Bnt nowadays we know that maggots come from eggs and the eggs are laid by flies. Similarly the litter of mice didn't come from the rags bnt were the offspring of mice which appropriated the basket of rags as a home. There is always an explanation if you are clever enough to find it. Anyhow, like maggots, mice, and Topsy, junk doesn't "just grow." It has a real beginning and existence for which everyone who owns or harbors a junk pile is responsible.

What One Junk Pile Contained

I examined the junk pile on a Wisconsin farm not long ago to try to learn the lesson in it. That particular jnnk pile seemed to be a monument to poor judgment in bnying. It was made np of four classes of articles in abont the following proportions:

1. Good merchandise that had worn out, 10 per cent.
2. Good or fairly good merchandise that had been poorly taken care of, 10 per cent.
3. Merchandise apparently used only a short time and discarded as useless, 40 per cent.
4. Small articles of trivial natnre that had been bought on an impulse, apparently because they were cheap or "would do for the purpose," 40 per cent.

All in all, less than one fourth of the junk was jnstified; the rest was evidence of indiscreet pnrchases and folly. An example of the first gronp (good merchandise worn out) was an old binder. It had cost $135 when new, and had been pnrchased second-hand for $40. Since then it had given good service for five years, but was now practically worn ont all over and was waiting for the junk man to buy it on an old-iron basis.

The second group (good merchandise poorly taken care of) was exemplified by a battered wash boiler. It had a good copper bottom and probably cost $2 when new. Bnt the tin on it was so badly rusted and so battered np that scouring was out of the question.

Hard usage and failure to dry it thoroughly when pnt away caused its being sent to the scrap pile far ahead of its time.

The third gronp (merchandise that had been discarded after only a slight term of usefulness) was the largest of all in bulk. A good example was a bed spring that sagged like a hammock. It was weakly constructed, had cost about $1.75, and apparently was made to sell rather than for service. For a child or for only occasional use it might have been a fairly good purchase. Bnt for general usage this spring had proved a poor investment. It was semi-junk in the first place.

The last gronp was the most interesting of all and, as I found ont later, a good many other things that really ought to have been in that group were scattered aronnd the farm. In a tool box, for example, were three screw drivers of about the same size. One of them had cost ten cents, and the edge was all bent up so it was useless. Another had cost twenty cents.

You can easily overdo the fresh-air treatment when dealing with farm machinery

That one was of slightly better material, but it had a soft point which was so twisted that it wonldn't fit a small screw head, and was too weak to loosen a large tight screw. Besides, the handle was loose. The third screw driver had cost 35 cents and was first-class in every way.

"I thonght the first one would do," the man who bonght it admitted, "and it looked about as good as the better ones. I really wanted the 35-cent one in the first place, but as I never had much use for a screw driver I tried to economize. I wasted nearly as much on cheap screw drivers as I paid for a good one."

No, this is not the scene of a runaway: it's just a farm junk pile, a monument to mistakes

This little incident which involves just a few cents had been repeated over and over with both large and small articles and helped to explain why his jnnk pile was so large.

Nearly everyone has his own opinion about the place and fitness of low-grade merchandise in the bnsiness world. It's a great subject. For temporary pnrposes low-grade material is often the best investment. Cheap articles also help in a way to keep prices on other grades from getting ont of reason.

But jnnk piles seem to show that the buying public is less skillfnl in getting service out of cheap articles than from the better grade. Stated differently, only an expert judge of values can make a practice of bnying cheap goods and save money by doing it.

A neighbor of mine went to buy a hoe. He looked at some 25-cent hoes and then at some 50-cent ones. They looked about the same, so he got a 25-cent one. He congratnlated himself on having saved 25 cents, so he treated himself to soda water for that amount. The hoe worked all right for a few hours and then got dnll. He sharpened it, but it wonldn't keep an edge. He tried to cnt some large weeds with it and the handle broke in two. The wood was weak and cross-grained. The next day he went back and got a 50-cent hoe which in the end really cost him a dollar if you count the cost of the first hoe and the soda water.

Perhaps You've Made the Same Mistake

Another cause of large junk piles is the habit of picking up articles of doubtful valne and lugging them home. I remember an incident that occurred some years ago in New Hampshire. A neighbor had an old blacksmith shop that he offered to give me for tearing it down and getting it off his land. It contained some pretty good lnmber, and as I had a notion it would come in handy I accepted the offer, especially as the shop was only half a mile away. Altogether I spent three days taking the old shop to pieces and piling np the lnmber. Then as I was unable to take time to do the hanling I paid $3 to have the lumber and the old iron it contained hanled to my place.

I can't begin to enumerate all the things that shop contained, bnt there was an old hand bellows, some wheels, an old iron vise, bolts, iron rods, and the like. Looking back on it now, I smile. My neighbor got rid of that old shop at no cost to himself, while I invested abont $10 worth of time and cash moving all that junk onto my farm. Yes, I had the lnmber, but for $10 I could have bought a larger amount of good new lnmber. And I never used any of the old junk. Finally, in sheer disgust, I nsed it to fill up an old well.

That was the first time I had ever thought seriously abont junk. Bnt the experience gained by the mental jolt turned ont profitably in the end, for ever since I have been more carefnl in my pnrchases and have had the satisfaction of redeeming that $10 many times over.

Really, except for the little poem abont the bnsy bee and the fable of the indnstrions ant that are taught us in childhood, a good many of us would never take serions notice of these important creatures. So even in the rat-infested, mosquito-breeding, ugly, hnmble pile of jnnk that you are saving for the dealer in old iron who never comes yon can find a personal financial lesson. Pay yonr junk pile a visit and see for yourself.

Two Wise Parents and a Great Country

By A. E. Winship

DR. WINSHIP is editor of the "Journal of Edncation." He is a man of broad mind and experience. In his contributions to FARM AND FIRESIDE he presents facts from life as he has seen it. And in this instance, is he very far wrong in thinking the parents wise?

THERE are four men of large wealth, with large families and great influence, in the intermountain region whose success appeals to me because it is so easily traceable to a wise father, a devoted mother, and America's great opportunities.

Forty-six years ago John Anstin and his wife Emma and their four sons were as hopelessly lost in the underpaid workaday world in an overcrowded mill city of England as any of the tens of thonsands of other families.

John Anstin was hale and hearty, a vigorons man in the prime of life, honest to the end of the limit, but his wages were so slight that the fntnre was very dark as he thought of those boys who mnst grow np into the same hopeless life he was living. The goodwife Emma felt it all as heavily as did John. Must those boys of theirs live and die sweltering in the mill city? Not if there was a God in Israel, for she was very religious.

She had neighbors with some advantages over her. Among them were two elderly maiden sisters who had a religions paper which told of a New World where there was land that conld be had for the taking. It was an advertisement, to be sure, and the facts were overstated, donbtless, bnt to Emma Anstin it was a veritable Gospel. She read and re-read and prayed as she read, "One hundred and sixty acres for John and the boys."

When Opportunity Came It Was Welcomed

True, it was a long way off and it cost money to get there, and John and Emma had no money, and their wages made no provision for saving. Emma was an intense woman, very intense, her prayers were intense, and she talked with the maiden sisters who were not much better off than she, bnt they had no concern for their fnture, for there were no children of theirs to grow np into the ceaseless toil and hopeless life of an English mill city.

Penniless Emma had no more idea of having those boys grow up in the life into which she had given them birth than as thongh she had an adequate bank account. It was in the winter of 1868 that she saw an advertisement of the sailing of a vessel to New York with the price specified for tickets to the land where there could be found 160 acres of land for the taking.

She told John and her neighbors abont it.

The sailing was several weeks ahead. John told her that it was foolish, for they conld scarcely raise money enough to get to Liverpool, to say nothing of the passage money. But Emma said it was fnn to think abont it and talk about it.

Just then, in the spring of 1868, those maiden sisters, from an unheard-of relative, received a share in an estate, and in came cash, and it was more than enough for the passage money of Emma Austin and her family into the heart of the land where there were 160 acres of land to be given away.

John hesitated, but not Emma, and in midsummer of 1868 John Austin and his family were in a lovely valley in the heart of the Rockies.

Once established and the market-gardening scheme on its feet, John divided the 160 acres in halves, kept 80 acres and gave each of the boys 20 acres. They all worked the whole of it, bnt kept the expenses and income from each lot distinct. They were members one of the other and each distinct from the other.

I know Mark Austin well; he is one of the eminently prosperous men in Idaho. He fnrnishes sugar beets for eight of the large factories along a line of 400 miles of railway, raising many of the beets and contracting for the rest. He is a prince among the business men of Idaho.

The other three boys, Thomas, William, and John, are cattle kings in Colorado, Wyoming, and Utah, each is at the head of a live-stock company, two in the sheep business—one had 50,000 head when I saw him in 1913. One is president of the Wool Growers' Association of the intermonntain region.

Remember the Wife Made the First Plans

The business interests of those four mighty men are interlinked thongh financially distinct. They run their vast business schemes as they did their 20 acres each, when they ran the 80 acres as though it were one market garden, bnt they knew the profit of each 20 acres, and divided it. They still keep those 80 acres together and apart. Each of those four men has a family, and each has done by his sons what the father did for him.

John and Emma Austin sweltering in an English mill town and Mark, Thomas, William, and John with dominion over a good part of the earth in four great monntain States is a comparative study in economics and sociology that sends a thrill through any heart.

EW

EDITORIAL COMMENT

FARM AND FIRESIDE
The National Farm Paper
Published every other Saturday by
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YOU'RE on the jury. Ever realize how many decisions of different kinds you make even in a day? And we know you like fair play.

So when you see any opinion advanced or statement made in FARM AND FIRESIDE that seems to you unfair or biased, speak up and say "Fair Play!" This issue, and every other issue, is open to criticism or approval in more than half a million homes besides your own. It's so easy to condemn on appearances. Give us your views and reasons on the other side if you think only one side has been given. Even if you have only something nice to say, send it along.

HERBERT QUICK, - - - - - Editor

September 26, 1914

Let's Not Hurry

CONGRESS is acting wisely in refusing to pass any rural-credit legislation this year. Farmers' organizations east and west have asked for delay and more time for study and thought.

It used to be said that the farmers of the country were always eager to ask the Government for monetary aid, but if that was ever true it is so no longer. We prefer a good system next year or the year after to any hurried and scamped legislation.

The Hollis-Bulkley bill, for instance, which provides for the purchase by the Government of $50,000,000 of mortgages yearly, has not set the farmers crazy. Neither did the Norris bill or any of the other bills for government loans.

In the meantime, why not consider the most successful land-mortgage system in the world, the *Landschaft* system of Germany? On June 13th of this year the German farmers were selling their 4-per-cent mortgages on the Berlin market at par, while German government bonds sold the same day for 96. The farmers' bonds secured by mortgages on their farms bearing 3½ per cent sold at 96, while the government bonds sold at 84. Three-per-cent *Landschaft* bonds sold for 80.50, while government 3-per-cents sold for 74.80. That is, a German farmer could get $4 more on a hundred-dollar loan, at 4 per cent; $11.20 more on a hundred-dollar 3½-per-cent loan; and $6.30 more on a hundred-dollar 3-per-cent loan than their Government could get. And in the case of the land bond the interest gradually pays off the principal, while the government bond has no such quality.

The Hollis-Bulkley bill confesses its weakness when it brings the Government in to help float the land bonds. If they were issued on the same system as the *Landschaft* bonds there would be no need of government intermeddling.

And as for the Norris bill, what's the use of government loans when if we had the German system we could borrow money on our farms at lower rates, probably, than Uncle Sam could borrow it?

It would seem the sensible thing for Congress to pass a law providing for the *Landschaft* system pure and simple. To be sure, most of the state laws are such as to foreclosure, redemption, and the like that the system would not work under them; but this obstacle would be cured in time. This would be its working: a man would come into the United States Government office in which the mortgage associations were organized and ask for a federal charter. "Where do you live?" would be the first question. "In Ohio? Well, the laws of Ohio do not allow you to conform to the *Landschaft* rules. We can't give you a charter. Sorry—good day!" Another comes. "I am from New York," says he. "Very well," is the reply. "New York has passed the necessary *Landschaft* laws. Here's your charter!"

When the Ohio farmers found themselves paying 6 per cent as against 3½ or 4 of the New York farmer, the Ohio laws would be changed. The *Landschaft* system would soon be universal. And while we were growing into the best possible system we should be no worse off than at present. Sometimes it pays to wait and make haste slowly.

Let Us Give Thanks

WE HAVE more to be thankful for than any people on earth.

Let us remember our manifold blessings.

We see the nations of the world at each other's throats in a hellish and fratricidal war.

We are most blessed in our removal by the wide ocean from the scene of that conflict. We are a united nation of fifty States, speaking a common language, understanding each other, having no enmities of one State against another. No other people have such a blessing. We are so accustomed to it that we can scarcely understand the anxiety of Europeans as they scan the sky for airships, gaze out over the sea for warships, and listen for the trampling of invading hosts.

On our north lies Canada, a people like ourselves, peaceful, friendly, no less our fellows than are our brethren of our sister States. We may well be thankful for the fact that along the great frontier from Maine to Puget Sound we are in need of not a single fort or a single soldier.

No European nation has such splendid neighbors as are the Canadians to us. This is the most beautiful fact in the political geography of the world.

On the south we have Mexico, turbulent, torn by revolution, and often a vexatious and undesirable neighbor. But we may well render thanks that by patient forbearance we have put aside the danger of embroilment in war with Mexico. We pity the Mexican people, and hope that they may set their feet now on the ladder which leads upward to the level of peace and stability and prosperity which we have gained.

We should be glad that our Government has so acted that we are free from war with Mexico at this time especially. Otherwise we should be in greater danger than now of being drawn into the awful vortex of the world war. Were we now at war Mexico might easily be encroached upon by some of the warring nations. Mexico might be able to make an alliance with one of them. Our possessions in the Pacific might be attacked. We should thank God for peace with Mexico.

We should be glad, too, that the policy of making friends with Argentine, Chile, Brazil, Colombia, and by our broad-minded treatment of the right of passage through the Panama Canal with the commercial nations of Europe and Asia, we are better friends with the whole world than we have been for years.

We should be thankful for a government of such financial strength that it can take measures for the safeguarding of the nation against financial panic, and that we have a business system strong enough to ward off from us all the evils of war, so far as they can be warded off. We should be glad of the solidity and calmness with which Government and banks are confronting a situation which threatens civilization itself.

We have no kings with ambitions like those of Hapsburg, Romanoff, and Hohenzollern. We are glad of that.

And of all things, in this dreadful time, we should be thankful that we have a people educated in common schools, able to read and write, and intelligent enough and moral enough to be sorry for the wretched peoples of Europe and to wish them a good deliverance from the tortures they are enduring.

To be an American is a good thing. Let us never forget that.

War Prices in Time of Peace

THE outbreak of the European war sent kiting upward the prices of things we eat and wear.

Many of these advances, if not most of them, were unwarranted and unjust. They were the effects of speculation. They represent all along the line an effort of insiders to make the outsiders pay a war tax, not to the Government, for it is at peace with all the world, but to the insiders themselves.

The success of these machinations would impose on the American people war prices in time of peace.

The President at once set in motion the agencies at the disposal of the Departments of Commerce and Agriculture to find whether or not there is anything like violation of law in connection with the upward movement of prices.

Meat went up. It is charged that the packers created a scarcity for consumption so that they might put stock in storage for speculative reasons. They answer that the receipts of killing stock at the yards prove that the rise in meats grows out of a natural scarcity. It ought to be easy to tell which side is correct by comparing the advances in meats with the advances in live stock.

There may be some reason for advances in tea and coffee temporarily, since we bring these across the sea; but the cessation of the European demand ought to make both cheaper.

The war found sugar selling very low, but it doubled in price within a fortnight. This is to be expected, since it comes across the oceans, and the great sugar-beet countries of Europe are all embroiled in the war. We may look for rather dearer sugar for a time.

Imported cheeses must go up, and the American dealer will find his demand greatly increased on account of the cutting off of the European supply by the war. Anything the Administration can legally do to keep down the speculative fever will command the sympathy of all, but there seems no good reason to expect that it can do much. War makes scarcity, and scarcity makes high prices. That Americans may suffer actual starvation on account of this fraticidal struggle is proof of the brotherhood of man, at least in suffering. "No man liveth unto himself alone, or dieth unto himself alone."

The man responsible for the war committed a crime against you and me and every other person in the world.

Guessing at the Top Price

DURING the Civil War an Iowa miller received a contract for a lot of flour from the Government. He offered higher and higher prices for wheat, going as high as $2.50 a bushel. Very little grain came in. The farmers were waiting for the top of the market.

It was a small mill on the frontier, and telegraph and telephone communication was not then developed. The miller began lowering his price for wheat—and the farmers began hauling it in. He filled his contract at an average of fifty cents a bushel less than he would have been glad to pay. The wheat growers would not sell until they were perfectly certain that wheat was going no higher.

There is a good deal of value in this story for us all. We have advised our readers not to give their crops and live stock away in the slump which took place when the ships ceased to sail. That slump is now over. Commerce is moving.

As this is written May wheat has reached $1.19. It seems to be still rising.

Giving advice is a risky thing. Trying to guess the top of the market is riskier.

The danger to those who hold on too long is that at the first little slump the farmers will do to the big markets what the Iowa farmers did to the local market at that frontier mill during the Civil War.

It is safer to sell on a rising market than a falling one.

The easiest car in the world to drive—The 1915 Maxwell $695—Fully Equipped, and with 17 New Features

1. Pure stream-line body.
2. Adjustable front seat.
3. Simms high-tension magneto.
4. Three-quarter elliptic rear springs.
5. Tire brackets on rear.
6. Spring tension fan.
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14. Famous make of anti-skid tires on rear wheels.
15. Gracefully rounded, double-shell radiator equipped with shock absorbing device.
16. Instrument board, carrying speedometer, carburetor adjustment, and gasoline filler.
17. Improved steering gear; spark and throttle control on quadrant under steering wheel; electric horn with button mounted on end of quadrant.

HOLDS THE ROAD AT 50 MILES AN HOUR

If you have never driven an automobile, the 1915 Maxwell is the car for you. If you have driven cars you will appreciate this automobile. This "wonder car" is driven from the left side, and has but two pedals. The two levers are in the center. The foot accelerator has a heel rest. The spark and throttle control are under the steering wheel. The front seat is adjustable to your individual leg length.

The Maxwell has ***real power.*** The Maxwell is one of the greatest hill climbers in the world. It will throttle down to 4 miles an hour on high gear, and pick up to 50 miles an hour in a comparatively few yards. This means little gear shifting, with less wear on both car and driver.

See this full five passenger, beautiful, graceful family car at the Maxwell dealer nearest you. Write for beautiful 1915 Maxwell Catalogue, Dept. A. G.

MAXWELL MOTOR COMPANY, Inc., Detroit, Michigan

With Electric Self-Starter and Electric Lights $55 Extra

The War is Influencing Our Market Outlook

The Apple Market

By Herbert Quick

THE apple situation is precarious. Summer aud fall apples have been a drug in most markets. What are the prospects for the winter crop? Whether there will be any considerable European demaud is a question.

The man who, auywhere in the United States, cau get even a fair price for winter apples is fortunate, aud should sell. It will probably be a year wheu storage will be the grower's ouly salvation.

There is uo reason to despair of good prices in the winter aud spring. Food will be high—and apples are food. They are, as a matter of fact, mighty good food.

People who are seeking to ecouomize in an era of war prices should have their attention directed to the apple as a cheap and wholesome substitute for things which have been elevated in price by the unprecedented conditions.

The orgauized apple growers should make au advertisiug campaign in the city papers. Teach the people the value of apples as a food.

"An apple a day keeps the doctor away," it is said, aud there is no doubt that this kiug of all fruits has great dietary value.

Co-operative buying clubs should be encouraged to buy and store apples while they are cheap.

If the people can be induced to form the apple habit, this year may not be such a bad thing for the industry after all.

Let's Eat Apples

By A. J. Rogers, Jr.

THE yield of fruit in the Middle West can be summed up as follows:

The apple crop is cut down to slightly more than an average crop by dry weather in the central and southern portions.

The pear crop is below normal, owing to the ravages of the pear blight.

The peach crop is slightly below the average, owing to a light yield of Elbertas in the uorthern portion.

The plum crop is above the average.

There is a bumper crop of grapes. It is estimated there will be 25,000 carloads of Concord grapes produced east of the Mississippi; and of these, 10,000 cars will go to the grape-juice factories.

The war has not yet materially changed the prices of peaches, pears, plums, or grapes. Winter pears may be affected somewhat by the closed export market, but the supply in this country is not likely to exceed the demand.

Both the East and the West have bumper crops of apples this year, so in spite of an average crop in the Middle West there will undoubtedly be a big surplus to consider. Even though the transatlantic service is resumed, the financial conditions in Europe will permit buying ouly the most necessary articles of food.

If our uewly acquired merchant marine were equipped for apple transportation an excellent market would be opened up in South America, but the boats could not be equipped for that service in such a short time.

It will then be necessary to dispose of all our apples at home.

But an increase in the price of staple food here should create a big demand for apples at a reasonable price.

Dried apples will be in greater demand this year both at home and abroad. This product and cider will provide a big outlet for the poorer grades of apples. The better grades can then undoubtedly net a reasonable return to the grower by a more efficient distribution and a campaign for larger consumption per capita.

Prosperity Now, But Later—

By L. K. Brown

SINCE the declaration of war in Europe the live-stock markets have fluctuated greatly through different causes of more or less conflicting nature.

Prior to the beginning of hostilities the price of hogs was slowly working upward as the supply kept gradually dwindling, as was seasonal. Then early in August came the temporary financial stringency due to the protective measures in closing the board of trade, and a slump occurred due solely to this cause. Immediately following this there was a quick rise of $1.40, and prices were the highest in years, but this again was short-lived.

The war has had little direct effect on the hog and provisions market. When oue realizes that the receipts at all the principal markets are so meager that one day's killiug, running at full capacity, could usually handle the week's supply, it is easy to understand that the cutting off of export demaud is unimportant.

By the time that transatlantic commerce has become safe with sufficient merchaut marine to handle it, and finaucial relatious between the United States and European couutries have been established, the fighting armies will be in need of food, and we are apt to have a larger export demand thau we can supply.

Prices will advance accordingly.

The longer the war lasts the greater will be the effect, and in case the war lasts until one side is completely vanquished it is quite probable that the pure-bred herds of Europe will have been consumed as food by the millions of fighters.

It is a cryiug shame and a great finaucial calamity if the work of generations of skillful breeders in building up the great breeds of live stock are to be sacrificed in the selfish endeavor of Hohenzollern, Hapsburg, and Romanoff. If such a condition does actually occur, America will eujoy a pure-breed export trade to Europe such as Europe has enjoyed for the past fifty years to us.

It need not be thought, however, that unmixed prosperity will be America's share in this great couflict. Destruction of life and property always has a marked depressing effect eveutually. Impoverishment of Europe will lessen its purchasing capacity.

L. K. Brown

Mr. Brown thinks the war will mean the destruction of the European pure breeds of live stock

Grow Grain This Year

By W. S. A. Smith

THEORETICALLY fat cattle should go higher, but will they?

Good feeders (at the river markets) weighing 1,000 pounds or better are worth $8.25. New corn will cost at least 65c per bushel, aud other feeds in proportiou. This means, to make money I must get $10 for four and one-half mouths' fed cattle.

We are all inclined to think that this war will make beef higher, but we must remember that every 10c advance in beef uot only affects the European market but it has a very decided effect on our home market. The American public are decidedly opposed to paying more for beef. In fact, this same American people are fast learning to eat less meat.

Local butchers complain bitterly on the lack of business.

On the other haud, there is very little chance of a lower market even though business conditions in the East are in the next six months upset and we have a uumber of unemployed. We not only have a decided shortage in beef cattle, but we have a great number of experienced cattle feeders who will play a safe game and take 65c for their corn rather than run the risk of feeding it.

Corn is reported as being a good crop, but in Iowa it is very spotted, and I question very much if Iowa has an average crop or anything like it. I rather think there will be keen competition for all grain offered.

I cannot see but that this war will mean high prices for the American farmer for a year or two, and rather feel he would be justified in growing uext year all the grain he can.

Country bankers are discouraging farmers from buying cattle for feeding purposes, and iu many cases refusing to loan money, claiming they are unable to sell the cattle paper in New York. Whether this will affect the stock-cattle market remains to be seen. The whole situation is liable to become more complicated as the war progresses, and it would seem as though it were safer to run no undue risks at present.

We Can Feed the Nation

By J. P. Ross

THAT the war will be of advantage to us in the long run, if we can preserve a strict neutrality, is pretty certain, though it may take some time to recover from the shock of so vast an upheaval.

Despite the hurt to our moral sensibilities we are fortunate in escaping war's horrors.

Luckily for ourselves and for Europe we have this year a big surplus of cereals, and very soon meaus will be provided to carry them to at least some of the warring nations. This foreshadows a range of prices of feedstuffs that will make beef and pork luxuries for the rich.

As a firm believer iu the value of sheep to the farmer and to the housewife, I want to tell them that here and now is their opportunity.

How wool will be affected is hard to tell because so much will depend ou how boldly our manufacturers of woolens will seize the chauces the war offers them; but anyhow it is bound to rise. Moreover, scarcity abroad and shipping costs will keep out imports. Wool, however, is of secoudary importance—muttou is "the thing."

Sheep can be raised and fattened without cereals on clover hay, legumes, roots, silage, cotton-seed meal, and the like. If we will grow these crops, retain the ewes and ewe lambs for breeding, and use pure-bred rams, we can feed the natiou, and so earn its applause aud merit its gratitude.

We Will Protect Our Products

By K. H. Dixon

Of the North Pacific Fruit Distributors

UPON the Northwestern fruit growers themselves depends to what extent the European war will affect them. Fifty per cent of the growers of the four States of Washington, Oregon, Idaho, aud Montana realize that.

The producer has always been the one to suffer most from any world calamity, national panic, or even local stringency. And it has been because he has reliuquished to someoue else the right to set the price ou his products.

Of course it is but human nature for the middleman to buy for as little as possible and sell for all he can get. That fact in times like this has played havoc with the markets, robbing them of any stability. The dealer never knew from one day to another where he was "at;" hence, he sighed with relief when "normal" was again reached. For the producer there was but one result—stung!

To-day fifty per cent of the fruit growers of the Northwest control their own product. It is an orderly control exercised by and for them through a great central institution of their own creation, co-operative in character, embracing 10 district associations with which are affiliated 110 local orgauizations with a membership of 8,100 producers.

The North Pacific Fruit Distributors was formed just about a year ago, aud it will market over half of this season's apples from the Northwest. It came into existence and was developed and perfected by a year of preliminary experience just iu time to be of exceptional value to the growers in a crisis like the preseut. Through it they will be able to direct the haudling aud distributiou of their own products.

The foreign outlet has naturally been very much narrowed by the war, but the organization is large euough and stroug enough to develop new channels for a wider distribution within available territory, and it has set out to do so, a thing which the grower as an iudividual or through past limited trade connectious could not do.

It proposes to avoid that congestion of markets which could easily take place under existing conditions when the crop is a heavy one generally throughout the country and is practically restricted to this country. It plans to do this by feeding out the supply only as fast as the trade can absorb it, utilizing its home storage facilities for over three million boxes and the extensive space contracted for at Eastern market centers besides.

If the unorganized aud non-affiliated growers do not become panic-stricken and in their hysteria stampede the markets with indiscriminate consignments to be sold at any old price, the entire apple output from the Northwest can be sold at reasonable prices for the producer. It depends upon those growers whether or not the markets shall be demoralized for themselves and their neighbors.

Plenty of Money—Use It

By Frank G. Odell

Secretary American Rural Credit Association

WHAT effect will the war iu Europe have on the farm-mortgage situation?

First, it should stimulate the supply of mouey for home investment. Financiers will be chary of sendiug money abroad for some time to come. This tendency toward a more plentiful supply of money will be augmented by a greater demand for American foodstuffs. Under such couditious interest rates should naturally decliue.

Second, the rapid growth of the co-operative idea will lead to the speedy establishmeut of rural credit associations based on this principle. The union of neighborhood forces aud interests will give character and stability to the rural-credit movemeut. It will probably operate ou corporate lines, much as the well-knowu building and loan associations but the co-operative element is essential if materially lower interest rates are to be secured.

Debeutures based on the security of farm mortgages will furnish an attractive and readily uegotiable form of investment. As soon as the public becomes familiar with this form of security it will find a ready market.

"But, the money?" Plenty of it in the country—iu saviugs banks aud elsewhere. The working people of St. Paul, Minnesota, have invested over $1,500,000 in "bargain-counter" municipal bonds in a year—all "raiuy-day money," tucked away to pay the doctor or the undertaker. The money came out because the people have confidence in the city—it's their own institution.

When our farmers show equal confidence iu their institution aud organize on the co-operative plan they will find money accessible.

If anyone fears that the financiers will stop it, let him remember that the only way the fiuancier knows of making money is to keep other folks' money working for him.

But don't wait for the financier to hand you cheaper interest rates. He isn't likely to do it. Make your organization and go after it.

The Cotton Crisis

By Herbert Quick

THE war had scarcely started when Texas felt the pinch of it. Her immense crop of cotton was without a market.

This is because Texas gins her cotton first of all the States. But the other States were in distress as fast as the bales came from the presses.

By the time this is read it is hoped and expected that arrangemeuts will have been made by States, banks, planters, and the National Governmeut to ward off the bankruptcy which threateus the whole cotton industry.

One answer is warehouses. These may be built for something like a dollar a bale, unless corrugated iron goes up as cotton goes down.

Warehouses will not serve alone. Unless the owners of the cotton can get money on their warehouse certificates the poor man will uot be able to hold his cotton, and the American spinners and the American speculators will absorb not only the profits of the crop but half the investment in it of labor and rent. This would mean a national disaster, for the farmers of the South cannot be reduced to poverty without a financial shock to the entire natiou.

The acceptauce of cottou receipts as a basis for the issue of currency will not cure the difficulty unless there are warehouses in which to hold the cotton. The problem therefore is a mixed oue of warehouses, loaus, and currency.

There is probably no great surplus of cotton, probably none at all. The British mills will run, aud so will those of Russia, Japan, and the neutral nations. They will ruu night and day to make up for the shortage of cotton goods which results from the shut-down in France, Belgium, and Germany. Our own mills will work overtime. War wears out cotton and creates poverty. Poverty clothes itself in cotton because there is nothing cheaper.

Cotton goods will be high.

It rests on the American statesmen and financiers to see to it that cotton in the bale is not given away by those who labored to grow it.

THE Weather Bureau of the Department of Agriculture has made arrangements with the U. S. Naval Radio Service for supplying wireless weather forecasts for the Great Lakes. This service is now in force.

Farm Notes

A Converted Well

By M. K. Hays

FOR twenty years our well, which was dug through solid slate rock, was left idle, save for hauging cream aud butter in it—it really was a good refrigerator. There was uo stream iu it, and all the water that accumulated there came by percolation. But a large wooden pump, 18 inches in diameter, was the best excuse for not putting it to its best service.

Last fall we lifted the old pump out, gave the well a thorough cleaniug, made a good cement curb and top, and purchased a spleudid force pump. It has proved a perfect success. The well has supplied us with water even through the contiuued drought this past summer.

Power Outside the Barn

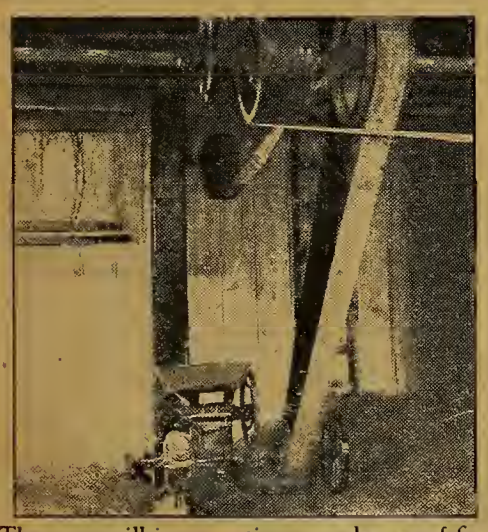
By Eugene J. Hall

ON ACCOUNT of the danger of fire some of us are afraid of installing either a steam or a gasoliue eugine in our barns. Au Illiuois farmer fouud a way out of this trouble. Eight feet from his dairy barn he coustructed a thoroughly fireproof power house of concrete and

The fireproof gasoline engine house is outside of the barn

heavy corrugated iron. In this power house a large gasoline engine generates the required power for operating the machinery installed in the barn. A long belt, boxed in, counects the engiue with au overhead shaft in the baru. There is no dauger of fire except from possible friction of the machinery, which is unlikely to occur if it is properly oiled and kept clean.

The second picture shows a mill for grinding aud mixing feed inside of the



The corn mill in operation—no danger of fire

baru, which is a great saving iu the expeuse of stock feed where large quautities are used. Power from the eugine house cau be used for all sorts of mechauical work.

In the famous Fox River Valley in Illinois, adjacent to the Elgiu dairy district, I have examined several power houses of this character, but uone were quite as safe in construction or ingeuious iu operation as this corrugated iron fireproof house just described.

Tractors That Are Too Small

PROF. I. W. DICKERSON of the University of Illinois has compared the cost of operating different sized tractors in au iuteresting way.

Oue of the experiments was with a medium-sized tractor costing $1,800, and a small tractor costing $750. The small machine required eighteen days to perform the work doue in seven days by the medium-sized tractor.

Considering that the larger tractor can be depended on to do much more additional work of different kinds, the present popular prefereuce for small tractors may be fundamentally unwise.

The advantage of a tractor over horses is to get the work done when it should be done, and that takes power and plenty of it.

Man labor is the most expensive of all, and when one man cau economically control a lot of cheap power his efficiency rises.

The cheapest power for a farm of 140 acres seems to be in the medium-sized tractor when there is sufficient work to keep it busy.

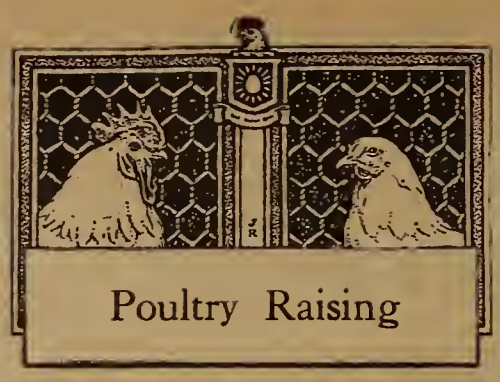
We should like to hear from people ou smaller farms or truck patches who have successfully used tractors. Take your paper and pencil in hand uow.

New Books

THE MODERN GAS TRACTOR will interest the engineer-farmer. It was written by Victor W. Page and is published by Norman W. Henley Publishing Company, 132 Nassau Street, New York City. The words and illustrations explain the adaptability of the tractor for various farming conditions. $2.

FIELD CROP PRODUCTION, by George Livingston, is a textbook for elementary courses in colleges and other schools. For such purposes it will serve well, since it leaves the data of the experiment stations to be studied, when desired, from the station bulletins themselves. The book is well written and amply illustrated. Macmillan Company, New York. Price, $1.40.

THE BEGINNER'S GARDEN BOOK, by Allen French, is a new book dealing with both vegetable and flower gardens. It is clearly written, well illustrated, and, as the title indicates, is intended especially for amateurs or for classroom study. 393 pages. The Macmillan Company, New York City. Price, $1.



Poultry Raising

How I Manage Green Stuff

By John L. Woodbury

IF YOU have the model arrangement of yards, before and behind the pens, for growing green stuff alternately, do not change the birds from the one to the other too quickly. My plan is to sow oats, wheat, and rape thickly together. When the rape gets a few inches high I thin out and toss it in to the birds. Later the leaves alone are taken, leaving the stalks to grow and put forth fresh material. This is continued until all is well rooted before the birds are admitted. In this way a growth is secured sufficient to purify the soil, and which can be eradicated only by protracted and vigorous effort on the part of the birds. A few fowls will in a few days, completely destroy a young and tender growth covering a large area, the major part of which must necessarily be wasted.

Vigor and the Dollar Mark

By B. F. W. Thorpe

HOW can we know a chicken of "high vitality" or, if you prefer, extreme vigor? Those having the "hen sense" well developed know the vigorous bird at a glance, although there are many characteristics which affect his decision.

In small chicks the ones that are "up and coming" from the minute the shell is kicked off and which develop steadily and uniformly both in growth and feathering possess good vitality.

The vigorous chicken is slightly built (for the breed), has a thick, strong beak, bulging bright eyes, strong neck, feet, legs, and "feel."

In the adult fowl extreme activity and erect carriage are leading indications of vigor. With these go strong-boned muscular feet and legs, the latter being set well apart, tail carried steadily with no twist or crook, beak short and heavy, comb and wattles well developed and bright crimson in color.

High-vitality stock will mature quicker and be ready for laying and breeding considerably in advance of the birds of low vitality.

There is no end to the talk about the necessity of vigor in poultry, and there shouldn't be any let up on it until everybody sees the point. The trouble with mere talk is that it stops short of figures to clinch the argument.

The Cornell Experiment Station now has some figures on the money value of "high-vitality" and "low-vitality" chickens. These figures are the result of five years of experimenting on the profit derived from both hens and pullets selected in the one case for excessive vitality and in the other for low vitality.

It goes without saying that these experiments represent an almost endless amount of patient work. And the experiments show that hens of high vitality produce more eggs at less cost than those that were selected for their appearance of low vitality.

The high-vitality hens and pullets averaged during the last year of the experiment 40 cents more profit each than the low-vitality pens.

This would make a difference in profit of $8 from a flock of 200 layers, to say nothing of the better vitality that would descend to their progeny.

Low Land Hastens Maturity

By F. W. Kazmeier

A YEAR ago we had a rather peculiar experience with our poultry. We were raising several thousand pullets in a field of about ten acres. In the corner of this lot was a piece of low swampy land that was too wet to till, especially in the spring.

Late in summer and fall it was a most interesting sight to see this low land almost alive with pullets. They preferred it to all other places on the farm. I also noticed that the pullets whose yards included this low corner began laying about two weeks before those farther away, who could not enjoy this privilege.

The low soil appeared to supply them with the most ideal conditions. It was not only cooler there, but the soil was full of worms and bugs, and instead of loafing around under the houses, as those farther up were doing, these were out and hustling, and feeling comfortable, resulting in quicker maturity.

EDITORIAL NOTE—A chicken "is possessed" to chase a bug even when plenty of commercial animal protein is within easy reach. The sport of catching his own game also gives the chick a good appetite, a healthy digestion, and adds zest to his life.

Swampy lowland in midsummer is a bugs' paradise, and the chicken has "two strings" to his craw—the bug on the wing and the bug to be scratched for. Each helps to develop the bird. The swampy, low-lying land is not the place, however, for the chicks in the cool early part of the season.

Feeding Mash Outdoors

By John L. Woodbury

A BROTHER breeder recently showed me a simple arrangement he had devised for feeding mash outdoors. It consists of but four pieces besides the trough, one roof board being hinged upon the other for a door to admit the grain. A space of about 1½ inches is left between "eaves" and trough on each side to enable the birds to feed.

Cultivate the Hen

By C. W. Hunt

THE challenge was thrown out years ago when the question was asked, "Is there a commercial poultry plant anywhere selling its products in competition with the common farm products of the hen, and paying?" Answer never came.

It is well known to those in the utility poultry work that they must have something above the market to make ends meet. It is easy to find a limited trade above the market, there being in all places men and women who will pay more for an egg which they know to be sound and sweet, than for one that is uncertain.

In spite of the thousands of us who are making the hen an important part of the farm income, it remains a fact that only the surface has been touched.

When eggs are coming they are gathered once in a while and dumped on the market for what they will bring, and right often at a low price. The man raising eggs on a commercial scale cannot sell his eggs at nondescript prices. The low-priced egg is still going to come from the slipshod farm. While there is nothing specially encouraging in selling eggs for a small price, the point I am trying to stress is this: Most of the common farm eggs come largely from the waste.

My experience is that the main reason why so many of us are poor, both tenants and owners, is that we depend on the main crop to buy all that is bought. The use of by-products will make money for the necessities during the year if we plan correctly, and the crop will be "velvet."

Cultivate the hen. With a little care eggs will come all the year round. Give hens to the children and allow them to use the income as their own, with mother's advice, and you will have a happy, prosperous set of children who will not be trying to get to town. Eggs coming so much from what would go to waste will be profit even when sold low.

The Chickens, the Flowers, and I

By Cora A. Matson Dolson

I HAVE just been viewing the flowers on our side lawn where the Brown Leghorns run. There are hollyhocks of every hue from white to deep maroon, the great wreathed stalks towering to the height of eight and ten feet, and calling forth the attention of every passer-by.

I sowed a little row of seed there once. I staked the plants from the chickens for the first year. That is all the care they have ever had. Self-sown, they come back to us every summer.

Then the perennial phlox. It grows in little groups among the hollyhocks, great heads of delicate flowers, pink, white, lilac, salmon, furnishing blossoms for the table, the parlor, picnics and social gatherings as well as funerals.

Ten years ago I sent 35 cents to a florist for seven plants of perennial phlox, all different. I set them here, staked about, and watered and tended them for the first summer. Since that time the chickens have dug among them as much as they pleased, hid among them from the hawks and other maranders, and under the tossing branches found shelter from the burning midsummer sun.

People say to me, "Flowers always seem to grow for you." So I impart the secret if others care to learn it, and you see it is easy as well as cheap.

And the birds, the bees, and the butterflies love the side lawn as well as the Leghorns and I.

Choose Sides for Winter Eggs

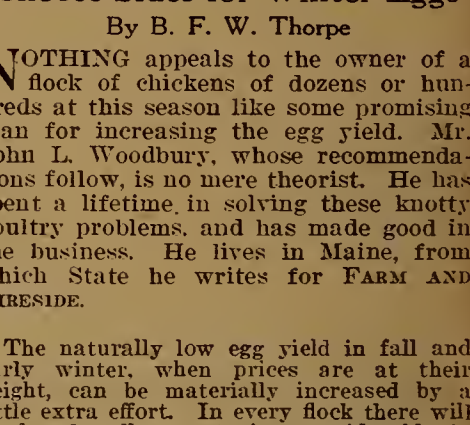
By B. F. W. Thorpe

NOTHING appeals to the owner of a flock of chickens of dozens or hundreds at this season like some promising plan for increasing the egg yield. Mr. John L. Woodbury, whose recommendations follow, is no mere theorist. He has spent a lifetime in solving these knotty poultry problems, and has made good in the business. He lives in Maine, from which State he writes for FARM AND FIRESIDE.

The naturally low egg yield in fall and early winter, when prices are at their height, can be materially increased by a little extra effort. In every flock there will be found pullets maturing considerably in advance of the rest. Place these in colonies by themselves, give the best of care and feed, and you will be surprised to see how many eggs even a dozen pullets will lay. The old hens may be similarly treated, the more backward in the molt being separated from their sisters with equally gratifying results. These same hens and pullets will lay but indifferently if allowed to remain with the non-producers, for there is contagion in idleness among fowls as among men. Besides, it is impossible to give them the benefit of the concentrated effort which can be bestowed when by themselves.

Not only have we personally found Mr. Woodbury's plan successful, but also the separating of hens into pens according to their constitutional tendency to lay on an overplus of fat.

If the easily fattened hens are penned together and fed a less fattening ration, and made to scratch like Trojans for all grain, their egg yield can often be doubled in the year, besides reducing the chances of their dying suddenly of apoplexy.



"Are you a resident of this place?"
"Well, I belong to the floating population!"

Chickens by the Millions

MAMMOTH poultry plants, like overlarge soap bubbles, are generally short-lived, but there are exceptions. One of these is the Pittsfield Poultry Farm with headquarters in Maine and a branch plant in Massachusetts.

The maximum number of chickens produced by this plant and sold principally in the baby-chick stage, up to the present year, has been a half million chicks annually.

Next year the owners, Messrs. F. W. Briggs, Gordon Dobson, and Howard Gilmore, are planning to increase the output of the plant to the two million chick mark. This plant has been in operation for eight years.

F.

No Cure for Hog Cholera

By Harry B. Potter

"HOG CHOLERA Cured With Dobry's Wonder Hog Remedy! The Dobry Hog Remedy is the first and the only positive cure and preventive known to the world. It cures and prevents so-called hog cholera in its first stages, cures thumps, cough, scours," etc.

This is but one of many hog-cholera remedies advertised at the present time. Another so-called cure, the F. H. DeVaux Antitoxin, claims that it will "cure sick hogs," and then farther on the advertisement speaks of "cholera antitoxin," which gives the impression to the reader that the antitoxin referred to will cure cholera.

Dr. Paul Fischer, state veterinarian of Ohio, in replying to an inquiry concerning the Porcine hog cure, manufactured by the Porcine Remedy Company, says: "There are hundreds of patent medicines advertised as sure cures for hog cholera for sale, and it is not possible for any institution to test all of them as rapidly as they make their appearance. It is known, however, that not a single one has as yet been found upon official test to be what was claimed for it."

Everybody Wants a Cure

We thought perhaps some other State had discovered a cure, and so we addressed letters to the leading Corn Belt States to get ideas as to hog-cholera cures. We mentioned several by name. We wrote to Mr. Fischer again, who replied to our letter by saying: "In the first place, the laboratories of the United States Government, as well as those of the European governments and of the American state experiment stations, have for years been searching for an effective remedy and preventive for hog cholera. Nothing of any value was ever found until the discovery by Doctors Dorset and Niles of "hog-cholera serum," which was immediately followed by the practical application of the same under the direction of the various state live-stock sanitary boards and agricultural experiment stations. We have in our own laboratories made a thorough test of the Snoddy remedy, with the result that this so-called remedy was found to possess absolutely no curative effects whatever. We are now running a test with the Ludwig Thiele 544. One test has already been completed, with negative results. A second is in progress.

"Generally speaking, while there is no reason why other remedies than serum should not some day be brought to light, no evidence has as yet been offered that a single one of the many advertised cures now on the market is in any sense what is claimed for it."

Eliason of Wisconsin says: "There is positively no known remedy for hog cholera. Different manufacturing plants are putting up stuff for that purpose and advertising it, but we have never been able so far to find anything that would *cure* hog cholera. The only preventive there is, is vaccination, and this is something that should be performed by a man who is qualified to do the work."

Musselman of Kentucky is inclined to have no faith in the patent preparations because he has seen them used extensively in his State and has never learned of a successful case.

Dykstra of Kansas makes the same statement that the other veterinarians have made in saying that serum, or serum and virus, is the only known method of prevention, and that there is no known cure.

Luckey of Missouri knew nothing about the particular remedies to which we called his attention, but thought it was foolish for anyone to rely upon a single remedy for controlling an outbreak of hog cholera.

Ward of Minnesota did not know of the particular remedies mentioned, but was firm in his conviction that the Dorset-McBride-Niles anti-hog-cholera serum was the only hope so far in our knowledge.

Hog-Cholera Cure Manufacturers, Attention!

Stange of Iowa is beginning a campaign against the so-called hog-cholera cures with the idea of being absolutely impartial and fair. He is willing to test out any of the cures advertised. This would seem to be an opportunity for the hog-cholera-cure manufacturing concerns. If their cures are what they think they are and what they say in their advertisements, then the remedies can be tested out under official supervision. If they don't send their "cures" to Doctor Stange it must be for the reason that they themselves know the nostrums to be fakes.

Craig of Indiana has made several tests, and as a result he says: "We have never made any official tests of the DeVaux Antitoxin or Dobry's Wonder Hog Remedy. We have been familiar with the DeVaux Antitoxin for more than a year. This remedy has not prevented or cured hog-cholera outbreaks in the field. The Dobry remedy we expect to test after a time. I do not believe that it is of much use in combating hog cholera.

"We have run tests on National 23, manufactured by the National Breeders' Association; Hog Cholera Specific, made by the U. S. Specific Co.; a cure put out by the American Specific Co.; and Blue Moon Hog Cholera Corrector. In each of these tests five to eight pigs were used. In every case the pigs died of hog cholera and showed lesions of hog cholera on postmortem examination.

"We now have tests on a remedy manufactured by S. H. Colbert, Dr. H. M. Parrett, and Crosier Stock and Poultry Powder Co. These tests are not as yet completed."

The Fake Remedy is Always With Us

There seems to be no division of opinion on one thing, and that is that there have been a very large number of fake cures presented to the public. There must be some reason for faith in some of them, however, and perhaps this reason is found in a statement made by Nelson of Indiana, who says: "In all cases that I have personally investigated I find that the change of feed from a grain to a light slop, sanitary surroundings, etc., could be credited for the number of animals that recover, instead of the treatment."

While we are discovering which "cures" are really cures and which are not, there should be state laws directed against the fraudulent ones. The remedies placed on the market should at least do what the advertisers claim they will do. But all States are not accustomed to so help the citizens.

Dyson of Illinois says: "No provision has been made in this State for the official testing of such products. I am positively of the opinion, however, that stringent laws should be enacted in every State to prevent the sale of all alleged hog-cholera remedies previous to their being subjected to authoritative tests to determine whether or not they possess any of the curative properties claimed by the manufacturers."

It would seem then that in these matters, as in many others, it is best for us to trust only competent veterinarians. If any of the manufacturing chemists or dealers try to persuade you that the vaccines, serums, and other preparations which they have will cure hog cholera, be a little skeptical of their advice. There are hundreds of trained men in the United States anxious to find such a cure. If these manufacturers will robe their advertising statements with facts, then we will be ready to listen to them.

Kentucky Fights It

Kentucky saved $12,157 just during the month of June through the use of anti-hog-cholera serum on one hundred herds. This is the very careful estimate of Graham of that State.

In the hundred herds treated there were 3,377 hogs; 823 of these were suspected—that is, they showed a temperature of over 103.5 when treated. But out of this entire lot the hogs that died constituted less than 7 per cent of the number.

Average deaths under similar conditions have been 90 per cent when no treatment has been given.

But besides the treatment and the usual preventive measures of cleanliness Graham recommends the following tonic mixture. The ingredients are to be thoroughly mixed and given in doses of one ounce to every ten pounds of grain fed; or it may be placed where the hogs have access to it at any time. Many Kentucky farmers are using it.

Common salt	15 lb
Wood charcoal	5 lb
Wood ashes	5 lb
Sulphur	1 lb
Air-slaked lime	1 lb
Powdered copperas	1 lb
Sodium hyposulphite	1 lb
Sodium sulphate	1 lb
Antimony sulphide	1 lb

These ingredients may be secured at the local drug store.

No one should be led into thinking that such a tonic prevents or cures hog cholera. It does no more than help to keep the hog in first-class condition, better able to resist the disease when it comes along.

But then that is important.

NAMING the farm is fun. Farming the name is business. Put it on the barn, and on the mail box, and on the letters that go into the mail box; put it on the crates and barrels you haul to market. Aim for quality in all the name stands for. Make it your trade-mark, and it will increase your trade in the market.

Crops and Soils

Things That the Harvest Time Brings to Our Attention

Let the Crops Speak

GEORGE ROBERTS in a circular issued by the Kentucky Experiment Station tells of a man who came into the chemical laboratory one morning with three samples of soils in his pocket. He wanted a chemical analysis made that would tell him what fruits were best adapted to each kind of soil.

He also asked to have the soils tested so that he could return that afternoon.

All good soil chemists are perfectly frank in saying that a mere chemical analysis—which by the way requires several days to make—is not of much value. The chief thing that it shows is the amount of plant food in the soil; but as far as telling the amount of food that different crops can get from the soil chemical analysis is of small value except in conjunction with other observations.

I once analyzed some Texas soil that I had never seen, and the results showed it to be rather low in potash and phosphorus, though there was enough of these elements for a fair crop. The land company for whom this analysis was made wanted further particulars, so they took me down to make some tests on the tract of land itself.

Alfalfa grew about six inches high and then refused to grow another inch.

Wheat did not produce enough grain to give back the seed.

But the trouble was not so much with the lack of potash and phosphorus as with the very hard subsoil, which in most places was only about five inches below the surface.

What the soil needed most was loosening, and, after a few years of plowing, cultivation, and manuring some crops did fairly well.

If a crop that has had sufficient moisture and cultivation does not do well, a good way to trace the trouble is to make a full report of the crops grown on that land for the past five years, together with the yields each year, to your experiment station or your farm-paper editor. A diagnosis can then be made which will be of much more practical value than an expensive chemical analysis.

Florida and Its Future

AT VARIOUS times Farm and Fireside has answered inquiries concerning the possibilities of Florida land by publishing the most authentic information it was possible to secure. Following is a letter from Mr. George B. Hill, formerly of the editorial staff of Farm and Fireside, and whose observations are unusually accurate. Mr. Hill is in no way interested in Florida land development, and reports impartially what he saw there the past spring during the growing season. He writes from Orlando, Florida, which is about the middle of the east coast, and these are his impressions:

This is a great place to come and sit around, eat orauges and throw the peel at the mocking-birds, and read the weather reports from the North. As far as solid commercial possibilities go I'm not so sure. Everythiug grows as fast as the prospectuses say, thau which nothing could be more speedy, but prices seem to grow just about one jump faster. Country is still in developmental stage; some towns going ahead at a great rate. Orlando, for instance, with about five thousand people,

Beans do well in Florida, as do other crops that have care and fertilizer

excludiug tourists (though no uative excludes anything he can help), has paved streets, light and water, stores better outfitted than the average Northern town of twenty-five thousand, fiue buildings, public and private. But there are plenty of other places that have missed out on tourist patronage aud are stauding still or goiug back. Also new little ones that are starting out with a railroad station, seven houses, aud a development company to build boulevards, sell corner lots, and put Palm Beach out of business. The trouble seems to be that every milk station figures on being a second Los Angeles, with a hundred per cent increase on population between censuses, which some of them could uow accomplish if another family moved in, but which few of them can keep up long.

Outside the towns this particular region—almost exactly central—looks pretty thinly settled. Good roads, but not many houses on them; much of tbe land untouched. Interesting arrangement bere: one can get five separate titles, or degrees of title, to new land, viz., turpentine rigbt (to tap the pines), timber right (to cut them), grazing right (slim grazing from the looks of it), trucking right, full ownership of the land.

The turpentine industry makes it possible to get returns off absolutely virgin land witbout much investment. I had an idea tbat most of Florida was swamp. This section isn't; lots of lakes, but between them sand, dry as ocean beach above tide, frequently with good stand of big Georgia pines—hard pines, with tall trunk and all the branches at the top, like the pictures of palms in the geographies, or the latest thing in millinery. You whack off two big shaviugs of bark, tack on a couple of tin troughs, put a tin cau or bucket underneath, and go away to live in leisure wbile tbe tree leaks.

I'm not sufficiently "hep" to conditious to tell how much of the scarcity of population is due to speculatively high land prices, how much to plain newness of the couutry, bow much to "turp" and timber lands being profitable when uncultivated, and how much to high cost of land clearing. That last must be some item, for where there areu't pine stumps there are palmettos—thiugs with a truuk like a pineapple pulled out six or eight feet long and partly lying down, and a bunch of leaves on tbe top end, and a root that goes clear dowu into the bowels of the earth aud takes a half hitch round its vermiform appendix. Anyhow, population is sufficiently thin so that elaborate towns and higb prices of land haven't much solid productional underpinning, as far as one can see. The land deserves all the boosting it has had; it will grow trees without an effort—pines sixty feet and over commonly, and bamboo clumps as high as a tbree-story house. Vegetables need fertilizer of course, nothing but sand in sigbt.

If I were tempted to buy Florida land I would, first, come and look at it closely, and secoudly, not buy at land-company prices until I had "mouched" around and tried to pick up the tract of some "sucker" who was anxious to pull out again, for from the looks of things there must be a number of such. People seem to be taking plenty of proceeds off the land, but I doubt if it is enough in all cases to pay for the large initial investment.

The way oranges are put up here requires ouly three hand operations—picking, grading, and packing. The grading is done by hand as the oranges slide past on roller belts. All the other operations are done in bulk, and the washing, scrubbing, drying, and separation of sizes by machinery. The packing houses arouud here are privately owned, but tbe growers seem pretty well satisfied.

Blown Up by Smut

ALMOST everybody knows that smut lowers the yield and injures the quality of grains affected by it, but not so many know that the smut contained in stacks and shocks may cause dangerous explosions during threshing.

In the vicinity of Colfax, Washington, 13 out of 26 stationary threshers were destroyed in one week in August by smut explosions and fire following them.

How to prevent this? Shovel a large quantity of dry dirt into the machine when the smut accumulations seem dangerous.

Money Going up in Smoke

GRAIN-BELT reader, stop a moment and compute the loss, at one hundred dollars per straw pile, resulting from the burning of the straw which to your knowledge has gone up in smoke during the past dozen or score of years! In not a few cases the hundred dollars thus lost is more than the net profit from the 40-acre grain crop were the entire labor cost, interest or investment, and soil depreciation reckoned.

A study of the value of straw piles burned or allowed to rot has brought out some figures that will cause surprise in grain-growing States other than Nebraska where the investigations were made.

A pile of threshed straw from a 40-acre field has been found to contain one hundred dollars' worth of plant food, to say nothing of its value as a mulch and improver of the moisture-holding capacity of the soil.

The Home-Maker's Lawn—How to Start a Good One

By Eben E. Rexford

EVERY home may have a lawn. It need not be a large one. It need not be an expensive one. But an expanse of greensward between the house and road is a sign that prevents intrusion on the sacredness and privacy of the family. It is the line of separation between the home life and the world of business.

Many a home is without a lawn because the lot is so small. But the tiniest lawn is, like the small garden, a great deal better than no lawn at all.

But, the amateur gardener or the home-maker may say, we don't know anything about lawn-making, and we cannot afford to hire a professional.

You don't need to. You can do the work for yourself. It will not be hard work if you go at it in the right way and take your time for it. And you will find it pleasant work, as everything that tends to make home attractive always is to the home-lover.

The first thing to do is to look the place over carefully. Very likely you will find humps and hollows, perhaps a stump or two. Or the ground may have an unpleasant slope in the wrong direction. These are conditions which must be corrected.

After you have got rid of everything that encumbers the soil and the space is clear for work, set about reducing it to either a level, or a slope from the house to the road. A sloping lawn is always more pleasing than a level one, but it is not so easy to make because it necessitates filling in near the house with soil.

Go over the ground with a sharp hoe and cut off the top of every hummock, and with the soil thus secured fill every hollow and depression. Pound it down well, that there may be no settling. When the entire surface has been reduced to a level or to an even slope, go over it with an iron-toothed rake, and scrape the soil well to the depth of an inch or two, more if the soil has come from excavations.

For the velvety lawn use good seed on well-prepared soil

Before seed is sown the ground should be well fertilized. An impression seems to prevail that a lawn does not require fertilizing, for the grass of the roadside looks fresh and green, and it gets little food except that which is furnished by the soil it grows in. You cannot secure a fine sward on the home lawn unless you make the soil quite rich. Much depends on the start the grass gets, and it will get a very poor start if the soil is lacking in proper food. The ideal fertilizer would be old, well-rotted manure from the cow yard if it were obtainable, were it not for the fact that it is sure to be full of weed seeds. Well-rotted stable manure, worked over by composting, has the weed seed germinated and is good lawn dressing. Commercial fertilizer if secnred from a thoroughly reliable dealer in agricultural goods will supply just what your soil needs. The dealer should be able to advise you as to what quantity to make use of. Scatter this evenly over the ground and rake it into the soil before seed is sown.

Use only the very best kind of lawn-grass mixture in seeding your lawn. A fine, deep, rich sward cannot be secured from poor seed. In looking over the seedsman's catalogue you will find a table telling you how much seed will be required for the lawn, but I would advise you to double the quantity specified. At least this is true if you buy prepared mixtures. By thick seeding you will get a deep velvety sward by the middle of the first season. [Who of our readers have had experience on this point?—Ed.]

Choose a damp day for sowing the seed, and a still day if possible, for the seed is so light that the slightest wind will blow it away. Scatter it broadcast, holding the hand close to the ground to make sure of the seed falling where it ought to. It is a good plan to sow from north to sonth, and then from east to west. By going over the ground twice in different directions you are likely to get an even "catch."

Mowing should not be begun until the grass has grown to be two or three inches tall. Then just clip the top of it. Close cutting will injure the crown, and it will also give the lawn the appearance of being sheared, and prevent it from having that velvety look which is one of the chief charms of the satisfactory lawn.

After the lawn is made do not spoil it by planting shrubs all over it, or breaking it up with flower beds. Keep the shrubs and the flowering plants to one side, and leave an unbroken stretch of sward between the house and the street.

F

Farm Wit and Wisdom

Condensed and Modified From Various Sources

AN OHIO conservative has reconciled himself to his new automobile by mounting a whip socket on the dash board and carrying a whip in it. No worse, after all, than wearing buttons on the back of a coat.

JUDGE LANDIS of the United States Court has warned the Elgin Butter Board that if it makes quotations in future on anything but actual sales it will be called to account. The Elgin Butter Board has been a monumental fraud, and we doubt the power of even the vigorous Landis to make it be good.

THE Nebraska Agricultural College reports that the crop of colts is short over the United States as a whole.

THAT Montana is still undeveloped agriculturally is shown by a statement in the "Reclamation Record" issued by the Department of the Interior. The "Record" says: "Montana spends more than $500,000 every year for condensed milk and cream, notwithstanding the fact that no other section of the West is better adapted to dairying. The same is true about potatoes, onions, and other vegetables, immense quantities of which are imported each year, every dollar's worth of which should be produced within the State."

A GOVERNMENT commission in Saskatchewan has made the calculation that under Canadian conditions it costs 55 cents a bushel to grow wheat. This means an average of 62 cents delivered at the railway tracks. The average net return to the western Canadian wheat grower in 1913 was only a fraction over 4 cents a bushel. The days of the western Canada wheat boom seem to be over—temporarily at least.

THE Nebraska Agricultural College is giving a short course in running farm motors—all kinds of motors from the pony engine to the tractor or automobile.

THE Tunis sheep utilized in the breeding experiments of the Arizona Station Farm have developed great efficiency as Johnson-grass exterminators. Director Forbes says that 175 of these sheep were sufficient to keep down the Johnson grass on five miles of weedy ditches during the entire growing season. They saved the cost of ditch-cleaning and at the same time made wool and mutton grow where one of the most stubborn weeds of Arizona had grown before.

THE Harrison County (Kentucky) Farmers' Union pooled the wool of its members this year and sold the 4,000 fleeces (24,000 pounds) at an estimated advantage of 2 cents a pound over what would have been received without cooperation. A mere trifle of $480 for the interesting and agreeable job of organizing.

GLOVER of the Colorado Station says that the well-known disease of hogs which produces weakness or paralysis of the hind legs "is now quite generally attributed to a lack of phosphate of lime." It has been laid to inbreeding, an unbalanced ration, and parasites. Lack of phosphate of lime is another way of saying "an unbalanced ration." Glover recommends the following treatment: One teaspoonful of cod-liver oil, fifteen grains of phosphate of lime, and three drops of fluid extract of nux vomica mixed with the food twice a day.

A NEW explosive called sabulite has been discovered, and will be manufactured by a Canadian concern. This explosive, according to the U. S. consul at Vancouver, Canada, is three times as effective as dynamite, is not affected by changes of temperature, gives off no poisonous fumes, and can be handled without danger both during the process of manufacture and in use. It is said to be especially effective for blasting stumps.

ANY alfalfa field is likely to be cut up by hail. What shall we do in such a case? If the injury is more than slight the alfalfa should be cut at once after the damage. The injured plants are weakened and may admit diseases which will spoil the year's crop. They will certainly be stunted and will interfere with the growing crop, and according to Keyser of Colorado may injure the succeeding crop. Often the crown shoots will appear after the hailstorm damage even when the injury is slight, indicating that the alfalfa is asking for the mower. Cut it and give it a chance to start over again.

E

THE Extension Service of the Arizona Experiment Station is sending out blanks to farmers and ranchmen asking for the value of their farms and ranches, amount of live stock, and the equipment used. When these blanks are properly filled out the experiment station experts will figure out how much the farms are making or losing, and will make suggestions for better management. This looks like first-hand, practical personal assistance.

ACTUAL tests made in Utah show that grain is lightest when threshed. It gains from 2½ to 3½ per cent in weight in the granary. It gets lighter in summer and heavier in winter. Probably these figures would not hold good in a different climate. Utah wheat is mighty dry when harvested. Who knows the facts as to the grain of other States?

THE rumors that the Panama-Pacific International Exposition would be postponed because of the European war have been officially denied. FARM AND FIRESIDE is authorized by the Exposition officials to state that no change in the original date has been made or will be made. The Exposition will begin February 20, 1915, and continue through December 4th of the same year. Of the thirty-seven foreign nations taking part in the Exposition not more than five will be affected by the war in Europe.

Linc Logan has decided to put off his fall plowin' till spring. 'Twon't take any longer then, and Linc sort of needs the time now to clean up his old gun for the winter hunting

NATURE settles the dusty road with a shower. Man improves on nature by settling the dust with oil so that it will stay settled.

MOST new irrigators use too much water. Cereals do better with one good watering. They need hot, dry weather to make them ripen, and too much water keeps them green and growing. Then early frost catches them.

BEING humane to dumb animals is never more profitable than when it induces you to provide winter shelter for your stock.

A BLANKET for your horse at the hitching post is more than humane: it is conservation of food.

WHEN the young cattle stop growing they stop making money for you. Remember this when you send them out to rustle food in the cold bleak stalk field.

THE fourth annual meeting of the Farm Women's Congress will be held in Wichita, Kansas, October 12-15.

HERE is a safe bet: The farmer is going to make money next year. What farmer? Why, the one who plans it all out this winter!

TRY an old spade for removing worn-out shingles from a roof, a manure fork for handling them in piling them up.

ARE squirrels and gophers a damage on the whole, or do they earn their board? They carry the germs of bubonic plague, spotted fever, and some other diseases, and we have been strongly in favor of their extirpation. Prof. Burnett of the Colorado Agricultural College, however, suggests that their destruction of grasshoppers and other insects at certain seasons of the year makes it necessary to enter an item on the credit side of the ledger. He asks farmers living where the striped gopher abounds to write him, telling him not only of the damage done by them but mentioning its beneficial traits, if any.

BY REPAIRING the machinery as it is being stored away for winter, one remembers where every break or damage is located; but if it is left to be done next spring the machinery usually is started in the field before the need of repairing is recognized. Drawbacks to this method are too numerous to mention.

WHY make the same mistake twice? There are enough new ones to last. No man ever makes all the mistakes there are.

SOILS should not be acid. Neither should corn. Acid corn (that which has an excess of the acid which all corn has to a certain degree) will not sell well on the market. In other words, the corn that has partly spoiled and grades low when placed on the market is the corn which has too much acid. This is the conviction of Beesley and Baston working in the U. S. D. A. Their findings are not altogether unexpected, but they have shown the extent to which acid in corn will affect its market value. Practically the lesson is to grow the corn that will mature well and then to store it in well ventilated and protected cribs. That will keep down the acid.

A CAREFUL reader of his farm papers makes a careful leader among his farm neighbors.

THE most famous potato-growing county in America—Aroostook County, Maine—has this year increased its potato-growing area five per cent over that of 1913, which was the maximum crop in area and yield produced in the county. Furthermore, Aroostook potato growers this season paid cash for a large portion of their fertilizer used in growing this season's crop, thereby saving close to one third of the cost of this heavy bill.

WHY not use winter wheat more as a cover crop? It is one of the best plants to make a thick, heavy, live winter mulch, and none is better to absorb and hold nitrogenous plant food that otherwise would be lost by leaching during the fall and spring rainy seasons. Winter wheat works into a rotation well over large areas of the country, and home-grown bread material is bound more and more to become a desirable thing to have on hand, war or no war.

WHILE the gilts intended for brood sows should be well fed for rapid development, their rations should be composed of the milder grains, such as cracked wheat, ground oats, and the like.

SOME days it is well to do as much as you ought to, not as much as you can.

REMEMBER that the horse is the most nervous of all animals, and that little things annoy and irritate him. He will be contented or miserable according as you treat him.

CALL YOUR NEIGHBOR IN

Editor Quick gave good advice in FARM AND FIRESIDE September 12th, when he said: "Let us draw closer together in neighbor=ship, and whatever horrors come to our knowledge let us remember of every people that they know not what they do, and forgive them.

"This is our country. We must live in it, and we are glad of that, more than ever before. We must live in it together. We should so live now that we may live in friendship and amity after this war is over. It will be over soon, but our neighbors will live near us for a long time."

FARM AND FIRESIDE Will Serve You

FARM AND FIRESIDE is a pretty good neighbor of yours. It pays you a visit every other Saturday and always has something worth while to say—and never makes trouble. FARM AND FIRESIDE always wants to serve you—it wants to serve you now with the best information about the most terrible and most interesting event in the world's history—*the present European War.*

Call in your neighbor, FARM AND FIRESIDE; use the War Atlas that FARM AND FIRESIDE has had made for its readers.

Every intelligent family wants to know all about the War, just where the battles are being fought and what the stakes are that Germany and Austria and England and Russia are fighting for. You want to know what are the resources of each of these countries. You want to know about their armies, their navies, their airships.

FARM AND FIRESIDE has had prepared for its readers a complete and comprehensive War Atlas and Gazetteer entitled "Europe at War." FARM AND FIRESIDE will give it to you—send it postpaid. In return be a good neighbor to FARM AND FIRESIDE and send just one new subscriber—one of your neighbors.

Pity the Tragic Fate of European Farmers

ALL over Europe, farmhouses and haystacks are aflame. The grain is rotting as it stands. The only harvest that is being reaped in Europe is by grim death. Blue smoke arises from exploding shells. The great war grows more terrible each hour. No human being knows when the end will come, nor what the end will be.

And yet in the United States you have peace! Your crops are in demand in every country in Europe. The United States must feed Europe and clothe Europe. These events are so great, the results will be so tremendous, that you must follow every move with breathless interest—you must know all about the war and what caused it.

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THE FARMERS' LOBBY

The War Affects All of Us

By Judson C. Welliver

THE tendency, nowadays, to "blame it on the farmer" has received some interesting new directions lately. A Congressman from Philadelphia introduced a measure to prohibit the exportation of foodstuffs during the war.

Entirely aside from the fact that it would be unconstitutional,—at least the constitutional sharps have always said the embargo during the war of 1812 was,—that would seem about as silly a performance as could be conjured up.

Think of it a minute!

We owe a vast amount of money to countries that are now at war. They want the money, but even more they want what we can give them to eat. We have less gold than we need, and more foodstuffs. So it is proposed that we refuse to pay them with the foodstuffs we don't need, and to pay them with the gold we do need!

We have over 900,000,000 bushels of wheat this year; some 300,000,000 more than we can eat.

What American will be benefited by having two loaves of bread when he only wants to eat one?

If he can sell the extra loaf to Europe it's an asset; but if he can neither eat it nor sell it, it's a loss. That's what an embargo on food exports would mean.

AT THE very same time that this piece of legislation was getting introduced, and even supported by some short-sighted people, another product of the farm was getting a very different sort of attention; two of them, in fact.

Cotton and tobacco.

The foreigners want our wheat, but they don't want our cotton. They are too busy fighting to make cloth. They don't want our tobacco either, in the usual quantities, because they are too hard up to smoke and chew.

So it is immediately proposed to enact measures to help the cotton and tobacco grower; and the same people who think it would be fine business to stop exporting wheat are full of the notion that we ought to do almost anything to get the cotton and tobacco exported.

They would refuse to let the foreigner buy the things we have to spare that he wants, but they would put the Government's credit back of the things the foreigner doesn't want, in order to keep their price up!

Legislation has been passed to authorize cotton, tobacco, and some minor staples to be deposited in government warehouses, the Government issuing its certificate that they are there. This certificate is made receivable at the national banks as if it were commercial paper, and the banks may deposit these certificates with the Government as the basis for issues of emergency currency.

Once nothing save government bonds was good enough to serve as the basis for issues on money.

Then emergency necessities caused other public bonds and certain classes or corporate bonds to be added to the list.

Then the new currency act came along and added other securities, and commercial paper.

Now we are adding warehouse certificates of the deposit of cotton, tobacco, canned salmon, and the like.

All this is being done by serious-minded, sober, conscientious legislators who are not accused of being crazy or dangerous inflationists.

As a matter of fact, they are applying common sense to conditions that confront them. They are making money out of tobacco and cotton because there isn't enough gold on hand or in sight to do the work.

That was just exactly what General James B. Weaver proposed to do. It was his financial plan on which, among other radical things, he ran for President, and captured 22 electoral votes too. Weaver carried Kansas overwhelmingly for that plan; now Kansas has carried the country for it!

Maybe old General Weaver wasn't such an egregious lunatic as was alleged.

If he was, Congress has gone crazy, for almost everyone that voted for these Weaverian measures was a few years ago busy denouncing them as the hare-brained emanations of economic madness. Republicans and Democrats alike—they all agreed on that!

I wonder how dear old General Weaver—right or wrong, he was one of the most magnificent men of his time—would feel about his vindication if he could be here to enjoy it!

"DO YOU realize"—it was a high official of the Government who was speaking—"that while they are killing people by tens of thousands in Europe the United States will lose more population, probably, than any other country on account of this war?"

It seemed rather a curious reflection, but a moment's thought suggested the idea.

"You mean that many of our foreigners will return home to fight—"

"Yes; and that immigration to the United States from Europe will be stopped. This is going to be the most striking instance we have ever known in this country, of reversing the immigration movement.

"There was a short period during the extreme depression following the panic of 1907 when the outgoing movement exceeded the incoming because newcomers from Europe, finding themselves out of work, rushed back home. But that lasted only a short time, and the temporary reflux was soon offset by a bigger flow than ever toward our shores."

"How will it affect affairs here?" was asked.

"Right seriously, but not suddenly," replied the official. He was an expert in immigration matters. "Let me explain some aspects.

"For a long time we have been getting about a million and three quarters of immigration into this country annually. That's more than half the population of the Colonies when they won their independence.

"On the other side, an average of about three hundred thousand of our alien population has been leaving us annually. That leaves a net gain of about a million and a half.

"Now, whether immigration in such vast numbers is a good or a bad thing, the fact remains that we have been receiving and absorbing that number of aliens annually. Somehow we have found something for them to do. Our whole industrial and business scheme is adjusted to the presumption that they are coming. They are the regular addition to our supply of common labor. They are the hewers of wood and drawers of water. In the North and West they do, broadly, the manual labor, as the colored people do in the South.

"Not to have them keep on coming, when everything is keyed up to the expectation of getting them, will be just as if, our population being stationary, we should lose them all at once. And suppose three millions of our best cheap laborers should leave us in the next two years? How do you presume it would affect us?"

"Some people," I suggested, "think we'd be better off without 'em."

"Yes; but even if that were true, which I for one don't admit, the business of readjusting ourselves to such a changed labor condition would obviously be a serious one."

The legislators are making money out of farm products since gold is short

EVERYWHERE one goes among the departments in Washington there is that same talk about "readjusting" to new conditions.

At the Treasury they talk about readjusting currency and banking arrangements to protect our gold supply which all the world wants; about providing means to finance new business in new quarters; about helping other lines of enterprise to survive despite that their business is taken away from them.

The Department of the Interior is surveying the natural resources to learn whence we may get tin, which has been coming largely from Wales; and potash, which has come exclusively, but can no longer come, from Germany.

Have all of us figured on next year's supplies of fertilizer? That will bring this readjustment business close home to us.

German potash is absolutely necessary in most of the commercial fertilizer formulas we use. There will be no potash till the war stops. What shall we do?

Secretary Lane has people already at work investigating the possibility of quick development—perhaps carried on directly by the Government—of potash in the Southwestern deserts. It can be produced, too, from the giant seaweed, kelp, found in the Pacific waters all along our coast.

Already the search, the experimenting with processes, is afoot. Meanwhile fertilizer prices are climbing.

THE greatest single employing industry in New York City is garment-making—clothes for men, women, and children. Most of the workers are recently come foreigners, the class that have not yet secured citizen's papers and that are liable for military service at home and sufficiently attached to the Motherland to be willing to go and perform it.

Therefore, being in New York the other day I saw all of fifty signs offering work to garment makers. They have been quitting their tasks and hurrying back home to fight.

Who'll make the clothes?

We can't. The business of clothing Americans is completely adjusted, now, to the factory and sweat-shop system. Our aliens do the real work. If they quit we must "readjust."

Talking on a train about this garment-making situation a drummer contributed his illumination about war's effects in another direction.

"I have been selling paints," he said; "high-class ones. Our house gets a large part of its paints from Germany, also much of the material for those we manufacture. To-day the house informed our biggest Western jobber that his order couldn't be filled because the paint that was coming from Germany for him is at Hamburg, aboard a boat that has been tied up at the dock five weeks and will continue tied up till the war is over.

"We are still able to sell some paints that are made entirely from domestic materials; and the house is scratching around in the effort to find somebody who will provide us with materials that have always come from Germany.

"Every concern that is able to supply these materials is now working double or triple shifts, and still unable to keep up with orders. But, say, they're going to make some real money. If the war lasts two years it'll be good-by to that line of business for Germany: Americans will be fully equipped to produce all we'll need."

I SAW Secretary Bryan a day or two ago. He looked tired, gray, careworn; not a bit bent, but rather like a man keeping himself straight by an effort because his burden necessitated it.

"No wonder!" I thought.

For Mr. Bryan and President Wilson, between them, come pretty near to being the diplomatic clearing house of the world. Washington to-day is more nearly the real capital of the world than any city ever was before.

Out of the remotest parts of the globe American diplomatic officers are doing the neighborly job of looking after the interests of the belligerent countries in the capitals and commercial centers. When two nations go to war they cease speaking as they pass by. Each withdraws all its diplomatic representation from the other.

But of course there is a lot of hang-over business, and there are new matters constantly arising, that make communication necessary. This must, according to the etiquette of war and diplomacy, be carried on through the diplomatic agencies of some mutual friend, some neutral power.

The United States is the one remaining first-class mutual friend in the whole family of nations. We are still everybody's friend, so everybody tells their troubles to our diplomats.

When the French ambassador left Berlin he turned over the archives and business of his office to Judge Gerard, American ambassador, and the French Government authorized Judge Gerard to attend, as its agent, to necessary matters. The Britishers did the same thing, and so did the Japanese and the Russians. It's about the same way at the other capitals.

Germany was for a time so completely isolated from the world that the Japanese declaration of war on Germany could not be made directly: it had to be notified to Germany through our State Department. In substance the Japanese ambassador in Washington said to Secretary Bryan:

"Will you kindly notify the most honorable German Government, in behalf of the humble Japanese Government, that the utterly unworthy Japanese Government deeply regrets the necessity to lick the tar out of the exalted and ennobled German Government, and shall forthwith proceed to the operation."

Secretary Bryan conveyed the message, adding some regrets on his own account.

THE world moves fast when it gets sufficiently prodded. And there are some twenty millions of sturdy persons in khaki prodding it just at the moment.

In Great Britain the Government is taking over the control of the flour mills, and in London the Cabinet Committee on Prices of Foodstuffs has been issuing schedules of maximum prices.

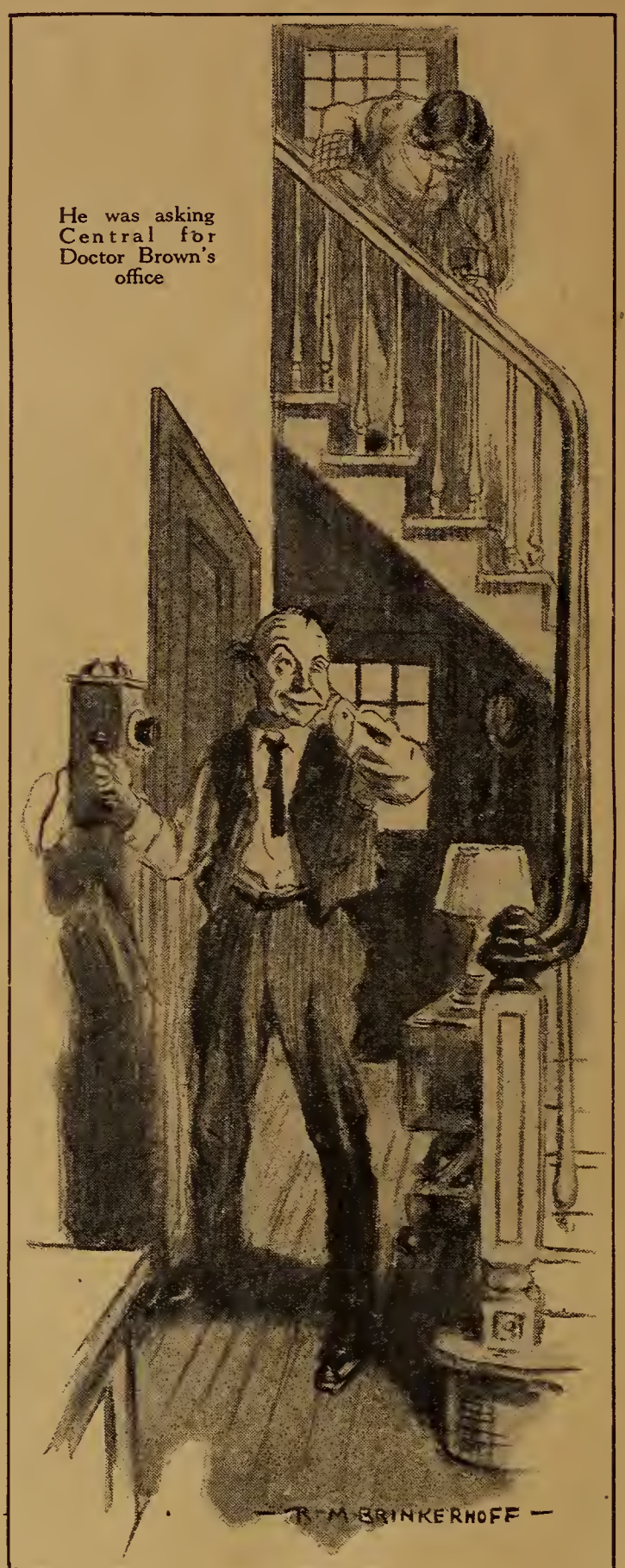
If the world gets a few years' experience with such vigorous measures as these, for good or ill, the world's social scheme, as well as its political map, is going to be astonishingly altered.

The Tooth and the Man

An Adventure in Finding His Wife's Viewpoint

By Alice Louise Lee

In Two Parts—Part II



"NOW, dear," said Mrs. Mason cheerfully as she covered the human door knob with the hot stuff and passed a bandage around his head, "you'll feel better. Your mother, who was a fine woman and an excellent nurse, always said there is nothing like this for drawing pain."

His mother was right. He proved that within fifteen minutes. The poultice drew all the pain that could reasonably be supposed to exist in the neighborhood for miles around. It continued to draw after Mr. Mason, in a frenzy, had torn the bandages from his head and flung the wet pasty mess across the room where it lodged in the open dresser drawer amid his collection of ties. It drew after he frantically washed it off the still enlarging door knob. Its memory continued to draw throughout the night. As he so often told the children, he never had reason to doubt his mother's word.

The night brought but one dim ray of comfort to Mr. Mason writhing in the morris chair. Mrs. Mason, the past possessor of ulcerated teeth, informed him that after the lapse of twenty-four hours it was customary for the sufferer to repair to his dentist for "treatment," and she hoped he would be sensible enough to go in the morning. She omitted to explain the nature of the "treatment," and Mr. Mason did not ask. His usually logical mind was not working much beyond the tooth with the neat, round gold filling. The fact that Mrs. Mason had opened the way for him to receive medical assistance was a negative comfort because he did not expect to be present in the flesh when a new day should break.

It was, then, something of a surprise but not yet an unmitigated joy when he opened his ears at 7 A. M. in time to hear the tail end of his last snore, and opened his eyes on sunshine and budding trees. That is, he opened his right eye. The left had gone out of commission during the night watches. He sat up stiffly in the morris chair and glanced into the mirror. The left side of his face bulged like a pink toy circus balloon, which it also resembled in color, owing to that efficacious pain-drawing poultice recommended by his mother. His jaw had ceased its breaking process, but there was at its roots an ulcer at least the size of a teacup—and that, Mr. Mason knew, was a mild estimate of its dimensions—which throbbed every time he moved, and every throb traveled to the top of his head and into his left ear and down to his collar bone.

"I know that the pain is not so sharp, dear," Mrs. Mason informed him when she brought his breakfast, "because you dozed off about three o'clock. And now all that remains is to get to the dentist and have that tooth treated. I'll go with you about ten o'clock."

As Mr. Mason swallowed without chewing he dwelt with increasing joy on that word "treatment." He had never inquired into ulcerated teeth, Mrs. Mason's having antedated his acquaintance with her, but the word "treatment" had a soothing, nerve-stilling sound. It meant that the dentist would put an end to his troubles and he should again be at peace with all the world. Owing to the fact that John junior's l-e-g began to threaten and ache, Mrs. Mason could not accompany her husband to town, but she bandaged the left side of his face, kissed the right side, and sent him out with the emotional and disquieting assertion that she should pray for him.

"What the dev— dickens does she mean by that?" Mr. Mason enquired of himself as he stumbled down the road to the trolley corner. Wasn't he going to the dentist to have that gold-filled tooth treated, soothed, cured? It was yesterday that he needed prayers—and didn't get any to judge by the result.

The dentist was an acquaintance of his. It was the same man who had taken the nerve out of that first molar and inserted the neat, round gold filling. He had never had other occasion to serve Mr. Mason professionally, because Mr. Mason's teeth were monuments to sensible living and good care.

"I've come," announced Mr. Mason thickly as he got out of the bandages, "to have my tooth treated."

"Uh-huh," assented the dentist.

He seated the patient in the chair facing an open window and, without remarking, as Mr. Mason supposed he would, that it was the worst case of ulceration he had ever seen, directed him to open his mouth.

Mr. Mason looked reproachfully out of his right eye. "I can't," he declared in an injured tone.

The dentist assisted him. After that Mr. Mason worked his jaws himself.

"Will you take ether or not?" demanded the dentist, rattling around among some noisy steel instruments.

Mr. Mason sat up with a gasp. A paralyzing chill frisked up his spine and lodged in his bulging lower jaw. "Ether? Why, my wife said you'd *treat* the tooth!"

"That's what I'm going to do," snapped the dentist who was a man of few words and swift actions. "I'll either pull it or go after the abscess. Which d'ye want?"

A greater chill started at the roots of the ulcerated member and traveled in a sickening wave down Mr. Mason's back. He sank back weakly. Perspiration added to the unloveliness of the left side of his face.

"I—" he began feebly and then braced up. "I expected—Mrs. Mason expected that you'd treat the tooth—*treat* it, you know. Mrs. Mason said—"

The dentist laid down a pair of wicked shining forceps and took up an equally shining and wicked-looking lancet. "Well, I'll probe for the abscess then, and take out the filling and," comfortingly, "in four weeks you'll probably go through with the same thing again. I advise pulling. If a tooth ulcerates once it's no good. Better get rid of it; but it's up to you."

"I—oh—treatment," mumbled Mr. Mason disjointedly. Then, because neither his wife nor any of his three children were near, he asked feebly, "Which—er—hurts the most?"

The dentist shrugged his indifferent shoulders and played with the lancet. "This doesn't hurt much. Just one or two plunges into the gum to the roots of the teeth—"

"Put it away," moaned Mr. Mason convulsed with shudders. "Get it out of my sight!" He lay back faint and closed his eyes. Was ever anyone in such a terrible extremity as he? "Mrs. Mason said you'd treat it," he finally insisted. "And I thought that meant putting something on it to take out the pain and reduce the swelling and all that."

The dentist began rattling around among the steel things again. "No such thing possible. Which shall it be, punch or pull?"

Mr. Mason, the cold sweat coming from every pore, his legs trembling to such an extent that he was a prisoner willy-nilly in that chair of torture, with his mind in chaos, finally decided on "pull," *if* the tooth could not be treated.

"I rather you'd treat it," he quavered, "much rather, and Mrs. Mason—"

"Open your mouth and let's have another look at it," interrupted the dentist.

That professional's voice was so kind that Mr. Mason ought to have been suspicious, but he was not. Neither did he detect the use to which the dentist was putting his right hand until it was too late for effective interference. Then all nature stopped in her course. The world turned upside down and all things in it went hurtling through space only to land squarely on the lower jaw of Mr. Mason. This collision removed his head and dislocated his entire nervous system. There were just enough auditory nerves left in place to convey to his brain an ear-splitting, blood-curdling yell which for strength and length would have done credit to a steam siren.

At the conclusion of the yell the tooth with the round gold filling lay on the floor, but its former owner scarcely touched the floor during the next fifteen minutes. The office was the scene of a continuous performance which plunged the cuspidor under the corner couch, wiped two flower pots off the window sill, sent the cat climbing up the curtain with its tail the size of the curtain pole. And through it all the dentist stood beside his chair, a bored expression on his face, examining a tiny object no larger than an infant pea which clung to the root of the tooth.

At length Mr. Mason was induced to lie on the corner couch after the office girl had groped under it in search of the cuspidor. The kindly dentist forcibly assisted him in arriving at this restful conclusion. And there, gradually, amid the soothing medical odors which emanated from the corner dedicated to the dental chair the peace came which he had so coveted since time began, or was it only since Sunday morning? Before he had the matter reasoned out he went to sleep. When he awakened, only the bulging cheek remained to indicate what he had passed through.

He went out on the street weak but happy. The world had, somehow, righted itself, and never had it looked so fresh and full of promise for future content. Mr. Mason was filled with happiness and a feeling of yearning sympathy toward his fellow men. A Salvation Army lass barred his pathway to the trolley. He gave her a dollar, and did not regret his generosity for a week. When he reached home the house had never looked to him so pleasant and peaceful and restful. Never had the evidences of Mrs. Mason's good housekeeping been so apparent. He paused on the walk to survey the lawn.

"Got to run the lawn mower over it to-morrow sure as preaching!" he decided.

Then his gaze traveled to the plot of ground at the left of the house. He went slowly up the driveway still gazing. Gingerly he stroked his swollen cheek. By to-morrow it would be reduced to its normal size, the dentist had said. Slowly he entered the house.

His wife was not visible. The reason was apparent to anyone with ears. The voice of John junior swelled from above the stairs, "Oh, Ma, my l-e-g aches so! Boo-hoo!"

John Mason, senior, stopped in the hall and listened. His wife had been up Saturday night with that brief l-e-g, Sunday night with his tooth, and to-day was Monday. He stepped to the telephone just as his wife appeared at the head of the stairs.

"John, how is the tooth?" she called tremulously.

Mr. Mason did not reply at once. He was asking Central for Doctor Brown's office.

"Is this Doctor Brown?" he demanded almost immediately. "This is Mason, John Mason. My boy has the leg ache, painful, you understand, very painful. I want you to come out right off. All right."

Then, while Mrs. Mason leaned against the banisters for support, her husband called up the man who attended to their furnace.

"Jim, is this you? Say, you any good at gardening? Glad of it, because I want you to fix up that bit of ground south of the house for Mrs. Mason. Can you come up to-day and get her ideas? All right, come this afternoon, say at three."

A Rural-School Junior Assistant

By Dick Dickinson

THAT an assistant from the ranks of pupils greatly increases the efficiency of the teacher in large rural schools has been successfully proved in at least one district school near Eureka, Montana.

This school has several eighth-grade pupils who, as in all district schools, are older and more mature than eighth graders in city schools. One of them, a young girl of fifteen, was appointed assistant at the beginning of the school year at ten dollars a month. Her duties are that of floor monitor for the one-room building. After several months' trial everyone was so well satisfied that they wonder why such a simple and effectual expedient was not thought of sooner.

While the teacher is hearing recitations, this assistant, an eighth-grade pupil, fifteen years of age, passes quietly among the pupils, maintaining order, giving assistance to the lower grade pupils, supplying seat work to the little folks, spelling and pronouncing difficult words, correcting language work and other papers, and everywhere going to the hands upraised.

The teacher in charge can thus devote full time—which is little enough in rural schools—to the recitations. This saving alone, in the opinion of the teacher, amounts to twenty-five per cent, to say nothing of the increased enthusiasm and energy which she can put into a recitation when there is no nervous strain from interruptions and discipline.

The junior assistant recites regularly with the eighth grade, most of the preparations of lessons being done at home.

It will often happen that two or three in the eighth grade expect to become teachers. The work of assistant will be excellent training for them as well as advantageous to the school. In this particular school it is planned to have them gradually work into hearing some of the lower grade recitations.

Such an assistant means a slightly additional expense, but considering the results it is a profitable investment.

E

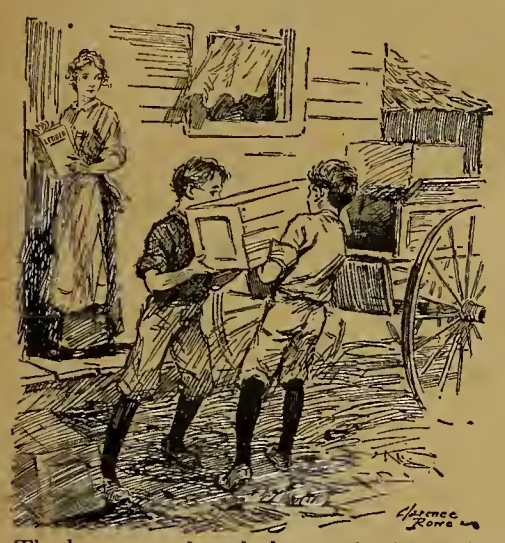
Places to Find Money

Farm and Fireside Women Tell More of Their Earnings

Why You Will Profit by Finding a City Market

By Nell C. Splitstone

DURING the first few years of my farm life, which began when I married, I took all my produce to the village store and traded it for groceries and dry goods, as did all my neighbors. I liked dairying and poultry-raising and took a keen delight in marketing my firm yellow rolls of Jersey butter and my basketfuls of clean fresh eggs. I knew the grocer always seemed pleased to get my produce, but it never occurred to me that I could command a better price for it than I was getting at the



The boys, too, found pleasure in the work

village store until one time when I was visiting some friends in the city and heard them talking about what a problem it was to get good butter and eggs and what high prices they had to pay for them. It was then that I decided to find a better market for my produce. I asked my friends to give me a letter to their grocer, which they did, and I arranged with him to take a shipment of butter and eggs from our farm every week, at prices which were several cents higher than those we received at home.

The first order the grocer gave me was not very large, but the second one took all the butter and eggs I had to sell, and soon the orders increased in size so that I had to go out and buy from my neighbors to complete the amount. I was careful not to buy anything of an inferior quality, and always packed the produee neatly and securely for shipping. In the summer the butter was put up in paper packages which were made for the purpose, and these packages were packed in a wooden box for shipping. When the weather got cool I shipped the butter in rolls, each wrapped neatly in rice paper and packed in a tin-lined box for shipment.

In the fall this city grocer wrote me that he could use some dressed chickens and turkeys, also some apples, hickory nuts, and walnuts—all of which I was glad to send him, for he paid more than I could have got at home. In the spring I asked him if he could use some new maple syrup. He was glad to get this, and made it worth our while to ship it to him.

This small huckster business I carried on in connection with the many other duties which fall to the lot of a farmer's wife with a family of six, and from the proceeds of our own produce and the profits I made on my neighbors' I practieally ran the house and elothed myself and four children. That is why I think huckstering a rather good way to piece out the family income.

The Jingle of Coin in the Sausage Mill

By Julia Ramsey Davis

FARMERS' wives and daughters in looking for ways to make money at home will find the making of pork sausage for market the most profitable occupation in which they can engage.

While this is not easy work (and what is, that is worth while?) it comes at a time when the other work on the farm is not clamoring for attention and, although strenuous while it lasts, is necessarily soon finished.

Every country housewife probably can manufacture sausage to suit the tastes of the members of her own family, but if she is making them for sale she must find out what seasonings her customers prefer, and cater to their tastes.

If her sausage is a little different and a little better than her neighbor's the public soon discovers this fact, and she will not have any trouble in disposing of her goods at a little more than the market price. To illustrate this I shall give the experience of a farmer's wife who has made a decided success with her sausage trade.

A Recipe Which is an Advertisement

Mrs. C. A. Davis• of Brooks• County, Georgia, has the reputation of always furnishing her customers with first-class sausage. They say that her sausages taste better, keep better, and even look better than any on the market. The result is she always has more orders than she can possibly fill long before the time comes for making them.

Mrs. Davis' husband makes a specialty of fine hogs, and sells many hundreds of pounds of well-cured meat each season, so she is fortunate in having plenty of first-class material from which to manufacture her sausage.

Her husband usually slaughters about 40 hogs at a killing. From the trimmings, or regular sausage meat, and jowls she makes between 250 and 300 pounds of sausage. She does not cut up other meat, as the high prices received from hams, shoulders, etc., do not warrant their use for this purpose.

This is her way of making, but as will be seen much is necessarily left to individual taste.

"To every 150 pounds of lean pork, that is the trimmings from the big meat," says Mrs. Davis, "add 50 pounds of the fat of jowls. Cut this as fine as the grinder will do the work. Then to every 50 pounds of sausage meat mix one teaspoonful of saltpeter. I think this helps to keep sausage from getting old. The following is a good recipe for seasoning, but I do not trust entirely to any recipe, as the ingredients may not always be of the same strength.

"To 50 pounds of ground meat add one-half ounce of sage, three ounces of ground black pepper, one ounce of pulverized red pepper, three-fourths pound salt, six ounces sugar. Mix thoroughly, and then mix again. Then I always taste it raw, and if it seems well seasoned I try a small piece cooked to make sure nothing is lacking before putting it into the casings.

"I not only do my own seasoning, but I give every detail of the work my personal supervision. I assist in cleaning the casings, and have them as clear and perfect as they can be made. These are ready by the time the meat is and are filled with considerable care, of course.

"I keep a record of how many pounds each customer has engaged, and deliver them as soon after making as possible.

"I make from 750 to 1,000 pounds of sausage each season, and have no difficulty in disposing of it at a good price. I shall give a copy of my record of amount made from each slaughtering last season, and this may serve as a guide to some who have never made sausage in large quantities.

"From the first slaughtering of 30 hogs, I made 200 pounds of sausage for sale.

"From the second slaughtering, in which 40 hogs were killed, 250 pounds of sausage were manufactured.

BROOKS COUNTY, Georgia, from which this letter is written, is maintaining in its own territory the reputation for hog-raising and bacon-curing which formerly characterized all our Southern States. Forty-five thousand pounds of cured bacon were recently delivered in one day at Quitman. It is no wonder that Brooks County has wealth and a reputation. Last year it sold $150,000 of bacon at an average price of 14 cents a pound. Pig clubs are popular among the boys who, because they are happy in their farm homes which are equipped with light and water plants, telephones, and other comforts, are deaf to the call of the city

"The third killing, 35 hogs, gave me 175 pounds for sale.

"From the fourth and last slaughtering, 46 hogs, I made 310 pounds of sausage.

"The whole amount sold was 935 pounds. This, at 20 cents a pound, brought me quite a nice sum for pin-money.

"If my sausage is superior to the general make, as many are kind enough to say, it must be because I strive to give my customers the exaet shade of seasoning they like. I know I spare no labor or time in the making.

"My advice to farmers' wives who wish to make sausages for market is, make them good and the selling will take care of itself."

This is good advice. Nothing advertises an article so well as its own excellence.

When Are Vegetables Not Vegetables?—By Mary Hamilton Talbott

HOW many housewives combine vegetables with their breads or think of them as possible desserts? In the farming districts of England parsnip biscuits are a frequent supper dish. Boil three ordinary-sized parsnips until tender, mash, and press them through a sieve. Mix in the proportions of one teacupful of parsnips to one quart of hot milk, one-half pint of yeast, a little salt and flour to make a stiff batter. Cover, set in a warm plaee, and when the dough has risen to twice its size knead, make into rolls and let them rise again. Bake until brown.

A welcome variety to the griddle cake of the breakfast table will be found in the squash griddle cake. Into one cupful of boiled squash (use dry and mealy squash) stir half a pint of boiling milk, one tablespoonful of sugar, one-half teaspoonful of salt, and two teaspoonfuls of butter. When this has cooled mix it with one well-beaten egg and a cupful of flour with which two teaspoonfuls of baking powder has been sifted, and bake on a hot griddle.

Pumpkin makes a splendid bread as well as pie. Sift together a scant cupful of corn meal, one-third cupful of flour, one-fourth eupful of sugar, one-half teaspoonful of salt, and one-half teaspoonful of soda. Add one well-beaten egg and a cupful of thick sour cream. When thoroughly mixed stir in one cupful of stewed pumpkin. Bake in shallow pan about twenty-five minutes.

New Uses for Corn, Potatoes and Tomatoes

Delicious accompaniments to stewed chicken are corn dumplings. Put through a fine sieve two eupfuls of cooked corn, eut from the cob, splitting the grains before doing it, and add two eggs, salt and pepper to taste, and sufficient flour for binding. Drop with a teaspoon into boiling water, and cook twelve minutes. Gems made from green eorn will utilize in a very good way the ears left over. Press the pulp from about three ears of corn and add to this two well-beaten eggs, one cupful of milk, one-half teaspoonful of salt, and one and one-half cupfuls of flour. Bake in greased gem tins in a moderate oven twenty minutes.

Potato muffins and scones one finds often on the tables of our Irish neighbors. To make the muffins, boil three good-sized white potatoes, put them through the eolander, and add to them a tablespoonful of butter and a teaspoonful of salt. When this has been beaten well, blend with it one-half cupful of milk and add two eggs beaten well without separating. To these ingredients add enough flour to make a soft batter, about two cupfuls, in which one teaspoonful of baking powder has been sifted. Bake in muffin rings. Potato seones are made by mashing eight ordinary-sized boiled potatoes and while hot adding to them four tablespoonfuls of sugar and half a yeast cake dissolved in half a pint of warm milk; beat well, then mix in enough flour to make a soft dough and set to rise. When light, roll into sheets a half-inch thick, eut into squares, and bake. These are very delieious for tea.

Tomato fritters make a hearty luncheon or supper dish. Prepare enough tomatoes to make one quart when stewed, and eook with them half an onion, a few cloves, and two tablespoonfuls of sugar, put through a sieve when cooked, and season to taste with salt and pepper. To one-fourth cupful of butter, bubbling hot, add one-half cupful of cornstarch. To this add the tomatoes you have already prepared with onion, cloves, and sugar, stirring them in gradually, and cook about two minutes, or until blended, then add one egg slightly beaten. Put this in a shallow buttered tin and when cool cut into squares, roll in bread crumbs, egg, and then crumbs again, and fry in deep fat. Drain before serving. Onions, turnips, and carrots make delicious soufflés which are good substitutes for meat at the lighter meals. Melt one-fourth cupful of butter and blend with the same quantity of flour and pour over them slowly one-third cupful of cream and one-third cupful of the water in which the vegetable has been cooked. Add one cupful of the vegetable, cooked, the yolks of three eggs well beaten, then the whipped whites, and salt and pepper to taste. Bake in a buttered dish in a slow oven.

Do not be discouraged if you eannot have the regulation plum pudding for Christmas, but try one such as the Scotchman eats, made of vegetables. Mix well together one pound of smoothly mashed potatoes, one-half pound of carrots boiled until tender and beaten to a paste, one pound of flour, one pound of currants, three-fourths pound of brown sugar, one pound of raisins, two ounces of suet, one nutmeg (grated), one-fourth teaspoonful of salt, and one egg. Put this into a well-floured cloth, tie it closely, and boil for six hours. Nuts and spices may be added if desired.

Baked green pea custards are dainty and make a wholesome dessert for children. Beat slightly three eggs, add one-half cupful of milk, one-half tablespoonful of melted butter, one scant eupful of sugar, one teaspoonful of vanilla, and one cupful of cooked peas; put through a sieve. (I use canned peas in winter.) Put this mixture in custard cups, place them in a pan of water, and bake until solid.

Two Vegetable Pies

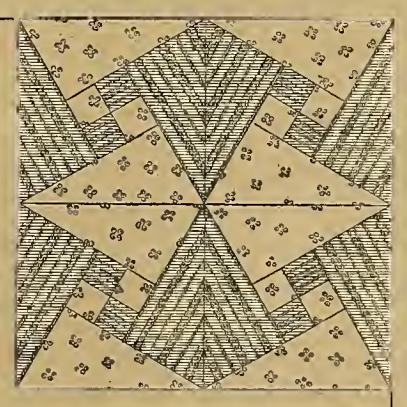
The pie-eating members of the family will enjoy carrot custard pie. For two custards take a pint of carrots after being boiled and mashed through the colander, three well-beaten eggs, butter size of an egg (which is used after melting), one teaspoonful of cinnamon, one-half teaspoonful of allspice, one-fourth teaspoonful of cloves, half a nutmeg, two tablespoonfuls of sugar, and two-thirds pint of milk. Cook in shells without a top and serve cold.

Sweet-potato pie may be made in the same way, or baked in a regular under crust, the filling being allowed to brown richly on top.

E

Mosaic Patchwork

By Mrs. M. S. Buell



THIS pattern produces the best effect when only two colors are used. If a variety of colors are to be worked in, the whole quilt should be planned before any blocks are pieced, and the blocks sewed together as fast as they are made. The pieces should be sorted into dark and light, and each of these arranged so as to shade each way from the center; that is, for the central row take the darkest of the dark pieces to run up and down and the darkest of the light to run across. Each block contains half of four distinct figures, and these halves must be brought together, so the arrangement of miscellaneous colors is difficult and the effect not specially good. In cutting the triangular pieces, one half of the blocks should be cut with the pattern lying on the upper face of the cloth, and the other half should be reversed like a sleeve pattern. To make the pattern, draw on a piece of paper a square a trifle larger than you want your block, find the center of each side, and mark with a dot. Then from each corner of the square draw a straight line to the center point of one of the opposite sides. These must all be drawn in one direction, either to the right or left, as you choose. The square left in the center should be divided into four small squares. Cutting this from one corner to the further edge of the small square, then at a right angle to the nearest outside corner, you have one piece for your pattern, one of the little squares makes the other. The pieced square shown in the diagram is made up of four blocks, as you will readily see.

Advance Models Which Display Fashions Latest Features

Designs by
Grace Margaret Gould

Drawings by
W. C. Reynolds

No. 2634
No. 2635

No. 2633
No. 2614

No. 2599

No. 2600
No. 2601

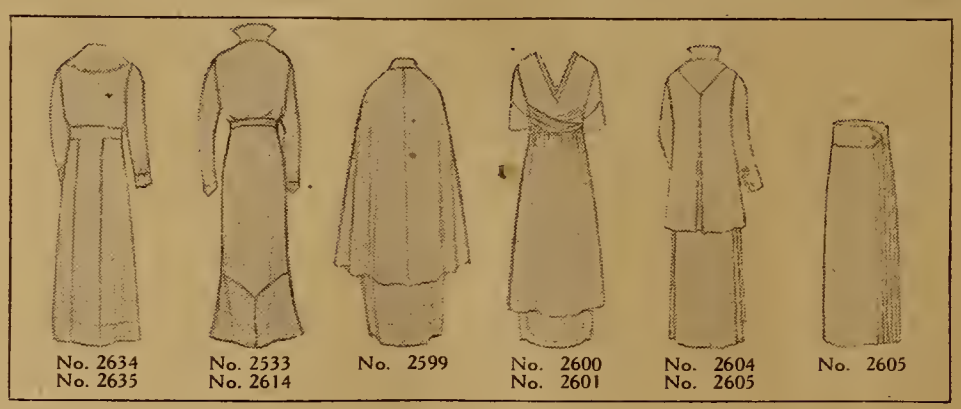
No. 2604
No. 2605

The cape with waistcoat is a particularly fashionable wrap

A STUDY of the costumes here shown is to familiarize one's self with the most important style features of fall and winter. The skirt with plaits at the sides, shown in the tailored suit, is high in favor and is a good big step toward wider skirts.

The long coat with its waistcoat and flaring skirt portion is a style leader. And again we find the waistcoat combined with the long cape.

In the evening dress it is the very wide girdle that is the special feature, and the basque waist with the skirt showing a flaring flounce is a much approved of costume.



No. 2634
No. 2635

No. 2533
No. 2614

No. 2599

No. 2600
No. 2601

No. 2604
No. 2605

No. 2634—Guimpe Blouse with Long or Short Sleeves

32 to 42 hust. Material required for 36-inch hust, two and one-fourth yards of thirty-inch material, or one and three-eighths yards of forty-five-inch material, with five eighths of a yard of contrasting material, three eighths of a yard of net, and one and one-eighth yards of lining for guimpe. This blouse may be made with long or short sleeves, as desired. The price of this pattern is ten cents

No. 2635—Panel Skirt with or without Side Tunics

22 to 32 waist. Quantity of material required for 24-inch waist, five yards of thirty-inch material, or three and seven-eighths yards of forty-five-inch material. Width of skirt at hottom in 24-inch waist, two and one-fourth yards. On account of its adaptahility this model is a most desirable one. The price of this skirt pattern is ten cents

No. 2604—Flaring Coat with Waistcoat

32 to 42 hust. Material for 36-inch hust, four and three-fourths yards of thirty-six-inch, or three and one-eighth yards of fifty-four-inch, with one yard of thirty-inch material for waistcoat and collar. The inverted plait at back of coat is its especially new feature. This box plait, though partially hidden by large collar, runs from neck to hem. The price of this coat pattern is ten cents

No. 2605—Skirt with Plaits at Sides

22 to 32 waist. Material required for 24-inch waist, four and one-eighth yards of thirty-six-inch material, or two and seven-eighths yards of fifty-four-inch material. Width of skirt at hottom in 24-inch waist, two yards. The fact that plaits are again to be fashionable is illustrated in this smart skirt. The price of this skirt pattern is ten cents

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Pattern Department, Farm and Fireside, Springfield, Ohio

Pattern Department, Farm and Fireside, Room 320, 1554 California Street, Denver, Colorado

Enclosed please find....., for which please send me the following patterns:

No.....Size..... No.....Size.....

No.....Size..... No.....Size.....

Name.....

Address.....

.....

THE very practical dress illustrated on this page in patterns Nos. 2634 and 2635 is one of the WOMAN'S HOME COMPANION adaptable patterns. The dress can be made as here illustrated, and also with side tunics on the skirt, which give it an entirely different effect. These loose side tunics are very smart.

No. 2633—Long-Sleeve Waist: Basque Effect

32 to 42 hust. Material required for 36-inch hust, three yards of twenty-seven-inch material, or two yards of thirty-six-inch material, with one-half yard of contrasting material for trimming. For fall and winter, basque effects are to be very fashionable, and this model shows a clever modification of the basque. The waist is made to hutton down over the top of the skirt, finished with a narrow helt. Pattern is ten cents

No. 2614—Flounce Skirt with Front Panel

22 to 34 waist. Quantity of material required for 24-inch waist, four yards of thirty-six-inch material or two and three-eighths yards of fifty-four-inch material, with three eighths of a yard of thirty-six-inch material for the girdle. Width of skirt at hottom in 24-inch waist, two and one-half yards. This attractive skirt model emhodies the season's latest lines. The price of this skirt pattern is ten cents

No. 2599—Long Cape with Waistcoat

32, 36, 40, and 44 hust. Material for 36-inch bust, four and one-fourth yards of thirty-six-inch material, or two and seven-eighths yards of fifty-four-inch material, with three fourths of a yard of material for waistcoat and one-half yard for the collar. This cape is so simple to make and fit that the home dressmaker will be glad to include it in her winter wardrobe. The price of this cape pattern is ten cents

No. 2600—Evening Waist with Draped Girdle

32 to 38 hust. Material required for 36-inch bust, two and one-eighth yards of twenty-seven-inch material, or one and five-eighths yards of forty-inch material, with one-half yard for vest and one yard for girdle. The girdle, so high that it almost forms the lower part of waist, is a special feature of many smart fall evening gowns. This dress, however, may be made without it if preferred. Price of pattern is ten cents

No. 2601—Skirt with Long Gathered Tunic

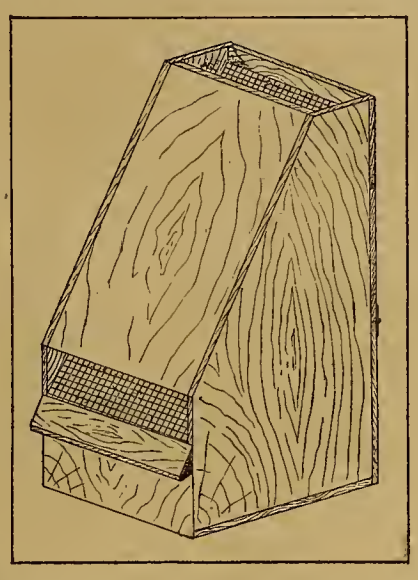
22 to 28 waist. Material required for 24-inch waist, three and five-eighths yards of twenty-seven-inch material, or three and one-eighth yards of forty-inch material, with three yards of thirty-six-inch material for the tunic. Width of skirt at bottom in 24-inch waist, one and five-eighths yards. This skirt may be made with the tunic of matching or contrasting fahric. The price of this skirt pattern is ten cents

A Dustless Ash Sifter

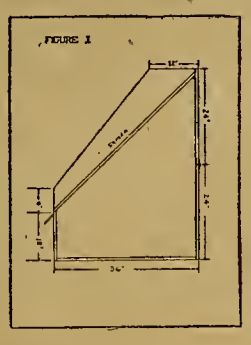
By A. E. Swoyer

HARD coal is becoming so expensive that methods for reducing waste in its use are an economical necessity. Of these, sifting the ashes in order to reclaim unburned pieces is one of the most usual. Unfortunately, ash-sifting with the devices commonly used is laborious and dirty, so that most of us dread the work. The ash sifter illustrated herewith, however, is practically dustless. It is worked with little more effort than would be required to dump the ashes without sifting. Moreover, it may easily be made at home at the cost of 1½ yards of wire netting and such odd pieces of board as may be found about any home.

The dimensions given are those for a large sifter which is to be kept in the cellar or yard, and which need be emptied not oftener than once a week. The same scheme may be used, however, for a smaller sifter to be kept in the kitchen; or, by cutting a hole in the bottom of correct size and shape to fit tightly over the ash can, it may be made to dump the waste directly therein, while discharging the good coal back into the hod.



The sides of this sifter are each composed of three 12-inch boards 4 feet long, joined together by means of cleats. A mark is then made on one edge of these built-up pieces, 18 inches from one end, and a line drawn from this point to one 12 inches from the opposite edge along the top. Sawing along these lines will give two pieces of the shape shown by the outside lines of Figure I. The front of the box is a piece 18 inches long by 12 inches wide. The remainder of the front along the slope should also be covered. The bottom of the box is solid, but the back is made in two pieces, each 18 inches long and 2 feet wide. The upper half is nailed to the sides, but the lower portion is hinged as shown in the back view of Figure II. This hinged portion is to be raised when it is desired to remove the ashes; when lowered it must fasten with a hasp not shown in the sketch, in order that it may not be forced open when you are sifting and allow the ashes to escape.

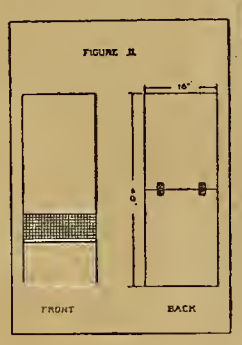


The sifter is now complete with the exception of the screen. This should be made of wire netting nailed to a frame 4 feet long and 17 inches wide. This width is for a box made of ½-inch lumber; if thicker wood has been used, make the frame the same width as that of the inside of the box. The mesh of the netting depends entirely upon the size of the coal which you use. For average use, "chicken" wire of ¾-inch mesh will be about right. When this screen is completed it may be worked into the box through the hinged doorway and placed so that its top is in the upper corner; the lower end rests upon the top of the front board, where it may be fastened with nails or screws.

To use the sifter, place the coal hod under the opening in the front of the box and dump the ashes into the open top; the angle at which the screen is placed is so sharp that the good coal will slide along its upper surface and into the hod, while the ashes will drop through into the box proper, to be removed at your leisure. At first glance it would appear as if considerable dust would escape through the open top; in practice this is not the case, the slope of the screen is so great that sifting is practically instantaneous, while the opening is relatively very small.

The box being of wood, care should be used not to dump hot ashes through it. Should you keep the sifter in the house and wish to avoid any chance of fire it is best to line it with sheet tin or with asbestos before putting it together.

This is a plan the boys can work out. Let them do it.



Side-Tracking the Loafer

By B. F. W. Thorpe

WE HAVE heard much about the loafer cow eating up the profits of the dairyman. Many hens have the same trick.

It's the molting loafer hen that gives the profit account a black eye.

Let me contrast the two types of hens in order to make my meaning clear.

The loafer type knocks off her egg-laying job in early midsummer, then leisurely loafs and molts till Thanksgiving before her feathery dress is fully up to hen fashion requirements.

As a rule her vacation is by no means over when she is full feathered. The same breeding inheritance that caused her to stop laying in July prevents her resuming egg production before midwinter or later.

About March this loafer type of hen is literally overflowing with eggs. For a few weeks, and perhaps months, every day is laying day with her.

It is the molting loafer hen and her progeny that are largely responsible for the spring egg glut.

Her bombardment of the market in April and May forces down prices to the cost of production or below. Her entire production for the year is probably not over six or eight dozen eggs, but a hundred million or so of this loafer class are concentrating their year's laying effort into a three or four months' period.

Naturally the big, fine-looking eggs laid so profusely in the hatching season by this class of hens are selected by the unthinking poultryman with which to perpetuate his stock, and the molting loafer type thus survives and predominates.

In contrast to the loafer hen the straightaway worker develops early, and at six months old or under is in laying form.

Nearly every flock has a few of this type even though no systematic attempt has been made to breed them.

Birds of the worker class continue to lay steadily without interruption when given good care through winter, spring, summer, and autumn.

Generally in late October these continuous layers literally shake their feathers off in a week's time and a month later the winter coat is donned—almost as soon as the loafer hens are feathered that quit laying in July.

This laying type of hen with proper care and feeding will resume her second year's laying by Christmas or New Year's, and can be depended on to lay twenty or thirty dozen eggs during her first and second years of production.

The few hens of this worker type found in flocks of the loafing type are scientifically known as "sports" where they develop without systematic attempts to produce them.

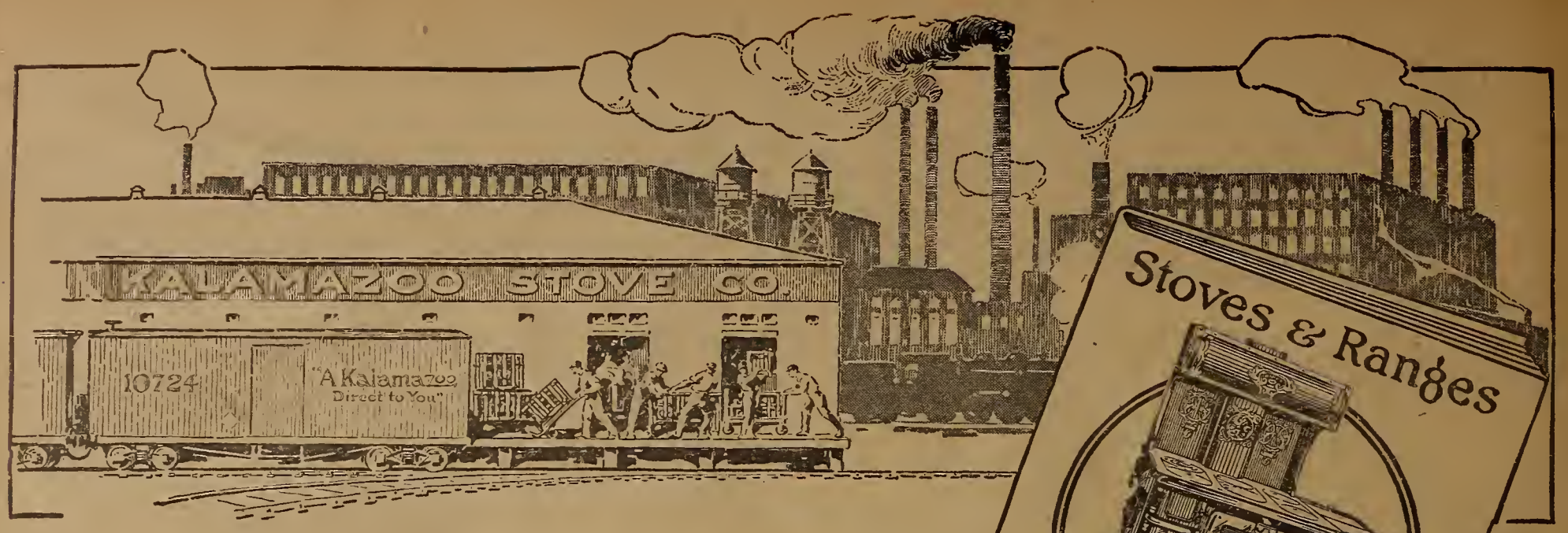
It is from such sports of breeding that many of the most valuable strains of plant and animal life have been originated. The owner of even one or two hens having this unusual laying capacity can well take pains to perpetuate their blood.

We must not wait for the scientists and expert poultrymen to do all the work of replacing one hundred million loafer hens with others that will lay two or three eggs to the loafer's one.

All can attack this problem by picking out the best layers by careful watching, and those who are able can use the trap nest as a surer means of selecting the best layers.

At any rate, make a start. Separate a dozen or two of the best layers during the hatching season, mate these with a rooster (pure-bred if possible) that is the son of a heavy layer. Allow none in the breeding pen, hens or roosters, except the most vigorous.

This simple plan followed out will furnish a start toward outlawing the loafer hen. The plan means more eggs.



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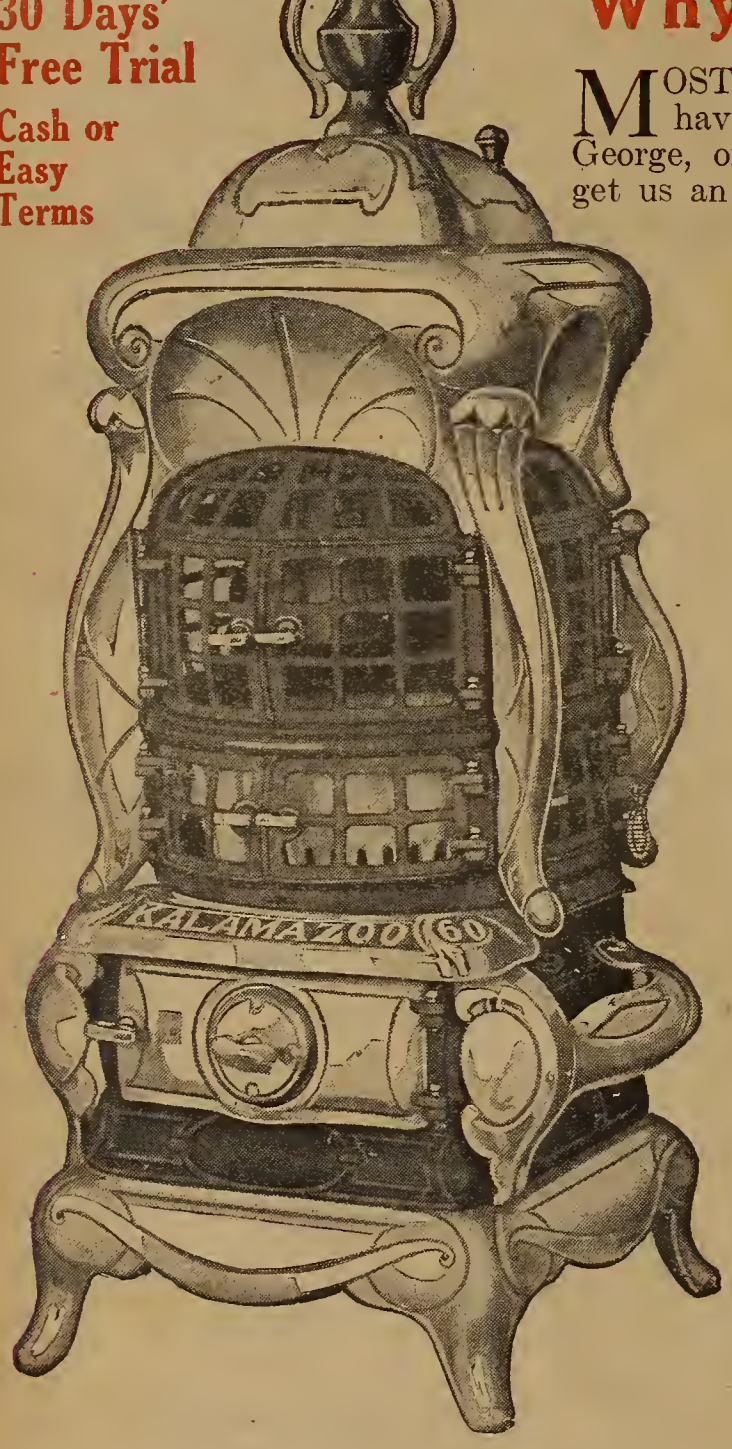

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