

WESTERN EDITION

ESTABLISHED 1877

FARM AND FIRESIDE

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... That all-softening, overpowering knell,
The tocsin of the soul—the dinner bell.—Byron

LOOK FORWARD!
THESE GOOD THINGS
ARE COMING!

The Sheep Must Stay

Dog and man have been stanch friends and comrades ever since the procession of animals went "two and two" into the ark. During this considerable stretch of history the dog has retained his freedom practically unrestricted while other domestic animals have steadily been brought under closer and closer control of man to prevent trespass damage as population multiplied and appropriated the earth. Now our meat and clothing supply is threatening to become insufficient, and the dog is charged for being responsible for a mutton and wool shortage. To bring this complex and intensely interesting matter before the whole country the economics of the dog is to be treated by FARM AND FIRESIDE more comprehensively than was ever attempted before. These articles begin in the April 11th issue.

The Story of the Sieve

"The White Whirlpool" concludes with the next issue. You have already begun to see, perhaps, that in the dairy business is a good place to study economics. It includes so many different interests and classes of labor, and yet the workings are easy to understand. We are beginning to realize how foolish it is to run our farms at top-notch efficiency, only to see someone else assume control of the products and divide the returns to suit himself. It's the old story of trying to carry water in a sieve. The last chapter tells how to stop the leaks and the whirlpool. Read it!

Alfalfa Problems

We never get to the end of them. It is the same proposition as is found in the general philosophy of life: the most difficult things to get are frequently the best for us. Alfalfa can be grown in every State in the Union say some who have had much experience with it. A Northwestern farmer tells in his story about alfalfa, how he won out, and why.

How to Plant Corn

Most folks think they know how. And perhaps they do. But one Mississippi farmer writes in telling seven distinct ways which are used in his community. Are there that many systems in your community?

Ducks and Chickens

They are much the same. At least we call him who keeps either, a poultryman. But there is a vast difference in the feed they require and the methods of handling them. Of those difficulties a reader of FARM AND FIRESIDE has written

Buy Bees by the Pound

That is the advice of a beekeeper who speaks from the fact that he bought some in that way and found them just what he wanted for his place. He tells what his conditions of working are, and why the bees paid him as they did.

The Community Builder

The function of the country church is one of the burning questions of the day. Living things, by virtue of the law of life, grow and change perpetually; and so religious expression grows and readjusts itself to meet the needs of men as these vary with changing conditions. The slogan of to-day is, "Let us have community life." The Church should be the leader in this movement, because the Church should be the leader in all movements for the advancement of the brotherhood of man. We have been publishing stories by Miss Anna B. Taft about country pastors who have taken this view of their work. On the Sunday Reading page of April 11th we shall start a serial which will continue through ten issues, written by the Rev. Harry R. McKeen, giving an account of his intimate experiences in building up a community church in northwestern Oklahoma in a village population of 214 and an outlying community of about 600 people. Mr. McKeen knows how to get close to human hearts and how to teach them to love God with all their strength and their neighbors as themselves.

Gardening About the Home

This is the season when we can plan the beautifying of our yards and make beauty spots out of eyesores. Our suggestions are simple and practical. Read them and see how easy it is to have beauty bloom around the farm home.

His Most Thrilling Moment

When we are old and look back upon life, what will each of us recall as his most thrilling moment? It is pretty sure to be some radiant instant when we found ourselves held close in the honor and love of a friend. Neely's moment was—but that is the story, which you will read April 11th.

WITH THE EDITOR



We Need a Different Loan System

I wish I could remember the name of that Minnesota man who wrote me once, declaring that I was a muckraker because I pointed out the fact that the financial system of the country is not adapted to the needs of the farmer. Well, it isn't worth while to hunt for it. He is probably one of those fellows who is afraid to get a new idea for fear of headache. Anyhow, everybody is now agreed that we need something different in the way of a loan system, and just on the off chance that that Minnesota chap is still reading this column I call on him to read the letter which follows. It is from a farmer living in Woods County, Oklahoma. I suppress his name because I haven't his permission to print it.

Wanted to Subscribe, but Couldn't

Yes, I have let my subscription to FARM AND FIRESIDE lapse for reasons quite sufficient. No, I have no fault to find with the paper—except one: it ought to come every week. As it is it is too long between drinks.

But the reason I dropped out is this: We have been having partial crop failures in this desert for five years, and the 1913 season was a complete failure, with nothing to sell, and no feed for stock even. Corn went down in July when partly tasseled. Kafir made no heads and the late fall rains ruined what little fodder it made. Our stock is now on wheat pasture put in on borrowed money for which we pay from twelve to thirty per cent. interest, depending on how needy one is for the money. We ourselves borrowed to buy corn to feed hogs for home use. Cholera came and cleaned out the hogs. So you see we are not very well fixed to take papers.

Many of the newspapers nowadays have a farm page, and their talk is disgusting to the man between the plow handles. From reading them one might conclude that the farmer is the most-to-be-envied person on earth, the most independent, the best fed, the only contented class. And in spite of our splendid condition they are always shoving advice at us every week.

All the farmer asks is a square deal in business matters, like other classes, and a chance to get money at reasonable rates.

Now, I like FARM AND FIRESIDE and miss it very much. I have read it since I was a boy in Indiana nearly fifty years ago, and when seasons change and we get on our feet again we will surely subscribe. Meanwhile we must consider the more vulgar things of life—grub, clothing, etc.

How Would You Feel and Act?

Does this letter sound blue and pessimistic? Well, put yourself in this man's place. He has been through a fight with both nature and man—a fight which is not yet over. It is very well to say that if the country there is a desert the man loaning to farmers must have from twelve to thirty per cent. interest or he will soon have no money himself. But it isn't a desert. Look at it on the map: it is thickly dotted with post-offices and villages and towns, and lined with watercourses—dry a good part of the time, for the most part, you may be sure.

It is not a desert, but a country in misfortune. I remember when we who lived there called Iowa a desert. My aunt once said that she would cry for joy if she could only see a dog that had ever strayed across our back yard in Wisconsin. And when my grandparents lived up in the "Injun Land"—I believe Edward Nordman lives there now—they called that a desert—and it was just about that. And yet any place is a desert when the elements are unfavorable. There are also millions of square miles of this planet which are desert, not because of the niggardliness of nature, but by the injustice of man. And if this friend of ours in Oklahoma has a farm in which there is a real basis of productiveness he has a just grievance if he is forced to pay from twelve to thirty per cent. for loans during this his time of bitter need.

No business can run on the lowest of these rates; and as for the highest, it means ruin. Even a small loan at thirty per cent. means the ruin of a farmer who has been weakened financially by years of unfavorable seasons. He cannot possibly stand such a strain. Such conditions are enough to make a country a desert, and if they were general they would. As it is, they ruin a man here and a man there. He passes out of the community, or sinks to a lower level, and another migration with a little hoarded money takes the farm—and will go the way of its predecessor unless some way out of these financial difficulties is found.

It may be that there are people living on lands which are so unproductive either from lack of fertility or from scanty moisture that no financial system can permanently aid them. To loan money to farmers who have been crowded out on lands below the margin of cultivation is impossible. Where such conditions exist it is not the fault of our financial system at all, but of our land system. The man below the margin of cultivation has passed millions of acres of better land in getting there. Land monopoly is what ails him, not our monetary system. And the cure of that is another story.

The Farm and the Farmer

Probably the farm of the writer of this letter has the capacity to make him a competence. He may not be making the best use of it; but when the drought keeps Kafir corn from heading we may acquit the farmer of mismanagement. However, if he is not making the best use of his land he should be helped to better methods. Perhaps his methods are faulty for the simple reason that he is short of capital. How can a man do anything in the way of enterprise after five years of partial failure, and money at from twelve to fifteen per cent. a year?

And yet this matter of making farm loans is not a mere question of shoveling out money to all and sundry. Unless there is a business basis under it not even the United States Government could stand the drain.

However, let us not be more downcast than our Oklahoma friend. He closes his letter with the cheerful promise that he will be back in the list of subscribers when "seasons change." They will change. The spirit which animates this man after five years of disaster will win yet.

Robert Smith

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Does Education Pay?

THIS is a question which every parent must ask himself. If we knew the measure of success which well-educated farmers are gaining compared with those with no education or inadequate educations, we could make up our minds as to whether it pays or not. The United States Office of Farm Management has dug up some figures which bear on the subject. These facts are derived from over five hundred corn-belt farmers, of whom 273 are farm owners and 247 tenants. Four tenants and four owners had no education. These illiterate owners are pretty good farmers, for while they average only \$15,000 each in property, they receive for their work an average labor income of \$536. Four tenants also are illiterate, and are making their work pay them \$680 a year each.

Two hundred and fourteen of the owners have common-school educations, and are worth an average of over \$27,000 each; but their labor income is only \$300 a year on the average. The tenants with common-school educations number 186, and average \$742 each for their labor income. Among the owners the 46 with high-school educations are worth on the average nearly \$38,000, and are getting \$650 each for their work; while the 51 high-school men among tenants earn as labor income \$1,268 each annually. The nine college men among the owners are worth over \$42,000 each, and get labor incomes averaging \$800; while the six tenants who are college men get the highest labor income of all, averaging \$1,721.

"Labor income" is what a farmer gets after the payment of rent and interest on investment. While the labor income of the tenants is greater than that of the owners, the owners receive rent and interest on their greater wealth before wages are paid. For illustration, the college-educated tenants, allowing them six per cent. on their average capital of \$3,351, would have a gross income of less than \$2,000 a year, while the college-bred owners, allowing them six per cent. on an average capital of \$42,781, have a total income to themselves of nearly \$3,500 each.

There are many interesting things in this set of figures, but they seem to prove that even without land or inherited property the best educated farmers make the best livings.

Moral: Make your schools as good as possible, and bring as much as you can of the college atmosphere and benefits into the rural schools.

Unconscious Manufacturing

THE Court of Appeals of New York has sustained the margarine manufacturers in their attack on the New York law regulating the color of margarine. The court holds that manufacturers of margarine must not consciously select such ingredients for making their product as will imitate the color of butter; but if ingredients are unconsciously selected, without any intention of imitating butter, which do actually produce a substance that looks just like butter, it may be sold freely!

The theory of the court seems to be that the margarine manufacturers produce the color unconsciously, since the decision is in their favor. And yet people

protest against the criticism of the courts! In this case every person on both sides of the case, the judges on the bench, the jury, the bailiffs, and the most unintelligent person in the audience knew that the manufacturer of oleo who did not pay strict attention to the color of his product would soon be out of business, and that whatever the color was it was so designed.

Why may we not just as well speak of an unconscious court decision? Is common sense illegal?

CARL VROOMAN, candidate for the United States Senate, in Illinois, has a number of farms in the vicinity of Bloomington. In January he sent thirty tenants to the University of Illinois to take the short course. This proves without further question that he believes that the best interests of both tenant and landlord call for better farming and permanent tenure.

Figures vs. Facts

KANSAS practically has doubled its average annual crop production in the last thirty-five years, according to figures compiled by F. D. Coburn, secretary of the State Board of Agriculture. In the period from 1879 to 1894 the average crop production was \$128,600,727 a year, while in the twenty years from 1894 to 1913 the average annual crop return was \$216,970,358. This



Let us not talk much as we look at this picture. On the one hand is clover, and on the other hand is—well, the photographer says there is some clover down among the weeds, but can you see it? And the reason is that the first had lime applied and the second didn't have any

includes the value of all live-stock products, excepting that kept on the farms for breeding purposes. And nobody has ever had the temerity to dispute Mr. Coburn's figures. —"Drovers' Journal."

While ex-Secretary Coburn's figures are no doubt accurate, the conclusion that the farmers of Kansas are twice as well off as they were thirty years ago would be a gross error. In the first place there are many more of them to divide the money. In the next place the cost of living has risen on the farm as well as elsewhere. One of the grossest of blunders possible is to reckon farm products in terms of money and call the increase an addition to production. It would be far more accurate to state the products of Kansas or any other State in terms of bushels, tons, and pounds per acre. On that basis the statement is not one to be very jubilant about.

A RURAL school teacher in Denmark is a more important member of the community than most of our rural teachers have any chance to become unless they leave the profession. He cultivates a small farm and actively engages in the social work of the district.

Calf-Preservation Laws

AND now the calf-conservation-law idiocy has broken out in the South. Commissioner Watson of the South Carolina Department of Agriculture embodies in his report a recommendation making it a crime punishable by fine and imprisonment to kill any calf under one year old and weighing less than 350 pounds.

He is rather inclined to believe that it would be better to raise the weight and make the age limit a year and a half. In view of the fact that the best feeders are of the opinion that no steer should be carried much longer than a year and a half, the conflict between good feeding and calf preservation by force is apparent. South Carolina, if it is to make fool laws interfering with farmers in their keeping or killing, would do far better to make and enforce a law providing for the extermination of all calves which at the age of one year weigh less than 350 pounds. It is only fair to say that Commissioner Watson objects to the "wholesale" slaughtering of calves. If by this he means that all owners of packing houses where calves under a certain age are slaughtered shall go to jail, while the law would still be an idiotic one, it would at least have the merit of beginning at the right end of the line. The packers and wholesale dealers have offered the highest prices on record for calves in the

last year, and the farmers have not been tempted to sell in any such volume as to satisfy the market. Show the farmers of South Carolina that it does not pay to kill calves, and they won't kill them. Try to drive them—the farmers—and there will be just anger and discontent.

Tennessee Free

AN EMANCIPATION proclamation has been issued which sets Tennessee free from cattle tick. This is an impressive proof of the wonderful work which the U. S. D. A. has done and is doing in extirpating the worst cattle disorder which any part of the United States has suffered from. We have always regarded this pest, called "Texas fever," "tick fever," "Southern fever" and other names, as quite a natural thing to fight in shipping cattle between the

North and South. Henceforth, if Tennessee maintains her regulations and methods, the live-stock interests of that State will be on a basis of health quite as stable as that of any other State. With the end of the cattle-tick plague the South will come into her own in the production of beef and dairy products. To the South the whole country is now looking for much of the meat that will be needed. Live stock always increases the prosperity of farming communities. The South is forging ahead.

Tennessee is only the first of the Southern States to be freed from the tick infestation. The same order of the Department which released the last fraction of a county in Tennessee from quarantine also liberated two counties in Virginia, five counties in North Carolina, two in Georgia, portions of two in Alabama, twelve in Mississippi and portions of eleven others, five in Oklahoma and portions of three others, four in Texas and portions of two others, and provided for non-tick-infested feeding quarters at Wichita Falls, Texas. This is wonderfully rapid progress, and means much to the whole nation, as well as to the stockmen of the South.

Smiling Through Tears in Kansas

What a Man from Iowa Thinks of the Sunflower State and Her People

By Frank G. Moorhead

HERE is a certain more or less truthful classic west of the Mississippi River concerning a tiny Kausas-bred mouse which, on the night before Christmas, imbibed too freely from the dripping spigot, with the result that when his hide was filled to capacity

He gave one big jump to the top of the keg,
Cocked his head on one side and waved his front leg;
"I'm as brave as a lion, I'm as big as a cow,
I could lick that darned cat if it came along now."

Of the truth or falsity of this classic, deponent saith not, but judging from developments in the Sunflower State during the past summer the only misstatement would seem to lie in the moderation of the language used by the intoxicated rodent. I have it on the very best authority of the ever-truthful newspaper correspondent that during last year's extensive and expensive grasshopper invasion a Ford County farmer exhausted his supply of syrup and was obliged to fall back upon a jug of whisky (kept in the house for many years as a preventive against possible snake bite) in bringing his poison bran mixture to the desired consistency.

An old hopper would come along [I am quoting from the newspaper correspondent, not from personal observation], take a bite at the bran, jump about four feet in the air, spit a stream of "tobacco juice," light down, take another bite, and then start out to lick the first hopper he met. In this way all the hoppers in the field were soon fighting each other. As soon as one hopper killed another, he sought a new opponent, and in this way there was soon but one big hopper left. Soon a rooster came along and made a dive for this hopper, but Mr. Hopper, instead of allowing himself to be eaten, jumped up and kicked the old rooster in the face, spit "tobacco juice" in his eyes, and chased him under the barn.

A Story With a Meaning

The story might exhaust our credulity and cause us to lament for the ultimate fate of a man so reckless with the truth were it not for the fact that it is not in a class wholly by itself. Inasmuch as this is not to be a Münchhausen tale but an unadorned narrative of certain facts, peculiar but pertinent, dealing more or less directly with the development and wealth of a certain great State, we shall relegate all similar stories, save and except one, to that innocuous desuetude of which many men talk but which few can spell.

We shall talk about those things all of us understand.

I have it on the authority of a well-known agricultural editor that once upon a time when the grasshoppers came to Kansas by the millions and billions and trillions they devoured a mowing machine (piston rod, wheels, iron axles, cutter bar, and knives) as an appetizer and then settled down to an epicurean but rather indigestible meal of granite boulder. Stripped of its affidavit of publication and other verbiage, even though much of that was interesting and well worth reading, the story, in the vernacular of the original narrator, runs in the following manner; I give it just as it came to me:

They saw that big rock, and there bein' nuthin' else in sight they went after that. In a minute that rock was covered three feet deep with hoppers. It sounded like a lot of stonemasons workin' on the rock for a foundation. You could just see that rock commence to crumble. In three hours they had et it all up, that four-ton stone, until it was just a little stone weighing about a quarter of a pound, that I kept as a souvenir.

It sort of made me hot to see the hoggishness of them blamed hoppers, when all at once a happy thought struck me. I knew they was full of crushed rock and iron and steel, and it occurred to me that they would make the finest sort of material for a graveled walk. So I just naturally loaded up 14 wagon boxes full of them hoppers and spread 'em on the walk leadin' down to the main road from the house, and then I took a roller and rolled 'em down. The crushed hoppers made the most beautiful walk you ever laid eyes on.

Did You Ever Walk on Crushed Grasshoppers?

Which simply goes to show that when it comes to smiling through tears you've got to give it to Kansas. There's a State that not only raises more wheat than any other in the Union, and more corn than all of South America, but that sits up at its own wake, chuckles over its own funeral sermon, and helps the sympathizing neighbors bury itself with the greatest zest imaginable. Kansas can take a drought, a grasshopper invasion, a corn-crop failure, and any number of hot winds, mix them together, and make such a pæan of harmonious praise out of the medley as causes every other State in the Union to look on with envy. Its perennial failure to know when it is licked has done more than anything else possibly could to offset the once popular fallacy that it is much of the time in such a condition of aridity "that cows can live there only by sucking themselves, hogs must be soaked overnight to make them hold swill, and mourners

have to be primed before they can weep at a funeral."

A State that can get so much downright, positive enjoyment out of its own trials and tribulations is not one to lose heart at such perfectly immaterial things as corn-crop failures, or water shortage, or dust storms that devastate whole sections of "blowu country." Not for a minute. And Kansas is just such a State.

You Forget Yourself in a Crop of Wheat

Take the case of wheat, for instance. Wheat is the chief smile-compeller and tear-dispeller in Kansas. It is the star in the moving melodrama, "How to Get Rich Though Drought-Stricken." A shimmering, iridescent field of ripening wheat can make a Kansas farmer forget everything except the multiplication table and the name of the bank he deposits in. And is it any wonder? In the last twenty years Kansas has grown a billion and a quarter bushels of wheat,

you are working upon. Consider the case of "Jim" Fike, gentleman wheat gambler, for instance. If it were not for Fike the story of wheat might be an epic with only romance and martial strains. Fike comes stalking in and the orchestra lifts up the Dead March from "Saul."

When it comes to taking a chance "Jim" Fike is there with bells on. The Louisiana Lottery, in its palmiest days, had nothing on Fike's Kansas wheat lottery. It isn't every man who has the courage, or the hardihood (ever notice that it makes all the difference in the world whether a man succeeds or fails at a venture, what the people call him?), to borrow \$14,000 with which to cultivate and plant 17,000 acres to wheat, and then when he never sends a single reaper into a single field to cut a single head of grain will keep up the same gamble another year. That's what "Jim" Fike did, and that's why when he swore off wheat gambling this year the word went back and forth through Kansas as the most important, the most unbelievable news since Populism was defeated along with old General "Jim" Weaver some twenty years ago. Fike had been "taking a chance" on wheat for a good many years, sinking a good many thousands of dollars on the gamble in weather, so when he gave up the wheat fight for keeps and went in for live stock and diversified farming, turning his back on the crop which has made Kansas famous, the State had something to talk about for a week. A strong man like "Jim" Fike doesn't give up easily, you know.

The Trials of Mr. Fike

Fike's story is the "and yet" of the Kansas wheat epic. In the last five years he staked \$175,000 on the wheat weather, and every year of the five he lost the bet. One year he never cut a single head on 17,000 acres, losing his seed, his work, his interest, and his stake. Some years he never even got his seed out of it; once or twice he made good to the extent of a few paltry thousands. But never once did the cards turn up that would have given him a winning hand. Any old time the yield ran above three bushels to the acre Fike got his seed back, while five bushels began to look like "velvet." The trouble was the five-bushel yields were too far apart. And yet—there it is again—back in 1903 thousands of acres in Fike's part of the State had yielded 43 bushels to the acre, and many more had returned 35 and even better. It was worth taking a chance on, but somehow or other the elements had it in for "Jim": one year the freeze came early; another, there was a lack of moisture; another, a dry, hot season, with the weather man double-crossing him; another, so many high winds the seed never even lodged, but went sailing all over Colorado and Oklahoma in a frolic of the zephyrs. And yet—mark the words!—if he ever had harvested a good crop (if, mind you!) he would have made up in one fat year for all the lean years and could have gratified his ambition to own a pair of patent-leather shoes and take a trip to Europe. Just supposing the year he plauted 17,

000 acres (and didn't get a grain in return) that each acre had yielded 25 bushels! There would have been a total of 425,000 bushels. At a dollar a bushel there was \$425,000, enough profit for a whole carload of patent leathers and a whole trip, for the whole family, around the whole world. Only, it didn't turn out that way.

What happened to Fike with wheat the past five years happened to innumerable other and less venturesome but none the less persevering farmers with corn the past year. Great as is wheat in Kansas, corn is still greater; and yet Kansas is not one of the three leading corn-growing States of the Union. But corn beats wheat as an income-bringer. In the past ten years the value of the Kansas corn crops has been \$150,000,000 more than that of the wheat product in the same period.

Corn was Intended for Kansas

In 1905 Kansas, it is very true, raised only an average crop of corn, but the yield was more than that of all South America, including far-famed Argentina; it was 80,000,000 bushels greater than the combined crops of Canada and Mexico. It exceeded the same year's crops of Egypt, Italy, France, Bulgaria, and Russia proper, all put together. In one year one county alone, out of the 105 in the State, raised more corn than Maine, Rhode Island, North Dakota, Montana, Wyoming, New Mexico, Utah, Arizona, Nevada, Idaho, Washington, Oregon, New Hampshire, Vermont, Massachusetts, and Connecticut.

And yet—

When the silo train, operated under the direction of the authorities of the state agricultural college at Manhattan, traversed Kansas last August, it went for mile after mile through a district in which the only moisture visible to the naked eye for weeks at a stretch was found in the tears of the men who had tried to grow corn that year. The greatest crop, the one which had made Kansas a billionaire, the one which was to surpass even wheat in buying patent leathers and European [CONTINUED ON PAGE 9]



enough to make a biscuit bigger than the State of Rhode Island and seven hundred feet high, enough to make a doughnut with a hole in it nine million miles in diameter. Just think of eating your way clear through Rhode Island, from Watch Hill Point to Diamond Hill, sixty miles of pastry like mother used to make! If Kansas ever takes in summer boarders there will be no need to send to the corner grocery store before breakfast for bread—there will be biscuits enough for all that crowd into the confines of the State.

The Sunflower State Has Actually Done These Things

In the case of Kansas wheat, figures are appalling as well as illuminating. In the ten years ending with 1910 the Sunflower State raised more wheat (hard, soft, winter, and spring) than any other State, or an aggregate of 750,150,000 bushels. In the past twelve years Kansas has raised more wheat than any other State by 37,000,000 bushels. In one year one county alone (Summer) raised more wheat than was produced that same year in the whole State of Texas or North Carolina, or in any one of twenty-two other States and Territories, and exceeded by over a million bushels the aggregate wheat yield of all New England, Mississippi, Alabama, New Jersey, Nevada, New Mexico, and Wyoming. In another year the wheat acreage of Kansas was more than the entire land areas of Rhode Island, Delaware, Connecticut, and Porto Rico combined. The yield that year was more than was grown in all of New England, Illinois, Iowa, and eleven additional States and Territories combined. Is it any wonder, in view of such a record, that even the wind emulates the example of the wheat farmer in Kansas, and blows, blows, blows?

And yet—and these two words sum up, as an epitaph, the hopes and despairs of the State—and yet there is another side to the story. That is one of the perennially provoking things about Kansas. Just as you are ready to make a comic opera out of the material and marshal the Joy squad into formation, along come the Glooms, and, lo and behold, it is a tragedy

“Does My Soil Need Lime?”

How You Can Decide This Question for Yourself—An Editorial Discussion

LIME for soil improvement is no doubt a stranger to a good many friends of FARM AND FIRESIDE. Imagine this stranger, Lime, to be a person wanting a job on your farm. He comes to you and makes you promises, telling what he has done for others and how much he can help you. But unless he has some good recommendations with him from people you know you will probably tell him to walk along. That is human nature. You want references. You cannot take in everyone that comes up the pike.

But Mr. Lime is not in that class, and so I am going to introduce him to you and tell something about his ability, so that you will at least become acquainted with him even though you decide not to use his services just now.

Lime is useful in a number of ways, but its great work in agriculture is sweetening the soil so that legumes can grow in it, and so that their roots can store up nitrogen from the air. Nitrate fertilizers are worth up to sixty dollars per ton. The legumes, especially clover, alfalfa, soy beans, and cowpeas, keep

How Much Lime to Apply

The amount of lime to apply depends upon the extent of acidity and the form of the lime. In general the following rules will apply:

- Quicklime1 ton per acre
- Air-slaked lime..2 tons per acre
- Water-slaked lime2 tons per acre
- Ground limestone2 to 3 tons per acre
- Ground shells...1½ tons per acre
- Marl (a hard earthy deposit rich in lime)..2 tons per acre

To apply at the rate of two tons per acre when spreading it from a wagon without the use of a lime spreader, put two rounding shovelfuls on every square rod. When the lime is dry and crushed fine a seeder can be used for applying it. A manure spreader is another good way. First scatter manure over the bottom of the spreader four inches deep, set the spreader for four loads per acre, and put on one thousand pounds of lime. This will give a total application of two tons per acre.

your soil well stored with nitrogen compounds, providing it is sweet enough for the bacteria in the roots. Lime makes and keeps the soil sweet; it enables you to raise certain crops that you otherwise could not grow, and in addition saves you a large bill for nitrates as long as you grow legumes.

A farm is a big factory, most of it without a roof—and the soil is the great melting pot for converting crude material into valuable product. The best farmer is the one who can, without injuring his melting pot, get the greatest difference in money value between what he puts into it and what he gets out.

Liming is Not a New Fad

I use the term “melting pot” because it is familiar, and because that is what it really is, except that the melting or liquifying is brought about, not by intense heat, but instead rather by the gentle warmth of the sun, moisture, the chemical action of manures and fertilizers, and the activity of small plants and animals such as bacteria, molds, earthworms, and all their kin. But the crude substances that go into the making of the crop actually do melt—that is, they become liquid, for plant roots take all their nourishment in liquid form.

Scientists are not yet agreed whether to call lime a soil tonic, a fertilizer, or merely a soil sweetener. It is hard for anyone to settle these questions definitely for all combinations of crops and soils. Just what takes place depends a great deal on what is present in the soil. Liming is not a fad, nor is it an agricultural hobble skirt that will trip up the inexperienced. It is not a recent discovery. The Romans used lime on their fields twenty centuries ago, and the Chinese used it long before the Romans did, probably because of their greater scientific attainments.

We shall need to learn a little chemistry in order thoroughly to understand the changes that lime and its products undergo before and after they are applied to the soil. This knowledge will also help in buying lime and applying it in the most advantageous way.

About eighty different elements are known to the chemist, and all things on earth—animal, vegetable, and mineral—are made from these elements and their

Average Prices for Commercial Grades of Lime

THE lower prices are for lime in bulk and in car lots. The higher prices are for smaller amounts in barrels or sacks. The grades also affect the price. The values are the prices per ton and do not include freight.

Quicklime in lumps.....	\$3.25—\$5.50
Quicklime crushed to a powder.....	3.50—8.00
Air-slaked lime	1.50—3.00
Hydrated lime	4.50—6.00
Ground limestone	1.00—3.00
Oyster shells	3.50
Marl	3.00

combinations. In the study of lime we are concerned chiefly with four of these—namely, calcium, oxygen, carbon, and hydrogen. Pure lime is a direct combination of calcium and oxygen. Freshly burned quicklime is the commercial product that most closely resembles pure lime. When water is added to quicklime, the lime forms a chemical union with the water and becomes hydrated lime. This is composed of calcium, oxygen, and hydrogen. When either quicklime or hydrated lime is exposed to the air it absorbs carbonic-acid gas and gradually turns to carbonate of lime. Limestone, clam shells, oyster shells, and marl are familiar forms of commercial carbonate of lime. Sulphate of calcium, popularly known as land plaster or gypsum, is sometimes confused with lime products. Gypsum does not sweeten sour soils and cannot be used successfully in place of the other lime products just mentioned.

Soils That Usually Need Lime

The most plentiful form of lime is ordinary limestone rock. When crushed to the fineness of dust it is known on the market as limestone powder or pulverized limestone. A small crusher run by an eight-horsepower engine will turn out about fifteen ton of this powdered limestone in a day. Crushers of this size are quite expensive, costing from \$450 to \$1,000. Small hand pulverizers can be bought for as little as \$5, but these are not practical except for small test plats. They are about the size of the small mills that are used for grinding green bone for poultry.

Another important source of lime for soil improvement is the waste of button factories using clam shells. Another is waste oyster shells. Such industries, also, as canneries and sugar factories have big dumps of hydrated lime that can sometimes be had for the hauling. Any of these forms of lime can be used.

Wood ashes are another source of lime. They contain potash also, and act both as a fertilizer and corrective for sour soils. Coal ashes have very low fertilizing value, and scarcely any value for overcoming sourness in soil. To a certain extent the calcium in lime is a plant food because all plants need calcium, though in small amounts. The principal use for lime is to sweeten or improve the texture of soil, and there its work usually ends. It cannot and does not take the place of manure, cultivation, and proper crop rotation.

All forms of lime, except quicklime, may be safely mixed with manure. Quicklime is caustic and tends to burn up the vegetable matter in the manure. Except on loose, sandy soil, where lime will work into

the soil of its own accord, it needs to be harrowed in. On hard soils, where the harrow does not make much impression, a disk is better.

The word “lime” as ordinarily used, without qualification in writing or speaking, refers to the entire group of lime products, and not merely to quicklime.

Soils that are usually helped by lime come into the following classes:

1. Heavy clay soils.—The addition of freshly burned lime makes the soil less likely to become puddled and sticky when wet. The tilth is improved and the effect of the lime on the soil is much the same as that of straw or manure.

2. All soils known to be sour.—The lime overcomes the sourness, or, as the chemist would say, it neutralizes the acidity. This is a chemical change and corresponds to the use of washing powders in cleaning and rinsing milk cans and churns.

3. Weedy soils.—The presence of many weeds, especially sorrel and horse-tail rush, indicates sourness. When the soil is made sweet with lime, weeds thriving in acid soil give much less trouble.

4. Old soils that will not grow clover or alfalfa.—These crops do not grow well in sour soils, and their failure to grow on any field that you may have should lead you to suspect sourness. Virgin soils and very fertile soils, however, will grow clover and alfalfa even if somewhat acid. Most sandy soils in humid regions are acid.

Simple Tests for Sourness

5. Soils that produce better crops after being treated with phosphate fertilizer.—When phosphorus, which is another element and also an important plant food, is absent the soil is usually acid. When a crop is helped by the application of a phosphate fertilizer, you may suspect that soil to be sour. Lime will help it.

The reason for sourness is definitely known. The lime that was formerly present has been washed out of the surface soil. Some fields may be sour at the surface even though they have a limestone foundation just a few feet below. The only soils that seldom need lime are alkali soils that are wet, and virgin soils in the semi-arid districts. Wet marsh soils

that are not alkaline usually need lime, but because of the excess of water so much of the lime would wash away that the expense would be too great in proportion to the results. If you are puzzled over the lime question the best thing to do is to look over your farm and see

whether any of the indications of the sourness that have just been described can be noticed. If there are such signs you can easily verify your suspicion by the litmus test. Go to your druggist and

ask for five cents' worth of blue litmus paper in strips. This paper turns red when it comes in contact with an acid, and back to blue again when touched by an alkali. With a knife blade or a sharp stick make a narrow slit in the moist soil or in a moist lump of earth, and put a strip of blue litmus paper in the slit. Then close the soil around the paper tightly. After ten minutes remove the paper carefully and notice its color. If it has changed to pink your soil is slightly sour. If the color is red the soil is very acid. There are different ways of making this test, but the one described is the simplest. The main precaution is not to let the paper touch anything moist except the soil. Handle it with clean gloves, for the fingers of the hand are usually slightly acid, and will leave a red mark on your litmus paper.

Another practical test of the need for lime is to plant ordinary garden beets on a small patch of ground and use one pound of crushed limestone to every ten square feet. If the beets grow better on the limed portion than on the unlimed portion of the land, the soil needs lime.

Crops—A Failure Without Lime

Alfalfa, alsike clover, red clover, white clover.

Decidedly Helped

Cantaloupes, cowpeas, crimson clover, cucumbers, hairy vetch, soy beans, summer squash, velvet beans.

Moderately Helped

Asparagus, barley, beans, beets, buckwheat, cabbage, carrots, cauliflower, celery, cherries, corn, cotton, eggplant, gooseberries, kale, Kentucky bluegrass, kohlrabi, lettuce, muskmelon, oats, onions, okra, parsnips, peanuts, peas, peppers, pop-corn, plums, pumpkin, quince, rape, red raspberry, redtop grass, rhubarb, salsify, sugar beets, sorghum, spinach, sunflower, Swedish turnips, timothy, wheat.

Neither Helped nor Injured

Apples, golden rye, millet, peach, pear, tomatoes. (Potatoes and tobacco are in the doubtful list.)

Injured by Lime

Blackberry, blue lupine, Lima bean, radish, serradella, sheep sorrel, strawberry, and watermelon.

Or you can apply a lime dressing across a field and compare the growth of crops on that strip with the growth on each side. If legumes are grown for the first time the soil may need to be inoculated to get best results. But do not go to too much expense in inoculating a soil thought to be acid, for beneficial bacteria will not thrive in sour soils. They must first be made sweet.

To apply commercial fertilizer to sour soils is also poor economy since the full value of the plant food is not secured in the crop.

Relative Values and Costs

Ground limestone is the best form of lime for general use, especially when you use stable manure or turn under a green crop. If limestone cannot be had you will nearly always find it cheaper to buy quicklime and slake it on the farm than to buy slaked lime. By slaking it yourself you save paying freight on water and also save horseflesh in handling it. What you want is the greatest percentage of calcium oxide for the least money and labor. The percentage of calcium oxide in the different commercial products is about as follows:

Kind	Per Cent. Calcium Oxide	Price Equivalent per ton
Quicklime	97	\$5.00
Water-slaked lime.....	72	3.78
Air-slaked lime	60	2.94
Ground limestone	54	2.80
Oyster shells	50	2.69

The last column in the above list means that oyster shells at \$2.69 are as good value as ground limestone at \$2.80 or air-slaked lime at \$2.94, and so on up the column, but these values apply only to goods of standard purity. To purchase lime, knowing exactly what you are about, you need an analysis of its composition. The figures above merely give you an idea of the relative value and cost. If you buy quicklime and slake it yourself, haul it out to the field directly from the car. This is the cheapest way. A helper can be loading one wagon at the car while you are hauling with another. When you return with the empty wagon leave it and hitch on to the loaded one. Put the lime in small piles, about a bushel each, cover with moist earth to a depth of about three inches. If you want to slake [CONTINUED ON PAGE 8]

Field Tests With Lime

Crop	State	Yield per Acre	
		Limed	Unlimed
Alfalfa hay	Wis.	2,080lb	1,340lb
Alfalfa hay	“	2,780lb	1,940lb
Mammoth clover	“	5,063lb	3,566lb
Clover hay	Va.	2,680lb	716lb
Potatoes	“	2,040lb	1,955lb
Corn	Md.	21.4 bu.	15.8 bu.
Wheat	“	31.4 bu.	22.5 bu.
Wheat	Ohio	19.2 bu.	12.9 bu.
Corn	Ala.	43.4 bu.	30.7 bu.
Cotton	“	800lb	592lb
Soy-bean hay	“	6,368lb	4,480lb
Velvet-bean hay	“	5,184lb	4,112lb



The amount of lime to apply depends upon conditions. See above

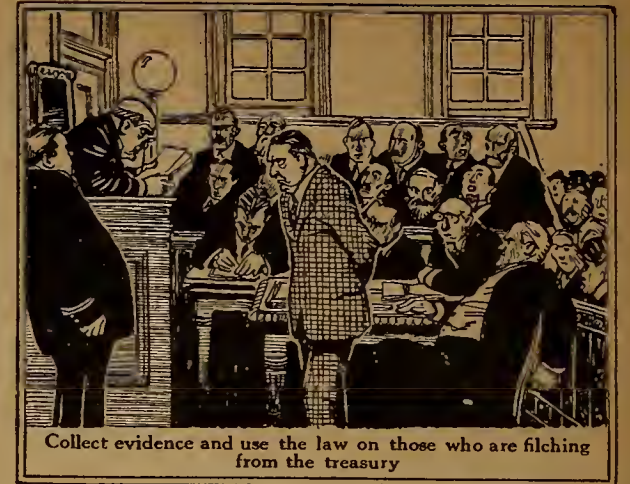


A milk strike is commercial warfare, and is sometimes the producer's last resort

The White Whirlpool

By D. S. Burch, Associate Editor

Illustrated by J. Norman Lynd



Collect evidence and use the law on those who are filching from the treasury

7—Milk is a Food and Drink That Always Stays in Style

THE preceding articles of this series have pointed out how the dairy farmer has been pushed into the background of the dairy business by uninvited commercial interests.

The milk dealer, the inspector, the scientist, and the educator have pushed themselves forward and have changed conditions to suit themselves. The farmer has in the past either accepted the conditions or gone out of the milk business. The entire dairy industry has been likened to the firm "Milk Producer & Co." This installment tells how the producer can best cope with the conditions imposed upon him.

We have now pointed out the leaks caused by nine partners, and have shown they can be made much smaller and perhaps nearly stopped. Now we come to the producing end of the business. The biggest leak of all is that of an impoverished soil. If I were going to send a dairy cow to a farmer friend that I feared would not appreciate her, I should write him this kind of a letter:

The Cow is a Liberal Paymaster

MY DEAR FRIEND: I am sending you a dairy cow. She is the finest employer you will ever work for. If you take good care of her she will repay you for every minute that you devote to her welfare.

But do not rest your faith in any stories you may hear about dairy cows that are good rustlers. When a cow is made to hunt for her feed she cannot do justice to her natural business of producing milk and bearing a good calf. The owner must rustle, not the cow. The cow does not owe you a living unless you earn it. She is exacting, but she is a liberal paymaster if you treat her well. She does not let you gamble with the weather. She enables you to capitalize your own labor. She gives you profitable year-around employment.

The horse, the hog, the sheep, and the hen are just as necessary and valuable animals as the cow. We need them all. But just now I want to talk about the cow because she is often considered a hard taskmaster and has been slandered by that name.

She does not permit bad farming. The easiest kind of farming is cropping without manuring. Bad farming is bad for the farm, for the farmer, and for his family. Manure is a valuable by-product of the dairy, and with modern machinery can easily be spread on the fields. The dairy cow encourages good farming. She makes us work, but it is always for our own good.

Poor Soils, Large Feed Bills

A Tennessee farmer whose land had been heavily cropped to cotton without rotation put up two silos, only to find that he could not raise corn. So he bought all the manure within hauling distance and, after four tedious years, managed to get enough corn to fill his silos. Now he is selling silage to his neighbors at \$5 a ton and is making a good profit from his good farming and their poor farming. In the same locality lives another farmer who has the only alfalfa field in the county. But in order to get a good yield he was forced to use deep tillage, to lime his soil, and to apply ten tons of manure per acre in addition to inoculating his soil. One field I examined in Mississippi was cropped to cotton for seventy consecutive years. Only a wonderfully fertile soil could have stood it. The owner and neighbors having similar fields, unable to raise cotton, are now going into dairying, some willingly, but most of them are forced into it in order to make a living. It is the cheapest way out of their difficulty even though they have to pay high prices for cows and for the grain feeds that must for a time be shipped in until their land can be made more productive.

A poor soil nearly always goes with large feed bills. If neighboring dairy farms have poor soil the local price of milk will be high, and you will be about as well off as your neighbors as long as they allow their farms to stay run-down. But if you have a run-down farm in the midst of fertile farms your expense will be higher than your neighbors'.

Notice in the middle of this page the list of retail prices for milk in different cities. The figures cover the past six months and are approximately the prices per quart for average commercial bottled milk delivered at the consumer's door.

Observe that all through the South, where feed is expensive, the scale of prices is higher than in the grain-raising States, where land costs more but is also more productive. So as a rule—not always, but only as a rule—milk prices are highest where the soil is the poorest. Or, stated differently, milk prices are usually highest where land values are lowest, and lowest where land values are highest.

The tick, drought, and other local factors cause and also explain apparent exceptions to the foregoing conclusions. You may ask, "Why has Pittsburgh 10-cent milk?" There are good reasons.

First, the country around Pittsburgh is not agricultural, and milk must be shipped a long distance. It is so long on the cars, in fact, that much of the milk has to be Pasteurized in central stations in the country and then re-Pasteurized on arrival in Pittsburgh. One company has nine of these country Pasteurizing stations.

So in view of these causes and others, 10-cent milk in Pittsburgh is a natural consequence. But the price received by the producer averaged only 3½ cents per quart delivered at his shipping station for the year 1912, the highest average monthly price being 4.013, and the lowest 2.586 cents.

The difference is appalling. To every member of the firm Milk Producer & Co. something looks crooked, and each secretly in his heart accuses the other of filching from the treasury. But in the light of previous explanations most of the filch went to pay for the profits and expenses of distribution, and the rest was business waste that went down the "whirlpool."

In Memphis, Tennessee, which also has 10-cent milk, the producer got 4½ cents, nearly a cent more a quart than Pittsburgh producers. He received more because the shipping expense of the milk was less, but his extra cent a quart didn't stay in his pocket. He had to spend it for feed, which is not raised in very large quantities around Memphis.

A Dairy That Pays Only Indirectly

Mr. Ernest Kelley of the Department of Agriculture has found that the average price paid the producer for milk delivered at the shipping stations supplying

and selling milk. But in the end he would lose because his farm would run down. So practically all the profits from his farm come from his crops; the manure is all he has left from his dairy after his feed bills are paid. He sells to a Boston milk contractor, and receives about 40 per cent. of the retail price for milk. That is the best he can do, and is about the only thing he can do.

He is powerless individually to get more, so he and his neighbors have organized a local association which is affiliated with similar associations all over New England. They had a strong association a few years ago which was dissolved by the Government as a combination in restraint of trade. The present one is patterned after the organization of labor unions. When the entire organization of New England milk producers is complete they will demand better prices, and, failing to receive them, expect to strike. They will feed their milk to hogs and calves or make it into butter, but they will not sell for less than a certain price. And the result?

Condensed Milk Weakens the Force of a Strike

The milk contractors who since the last strike have acquired control of creameries within shipping distance of Boston will deflect all that supply to Boston. They will have no surplus, and will sell the milk for the full retail price of 9 cents a quart instead of the present average return of 6 cents for all milk handled. Milk will be shipped in from outside the striking zone, and can-openers will be busy on condensed milk. If the consumer refuses to pay 10 cents a quart for milk the dealer refuses to pay the farmer any more, and when the strike breaks the farmer is back in his old place, minus his milk check for the period of the strike. If the consumer will pay more for milk the strike

may be considered successful, the producer will get a trifle more, but not as much as expected, as I shall show later. So a milk strike is generally a battle between producer and consumer, the dealer being a buffer between the two.

When all other methods fail, striking is necessary. It is commercial warfare, and, like all kinds of warfare, it is wasteful. But if the cause is just, and peaceful methods fail, let there be strikes. It means, however, that the brain has not been skillful enough or forceful enough to find the way out of the trouble, and that the exhibition of physical strength is man's last resort. It corresponds to the ancient custom of laying siege to a city and starving them out, though in this case only milk is withheld and children are the chief sufferers. And here is another aspect:

Let the Courts Decide Who's Right

Even when the consumer pays a cent a quart more for milk the producer does not get a cent a quart more, because higher retail prices tempt more farmers into the dairy business, thus extending the milk-producing area for any particular city. More money is paid by the consumer, but it is divided among more people. The common carrier gets a little more than he did before, for he hauls the milk longer distances. The supply dealer gets a larger share, and the milk dealer naturally takes a portion too. So when the producer who thinks he has an extra dollar or two coming to him reaches for his silver eagle he finds that its wings have been clipped, the drumsticks taken away, the wishbone and white meat gone, and all there is left is the pope's nose, and perhaps a neck.

Thus to make the consumer pay more for milk is not a means of making the dairy business correspondingly profitable to the individual producer. The old ratio still holds true and the producer gets only about two fifths of the extra cent the consumer pays. This is something for the consumer to think about as well as the producer.

Striking has been shown to be the physical way of getting better returns for milk. Another, and in most cases a better, way for the producer to gain his end is to study the law just as the milk dealer does. When he has put his business on a basis where it will stand inspection, and he knows just what his costs and profits are, his next step is to "get the goods" on the man who is looting the treasury by dishonesty or by charging too much for his services. First collect the evidence, study the game, and when you have facts that you can swear to, turn them over to the proper official.

Proved facts contributed by the producers were what beat the Elgin Board of Trade at its game of speculation, and compelled it to issue quotations on the basis of actual sales.

The manager of a condensed-milk factory in the Middle West juggled tests in order to gain patronage. The facts and a complete [CONTINUED ON PAGE 12]

What Consumers Pay for Milk in Different Cities

Cities are Arranged Alphabetically

Eastern Cities		Southern Cities	
	Price per Quart		Price per Quart
Baltimore, Md.	9c	Asheville, N. C.	10c
Boston, Mass.	9	Atlanta, Ga.	10
Buffalo, N. Y.	8	Birmingham, Ala.	10
Fall River, Mass.	9	Charleston, S. C.	11½
Fredericksburg, Va.	8	Corinth, Miss.	10
Manchester, N. H.	8	Dallas, Tex.	10
Newark, N. J.	9	Galveston, Tex.	10
New Haven, Conn.	9	Jacksonville, Fla.	12½
New York City	9	Macon, Miss.	10
Philadelphia, Pa.	8	Memphis, Tenn.	10
Pittsburgh, Pa.	10	New Orleans, La.	10
Providence, R. I.	9	Sheffield, Ala.	10
Richmond, Va.	10	Stevenson, Ala.	10
Washington, D. C.	9		

Western Cities		Central West Cities	
	Price per Quart		Price per Quart
Boise, Idaho	8½c	Aberdeen, S. D.	7c
Butte, Mont.	10	Chicago, Ill.	8
Cheyenne, Wyo.	9	Cincinnati, Ohio	8
Colorado Springs, Colo.	7½	Cleveland, Ohio	8
Corvallis, Ore.	9	Davenport, Iowa	6¼
Denver, Colo.	8½	Detroit, Mich.	8
Helena, Mont.	10	Fargo, N. D.	8
Los Angeles, Cal.	10	Fayetteville, Ark.	8½
Phoenix, Ariz.	8½	Indianapolis, Ind.	8
Portland, Ore.	9½	Joliet, Ill.	7½
Reno, Nev.	8½	Kansas City, Mo.	9
Salem, Ore.	8½	Madison, Wis.	7
Salt Lake City, Utah	8½	Manhattan, Kan.	8
San Francisco, Cal.	10	Milwaukee, Wis.	7
Seattle, Wash.	9	Omaha, Neb.	8
Walla Walla, Wash.	8	St. Louis, Mo.	8
Yakima, Wash.	8½	St. Paul, Minn.	7½
		Springfield, Ohio	7
		Topeka, Kan.	9

twenty-six cities was 3.565 cents per quart in 1912. The average price of milk paid by the consumer for ordinary grades of bottled milk is about 8½ cents according to figures collected by FARM AND FIRESIDE. So all over the country the producer gets for his milk at his shipping station about 40 per cent. of what the consumer pays. Forty per cent. for production—sixty per cent. for distribution. This ratio looks unfair. But we can't change conditions simply by dodging the figures or denying them. They represent actual conditions in the milk-producing areas tributary to nearly all of the large cities.

In small cities, where the producer makes his own deliveries, he gets the full price, but he also stands the cost of distribution, extra equipment, and sundry expenses. Yet he controls the situation, and is much better off than the shippers to large cities who say good-by to their milk at the shipping stations and never see it again unless it is rejected and comes back sour.

A dairyman living at West Deering, New Hampshire, showed me that he could temporarily make more money by selling his hay than feeding it to his cows

Garden and Orchard

Every Apple-the Best

By C. M. Weed

MOST of us have had the experience of digging over a bin or barrel of apples to find the big red one that is the best in all the lot. I was reminded of such experiences the other day when an orchardist who sells his apples at \$3.50 per bushel box told me: "We try to have our apples in such shape that a man in the dark can put his hand in the box and take out the best one every time." And the hundreds of boxes of fruit in his cold-storage plant showed that this was no idle boast.

This experience was in the famous Marshall orchards of eastern Massachusetts. Planted only ten years ago these orchards produced upwards of five thousand bushels of fancy fruit this year, and are a revela-

phosphoric acid and, still more particularly, potash. In soils that are abundantly provided with humus and nitrogen, especially in a wet season, or if the land is more than commonly moist, celery plants are quite liable to produce hollow stalks. Wood ashes make a good and usually effective application in such cases.

Treating Soggy Soils

When a piece of ground that is naturally drained has been made soggy and perhaps excessively filled with nitrogen by the continued application of dish waters and other slops and wastes from the household, we can usually rely on time, and exposure to the weather, freezing and thawing, and especially on manipulation and cultivation, to fit the soil again for the growth of beans, peas, and other garden vegetables which are refusing to grow in acid soils. The application of lime, at the rate of several tons of air-slaked lime per acre, will help in this, or hasten the return to normal conditions. Time with its rain-falls, or irrigation, will help soils made unproductive of unsuitable for plant growth by excessive applications of muriate of potash, fresh wood ashes, and similar substances.

Gathering Sage Leaves

Pick the leaves before much bloom appears. Remove the bloom. More growth, more leaves. Sage plants will try to bloom and produce seed. That is natural. T. GR.

Scale Still in the Game

THE great stir made by some fruit-pest experts about the wholesale killing of San José scale by insect parasites should influence no orchard owner to delay spraying for a single day.

It is true the parasites have been preying on the scale in some sections of the country and lessening the hordes of these little fruit pests, but no one can yet tell whether the parasites will be on the job this season. At best there will be many scale unparasitized, and if a half dozen scale insects escape in a month or two these can reproduce families that will number into millions.



McIntosh Reds, and every one a good one

tion of the possibilities of New England orcharding. More than six thousand trees are now planted, but a large part of them have only been growing a few years. Every detail is as carefully attended to as expert knowledge renders possible. The sod-mulch system is aided by abundant applications of potash and bone meal. The trees are sprayed six times a year and the fruit is thinned three times after the June drop. No tree is allowed to reach a greater height than twenty feet. The apples are then easily picked.

The picking is chiefly done by women because they are more careful and reliable than the men that can be hired in that locality. These women are paid \$1.75 a day, and handle the fruit as gently as they would eggs.

After picking, the apples are carried to the storage house, where they are sorted automatically to five sizes by an ingenious sorting machine run by electricity, and then placed in the cold-storage rooms, to be wrapped and boxed through the rest of the year. The regular Western apple box is used, and the bulk of the crop goes by express in single boxes to regular customers, so that a net price of at least \$3.50 a box is obtained. The trees of course are headed low and a space of about five feet in diameter around the trunk is kept free from grass and weeds.

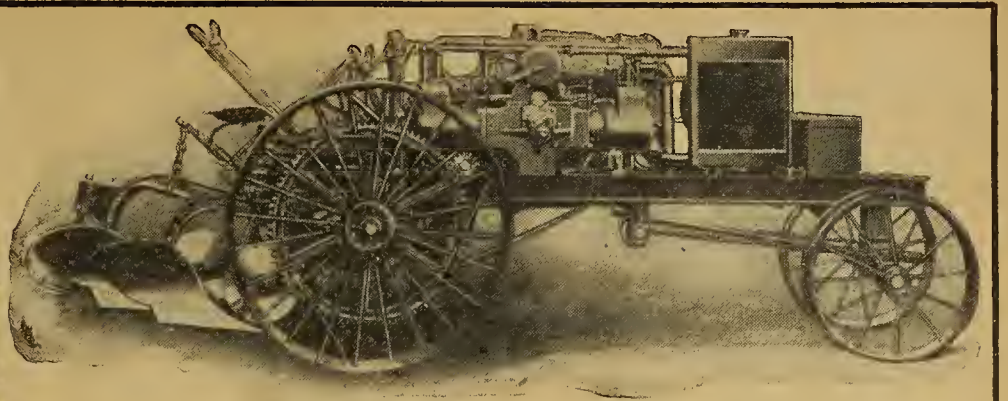
The leading variety is McIntosh Red, which runs to a large size and uniformly smooth quality throughout the orchard. It certainly is well adapted to such a high-class system as is here employed, and its excellence as a dessert fruit makes it command the fancy prices here obtained.

New Vegetables and Fruits

THE wise always look with some suspicion on new things for which extravagant claims are made by their introducers. It is well to try them in a small way, especially if the introducer is generally known to be on the square. But even the honest introducer may be mistaken or prejudiced, or the novelty may not suit all local conditions. The merits of a really good novelty are soon recognized by the stations, and by the trade generally. If it is not we may take it for granted that it has not come up to promises and expectations. The Giant Himalaya berry, for instance, was introduced some years ago. Whatever it may do elsewhere, in the North it was found to be very uncertain, especially as a fruit-producer, and it is hardly noticed by stations or the general seed and plant trade. It may be all right for a collection, or for curiosity, but not for its fruiting. We test all these things, but try to test them wisely.

Celery Having Hollow Stalks

When a planting of celery produces hollow stalks and not the solid and brittle ones which we expect and usually get, we are apt to lay the blame on careless breeding of the seed stock, and in many cases with good reason. The grower should be sure to obtain the seed from a high-grade seedsmen, and buy only the highest grade of seed of each variety he plants. Then he should take pains to have the soil in which the celery is planted well provided with all the essential elements of plant food, especially with the mineral ones,



THE WATERLOO BOY SMALL FARM TRACTOR THE GREAT FARM ECONOMIZER

\$1050 (complete with plows)
(F. O. B. cars factory)

It will do the work of six good horses and sells for less than half their cost. It can be operated at much less expense than is required to keep six horses. It has a belt pulley and will do the shelling, shredding, silo filling and other heavy duty work for which you would buy a portable engine. Will turn short, work close around corners, will work wherever horses can.

SPECIFICATIONS

MOTOR: 2 cylinder opposed 5 1/2 x 6, 4 cycle crank, pin bearings 2 1/2 inches diameter by 3 1/2 inches long. Main bearings 2 1/2 inches diameter by 5 inches long. Main bearing and connecting rods bearing are of die cast bushing.

CLUTCH: Cone type, leather faced. Engaged and disengaged from fly wheel rim by foot pedal. It is located on extension shaft. End of shaft supported from fly wheel hub by radial and end thrust ball bearing. The belt pulley is on the opposite end of this shaft. The drive pinion on this shaft meshes with the differential gear on jack shaft.

To operate the belt pulley, slide pinion out of engagement by hand lever located on left of operator on automobile type gear shift quadrant. The pulley can then be started and stopped with cone clutch.

RADIATOR: Improved, honey comb, automobile type, cooled by 18-inch fan driven from engine fly-wheel by 1 1/2 inch waterproof belt. The water is forced through the cylinder and radiator by a 5-inch centrifugal water pump.

SPEEDS: One forward, one reverse. The reverse gear is operated by the same lever as the one used for sliding the down pinion in and out of engagement, thus making only one lever for all gear shifts.

Handles two 14-inch bottom plows with an abundance of surplus power under reasonable conditions. The Waterloo Boy Small Tractor is strictly a one-man machine; is simply built, strong, durable and backed by our five-year guarantee.

MAGNETO: Driven by universal shaft and equipped with impulse starter consisting of latch and trip which holds magneto armature until engine has passed center when armature is released with a quick forward motion which produces a long fat spark.

It is not necessary to spin the motor to get a good speed and an easy start.

TRANSMISSION AND DIFFERENTIAL: Transmission is of sliding gear type. One speed forward, one reverse. The gears in both the transmission and differential are cut steel, all pinions are hardened steel. The differential gears run in hard oil. Bull gears are semi-steel.

WHEEL BASE: 7 feet 6 inches.

LENGTH OVER ALL: 10 feet 8 inches.

WIDTH OVER ALL: 6 feet.

CLEARANCE UNDERNEATH: 22 inches.

WHEELS: Main drive wheels, 50 inches diameter with 10-inch face. Bull gear semi-steel, 37 inches in diameter. Front wheels, 28 inches high and 5 inches face.

WEIGHT: Approximate weight without the plows is 3,400 pounds.

GET ONE AND BE CONVINCED

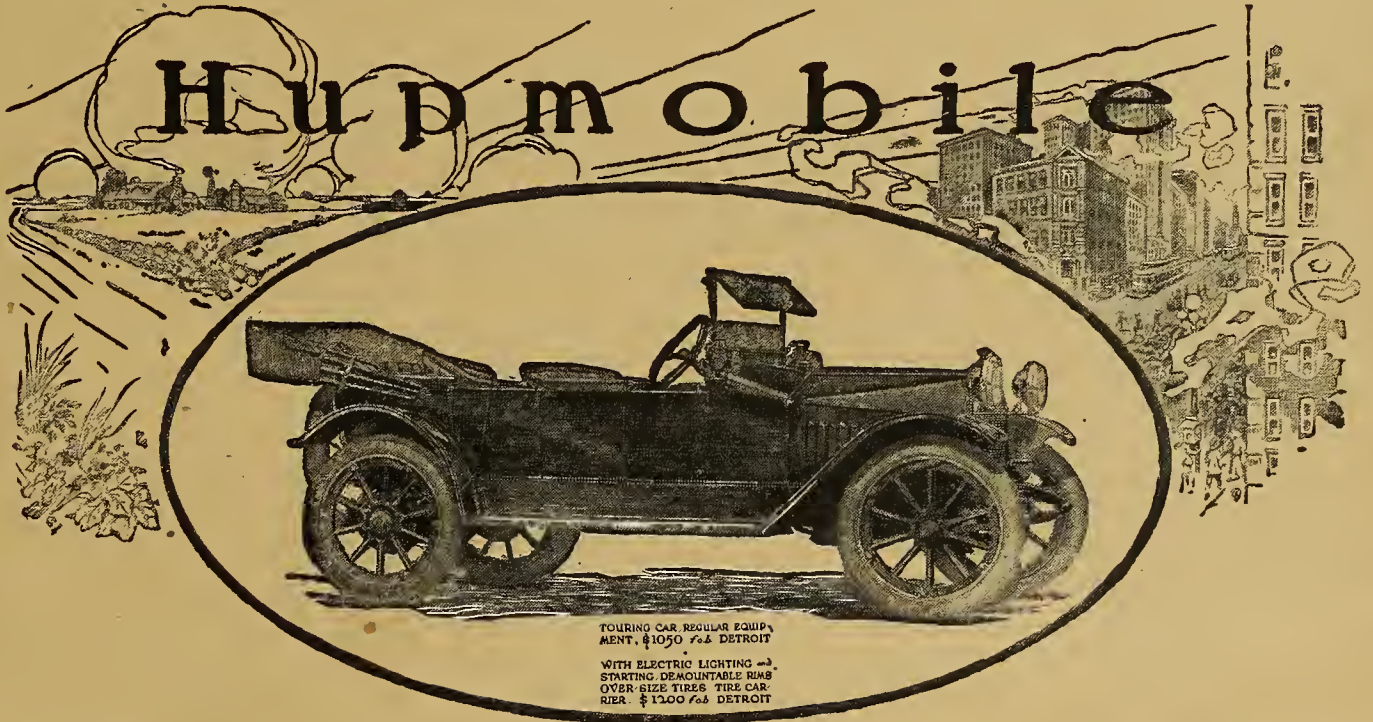
WRITE FOR FURTHER INFORMATION TO

WATERLOO GASOLINE ENGINE CO.,

Tractor Department

16 Miles Street

WATERLOO, IOWA



The Car for the Farmer's Family

Is there any *real reason* why the farmer should prefer the Hupmobile to some other car?

We are convinced that there are a *dozen such reasons*.

Almost every automobile maker tells you in a general way that you ought to buy his car.

But we want to go further—we *want to tell you why* we believe your choice should be a Hupmobile.

We are convinced, and we are sure you will convince yourself, that it is especially suited to the needs of a farmer's family.

One of the prime reasons why it is so suited is the low cost of repairs.

Hupmobile records for five years prove that *positively*.

They show every dollar's worth of repair parts sold to dealers and consumers.

And on an average mileage of 5,000 miles per year to each car, the repair cost per mile per car is so amazingly low as to be *almost unbelievable*.

It amounts to 27 mills per mile—27 cents for every hundred miles.

Facts and figures on this subject will be sent you on application.

A Hupmobile farmer almost invariably gets longer tire wear.

He gets it because Hupmobile solid steel construction is still light construction.

The tires wear longer, moreover, because of the steady impulse of the long-stroke engine—less snubbing and rubbing and jerking and jolting.

That long-stroke engine alone is one of the dozen reasons for owning a Hupmobile in preference to any other car.

Another mighty practical reason is the *high price which the Hupmobile commands* as a second-hand car.

People don't give more for a used Hupmobile than they do for other cars of the same price without sound, sensible reasons.

It's especially suited even to unimproved roads—because it's light, tough staunch, and skims the rough places.

It's a family car because of these things—a farmer's family car, because it isn't a luxury but a downright saving.

It's good-looking. It's different. There isn't a cheap thing in it.

We can—and will in other advertisements—give you other excellent reasons.

But these are enough for one advertisement. Go to your Hupmobile dealer and give him a chance to continue the story.

Hupp Motor Car Company, 1289 Milwaukee Ave., Detroit, Mich.

A Few Hup "Whys"

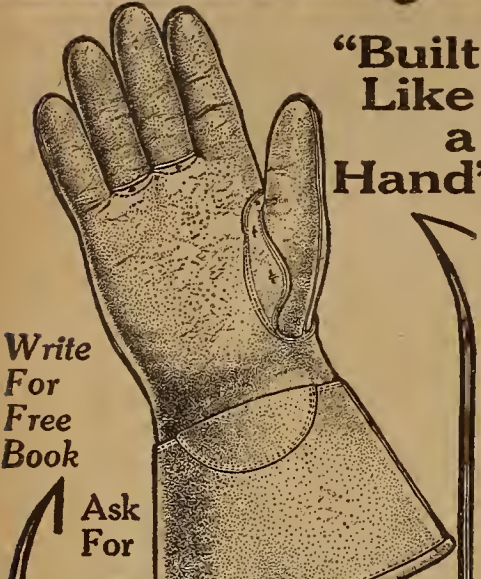
Center control—either side front entrance.
Vibrationless steering wheel
Short turning radius—40 ft.
"Lively" motor—quick response to throttle.
Little of customary motor vibration.
Dash control of hot and cold air to carburetor.

Simple carburetor—no delicate adjustments necessary.
Certain clutch action.
Simple, infallible oiling system.
Rain vision, ventilating windshield.
Quickly adjustable side curtains.

Low center of gravity—good looks, easy riding, few skids, no turning over.
Gasoline tank under cowl, nearly over carburetor, assuring constant flow of gas.
Improved tire carrier.
Rainshield magneto.

All moving parts enclosed.
"Streamline" body—only now being adopted by highest priced cars.
Accessibility and lightness in weight of starting system.
Four spare fuses in fuse box cover.

Velvet Softness Rawhide Strength



Ask For Hansen's Buckskin Gloves

built to fit and "give" with every motion. No extra bulk; no cramped fingers or hindered muscles. Never mind bad weather and rough chores when you wear this comfortable, lasting Hansen.

This buckskin is soft, pliable and strong. "Protector" and "Glad Hand" Gauntlets, as also "Dan Patch" for driving, are made of this perfect leather. Prices \$1.50 to \$2.00, stamped Hansen's Genuine Buckskin. Leather protects against heat and steam. Will not shrink in water and cleanable with gasoline.

500 styles for motoring, railroading, sport, etc. At your Dealer's, or we will tell you where to buy.

O. C. Hansen Mfg. Co.
139 Detroit St., Milwaukee, Wis.

"Jimmy, Always Give 100 Cents' Worth for Every Dollar You Get"

That's what my father said to me when I was a boy—and that's what I'm doing when I send you my Belle City hatching outfit. 276,000 users will tell you so. *I am giving you more, when you compare my*

**8-Times World's
Champion BELLE CITY**

with any other incubator. Belle City has won Eight World's Championships and thousands have made 100 per cent perfect hatches. Send for my New Book, "Hatching Facts." It tells of big money making successes. My low price will surprise you. Write today.

Jim Rohan, Pres., Belle City Incubator Co., Box 100 Racine, Wis.

55 BREEDS Pure-Bred Chickens, Ducks, Geese, Turkeys, Dogs. Incubators, Supplies, and Co. Write for my valuable illustrated descriptive Poultry Incubator Catalog and Price List.

H. H. HINIKER, Box 100 Mankato, Minn.

PFIFE'S 65 Varieties LAND and Water Fowls. Farm-raised stock, with eggs in season. Send 2c for my valuable illustrated descriptive Poultry Book for 1914. Write Henry Pfife, Box 627, Freeport, Ill.

SAVE YOUR CHICKS

We can help you. Send us names and addresses of ten poultry friends and receive our revised 32-page book on "WHITE DIARRHOEA," the greatest Foe to Chick Life.

This makes Poultry Profits Possible, gives care and feeding of chicks and turkeys, also cause and guaranteed cure for bowel trouble. Above book FREE for the names. Postpaid. Write to-day; the value will surprise you. F. K. REMEDY CO., 760 2nd St., Arkansas City, Kas.

Get My 1914 Prices

Don't Take a Chance This Year. Let me tell you why the "RELIABLE" is the SAFEST buy and SURE T hatch. No better at any price. Money back, if not satisfied with Reliable Incubators and Brooders. Write tonight for catalog.

W. W. MYERS, Pres., Reliable Incubator & Brooder Company, Box B-41 Quincy, Ill.

Tells why chicks die

J. C. Reefer, the poultry expert of 1602 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books.

\$7.35 LOWEST PRICE YET FOR BIG INCUBATOR 155 EGG

Think of it! The old reliable Progressive 155-Egg Incubator for \$7.35. Money back with 8 per cent interest if not satisfied. Wonderful bargain! Only incubator with hundreds of dead air cells. Copper hot water boiler, double disc regulator, deep nursery, double doors, egg tester, safety lamp—every big feature—all for \$7.35 freight prepaid E. of Rockies. Incubator and Brooder ordered together, \$9.85. Send your money now, or, if you want more facts, write for our Big Free Book.

PROGRESSIVE INCUBATOR CO.
Box 142 Racine, Wis.

Poultry-Raising

Solid-Comfort Brooder

By Levi French

I WANT to describe a brooder which I have made at a very small cost and which "delivers the goods." That brooder is best which will produce the most and the best chicks for the least outlay of time and money; and we care not what system of heating is used—or, indeed, whether we use any heat at all or not.

However, it is well to remember that there are a few general principles which we cannot ignore if success is to crown our efforts. The first and greatest of these is that little chicks to do their best must be kept comfortable. And a little chick cannot be comfortable if it is not warm and dry.

Now for the brooder: Make a box of one-inch pine or redwood lumber 30 inches wide, 5 feet long, and 10 inches high. In the bottom cut a hole 10 inches wide and 20 inches long. Tack a piece of tin or galvanized iron a little larger than this hole securely over it on the outside. Next nail strips three inches wide around the edges of box on the bottom so as to raise the bottom of the brooder three inches off the ground. This space is for the circulation of the heat from the lamp. Five 3/4-inch holes should be bored through these strips at each end of the brooder to allow the heat and fumes from the lamp to escape. Nail a board five inches wide across the top of the box at one side, and to this fasten the cover with small hinges. Now in the front of the box (the side where the cover is hinged) cut a hole 5 inches wide and 2 feet long; over this, place a board hinged at the bottom so that it will close this opening and when open the upper edge will rest upon the ground, making a little incline on which the chicks may go into the brooder.

This brooder may be placed in a colony coop, laying house, or in any kind of a shed or building; or it may be placed out of doors if a piece of roofing is placed over it to keep out the rain.

Dig a trench where the brooder is to stand, about 8 inches wide and 12 inches deep. This should be at right angles with the brooder and should extend from near the front edge of the brooder to about a foot beyond the rear edge of the brooder box. The lamp should be placed in this trench directly under the center of the piece of tin. Use bricks or small blocks of wood to raise it up so that the top of the chimney is about three inches below the tin on the bottom of the brooder.

A Brooder That is Dry and Warm

Now fill in on top of the tin with sand or dirt about an inch deep. A little sand or dry earth may also be sprinkled over the boards on the bottom of the brooder.

Place a short piece of board over the trench at the back of the brooder, but do not cover this up tight, as the lamp must have air. Any ordinary incubator or brooder lamp may be used, or a common glass bracket lamp, or any low lamp will give equally good results. Place the lighted lamp under the brooder near the center of the piece of tin and you have a brooder which will accommodate from 150 to 200 chicks and keep them warm and dry under any and all conditions.

Several holes should be bored in each end of the brooder to provide ventilation, and unless the weather is very cold the cover may be raised an inch or so. After the chicks are three or four days old the door in the front may be left open if the building where the brooder is placed can be closed so as to keep out rats, skunks, and cats.

The floor of this brooder is always dry and warm, and chicks do not need to be taught to go into it, but chicks only two or three days old will run in and out of their own accord, seeming to realize that when they are cold here is the place to get warm.

This brooder being warmer directly over the lamp the chicks can find any degree of heat desired.

Good Profit in Spite of Low Production

KEEPING hens in a building without any outside range or even a yard run throughout the summer is an unusual practice.

Mr. Samuel Young's (a 77-year-old Maine poultryman) experience during 1913 follows:

A flock of 175 hens, including Barred Rocks, Rhode Island Reds, and a few Wyandottes, were kept in a two-story 18x40 chicken house, a part of the upper story not being used for a run for the hens.

These hens were fed a fairly well-adapted ration both in dry mash and scratch grain form, but not sufficiently well balanced to afford the best results. Mr. Young used special pains to provide

an abundance of fresh green succulence in the form of garden-grown turnips, beets, etc. Five square rods sown to turnips furnished him over 60 bushels of roots. During the summer nearly a bushel a day of turnip tops and other greens were consumed.

Plenty of dry dust and scratching litter kept the birds busy and exercising. During June, July, and August these 175 hens laid 468 dozen eggs, and during the year, 1,270 dozen. This is a small production,—only 90 eggs per hen besides those used in the family,—but by means of favorable marketing his flock netted him an average of nearly \$1.50 per hen. The total income was \$399 and the feed cost \$157.

Mr. Young has marketed eggs to southern New England commission merchants and retailers for a long period of years. The buyers used to set the price paid, but now he sets the price and ships about one case of 30 dozen each week. His eggs in 1913 brought from 24 cents a dozen net to 50 cents a dozen net.

The retailers who now get Mr. Young's eggs are a grocer and a lunchroom operator. These buyers have bought his eggs for six or seven years past.

There is one drawback in dealing with retailers that Mr. Young deplures, and that is slow pay. The two retailers mentioned now owe him about \$350 for eggs. They are "good for it" but slow, and always "tail along behind" in payment.

Poultry

By Ramsey Benson



THE Goose laid the golden egg, but she didn't make much dent with the Peasant, who was nothing if not modern.

"I'm too busy," he declared disdainfully, "to hother with poultry."

And when, a little later, his wife asked him to ride in her new limousine he was dense enough to wonder where she got it.

"Does My Soil Need Lime?"

[CONTINUED FROM PAGE 5]

it more quickly add enough water to make it crumble, but not enough to make the lime run.

About once in every five years is often enough to use lime. Its use is sometimes carried to extravagance, and when too much is applied it will be no more beneficial than when just the necessary amount is used.

When preparing a field for potatoes do not use lime. Even when the potato seed is disinfected in formaldehyde solution the danger of scab is much greater where lime is applied to land just before the seed is planted. This trouble can best be overcome by putting the lime on at least two years before the potatoes are to be raised.

Until a few years ago some soil specialists maintained that magnesium in limestone was harmful to crops. This contention has been exploded. But if the limestone is over one third magnesium the best results will not be obtained. As this proportion is seldom reached the matter of magnesium can be safely left to take care of itself and need not be worried about.

The question whether the use of lime will bring crops that justify the expense of putting on the lime is a question that you must decide for yourself. Intelligent liming nearly always pays for itself in the increased value of the crops, and when in addition the value of the nitrogen taken from the air by legumes is considered you can see that lime deserves a trial.

Thousands of tons of lime products are used every year by farmers, but accurate results of the difference between limed and unlimed fields are limited mostly to the experiment stations and substations. The bottom table on page 5 gives a few results that have followed the use of lime. These show what may reasonably be expected.

Of all forms, ground limestone is the most pleasant to handle. Quicklime is irritating to the skin and to the nostrils. The irritation may be reduced by wearing gloves and by keeping a moist sponge under the nose.

Home-made spreaders costing from twelve to twenty-five dollars can also be used to make the handling of lime more pleasant. Most of these spreaders are merely hoppers with holes in the bottom and having a rod or some similar device inside the hopper to shake the lime out.

The whole question of using lime has been summed up by the little poem that follows. The first two lines are a European proverb; the next two were supplied by Professor Vivian of the Ohio College of Agriculture, and the last two we supply.

Lime, and lime without manure
Make both farm and farmer poor;
But manure lime and vigorous clover
Make the old farm rich all over.
The wisdom of this little rime
Should lead you, also, to use lime.

\$5.75 Buys This 150-Egg Incubator

With Brooder Only \$8.25

This low price Reliance incubator is sure to become the hatching sensation of the year. Can't be beat for large hatches. Built to last and give results. Runs automatically. Especially recommended to beginners. No lessons to learn—no experience required. Following simple directions insures success with our

1914 Reliance Incubators

Get our 150-Egg Machine or for Special Bargain, send us \$3.90 for our 70-Egg Incubator, with Brooder, \$6.50

These are two wonderful bargains. Don't overlook them. The secret of our low price is we have no large advertising bills. The Reliance sells on results, repeat orders, recommendations. Over 80,000 last year.

ORDER DIRECT FROM AD

as others do, on our money-back guarantee. The Reliance makes chicken raising pay big profits. No losses, no repair bills, no extras to buy, no waste of oil. Better order yours right now from this ad. You'll never get any other such offer.

If you want particulars, write for our literature. We send just a plain circular, but it's filled with Reliance incubator facts and reasons why we can sell this high grade hatcher for only \$3.90 or \$5.75. Orders filled same day received. Address

Reliance Incubator Co., Dept. Z, Freeport, Ill.

130 Egg Incubator and Brooder for \$10

Ordered Together, Freight paid east of Rockies. Hot water, copper tanks, double walls, dead air space, double glass doors, all set up complete, or 150 Egg Incubator and Brooder \$11.50. FREE Catalogue describes them. Send for it today or order direct.

WISCONSIN INCUBATOR CO., Box 112, Racine, Wis.

10c for 3 months' subscription to "Gleanings in Bee Culture"

called the "Bible" of bee keeping. Facts, stories, ideas worth dollars to you. Shows how to get more and better honey. Book on "Bee Supplies" sent Free. Offer open for limited time. Send stamps or coin at our risk.

THE A. I. ROOT CO., Box No. 14, Medina, Ohio

SHOEMAKER'S BOOK ON POULTRY

and Almanac for 1914 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c.

G. C. SHOEMAKER, Box 992 Freeport, Ill.

YOUR HENS Farmers and Fanciers

YOUR FARM should get the FREE POULTRY BOOK and Catalogue written by ROBERT ESSEX, well known throughout America. After 25 Years With Poultry, It tells How to Make Most From Eggs and Hens for Market or Show, contains Pictures of 30 Poultry Houses; tells cost to build; describes AMERICA'S LARGEST LINE OF INCUBATORS AND BROODERS—\$2.25 to \$48 each. Write today

Robert Essex Incubator Co., 83 Henry St., Buffalo, N. Y.

Greider's Fine Catalogue

and calendar of pure-bred poultry for 1914, large, many pages of poultry facts, different breeds in natural colors, 70 varieties illustrated and described. Incubators and brooders, low price of stock and eggs for hatching. A perfect guide to all poultry raisers. Send 10c for this noted book.

H. H. GREIDER, Box 49, Rheems, Pa.

PAINTED ROOFING \$1.50 A SQUARE OR 16' A SHEET

Galvanized Steel Roofing, \$2.50 a Square, 27c a Sheet. Furnished in 2 1/2 in. corrugated only at this price per square. 11-4 in. corrugated painted, \$1.55 a square.

Galvanized, \$2.50 a square. Price per sheet same as 2 1/2 in. corrugated. Covering width, 24 in. 5ft. lengths only. Best open hearth steel, perfect quality and finish.

All prices F. O. B. Niles—write for samples and freight paid prices, also for prices on our heavier grades, made in all lengths.

THE SYKES METAL LATH AND ROOFING CO.
528 Walnut Street, NILES, OHIO

Money Making Poultry

Our specialty. Leading varieties pure bred chickens, turkeys, ducks and geese. Prize winners. Best stock and eggs. Lowest prices; oldest farm; 20th year. Fine catalog FREE.

H. M. JONES CO., Box 64, Des Moines, Iowa.

60-p. catalogue free, 60 varieties, chickens, ducks, geese, turkeys, guineas and Bell Hares. Stock for sale, lowest prices. H. A. Souder, Box 50, Sellersville, Pa.

\$6.50 Profit A DAY

That is what one-minute Photography will bring you. Only 60 daily sales at 15c each will bring you \$6.50 profit, 13c on a sale. You can double this on big days. Think of the great possibilities for big profits with the

"MANDEL" POST CARD MACHINE

Portable post card gallery. Makes finished post card and button photos in one minute. A wonderful machine, requiring no plates, films, or dark room. Profits begin first day. A great business of pleasure and big money. No experience. Fairs, picnics, carnivals—all outdoor celebrations are money markets with the "Mandel" Machine. Small capital starts you. Don't delay. Write at once for FREE BOOK.

The Chicago Ferrotpe Company
311 Farrotpe Bldg., or Dept 311 Public Bank Bldg. Chicago, Ill. New York, N. Y.

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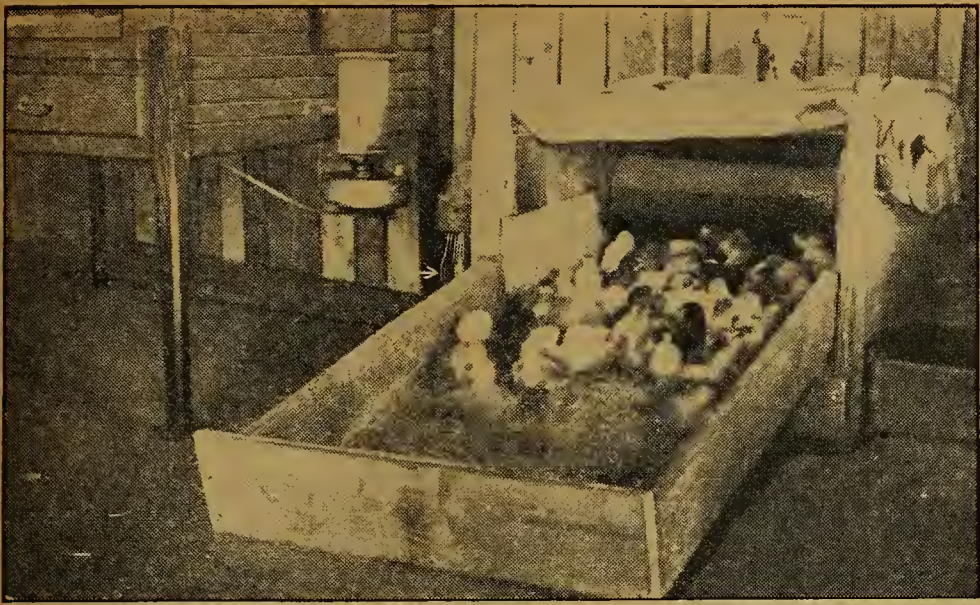
THE NATION'S GARDEN SPOT

THAT GREAT FRUIT AND TRUCK GROWING SECTION—ALONG THE

ATLANTIC COAST LINE RAILROAD

IN VIRGINIA, NORTH AND SOUTH CAROLINA, GEORGIA, ALABAMA AND FLORIDA. WRITE TO

WILBUR MCCOY, & E. N. CLARK
A.S.I. AGT. DESK F & A.G.L. AGT. DESK F
JACKSONVILLE, FLA. WILMINGTON, N.C.



Just some boards, a stovepipe, and a lamp

Stovepipe Brooder

By John E. Hickey

THIS home-made brooder is constructed of old boards and a length of stovepipe with an elbow at one end and a tee at the other. The tee turns down and has some holes punched in it to give draft to the lamp. In the picture the brooder lamp is shown at the point indicated by the arrow. The top of the hover is made with boards a little apart, and in cold weather is covered with a blanket to keep in the heat.

The pipe should be warm enough so you can hold your hand on it and not be burned. This brooder gives the same heat as the hen. The chicks will go out and scratch, run in back to the pipe for a short time, and run out again. The chicks will go out on the floor in the coldest weather.

Chicks are kept in the brooder for three weeks and then given an outside hover without fire. Handled in this way they grow splendidly.

Eggs That Will Hatch

By F. W. Kazmeier

FRESH and fertile eggs are the first requisite for a successful hatch. In cold weather gather them every two hours. In warm weather three times a day is sufficient. Scrape soiled eggs with a knife until clean, but discard very dirty eggs.

In saving hatching eggs aim to keep them in a rather damp location at a temperature of about fifty degrees, and turn daily. This is important and should not be overlooked.

Smiling Through Tears in Kansas

[CONTINUED FROM PAGE 4]

round-trip tickets for hundreds upon hundreds of farmers, was an absolute failure. Catch the significance of those two little words "and yet" when applied to Kansas? They are the Open Sesame to the door of agricultural hope in "that grassy quadrangle which geographers call Kansas."

The Gloom squad rampaged at will through the eight million acres of Kansas cornfields last summer, completely routing the Joys. Think of a summer when the mercury in the thermometer plays tag with the century mark for weeks at a time, and when the leaves shrivel and fall from the trees with the heat of July!

Is it any wonder when the agricultural-college silo train crept from station to station it found men begging to know if the seared and scorched cornfields just across the track were too far gone to be cut into silage and stored away in home-dug pit silos against the coming of winter?

Never was a special train more timely than the silo one which traversed Kansas throughout that July-August hot spell, carrying hope to the well-nigh hopeless farmers, showing how to cut and store and feed silage and stopping that hysterical rush to market of the thousands upon thousands of head of cattle which the farmers despaired of ever being able to feed through the winter.

And yet—what did a corn-crop failure amount to when one considers that that very year Kansas raised, harvested, and sold for cash 86,515,000 bushels of wheat, at 70 cents a bushel, a tidy little sum of sixty million dollars? And yet—why overlook the fact that long before the corn was completely burned up Kansas had received the money for two cuttings of alfalfa, averaging one and one-half tons to the acre of the richest hay known to agriculture, worth on the Kansas City market \$15 and \$16 a ton?

When it comes to the gentle art of making the whole wide world sit up and take notice of a State's greatness, you've got to give it to a little coterie of boosters in the Sunflower State. They're all-round geniuses in never getting discouraged, are those boosters. They can keep a stiff upper lip when the home ball team loses twenty straight games, when a two-minute-flat trotter drops dead in the home stretch, when the blue envelope is handed out just as winter is coming on, when corn is so plentiful you burn it for fuel, and when corn is so scarce you look at it under a glass case

We do not keep eggs for incubation longer than a week before setting them. Although they do hatch if several weeks old, the hatch is not as good and the chickens are weaker and harder to raise. Select eggs of medium size, shape, and average color. Cull out all eggs which have rough shells.

Handle the eggs with care. Jarring of the contents is injurious. If eggs are stored in a dry place, cover them to prevent evaporation. If dried too much they will not hatch well, and those that do hatch will produce chicks of a low vitality. Never expose eggs to sunshine, vapor, or currents of cold air. When handling hatching eggs be sure that your hands are clean and free from grease and oils.

POULTRYMEN buying oats for sprouting should look out for sulphur. Dealers bleach poor and discolored oats to improve their appearance. They will not sprout. Most of them have more or less of the smell of the sulphur. The law everywhere should make the dealing in sulphured oats a crime.

CHICKS confined to yards or limited range usually lack the abundance of fresh green food that is absolutely necessary to the best growth and development of young poultry of all kinds. It is easy to feed grain and not trouble to get the fresh, succulent greens that keep the chicken's digestive machinery working to best advantage. Many well-hatched, healthy, vigorous chicks later become runty and finally fall an easy mark to disease, merely for want of green food to act as a conditioner.

in a museum. Just think of Walt Mason writing this in one of the lean years:

Kansas: Where we've torn the shackles From the farmer's leg;
Kansas: Where the hen that cackles Always lays an egg;
Where the cows are fairly achin' To go on with record breakin',
And the hogs are raising bacon By the keg.

Think of another rural tamer of Pegasus having the nerve to write this when the year was not only lean but frizzled:

Sometimes dry and sometimes wet,
So they say o' Kansas.
Both in laws and weather, yet
She's a peach, is Kansas—
She can stand the rain or drought,
—Can feel way down in the mouth,
Then start things a-goin' south,
Any time, can Kansas.

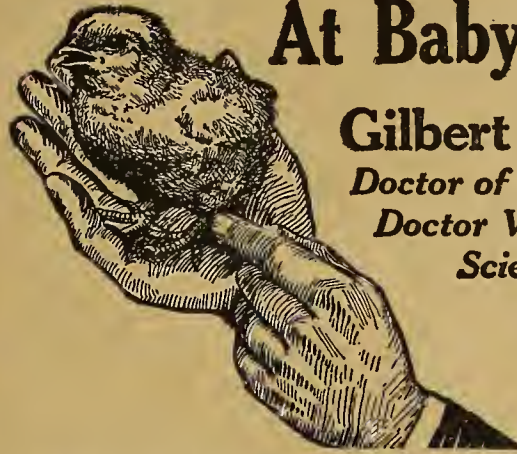
Sometimes corn's the biggest here,
In the State o' Kansas;
Sometimes it's the biggest steer,
On the plains o' Kansas;
But if steers an' corn are slack
She jes' takes another tack—
Sells alfalfa by the stack,
When it's dry in Kansas.

Isn't that laughing through the tears? But, pshaw, good as that is, it's not in it at all with some of the optimism that ex-Secretary Coburn pulls. You know Coburn, don't you, the ruddy-faced, white-chin-whiskered genius who has been keeping Kansas on the map? Coburn can think of more ways of keeping the Kansas date line in the newspapers than any theatrical or circus press agent who ever lived. Coburn doesn't even have to argue that Kansas is the greatest State in the Union: he admits it.

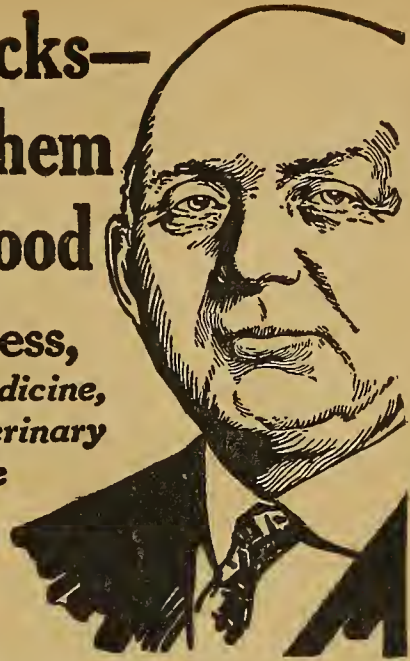
Just think of the optimism manifest (typical of the whole State, in a rather less gifted way, so far as expression goes) in an idyl like this: when corn was no corn, when "Jim" Fike didn't get a grain of wheat out of 17,000 acres, and when stockmen were sacrificing 25,000 or 30,000 head of cattle every twenty-four hours, taking any old price they could get, Coburn would sit in his office in the state house, smile beneficently, and the newspapers would literally fall all over themselves to print rhapsodies like this:

Occasionally a good man becomes dissatisfied with Kansas. The milk is too yellow, or the honey too sweet, and he doesn't like to have them flow over his land anyway. So he parts with his land and sells his live stock and other thing too numerous to

Save All your Chicks— Put Stamina into Them At Babyhood



Gilbert Hess,
Doctor of Medicine,
Doctor Veterinary
Science



The annual loss of young chicks in the United States is staggering. More than one-half the yearly hatch die before reaching pullet age—die through leg weakness, gapes and indigestion. Talk about conservation—think of the millions of dollars that poultry raisers could save by saving most of these chicks. Yes, most of them can be saved—saved by starting them on

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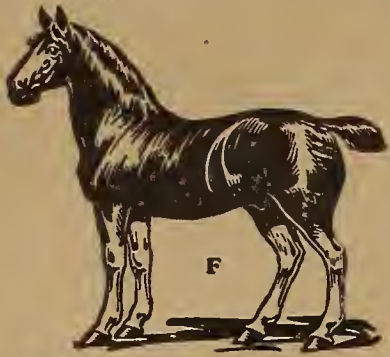
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mention and moves to Oklahoma. There he takes good Kansas money and buys a farm which to-day is and to-morrow is not, because the wind has blown it away. Or tries Colorado and slushes in mud trying to irrigate a strip of bottom so narrow a cow could jump across it. Then he hears of Texas and goes down to hunt the bag at the end of the rainbow. In the daytime he scratches the sand burs out of his flesh, and at night centipedes crawl over his face. When his money is all gone he begins to feel like he did the first night he stayed away from home.

He yearns for good old Kansas, and the yearn sticks in his throat and chokes him till the tears come in his eyes. He would give months of hard work to see the cows standing at the bars of his old Kansas farm and hear the horn for supper. Memory is a marvelous painter, and paints the things we love the best. It pictures to the traveler the corn silking in the fields he used to own, the wheat yellow for the harvest, the clover stretching away in a carpet of red and green, richer than the rugs of Persia. It shows to him the elms as they whispered to the children at play under them, points to the rose in the corner of the rail fence, and infinite details paint a thousand things that touch the heart and prove its whimsical power. Happy is the man who wakes to find that he has wandered from Kansas only in a dream.

Now, do you realize why Kansas is so really and truly great; why it laughs through its tears, makes fun out of grasshopper invasions, cracks jokes on the most solemn occasions, and never knows when it is licked? It's the indomitable spirit of the people—from the boy watering the stock, to "Jim" Fike cheering up in the midst of a wheat failure on 17,000 acres; from the farmer storing his poor, shriveled, dried-out silage in a miserable, crumbling, home-made pit silo, to the farmer riding home in his electric-starter, six-cylinder automobile with the tonneau crammed full of twenty-dollar gold pieces secured in exchange for a bumper alfalfa or Kafir crop. You can't get a people like that down and out for good. Kansas is undoubtedly up and coming.

The Market Place

Light Hogs are Scarce

By L. K. Brown

THERE has been an arrest in the upward march of hog prices, and just how long it will last is an uncertainty; but it seems apparent that higher values will be realized later on. The market has shown a remarkable stability. The reason is apparent: the strong Eastern demand has continued, sometimes taking thirty per cent. of the Chicago receipts; fresh pork has been consumed beyond expectation, and the supply has been but moderate.

The outlook for several weeks is optimistic for the grower. There is no reason why there should be any great change in the Eastern and fresh-meat demands, and rather decreasing receipts are expected. The northern corn belt furnishes the major portion of the hogs marketed in the spring and summer months. This year this is the territory that has been most severely ravaged by cholera, and it cannot be counted on to furnish many hogs between April and August.

A new element has come into the field that has begun to curtail the supply at the central markets. This is the growth of the Pacific coast demand. Buyers are operating right up to the Missouri River markets, and the traffic has been sufficiently large so that the Milwaukee road has made a regular hog extra from the Dakotas, and this train makes almost passenger time to the Puget Sound cities.

On the provision market there has been but little change. Prices have gone up some because of live hog advances, but buyers seem cautious. The present accumulation of surplus stocks in packing cen-

ters is being used as a bear argument, but when the general world shortage of meat is considered, and when it is remembered that this is the season of accumulation, this surplus appears insignificant. Under current conditions this surplus is a profitable piece of property. Much of the pig meat that was put into the cellars early in the fall, when the little fellows were a drug on the market, is now going out into the fresh-meat channels at a handsome profit to the killer. This fresh-meat demand has been so great recently that light hogs are selling about on a parity with the heavyweights, and will very soon sell at a premium.

The Lenten Market

By J. P. Ross

WHILE Chicago and all the principal Western markets have been liberally supplied with sheep and lambs, prices, especially of the former, have been well maintained. Even very fat ewes of from 125 to 200 pounds have sold readily at from \$5.75 to \$6.25, with 100 to 130 pound wethers at about the same prices, and yearlings from \$6.50 to \$7.25. Both sheep and lambs which seemed good enough for killing have been taken for feeding. Lambs have hardly done as well, it taking something extra good to reach the \$8 mark. Altogether, for the Lenten season, the market has held up well. Reports from all-wool centers are very encouraging.

The constantly increasing demand for both mutton and wool and their satisfactory prices will, it is to be hoped, induce many farmers who have hitherto neglected it to take up this most profitable source of revenue, and of soil fertilization. With regard to mature sheep the recent advance in their values should serve as an inducement to those whose farms comprise some portion of high lands unsuited to arable uses to turn them to profitable account by stocking them with sheep of any of the hardy Down breeds. Wherever on these lands vegetation of any kind exists these sheep will do well, and when it becomes desirable to finish them for market, a few weeks of a daily run on a forage crop or a moderate ration of grain with a little linseed or cotton cake will make them as fat as is desirable to meet the prevailing demand for moderate weights and lean meats.

The fact that the consumption of sheep and lambs has for some years been exceeding their production, and the retirement of so much of the Western ranges from sheep breeding are strong reasons why every farm, great or small, should maintain a flock of breeding ewes suited to its capacity.

Help Yourself

By W. S. A. Smith

"A BIRD in hand is worth two in the bush." It is getting on toward spring, and now is a pretty good time to look ahead a little. Taking it for granted that every intelligent farmer is beginning to realize that live stock on his farm is a necessity, the question now is, What? It does seem to me the first thing to consider is to get the best results out of what you already have. These present prices for stockers and feeders do not appeal to me, so I just bred an extra lot of sows, figuring that if cattle keep high, hogs will follow.

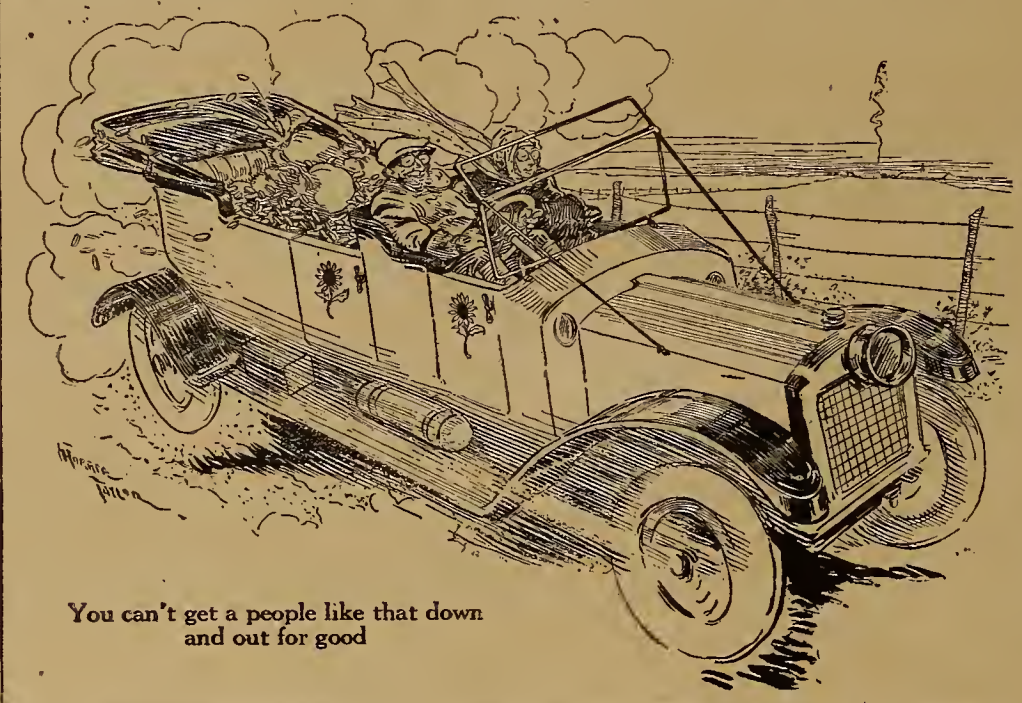
There is many a farmer who flatters himself that he is going to raise lots of pigs this spring who will be sadly disappointed, and a great deal of this disappointment comes from lack of a little thought. It is impossible to get good results from sows fed exclusively on corn. This I know, as my great trouble for years was that the sows following cattle got too fat. This year we have had excellent results from using a self-feeder with oil meal and allowing the hogs following cattle to help themselves. The hogs eat on an average one-half pound per head per day. With oil meal at \$30 per ton this makes a very economical feed. I have 63 sows with pigs that have been ranging over 160 acres all winter. These sows run to the alfalfa stacks during the day, and at night are fed three pounds shelled corn with oil meal mixed about 1 to 8, and are, if anything, too fat. Sows kept in this way, with plenty of exercise and plenty of protein feed, ought and will produce large and healthy litters.

There is still time on most farms to see to it that sows with pig get something else but corn to eat before farrowing, and farmers ought to realize that oil meal or tankage judiciously fed decreases the cost of production and is often the difference between success and failure.

In your planning do not overlook summer pasture for your hogs. The recent experiments at the Iowa State College show great results from Essex rape. I would not think of farming without this. Sow it in your corn at the last cultivation, in your small grain if you don't put in clover. Get a hog fence round it, and if you are going to produce pork—produce it at a profit.

You will be surprised at the amount of feed you can produce and the amount of pork you can make by allowing the hogs to do their own husking and run on the rape. For many years before I tried it I thought there would be waste in allowing hogs to bog down corn. Now I know better.

F W



You can't get a people like that down and out for good

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"THERE'S A REASON."

Live Stock and Dairy

The Silo

By Berton Braley

WHEN Joseph throve in Egypt
He bade the people hold
Their grain against the famine
Which he had long foretold,
And when the lean years followed
They learned his words were gold.

To-day we fill our silos
With green and juicy corn,
Against the days of winter
When pastures are forlorn,
And so we feed our cattle
Until the spring is born.

We have great store of forage
Within the silo's girth;
We fear no drought of summer,
No lean year's bitter dearth,
For we have wisely hoarded
The fatness of the earth.

The granaries of Egypt
Have made a lot of fuss,
They proved your Uncle Joseph
A mighty canny cuss,
But just the same he didn't
Have anything on us!

Care of New-Born Foals

By Dr. A. S. Alexander

IT HAS been alleged, with sufficient reason, that some twenty-five per cent. of new-born foals succumb within a few days or weeks of birth. Most of this mortality might be prevented by following a few sensible, sanitary rules of care and management. Most of the loss is due to infection of the navel by filth germs at birth. Other deaths occur from stoppage and inflammation of the bowels, which may be prevented or remedied in a majority of cases. Less loss occurs when foals are dropped on grass, but the navels and bowels of these foals also should have proper hygienic attention. Where the mare does not foal on grass she should do so in a specially prepared box stall that is light and perfectly ventilated. For her reception the box should be scrupulously cleansed. The floors, walls, and ceilings should be scrubbed, saturated with a 1-50 solution of coal tar disinfectant, and then whitewashed with fresh-made lime wash, to each three gallons of which has been added one pound of chloride of lime. The floor should be flooded with such lime wash and, when dry, bedded with fresh planing-mill shavings. Sawdust may be used if shavings cannot be obtained, and in the absence of both any bedding material used should be perfectly clean, dry, and free from chaff and dust. When the foal is born avoid tying the navel cord (umbilicus) unless absolutely necessary. It is preferable for the cord to break off, or be scraped through with a sterilized knife; but if a ligature has to be used it should first be soaked in a five-per-cent. solution of coal-tar disinfectant, or lysol, or 1-1000 solution of corrosive sublimate. The stump of the navel should at once be inserted in a small wide-mouthed bottle filled with a solution of corrosive sublimate not weaker than a 1-500 mixture. The solution may be made from tablets to be bought of any druggist. Repeat the application twice daily until the cord dries up, drops off, and no raw spot can be seen.

This is a Good Treatment

Another treatment is to squeeze the navel dry, saturate the stump with full strength tincture of iodine, and then dust it persistently with a mixture of equal parts of starch powder, boric acid, and powdered alum until thickly coated. If a ligature has been applied to the navel it should be removed as soon as fear of bleeding has passed. Clotted blood and serum should then be squeezed out and the navel treated as above advised. Burn the soiled bedding and afterbirth of mare; then put in fresh shavings. Encourage the bowels of foal to quickly move, and rid the intestine of meconium—the first sticky, fecal matter passed by the foal. Do so by giving rectal injections of warm sweet oil, or flaxseed tea, or slippery elm-bark tea, or warm water and a little glycerin. Inject by means of a fountain syringe or clean hose and funnel. If the bowels do not move promptly give the foal two or three tablespoonfuls of a mixture of two parts best castor oil and one part sweet oil shaken up in milk; or raw linseed oil may be used in the absence of other oils.

Father Used to Keep Sheep

By Mrs. Cora A. M. Dolson

MY FATHER used to keep sheep. They ran in the stony south pasture which could not well be plowed and was fenced about by stones thrown into a ridge, with two rows of rails on top. I liked the feuces—they were easy to scale, and red

raspberries grew plentifully all around the outside. On the inside the sheep kept the bushes down.

The sheep were of some pure-bred fine merinos. I do not know the name. Father would sometimes sell a young ram for ten dollars. The big-horned ugly-looking fellows he always drove under shelter when it rained, so the oil would not wash out of the wool. Then he took them to the fair at Fulton and always got first premium. I remember once a lady poked one with her parasol and said, "What a dreadful greasy creature!" Then Father said to her, "But that is the wool that goes into your finest winter dresses."

Every fall we had mutton, not simply once in a while, but twice a day, from the first of October until Christmas time—great platters of fried steak with brown thickened gravy for our potatoes and bread, and rib pieces roasted in the oven, and the end of the dripping pan heaped with dressing. There were also mutton soups delicious with onions and light dumplings, and stews in the Scotch iron kettle, each square of the meat browned on every side.

And Father always said, "Our mutton doesn't cost a great deal." He sold among his neighbors all the meat he could spare, and also had a market for the skin and tallow. But who ever sees mutton in this vicinity now?

Dogs got at Father's sheep. One morning thirty of them lay dead or bitten; before winter all of the injured ones were dead, as the slightest bite of a dog means death to a sheep. So many were killed in the township that it was four years before the dog tax paid for them. Father then sold all his sheep that were left. It was too much expense and worry to try to keep them.

When we want fresh meat we have to cook chicken or buy canned beef at high prices, unless one cares for pork, which I do not. Yet the best meat in the world is mutton.

Go for His Eyes

By James R. Runyon

TO FIGHT a cross bull go for his eyes. I saw one put to flight in a very short time when a man near eighty years old was nearly overcome by a two-year-old Jersey bull. A man sweeping in a barn near-by saw the situation and came with his broom. The old man moved out of his way and he jabbed the broom in the face of the bull two or three times. The fight was then over. The bull ran away. My opinion is that anything to injure his sight would have had the same effect—sand, dust, or anything similar.

Cause of a Mule's Cough

By Dr. A. S. Alexander

I AM asked what is the matter with a two-year-old mule that has a cough usually terminating in a sneeze. His wind seems all right, and he is apparently well except for the cough, which occurs four or five times a day.

Such a cough is caused by some irritation or inflammation of the nerves and membranes of the throat. The first step should be to examine the nostrils, as a tumor may be present. Such tumors often have narrow necks and drop from the back of the nostril into the vestibule of the throat now and then, causing a spasmodic coughing.

To determine the presence of such a tumor, if it cannot be seen by looking into the nostrils, close one nostril with the palm of the hand and see if the mule can breathe freely through the other nostril. Now test the other nostril in the same way. If one nostril is obstructed, breathing will be difficult on that account. A tumor may be removed by operation, a qualified veterinarian being needed for the work. The veterinarian should also look at the teeth, tongue, gums, and throat for other possible causes of irritation. Moisten all feed, and keep stable clean to prevent noxious gases from irritating the breathing apparatus.

Government Figures on Cattle Shrinkage

AFTER weighing 19,000 cattle in 265 shipments, government experts have concluded that the normal shrinkage of cattle in shipment is from three to six per cent. There are exceptions to this rule, and no one can say beforehand just how much cattle will shrink in going to the market. It depends on the treatment of the cattle, the length of time they are held without feed or water, the nature of their feed before loading, the character of the trip to market, the distance shipped, and the time of arrival.

The shrinkage of the first twenty-four hours is greater than for any subsequent twenty-four hours. Steers generally shrink a little less than cows of the same weight. Fed cattle and range cattle shrink about equally. There is no way to prevent shrinkage, but careful handling and good feeding will keep it within reasonable bounds.

One of the chief causes of heavy shrinkage is a too severe drive to the loading pen, especially during hot weather.

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Druggists everywhere sell Save-the-Horse WITH CONTRACT or sent by us Express Prepaid.

Paralysis in Hogs—Its Cause

AN OHIO reader is worried because one of his valuable sows has "kidney worms." He says that the back parts of the sow are useless, that she cannot get about well, although she eats and seems otherwise O. K. We submitted the question to Doctor Alexander, who says:

Hogs do not go down paralyzed in the hind parts on account of the presence of worms in the kidneys. I have opened many of such hogs and have never found the alleged worms. The worm as a cause is a myth, but it is quite commonly believed in by farmers. The true cause of the paralyzed condition is "rickets,"—akin to bow legs of children,—and the condition is induced by lack of exercise and by pampering, especially upon corn, which does not go to build up strong bones. Malnutrition always is present, and worms may bring this about. It is seldom seen in hogs that are given free range on clover or alfalfa, and fed mixed rations from birth. Corn should be kept for the fattening of adult hogs, and should be fed very lightly, if fed at all, to breeding stock and young growing animals. In some instances we have found the paralyzed condition due to hog cholera, but in that case the animal is sick and soon succumbs.

As the sow in question is not sick and is in good flesh, I would advise killing her for meat, which can safely be eaten if no internal disease is found. Make sure that a broken leg bone is not present. If it is, the meat around it should not be used.



"What makes you so slow harnessing that horse?"
"Why, he won't take the bit in his mouth, so I'm waiting for him to yawn."

Signs of a Good Cow

By D. S. Burch

A COW with a tail that reaches the ground Gives plenty of milk the year around; Also the cow with a forehead wide And a slender neck and thin soft hide. Hips that are large and an udder low, So little light is seen below, These are the signs that often tell The cow that's likely to give milk well. But better than forehead or hip or tail Is the proof she gives you at the pail. Her milk should total five tons a year, With test of four per cent., or near. The more she weighs the less she eats Per pound of milk that she secretes.

The Cause of Bloody Milk

By Dr. A. S. Alexander

A FRIEND in Arizona writes me about his Jersey cow that has begun to give bloody milk from one quarter. The udder has also begun to show signs of hardness. He reports the case as "bloody garget." Garget is merely a term applied to that condition of the udder which, through inflammation, gives rise to a change in the consistency and quality of the milk. Milk so affected may show traces of blood, but bloody milk usually is due to rupture of small blood vessels, and this trouble is most likely to affect a young cow just after freshening.

The treatment in such cases is to bathe the udder with cold water three times a day and at night wash with a strong solution of alum in cold water. Give the cow one dram of sulphate of iron and two of salt in her feed, night and morning, until the milk clears up. Milk carefully and protect the udder against bruising in the stable.

The White Whirlpool

[CONTINUED FROM PAGE 6]

chain of evidence were collected, and passed along to the state dairy commissioner. The manager could do nothing more graceful than plead guilty and pay his fine.

Most officials are glad to act, for it brings them before the people. But there are exceptions. The secretary of the State Board of Agriculture of New Hampshire remarked to me with a sigh last summer, "The milk producers of this State have never had a square deal. I don't know that they ever will get one." They certainly never will if they have to wait for some of their officials to speak or act for them. The economics of profitable dairying is

an important study in itself. One of the first astonishing things learned is the way everyone's business is linked up by economic chains with everybody else's business. The market price of milk for example depends roughly on the amount of supply and demand for a given area which covers many square miles. But the producing cost depends on your own particular ability to obtain good cows and the way you feed and handle them.

So the cow that is better than the average makes her owner a profit not only because of her own ability, but also because of the poor performances of all cows that keep the average production down.

The Line Between Profit and Loss

It is just the same way as with crops. Those who have good crops in a year of general failure profit not only by their own success but by the failures of others. And as the average person becomes more expert the skillful man is less conspicuous and the incompetent man more so. This condition, which seems unfair, is based upon unchangeable economic laws, and ought to impress upon us the need for greater effort toward the economical production of milk. It's a question of studying the direction in which business is moving, and then going in that direction and keeping somewhere near the head of the procession.

Cow-testing associations are one of the best means for working out problems of dairy efficiency, and they also indicate good places to buy first-class cows.

The Lyndeboro Cow Testing Association of New Hampshire has found for its members that cows giving over 10,000 pounds of milk yearly produce it at a cost to the owner of 81 cents per hundred pounds of milk. Cows that give less than 4,000 pounds are over twice as expensive to keep because every hundred pounds of their milk costs their owner \$1.86 to produce it. This cost is usually more than the selling price. Cows producing 6,000 pounds of milk yearly at the present time in New Hampshire are just on the safe side of the line between profit and loss.

Getting at Butterfat Costs

Readers accustomed to think in terms of butterfat should examine these figures from the Waterford and Norway Dairy Testing Association of Maine, covering twenty-nine herds. Each figure is for an entire herd, and gives the cost of producing one pound of butterfat for the different months in the year.

	Highest Expense	Lowest Expense
January, 1913.....	57.0c	16.5c
February, ".....	61.5	17.4
March, ".....	47.3	13.3
April, ".....	47.8	13.4
May, ".....	48.7	8.1
June, ".....	24.9	4.7
July, ".....	27.9	3.3
August, ".....	30.5	4.1
September, ".....	38.4	5.5
October, ".....	74.3	10.4
November, ".....	96.8	16.8
December, ".....	51.0	19.5

When the expense drops below 10 cents it means that the cows are on pasture and are giving a large and profitable flow of milk. When the expense climbs up till it exceeds butter prices, as it has done for the poorest managed herds in the first column, it usually means that the herd has been kept at a loss for that particular month.

These Figures are Significant

And with all that is known about breeding good cows, they are not being bred fast enough. A "good" cow is only a relative term meaning better than the average. As the average comes up, cows must be better to be classed as good. The best cow of a few years ago is only second best now. But even so, the figures show the small chance of this country ever having so many good cows that the market for dairy products will ever be glutted.

Population of the U. S. (Census 1890).....	62,622,256
Population of the U. S. (Census 1910).....	91,972,266
Increase in population.....	46.7%
Total dairy cows in U. S. (Census 1890).....	17,136,000
Total dairy cows in U. S. (Census 1910).....	20,625,000
Increase in cows.....	20.4%

The increase in the number of cows in those twenty years has been less than half as great as the increase in population. Among other reasons for not fearing an overproduction of milk are these: It is perishable, and therefore difficult to speculate in. Not being suited for speculation its average market value depends in a broad way on the law of supply and demand, which is the ideal market condition. Milk has no successful substitute except products made from milk itself. The ice-cream business, which uses enormous quantities of milk, is almost a new industry, the growth of which we are reasonably sure will continue. The condensed-milk industry is also an increasing market. The bottom is never likely to drop out of the milk market. It is a food and drink that always stays in style.

[TO BE CONCLUDED]



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Garden and Orchard

The Efficient Greenhouse

By T. Greiner

I AM asked how to construct and equip a greenhouse. Possibly I might be able to give just as intelligent an answer to the question, how to build and furnish a dwelling house. I would first have to know your circumstances, your means, your purposes. What do you want a greenhouse for? How much money have you ready to put into it? I know of a day laborer in my own vicinity who was handy with hammer, square, and saw, but who had very little money besides what he could save from his daily wages. He built him a sort of house to live in from the framework and the second-hand lumber secured by dismantling a large shed or old barn that somebody had made him a present of. The only way that I and most others could build a house is to make a contract with some builder and draw my checks as the payments become due. So it is with the greenhouse.

In the first place I believe that every gardener who makes a business of raising vegetables or plants for sale should have a greenhouse of some sort. He cannot do the best work or secure the most satisfactory results without one. Even the home grower who wants a complete garden and

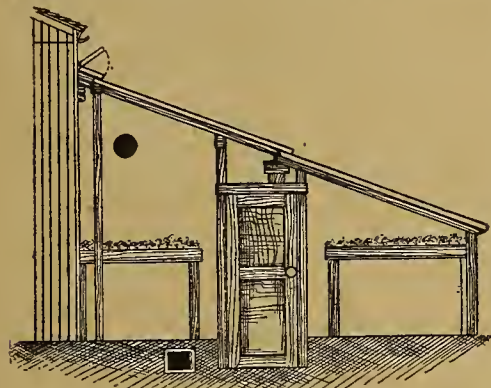


Fig. 1

all the good things that it is possible to extract from a garden will find the greenhouse of great help. In these cases it may be a mere makeshift, an apology for a greenhouse, such as anyone who has a few dozen ordinary hotbed sashes may easily put up at small cost. He will use some cheap or second-hand lumber if he cannot get the new and higher-priced stuff. All I can do is to make some suggestions as to general rules along this line.

What Material to Use in Building

Anyone who wants to plan and build a larger greenhouse, and has the money to put into it (and it takes money to build a greenhouse as well as a dwelling), should consult the commercial builders of greenhouses. On account of the constant moisture inside the greenhouses wood is a very poor material out of which to build such houses, except in making the rafters, plates, etc., which should be of the practically indestructible Southern cypress. Cement and iron are the modern greenhouse building materials. Send for the catalogues of firms who offer greenhouses,

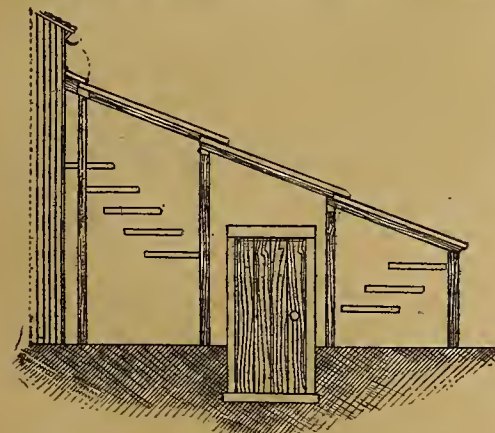


Fig. 2

greenhouse fixings and material, greenhouse heaters, etc., examine the cost, etc., and pick out what you want.

Much can be done in a market garden of moderate proportions, with the simplest form of makeshift, such as, for instance, is shown in Fig. 1. This is a lean-to built against the south side of a barn or other outbuilding, a simple shed covered with two tiers of ordinary hotbed sashes. These are usually from five to six feet in length and three feet wide. The needed ventilation is secured by means of a 12-inch board hinged at the top to the barn, and possibly by making some of the sashes in the upper tier removable or slidable. I have seen in successful operation a number of such home-built lean-tos, both in the style of Fig. 1, having two tiers of sashes, and of Fig. 2, having three tiers. Some of these were heated by means of a box stove, and

stovepipe running the entire length of the building; others by means of a flue running under the bench next the barn from the fireplace at one end (in a pit) to the chimney at the other end. Such houses are used mainly or exclusively for plant-growing beginning in February.

Fig. 3 shows a small greenhouse, good for the amateur or small market gardener. I have a house of this kind in use. If it can be sunk well into the ground, all the better. It will be warmer. In a house ten feet wide and twenty or twenty-four feet long (like mine), thousands of vege-

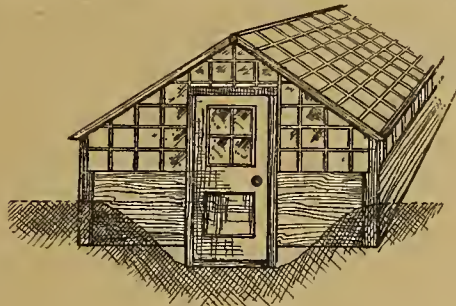


Fig. 3

table and flowering plants can be grown every winter or spring, and a good sprinkling of lettuce or other green stuff besides. I find the self-feeding water heater and a system of hot-water pipes (2-inch) a very convenient and satisfactory way of heating this building, using half chestnut and half pea coal, mixed. Be sure to make the sides and ends, and preferably also the benches, of concrete. Or, hollow brick may do for the side walls. If you use wood there will be no end of repairing and renewing. I have my heating pipes on the floor under the benches, the flow of course must gradually rise from the boiler (heater) to the expansion tank at the farther end, and the return pipes gradually descend to the heater. When I build another little greenhouse (somewhat larger) I shall place the pipes in sections or coils along the side walls so as to have the floor space under the benches clear for forcing rhubarb, witloof, growing mushrooms, and the like.

About the management, planting, etc., that is another story.

STOP envying a "lucky" neighbor. Ten chances to one it's "hustle," not luck, that made his farm yield big dividends. Go and do likewise.

GUESSING at the quality of the seed to be planted is as foolish as betting good money on an election.

Insects of the Underworld

By Clarence M. Weed

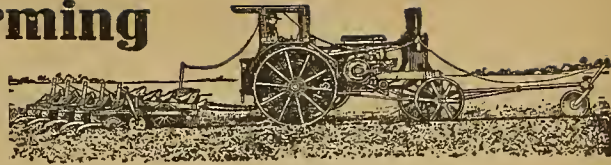
IN THE case of many plants no part is free from attack by insects. Even the underground roots, concealed from sight and protected by the soil, furnish food for many larvæ which are especially adapted to living on them.

One of the easiest ways to find these root-feeding larvæ is to follow after a plow in spring. As the deep furrow is laid open it brings to view many creatures which were busily eating underground roots. The largest and often the most abundant of these is likely to be the common white grub which is familiar to nearly everyone brought up in the country. It is a large larva, nearly two inches long, with a brown head, six brownish legs, and a white curled body.

It is easy to account for the presence of these grubs in the plowed ground, especially if the field has been in grass. Some warm June evening of a previous year, a lumbering June beetle had crawled down beside the grass roots and laid some small eggs. The eggs soon hatched into very small white grubs that proceeded to eat the grass roots and make themselves very much at home in the soil. They were provided with strong jaws for gnawing the roots, a hard head which could be pushed through the soil without injury, and six powerful legs with which to work a way ahead.

These white grubs are in no hurry to leave their sheltered quarters. They grow so slowly that it is more than two years before they reach their full size. They frequently change to pupæ the summer of the third year from hatching, and change again from pupæ to beetles that same fall. The beetles remain in the ground, however,

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The farmers of this country are right up against a serious situation. The three things they have to depend on are soil, help and power. The soil of this country is being worn out. It is hard to get help at any price. Horse or mule power is also getting more expensive. It's a serious situation and the problem is how to meet it. You must raise bigger crops and do it cheaper. The one big solution to this whole problem is "Tractor Farming." Tractor Farming is necessary to solve the soil

problem. Only tractor power will enable you to do deep plowing, plowing at the right time and thorough cultivation. Only Tractor Power can solve the hired help problem. With a Tractor, one man or boy can do as much work as 2 or 3 men with horses or mules. Tractors also solve the power problem. You can farm cheaper with a tractor than with animal power. You can also farm more extensively as well as more intensively. Only Tractor Farming can solve your soil, help and power problems. Tractor Farming is now a necessity.

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and many of them have written me and sent pictures of their crops, which look fine. Write for illustrated booklets and magazines telling of successes Northern men have made in Kentucky, Tennessee, Georgia, Alabama, West Florida and South Mississippi. YOU can do as well on these cheap lands, and live in an almost perfect climate. G. A. PARK, Gen'l Imm. and Ind'l Agent, Box 116, Louisville & Nashville R. R., Louisville, Ky.

Phelps' Buggy Is Yours For The Asking

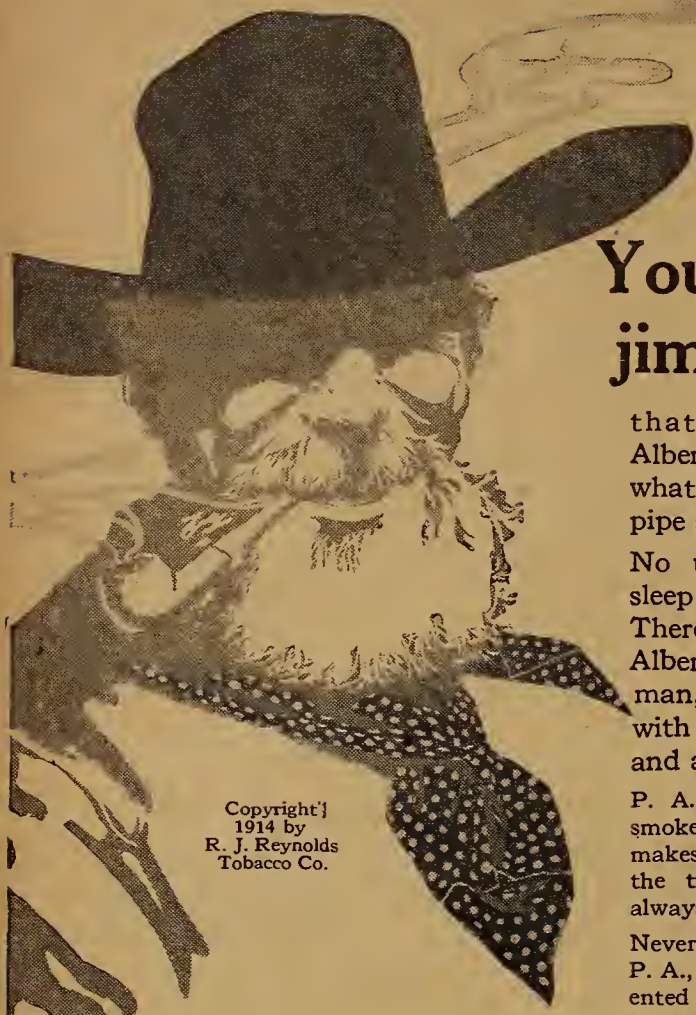
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You fire up a jimmy pipe

that's filled with Prince Albert tobacco and you'll get what you're looking for in a pipe smoke.

No use arguing or losing sleep about the question. There's one answer—Prince Albert! You, nor any other man, ever smoked tobacco with such flavor, fragrance and aroma.

P. A.'s what men call a man's smoke. Men like it because it makes good, today, tomorrow—all the time! It's always fresh; it always tastes good.

Never was such pipe tobacco as P. A., because it's made by a patented process that cuts out the sting and throat-parch.

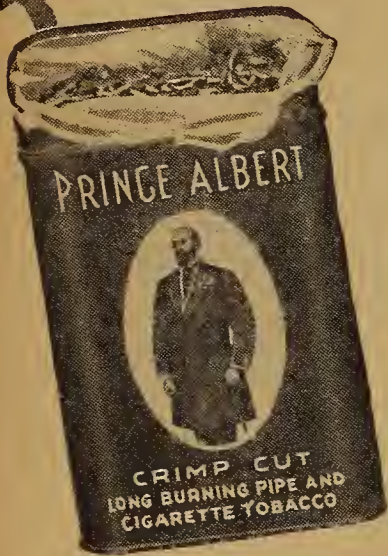
Do this! Polish up your smoking irons. Buy some P. A. in the tidy red tin and go to it. Since P. A. has been made three men smoke pipes where one smoked a pipe before.

PRINCE ALBERT

the national joy smoke

You buy Prince Albert everywhere tobacco is sold. That's for your convenience, so you don't have to change your brand every time you want to smoke. You stick to P. A. because P. A. will stick to you. Prince Albert is sold in toppy red bags, 5c; tidy red tins, 10c; also in handsome pound and half-pound humidor.

R. J. REYNOLDS TOBACCO CO.
Winston-Salem, N. C.



until spring, when they crawl out. They fly about during warm nights in May and June and feed on the leaves of a great many kinds of trees. They are attracted to lights, and so often fly in through open windows.

These beetles are called May beetles or June bugs. There are a great many different species of them, but in general their life histories are much alike.

While the white grubs are likely to be the most abundant insects turned out of

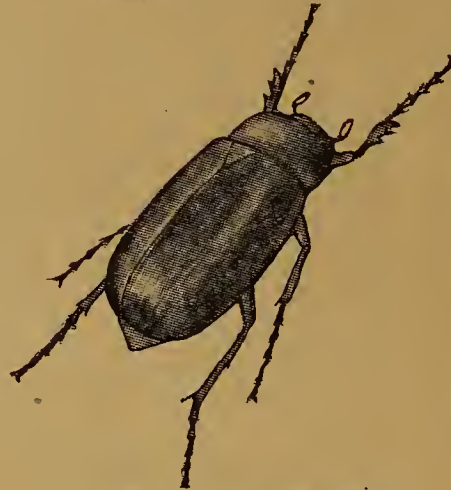


The pupa—that sleeps

house and home by the plow they are by no means the only ones. Sometimes the hard slender yellow wireworms will be almost as common. These are much smaller than the white grubs, but the story of their life is not very different. The parent beetles that lay the eggs among the grass roots are the familiar flattened click beetles or "snapping bugs." When laid upon their backs they snap quickly upward and commonly land on their feet.

The white grubs devour roots bodily, biting them off with their powerful jaws. The smaller and more slender wireworms often burrow into the larger roots, riddling them with holes, and thus injuring the plant.

The larvæ of many other beetles feed upon plant roots. Nearly everyone who owns a garden is familiar with the yellow-and-black striped cucumber beetles that attack young cucumbers, melons, and squashes. These beetles have a habit of crawling down beside the central stem and laying eggs where the roots branch off.



The beetle—that likes the light

These eggs soon hatch into slender whitish worms that burrow in the fleshy tissues, feeding upon the white tissues for many weeks. In so doing they often kill the plants. When full grown the larvæ change to pupæ in the ground, to change again a little later into adult beetles that make their way to the surface.

The spotted cucumber beetle has a similar life history, though the larvæ feed upon the roots of many plants besides those of the vine family. In some southern regions it injures corn, and so it is there called the Southern corn rootworm.

The ordinary corn rootworm of the Northern and Central States is often very destructive. The adult is a small green beetle of the general shape of the cucumber beetle and about the same size. It appears in cornfields in autumn and lays its eggs in the ground. Then the adult beetles die and the eggs live through the winter. In spring they hatch into small, slender larvæ. If corn is planted in the



The larva—that eats the roots

field these larvæ attack the roots and develop into beetles again. But if corn is not planted the larvæ are very likely to starve to death. Consequently, if farmers practice crop rotation they are not very liable to be troubled by this insect.

The root feeders so far described are all the young stages of beetles, but there are many other sorts of insects that feed upon roots. The larvæ of the two-winged flies are often seriously destructive to crops through their root-eating habits. The root maggot that infest radishes, cabbages, and similar crops are examples of these.



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Crops and Soils

When I Go Out to Plow

By W. F. McSparrow

WHEN I go out to plow
I want a plow from p'int to beam
An' hitched thar to the doubletrees
I want a walkin' team.

I do dislike this throwin' stones
To make the hosses go,
Or have 'em at the corner stop
Afore I holler "Whoa!"

I like to see my moleboard
Turn the furrow upside down,
An' have them sassy black birds
A follerin' me around.

An' then I let the hosses rest,
While I set on the beam
An' smell sweet scents an' hear soft sounds
Come to me like a dream.

It kind o' makes a feller feel
As if some wondrous plan
Had tuned all nature's harmonies
Unto the heart of man!

An' when at sundown I unhitch,
The feelin' comes, somchow,
My work has been o' some account—
When I go out to plow.

What Price Do You Pay for Your Alfalfa Seed?

By A. C. Hartenbower

RECENTLY two farmers, one living in Oklahoma and the other living in Missouri, had samples of alfalfa seed from which they had planted tested for purity and germination. The former considered quality, the latter "wanted to get all he could for his money." The sample tested for the Oklahoma farmer was from seed that was quoted in the market at \$20 per hundred pounds, while that tested for the Missouri farmer was quoted at \$10. Here are the results of the tests made for purity and germination of these two samples.

LOW-PRICED VS. HIGH-PRICED ALFALFA SEED

	Low- Priced Seed	High- Priced Seed
Cost of alfalfa seed per 100 pounds	\$10.00	\$20.00
Weed seeds, per cent. ...	21.96	.14
Dirt, sticks, and other adulterants, per cent. ...	27.16	1.41
Alfalfa seed, per cent. ...	50.88	98.45
Alfalfa seed that germinated, per cent.	21.00	96.00
Number of weed seeds per pound of alfalfa seed..	96,526	245
Number of weed seeds per 100 pounds of alfalfa seed	9,652,600	24,500

From the above table the farmer who intends to purchase alfalfa seed may discern several significant facts.

The Cost of Low-Priced Seed

First: The high-priced alfalfa seed cost twice as much as the low-priced alfalfa seed in dollars per hundred pounds.

Second: The \$10 seed contained 21.96 per cent. of weed seeds, while the \$20 seed contained .14 per cent. The first sample was almost one fourth weed seeds. This per cent. figured in dollars and cents meant that when the farmer purchased ten dollars' worth of the low-priced seed he paid \$2.20 for weed seeds.

Third: But weed seeds did not constitute the only adulterant for which the farmer paid his hard-earned cash when he bought the cheap alfalfa seed. In the \$10 seed you note 27.16 per cent. of dirt, sticks, and other adulterants, while in the \$20 seed there is but 1.41 per cent. of similar material. This per cent. of adulterants meant that when the farmer bought ten dollars' worth of the low-priced seed he paid \$2.72 for dirt and sticks.

Fourth: Deducting the per cents. of weed seeds, dirt, sticks, and other adulterants, there is left 50.88 per cent. of alfalfa seed in the low-priced 100 pounds of seed, while there is 98.45 per cent. in the high-priced seed. The man who bought the \$10 seed paid almost one half of his money for adulterants. The man who bought the high-priced seed received about \$19.69 worth of pure alfalfa seed for his \$20.

Fifth: But the farmer who purchased the cheap alfalfa seed "did not get all that was coming to him" when he received about fifty per cent. of adulterants in the \$10 seed. We now come to another unpleasant and unprofitable feature of the low-priced seed buying. All of the 50.88 per cent. of the alfalfa seed that the farmer was fortunate enough to get for his money would not sprout when planted in the soil. Only 21 per cent. of it germinated when tested by means of the plate-and-blotter method; or, the \$10 seed was not only about one half weed seeds, dirt, sticks, and other

adulterants, but of the alfalfa seed procured only a little more than one fifth of it germinated.

We find that in the \$10 seed \$4.92 was paid for adulterants, including weed seeds, dirt, sticks, etc., and \$4.01 was paid for alfalfa seed that would not grow when planted. Totalling we find that the "cheap alfalfa seed" farmer paid \$8.93 for something he did not want, leaving \$1.07 worth of good alfalfa seed for \$10.

What the Comparison Means

Compare these figures with the seed at \$20 per 100 pounds. Here the seedsman had sold the farmer 98.45 per cent. of pure alfalfa seed, of which 96 per cent. sprouted when tested for germination. Totalling, as in the other case, we find that 3 cents was paid for weed seeds, 28 cents for dirt, sticks, and other adulterants, and 79 cents for alfalfa seed that failed to grow when tested for germination. This gives a total of \$1.10 that this farmer paid for something he did not want, leaving \$18.90 worth of viable alfalfa seed for \$20.

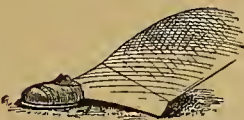
Sixth: Considering the weed seeds again, we find that every pound of the \$10 per hundred, or cheap, seed contained 96,526 weed seeds, while every pound of the \$20 per hundred, or high-priced, seed contained but 245 weed seeds. These numbers of weed seeds figuring on the basis of 100 pounds, shows that the purchaser of the cheap alfalfa seed actually received 9,652,600 weed seeds for his money.

What would it cost you, Mr. Farmer, to eradicate 9,652,600 weeds, dodder and Russian thistle included?

Considering the wide variations noted in the two samples, and the fact that alfalfa seed with adulterants and impurities and a low per cent. of germination is continually offered for sale, is it any wonder that alfalfa-seed control stations have been established in most of the States?

A Good Plowshare Guard

By Edwin Albers



WHEN taking a plow from one field to another it often happens that the point of the plow digs into the ground. This can be prevented by placing an old shoe tip on the point of the share. It is very cheap and convenient, and can be easily carried about when not in use. Try it this season and you will be well pleased with the scheme.

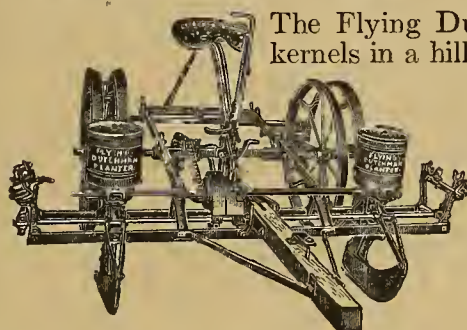
Upon the Stand Depends the Yield

No matter how fertile the soil or how well prepared the seed bed may be, without proper planting, these good qualities are of little benefit.

Thus by properly placing every seed—an accurate Planter or Drill saves seed—secures a full stand and increases the yield.

Flying Dutchman Corn Planter

Variable Drop—Edge Drop—Flat Drop Drill



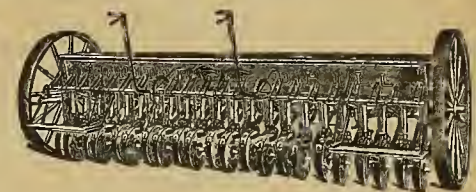
The Flying Dutchman Planter drops 2, 3 or 4 kernels in a hill with unvarying accuracy. It can be used either as an edge or flat drop planter by simply changing the plates. It can be used as a drill also. The Flying Dutchman Planter is so simple, convenient and accurate that it is known as "The Planter Without A Fault."

Regularly furnished with seven pairs of plates and 80 rods of wire. Can also be furnished as a Fertilizer Planter.

Monitor Double Disc Drill

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The only Drill that deposits the seed in front of the disc bearing with the downward turn of the disc in the bottom of a clean two-row furrow, thus saving seed, increasing the yield and improving the grade of the grain.



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And now comes a new price—a record price on a car of this class and quality.

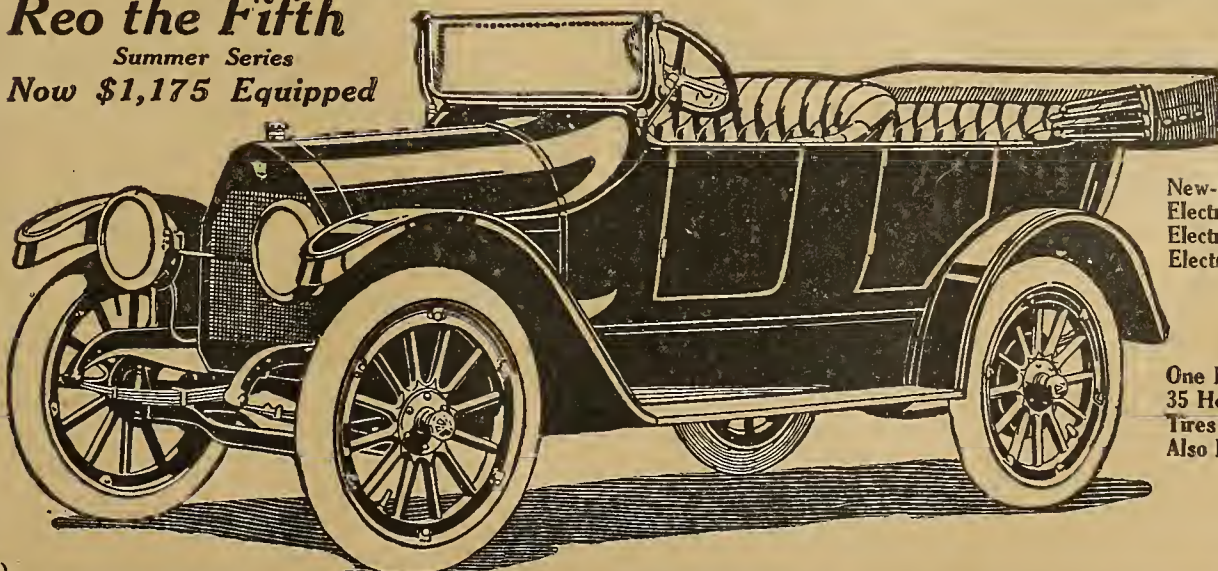
Price \$220 Less

The price this year is \$220 less than last year's model, similarly

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35 Horsepower
Tires 34x4
Also Roadster

equipped. That saving is mainly due to this: All the costly machinery for building this chassis has been charged against previous output. That cost is all wiped out. From this time on, so long as we build this chassis, this big item is omitted from our cost.

No other factory in America could offer you a price of \$1,175 on a car built like Reo the Fifth.

A Costly Car

Reo the Fifth is built in a most unusual way. The steel is made to formula, and each lot is analyzed twice. All driving parts are given 50 per cent over-capacity. Gears are tested for 75,000 pounds per tooth. Engines are given five long, radical tests.

There are 15 roller bearings, 190

drop forgings. Each car is built slowly and carefully. Close-fitting parts are ground over and over. Tests and inspections are carried to extremes.

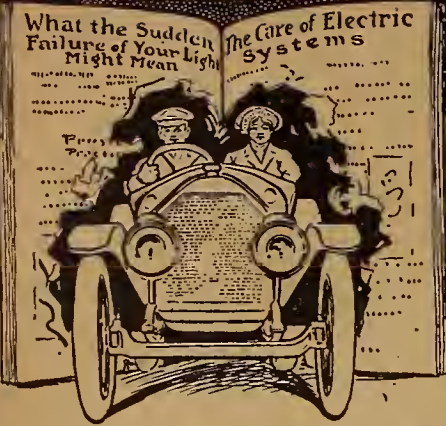
We could save at least \$200 in the hidden parts if we built you a shorter-lived car. But you get here low cost of upkeep. You get freedom from trouble. You get a car built to run for years as well as it runs when new.

Reo the Fifth is built for men who want the utmost in an honest car. For men who buy cars to keep. For men who want safety and staunchness. It is the car of super-strength.

A thousand dealers sell Reo the Fifth. Ask for our catalog and we'll direct you to the nearest showroom.

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What the Sudden Failure of Your Lights Might Mean



The Care of Electric Systems

This book means a better car for you

It tells why a gas-lighted car gives you advantages over an electric-lighted car, such as:

Light weight; Less tire trouble and expense; Less up-keep cost; Less annoyance; Less expense for fuel and oil; Greater speed; Greater hill-climbing ability; Lower price; Greater safety at night; Better and cheaper light.

Prest-O-Lite

A Prest-O-Lited car is a simple car. Prest-O-Lite adds no mechanism, breeds no troubles, and has no mysteries. You can understand Prest-O-Lite thoroughly in a very few minutes.

But what do you know about electricity?

Even if you are a skilled mechanic, the complications of the automobile electric system are baffling and confusing.

It is difficult to get an electric system repaired by any one but a factory expert.

Have you time to put your car in storage every time you have lighting trouble until you can get an expert to fix it?

See if the dealer will guarantee to keep the electric system working and then remember—

You can have Prest-O-Lite on thirty days' free trial.

We do not merely "tell" you it is better. We prove it.

Better Light

Electric lights send a thin, dazzling beam of light to search out some church steeple half a mile down the road. But Prest-O-Lite gives more and better light on the road in front and to the sides of the car, where you need it.

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If your safety is important you'll insist on gas lighting.

Electric lights depend upon delicate connections and apparatus. And if anything goes wrong while you are running on a narrow road, your lights go out with a hindering shock, pitching you in total darkness, and anything

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Farm Notes

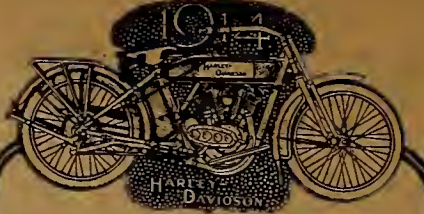
The Co-operative Store

By Fred Telford

A SMOOTH Young Man with the Gift of Gah once drifted into a prosperous Farming Community. His Tongue was so evenly balanced that it would work at both Ends at the Drop of a Hat, and he never let it rest except when he was asleep. He soon put the horny-handed Sons of the Soil wise to the Fact that they were supporting four Grocers, two Implement Dealers, a Hardware Man, and other avaricious Middlemen in the neighboring Hamlet. He told them these Parasites were waxing fat and sassy on their ill-gotten Profits, and pointed out the large Families of Children fed and clothed at their Expense.

The Farmers fell for his Lieve of Talk, and determined to put a Crimp in the Middlemen by starting a Co-operative Store of their own. The Smooth Young Man figured out the annual Saving and volunteered to sell the Shares when the Stock Company was formed. The Farmers' Co-operative Grocery, Hardware, and Implement Store opened with a big Flourish and the Parasites in the Hamlet looked blue. But the foxy Middlemen began making secret Prices to the Farmers and offering Rehates that made the co-operative Prices look sick. Each Man regarded himself as the one lucky Fellow favored. After three Months the Smooth Young Man, who had been made Manager, reported that the new Store had a worthless Lot of Stock on Hand, and owed him a Hundred Dollars for Salary and Money advanced. The Co-operative Store then closed its Doors and the alert Middlemen began paying their Back Dues in the Anti-Race-Suicide League.

Moral: Co-operation is always a Failure if the Other Fellow has to do all the co-operating.



The Harley-Davidson Two-Speed WITH STARTER

It's the last word in motorcycles. The two-speeds are selective, and the rider can shift from high to low or low to high or neutral while the machine is standing still or in motion.

The step-starter does away with the necessity of dismounting and placing the machine on the stand to start. The rider may sit in the saddle with both wheels on the ground and give either pedal a downward push, engaging the step-starter and starting the motor.

1914 Catalog on request

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Makers of High-Grade Motorcycles For More Than Twelve Years
948A Street Milwaukee, Wis.

Economical Twelve-Sided Barn

By Alonzo Price

THE diameter of this barn is 47 feet. Each section of the side is 12 feet, making 144 feet around the building. The upper part, with shutters over windows, consists of twelve sides, each 5 feet, making 60 feet around. Each side of the cupola is 4 feet square. A gable 16 feet wide and 16 feet high at highest point is built over the driveway, which is 12 feet wide and extends through the double barn. Doors are at each end of drive. The driveway is 12 feet high. An opening for drawing up hay

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FARM CUSHMAN All Purpose Engine

4-Cycle. Weight 190 lbs. Does all work a 1,000-lb. engine can do. 10-year guarantee. Also 6-h. p. up to 20-h.p. Special Heavy Duty Engines. Get catalog and "trial offer."

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Use KEROSENE Engine Free!

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Almost a round barn

with a fork is left in the loft between the drive and gable. A straight steel track and harpoon fork is used for this purpose. The mow is 10 feet deep at eaves. The stalls are 8 feet high. A small door on the west side admits to a row of eight stalls for cows, each with a 3½-foot front along the driveway. The partitions between the stalls are at right angles to the outside wall. The stalls are in the center of the west side. A space is left on each side for feed and tools.

There are five stalls for horses on the east side of driveway, each with a 5½-foot front built in the center of east side with partition between at right angles to east wall. The space at front, or south side, is used to store tools in, it being 7 feet 3 inches on driveway side. On the back, or north side, is a cornerib.

The loft is supported by 8x8-inch posts, three on each side of the driveway. The walls are made with 2x5-inch studding two feet apart, with pine siding. The roof is self-supporting.

The foundation is of rock and concrete below ground. 18 inches deep by 8 inches wide. Above ground the foundation was about fifteen inches high, built of concrete, but has been filled around until only about five inches is above ground. The proportion of the concrete used was one to six. The foundation under the posts in center are of concrete 18 inches deep and 18 inches wide at bottom and 9 inches square at the top.

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BY THE closest kind of a squeeze the parcel post has been saved. Whether there was a conspiracy to destroy it, or whether partisanship, jealousy, and narrowness were skillfully arrayed as the allies of the interests that would like to see the system killed, cannot yet be told certainly. Certain it is that at a time when the parcel post was little over a year old, and when it had demonstrated itself a stupendous success and had the support of almost all the people, the effort to hamstring and wreck it came very near success.

It is a remarkable story of the last desperate effort of opposition to prevent the further growth of the system and prejudice the country against it. The worst feature about it is that the project was aimed especially to injure the farmers. The one roll call taken in the Senate, directly on the parcel post, was on an amendment to prohibit raising the parcel weight limit above 50 pounds. If that amendment had carried it would have been impossible thereafter to provide, except by affirmative legislation, for carrying packages above 50 pounds; in other words, the usefulness of the service in getting the farmer's products directly to the town consumer would have been largely destroyed. By a majority of just one vote the amendment fixing the weight limit at 50 pounds was voted down!

Twenty-seven Senators voted to fix the 50-pound limit. Twenty-eight Senators voted against it. Thirty-nine Senators were conveniently absent or not voting. Every one of these ought to be required to explain to his people why he was not on deck attending to business. So ought every one of the men who voted for the amendment to dwarf the further development of the system.

It has been the experience of the world that when governments went into the parcel-post business they didn't know how to fix the rates and distances and other regulations. No two countries had like conditions to meet. No country's experience furnished a precedent for the action and policy of any other.

We Learn by Experience

RATES of postage for letters have almost invariably been fixed by legislation. So when efforts were made to establish a parcel-carrying system as an adjunct to the post-office it was natural enough that the rates should be fixed in the law providing for the service. That was a great, big initial mistake. It was made in Germany and in England. In each of those countries experience proved that the law-made rates would not do. Some of them proved so low that the business done under them was done at a loss; others were so high that business could not be done at them at all. The result of course was that private carriers got the business that the government service could not get by reason of the government rates being too high, and the Government got the business that could only be done at a loss. As an outcome of those conditions parcel post was for a long time a pathetic failure in Great Britain and Germany. Finally somebody conceived the bright idea of letting the Government's post-office authorities make their rates just as the railroad and steamboat and express companies made theirs; that is, experiment with various rates and weights and distance zones and determine by the actual experience what charges could be made without losing money, and yet with the result of getting enough business to be satisfactory.

In such a complexity of adjusting service, rates, distances, weights, dimensions of packages, and the rest of the elements, so as to do a nation-wide business, it would seem plain that this would be absolutely necessary. Yet there was much protest against it in the beginning. Finally the European countries progressed to the point where they were willing to try the experiment; and right there began the era of successful parcel post.

The Wisdom of David J. Lewis

WHEN the United States tardily got around to the creation of a parcel post, not many people in this country understood all these details. Legislation was introduced in Congress, and pressed with much earnestness, by men who wanted to write every detail of rates, weights, distances, and dimensions into the law, and leave it, rigid and inflexible.

A few students of this specific detail, headed by Congressman David J. Lewis of Maryland, had discovered this elemental fact. When the parcel-post legislation came up in Congress two years ago for action they pressed their point in and out of season; and finally they had their way. Mr. Lewis did a piece of work for which some day we will build monuments to him. He got up as a new member of the House and discussed the subject with such complete understanding, such all-including grasp, that before he was done the House recognized him as the

Victory for Parcel Post—By Judson C. Welliver

master of the subject. It took his advice, and the whole country acknowledged his leadership. The law passed with tentative provision of these details, and with general authority reposed in the post-office officials, on consultation with the Interstate Commerce Commission, to make changes when and as they found necessary to further the development of the service.

It isn't necessary to tell of the early success of the parcel post. It astonished even its most ardent advocates. The people seemed determined to disprove all the prophecies of disaster that had been indulged in. It made big profits in the first year of its operation. When the holiday season came on at the end of 1913 predictions were made to the effect that the system would collapse under the stress of lugging Santa Claus' holiday bags around the country, and that in the wreckage the letter-mail business of the country would be utterly demoralized. Nothing of the kind happened,

These changes had actually taken place, or been ordered for the near future. But this was not all. It was very definitely understood that the Postmaster-General had in mind to extend the weight limit for the first two zones just as soon as possible above 50 pounds. It might not get up to 100 pounds at a single jump, but it was on the way there, and Mr. Burleson had no idea of putting on the brakes and impeding its progress. He wanted it to get there as soon as safety and conservative management, consistent with keeping the service on a self-sustaining basis, would allow.

This limit of 100 pounds for the first two zones of course is the item of immediate concern to farmers. When a farmer can send 100 pounds by post, up to 150 miles, there is some object in establishing a direct interchange of business with his city and town customers. Under that limit, it would be difficult and uncertain.

So just at the time when this consummation was looming in the proximate future the Post-Office Committee of the Senate proposed to write into the law that

... there shall be no change in the existing weight limits, rates of postage, or zones of fourth-class mail matter until authorized by law.

Which would have meant that there would be no 100-pound limit for years and years to come. To get a law of that kind through Congress would have proved just about impossible. It took fifty years to get an experimental parcel-post act passed. It has a mighty force of public opinion and political expediency back of it. The country was aroused. But to get the country and the politicians excited over such a detail as raising the weight limit from 50 to 100 pounds would have been a very different matter. In practical experience, to provide that these details could not be changed except by law would have been equivalent to prescribing that they could not be changed at all.

Public Protest Saved the Day

THUS it stood when the committee got the post-office appropriation bill. Smith of Georgia offered the amendment to prohibit changes in weight limits; Bristow of Kansas added to it the "rates of postage and zones." The first is a Democrat; the second a Republican. The committee without dissenting voice incorporated this amendment into the measure, though some of the members are entitled to have it said for them that when the significance of the thing was exposed later they opposed it vigorously.

As soon as the proceedings inside the committee room had become public—and right here it is worth while to say that this kind of business, vitally concerning the most intimate welfare of the people, is done in committee behind closed doors, which it ought not to be—the roar of protest went up from all parts of the country. That was what saved the day. At length the day came for the consideration of the post-office bill, as reported from the committee, in the Senate.

The first fight was on the amendment to prohibit changes in rates, weights, or distances without act of Congress.

By a vote of 24 to 33 the amendment was held to be out of order.

How the Senators Voted

BUT this was by no means the crisis. Mr. Bankhead, who is chairman of the Post-Office Committee and a tory of the tories, just as soon as possible got the floor and tried to get the same result in another way. He offered an amendment providing that none of the money appropriated in the bill should be used to transport fourth-class mail in packages of over 50 pounds. The roll call was ordered on the Bankhead amendment, and this is the way it resulted. For the amendment and against the parcel post:

Bankhead, Brady, Bristow, Bryan, Catron, Clark of Wyoming, Cummins, Dillingham, Gallinger, Hitchcock, Hollis, Hughes, Lippitt, Lodge, McCumber, Nelson, Oliver, Page, Perkins, Ransdell, Sherman, Simmons, Smoot, Stephenson, Sterling, Sutherland, Weeks. Total, 27.

Those who voted against the amendment and for the parcel post were:

Ashurst, Chamberlain, Clapp, Gronna, James, Jones, Kern, LaFollette, Lane, Lee of Maryland, Martine, Norris, Overman, Poindexter, Pomeroy, Reed, Robinson, Saulsbury, Shafroth, Sheppard, Shively, Smith of Maryland, Swanson, Thompson, Tillman, Vardaman, Works, Townsend. Total, 28.

Thus, by a majority of one—just one—that amendment was rejected and a parcel-post victory won.



A fifty-pound limit is too light for this country, Senator

as we all know now. The people in every locality discovered that they were getting what they wanted: good, prompt, and efficient service.

In short, parcel post had made good in the biggest kind of a way, and the theory of administrative adjustment of rates and regulations had been approved by the roughest of experience. Then came the assault on the very vitals of the system.

The post-office appropriation bill passed the House of Representatives early in the present session and went to the Senate. There it was referred to the Post-Office Committee. There an amendment was proposed and without a vote in opposition was incorporated in the measure. It was just a few innocent-looking lines at the end of a section. It said:

... and provided further that there shall be no change in the existing weight limits, rates of postage, or zones of fourth-class mail matter until authorized by law.

Those few words were the shackles that were to be riveted on the parcel post. It was known that while the Post-Office Department had already made a number of changes in these regards, all of them working excellent results, it had yet more of them in prospect. The weight limit started at 11 pounds when the law passed, and had been raised to 20 pounds for the entire country. More than that, on January 1, 1914, experiments began with a weight limit of 50 pounds for the first two zones; that is, the zones of 50 and 150 mile distances. The first two zones had been, in effect, consolidated by an order making the rates uniform for both of them, because experience had shown that this procedure seemed highly desirable.

Beyond that still, the Postmaster-General had issued an order that after March 16, 1914, books would be included in fourth-class matter, to be carried by parcel post. These had been specifically excepted in the original law, but experience again had convinced the people in charge of the service that books ought to be taken in as mailable under parcel post.

Penelope and the Convict

By Helen I. Castella

Illustrated by R. M. Brinkerhoff



"Keep perfectly quiet, they're after you!"

IT WAS just exactly two hundred dollars that I needed, for my mind was made up to have a year at the School of Arts and Crafts, and my mind is like Aunt Minerva's, once made it is hard to unmake. And it seemed a sort of coincidence that just at that time there should appear on nearly every tree and hitching post throughout the country a notice offering two hundred dollars for the arrest, or any information leading to the arrest, of a slim, dark-complexioned young man with excellent teeth and a habit of smiling most of the time, who was wanted on a charge of burglary and, incidentally, almost killing a mau.

If I only could get that two hundred dollars we shouldn't have a thing to worry about, for my schooling would be all provided for, but Aunt Minerva seemed to regard it in the light of a joke, and insisted that we had better stick to our original intention of taking a boarder. In fact, as a result of advertising, we had already secured a young mau who was likely to come at any moment and occupy our spare chamber upstairs. He was to pay us seven dollars a week, and had agreed to stay four weeks, and that of course would make twenty-eight dollars, and there would be some peaches to sell, and the fall apples, and maybe a couple of dozen eggs and a pound of butter each week.

"Get together all the mouey you cau and I'll help you out," said Aunt Miuerua. "For dear kuows, I don't want you shall go through life as I've done, having ambitions which have never been realized. I'm not a haud to complain, but I'm telliug you that all my life I've felt the call in me to go to China as a missionary, and while of course fifty-eight isn't in any ways old, if we're to judge by that picture of Sarah Bernhardt which was in 'Saturday's Review,' and who we are led to believe, instead of spending her time putting up the jellies and preserves, and making ketchup for the family's use during the winter, prefers to play lawn tennis and take a five-mile walk every morning, which is as far as it is to Sam Perkin's store and back again, but Sarah Bernhardt never had the pleurisy like I had it, seven years ago this past fall, or she would appreciate a comfortable rocking-chair in the kitchen, with a good rag carpet under her feet."

Do you know, what Aunt Minerva said about China fairly gave me a chill down my spine, reminding me as it did of a prank I played once? There was a girl at school about three years ago who had gone to a masquerade dressed as a Chinaman, and I borrowed her suit and never said a word, but put it on and went around to the back door!

Aunt Miuerua was in the kitchen, beating two eggs in a bowl, with a cupful of sugar, for a tea cake.

"Glood ev," I said with a bow, and I had the pigtail tossed over my shoulder so she could get the whole effect.

"Lil' ledde gli' me washee?"

Aunt Minerva is a large woman,—she weighs over two hundred,—and I thought the "little lady" would please her, but she gave me the most awful look, and the bowl slipped through her fingers, and the eggs and the sugar and the pieces made an awful mess on the floor.

In thinking about it afterward it always seemed to me that for a woman of good, sound common sense Aunt Minerva was awfully worked up over one poor little Chinaman, but I believe now that she had been dreaming about Chiaua all these years, and, for an instant, thought she had been transported over there.

Well, as my cousin Lemuel says, I "beat it" good and quick, and I gave Aunt Minerva plenty of time to repair damages and to make another tea cake, if she felt fit, before I came slowly around the side of the house, an American again, so deeply engrossed in my algebra I could hardly look up.

Aunt Minerva didn't say anything until she passed me my cup of tea, and then she wanted to know if I had heard anything of a Chinamau staying in the village, and I looked surprised, and said truthfully enough that I hadn't.

I've never alluded to the matter, for somehow I've had a feeling that perhaps it would be best not to. That yellow bowl had been in our family for years!

Now to get back to the story. It was on Wednesday afternoon, and I had been over to Luella Harcastle's,

Christiau Endeavor, and there's a lot goes on in our village if you keep your eyes and ears open all the time, I stayed a little later than I should have doue. One thing too, Luella and I were almost sure that Gueuuevie Falkner was in at Briggs's, which is the next house to Harcastle's, for we both were certain we saw a pink dress from that little widow in the hall by the parlor, and there isn't a person in the village who has a dress just that shade but Geneuuevie. Of course if she was in there with Mildred Briggs she couldn't get out unless we saw her, for no Falkner ever went visiting anybody and left by the back door.

But she didn't come out, so we decided it was only a reflection made by the sun, and anyway, come to think of it, Gueuuevie wouldn't wear her third-best dress visiting when we always kept that for going to town and the like. We wore our second-best visiting and Sunday evenings, and Gueuuevie's second-best was the lavender, made over from the year before.

So after we said good-by I took the short cut through the woods, for I remembered that Aunt Miuerua was going to the Mite Society meeting, and I was supposed to have supper ready when she got home. The path leading through the woods runs almost from our back door, and is never much frequented, excepting by boys who go there to bathe in the pond. The woods has always been quite an attractive place, for at one time it was supposed to be rich in ore of some kind, and away up among the trees is a little log cabin which I suppose was built to keep tools and so forth in.

Well, I was hurrying along, attending strictly, as I always did, to my own affairs, when I stopped a moment to read one of those signs announcing the two hundred dollars' reward, tacked on a tree directly in front of me, and then—my feet seemed glued to the ground upon which I stood, for there he came—the criminal! Running toward me, his striped suit on, and a pair of light flannel trousers, which he had probably killed a man to get, drawn over the stripes and fastened around his waist with a belt!

It was just for a second that I was paralyzed. I am telling you the truth when I say that this convict didn't look like a man at all to me. He looked like a two-hundred-dollar bill, and the School of Arts and Crafts, and all the rest of it.

Down the path I sped to meet him, the trees shielding me, and my footsteps making no sound in the soft earth, until I was almost abreast of him, when I sprang out from the trees and grabbed his hand firmly in mine.

"Come with me! They're after you!" I whispered, dragging him along. "They're after you! Hurry!" "Huh?" He seemed bewildered, but came readily enough, and both of us rushed, pell-mell, until we reached the log cabin. In fact, he was going so fast he almost fell headlong.

"Keep perfectly quiet, they're after you!" and I slammed the heavy door in place and shot the bolt, which, for some reason, had been placed on the outside.

"And they'll get you too!" I told myself, jubilantly, as I skipped, like a scared rabbit, toward home.

Now Mr. Briggs was the squire, and I would have to go all of that two miles and a half again, for not for worlds would I have taken that short cut through the woods! But I felt that no one, not even Aunt Minerva, must get a suspicion of this until after supper, when I could sneak off quietly; so I scurried around and got the fire started and the kettle on, and had cut off a slice of ham, and brought up the cold potatoes and a jar of damsons and one of apple jelly, when I heard a sound in the front room.

"Back again, Aunt Minerva? Supper is almost ready. I'm making plenty, for I know what Mite Society refreshments are. Do tell me if Mrs. Washington Thorpes has had her hat trimmed over again! I should think she'd be almost ashamed to—it'll make about the fifth time."

I peeked through the door to see if Aunt Minerva had worn the black-and-white polka dot again, when I thought the gray muslin looked more up-to-date—but instead of Aunt Minerva it was the new boarder I had been talking to! He was standing over by the door, the funniest expression on his face!

WELL, I tell you I whisked off my apron and dusted a little cornstarch over my face (I think any mau dislikes a shiny nose), and went into the sitting-room holding out my hand.

"Of course you are Mr. Brinkle who is coming to board with us! Do sit down and let me make you welcome!" Aunt Minerva has always said I have a great deal of poise for one so young. "My aunt has gone to the Mite Society meeting, but she will be home very shortly; in fact, I am expecting her any minute. Just make yourself comfortable and right at home."

You see, I didn't want to show him up-stairs to his room before Aunt Miuerua came home, for Miss Minetta Williams, my Sunday-school teacher, has always taught us that we must guard our good name very carefully, and be sure to follow in the straight and narrow path which is laid down by convention. So we sat there and talked, and I suppose I was really more confidential than I should have been, for we got to laughing over some of Aunt Minerva's ways which the neighbors think are eccentric.

She has a fashion of hiding the silver, even if she only goes out for an afternoon, and it was he who found the spooos underneath the afghan, and he very

obliquely offered to help me hunt the rest of the silver and valuables. He seemed so interested in all our things, and knew right away which was solid and which was not (although I must say we have very little of the spurious kind), that I went up-stairs and brought down for his inspection some of our real treasures: Aunt Miuerua's set of sapphires, and Grandfather Roger's solid gold watch, and even my gold beads, which had descended to me straight through four generations.

Well, he certainly did finger those things as though he loved them, and I thought he was the pleasantest young mau I had ever met, and I knew Aunt Miuerua would be charmed with him.

After a while he seemed to get restless, and started walking around, several times through the sitting-room, and through the dining-room and even the kitchen, and when I asked him how he liked the house he said that it was "nice."

But when he opened the door of the long dark closet in the hall, which is a sort of catch-all for everything which we do not wish spread out for the too curious gaze of our neighbors, I own that I felt a little indignant. It was on the tip of my tongue to say that while we expected anyone boarding with us to make himself at home, yet I would suggest that there be limitations to his curiosity, when he said, with such a peculiar inflection to his voice, "Why, what is this in here?"

Naturally I hastened over to see, for everyone who knows us is aware that our lives are as an open book, and there didn't seem to be a thing out of the way. There were the rubbers standing neatly on the floor, my mackintosh hanging over Aunt Minerva's plaid shawl, and the usual miscellany which, as I said before, we hoped to keep from the prying eyes of our neighbors. The polite young man stood aside to enable me to see better, as I supposed, and it was not until my arms had been pinned together and I had been given a violent push and the door slammed upon me that I realized I had been tricked, and by the very same method that I had used for that criminal up there in the woods!

Well, I beat and I screamed and I pounded, but of course it was no use, and the moments I had to stay there seemed like hours, and I could smell the ham and the potatoes burning to a crisp, and, after what seemed like ages, I heard Aunt Minerva's voice. "Laud sakes alive!" And those pauses went whizzing off the stove in less time than it takes to tell it.

BY THE time Aunt Minerva had found out where the sounds came from, and had liberated me, I was in hysterics, but from the way I dashed past her and into the sitting-room she thought I had taken leave of my senses.

"Oh, they're gone, they're gone, Aunt Minerva!" I screamed. "The spooos are gone, and the sapphires, and the silver finger bowls, and Grandfather's watch, and my beads, and even the gravy ladle! Oh! Oh! Oh!" And I threw myself on the sofa in a paroxysm of grief.

"What are you talking about? What do you mean?" Aunt Minerva's hands were shaking so she couldn't find her hatpins, and when finally she got them all out but one her bonnet wriggled and fell over so it hid one eye, and she mussed her hair all up running her fingers through it.

"What do you mean by saying the silver is gone? Who has taken it?"

"The new boarder!" I gasped. "He came while I was busy getting supper, and he was so pleasant and affable, and he said he was quite a collector of antique silver, and he wanted to see all our things, and I even brought down our jewelry. Oh, what shall we ever do? Had I better run all the way to Squire Briggs's this very minute?"

"Wait a minute till I sense what you've said." Aunt Minerva's voice sounded like vinegar. "I don't believe the young mau whose name is Mr. Brinkle ever took them things at all, for I was sitting here talking to him for almost an hour, thinking you surely would be home every minute, and I never did go to the Mite meeting till just as he started to go swimming. He had on his bathing suit and a pair of flannel trousers, and I showed him the path up through the woods. I never will believe that young man is a thief, any more than you or I!"

"Oh, Aunt Miuerua!" I fairly screamed. "Was his bathing suit striped? Oh, I met him, and I thought he was the convict that they're offering the reward for, and I've got him shut up there in the toolhouse! Locked in so that he cannot possibly get out!"

"What?" And this time Aunt Minerva screamed at me. "What? You've got him locked up for a convict? Penelope Rogers, you'll laud yourself in jail one of these days, you mark my words!"

Just at that moment I saw something coming up our path, and I made for the kitchen where I could watch through a crack of the door. You needn't tell me those stripes didn't look like a convict's suit, and he had a black eye and scratches all over his face, and his flannel trousers were almost hanging in shreds.

"Where's your jail?" he yelled at Aunt Minerva. "I've caught the fellow the big reward's out for. He's got a whole pile of silver with him now, and some jewelry too, but I didn't take time to examine it. He must have thought that log cabin in the woods was empty, especially on account of being bolted on the outside, for he came running into it just like a pet lamb. I was watching through a peephole, for I expected that crazy girl to come back and set fire to the shack. Ha, ha! I never dreamt she was putting me in the way of landing two hundred dollars that easy! Maybe I oughtn't to call it easy, though," looking down at his clothes, "for he put up a pretty stiff fight. Say, who is the girl [CONTINUED ON PAGE 20]



OF COURSE I did not sleep much the night after Rosaltha ruined our Valentine party by clipping off Pearl's curls. My chief chagrin was due to the fact that I was afraid she had cut short forever my career as a reformer in Fieldtown. After I had worried intolerably over the possibly resultant failure of the Mothers' meeting which Mr. Comstock was going to call for my benefit on Monday evening, I was suddenly exhilarated by the realization that if I succeeded after all in making a presentable child out of last night's culprit I should establish a very big claim indeed to the faith of the outraged community.

It was nearly morning before I decided just what my line of conduct toward the child should be. Punishments are seldom of any value, except for the one case in hand, and I wanted to be constructive—to build a future for Rosaltha. She needed, not humiliation, which had been the atmosphere of her life, but self-respect. In realizing that, I became vividly conscious of a principle too often ignored in child-training, that different children may perform the same act from totally different defects of character. For instance, if Thomas had done what Rosaltha did it would have been to attract attention to his own smartness, and he would have needed a punishment aimed at the reduction of his vanity, whereas Rosaltha had sinned through a lack of self-respect and sense of responsibility in a family function, and needed those qualities increased. On the spot, I decided to omit punishment altogether, and devote my energies to making of her the kind of little girl who would look back upon the deed with utmost shame.

Reformed by a Pair of Scissors

Then a second idea occurred to me. Perhaps she had just arrived late at the cutting age. From three to five years old the children of my experience have all adored the combination of scissors and some fabric to cut with them. At first just the joy of seeing the floor accumulate shreds of paper has seemed sufficient, just as the debris of hair gave joy to Rosaltha. Then they have worked on, to the formation of animals, dolls, or furniture. I therefore made a second decision: to keep Rosaltha supplied with scissors and paper and observe what happened.

She was a much-bewildered little girl when she found herself upon just the same basis in the family as before her misdemeanor, except that Ruth seemed more inclined than ever to regard her as an invalid, and the boys stared at her a little more curiously.

These actions of my children—which were instinctive with them, for I had declined to discuss the episode—were inspired by an intuitive sensing of Rosaltha as a completely unsocialized creature. No highly trained pedagogue could have arrived at this just conclusion more swiftly and luminously by the avenue of reason than these babies did by the avenue of instinct.

The inexorable justice of the reactions of children on one another constitutes the most admirable of all educations for the children. It also conveys the most enlightening suggestions which observant elders receive.

When she was first given the scissors Rosaltha suspected a trick, and exhibited both anger and fear. To these emotions I paid no attention. After I had gone about my work silently for an hour I returned to the room where I had handed them to her. There I saw a carpet of fine paper clippings spreading from end to end. In the middle of it sat Rosaltha, rhythmically opening and closing, closing and opening, the incisive edges of her weapon against the crisp, fragile body of a newspaper which dissolved at her touch.

Her evolution from a destroyer into a creator occupied about two weeks. First she varied her long strips by cutting squares and circles. Then she began to imitate forms such as tables and chairs, until finally she attempted a portrait of our cat, which Mark hurt her feelings by taking for a turtle! Well, we all cut. The rhythm of scissors at work gradually assumed a sort of tune in my brain, as that of revolving car wheels will after constant traveling. I dreamed scissors, which became dragons and bit my head off.

In the meantime the Mothers' Meeting took place. I went to it armed with a paper prepared in my most cautious language, but I was greeted by such a large

The Child at Home The Mothers' Meeting and Montessori

By Helen Johnson Keyes

gathering, so full of interest and bubbling over with inquiries, that I began talking and answering questions as I went up the aisle, and I merely continued talking and answering them when I stepped upon the platform, forgetting my paper altogether.

Ann sat in the front row, her big, intense eyes reading mine with that absorption which makes you feel as if it were a religious duty to minister to her. Back of Ann, but with her face entirely visible to me, sat Mrs. Pettigrew, who has the sharpest but also the most honest tongue in the village. She is never afraid of the results of thinking.

Mr. Comstock sought to bring some formality into the meeting by introducing me, and in doing so he stated my dilemma. Was it right to take children out of their own homes and away from their mothers for the greater part of every day? What did they think about it?

Mrs. Pettigrew sprang to her feet: "If mothers are incompetent, as most of them are," she cried, "it's the greatest blessing that can be done the child and them. Most of us are too busy to train our little children at all: we just slap their clothes on them, put their food in front of them, and run off to our other work. If there's somebody who'll train the babies to play and do things for themselves, why, it will be just as big a blessing as school is!"

This seemed to be the feeling of the entire meeting. William Bellows added the thought that there are only two kinds of mothers—bad ones and good ones. The bad ones, he said, would be glad to get rid of their children, and the good ones would be grateful to place theirs where they could have the best training. In both cases the children would profit by the "Children's House."

Then everyone began to ask me questions about the great Italian teacher, and I fell into a talk a good deal like what follows.

Montessori's Message to the American Farm

"Maria Montessori is the only child of Roman parents of the middle class. At seventeen she was extraordinarily beautiful, and this fact made even more shocking and incredible to her family her resolution to study medicine. If our daughters decided to be miners or sailors we should not consider them more insane than the parents of Maria Montessori considered her. However, the girl entered the College of Medicine of the University of Rome and was graduated from it—the first woman to do so. She had become particularly interested in children's diseases, and was appointed assistant physician to a clinic for the feeble-minded. In studying these children the idea grew upon her that their defects could be remedied only partially by medicine or surgery, and that education must do the rest. While carrying on a busy practice as a physician she also devoted an enormous amount of time to observing these defectives and studying the work of men who had attempted the education of imbeciles. She finally evolved a manner of teaching them, the result of which was that they passed the regular public-school examinations with greatest ease and higher percentages than normal children. She then realized that this was an irrefutable proof that normal children were not educated as they should be, or they could not be equalled by defectives.

"About this time she was asked to take charge of a tenement-house school to be composed of the normal children under school age of mothers obliged to go out by the day to work. She gave up her practice of medicine and became an educator, the greatest teacher of little children whom the world has yet known.

When mothers talk together there is generally a host of questions to be asked. Any inquiries addressed to Mrs. Helen Johnson Keyes, Farm and Fireside, Springfield, Ohio, will receive attention and personal replies.

"The results obtained by her methods have startled the world. Many of these results, however, upon which we place such a heavy emphasis, such as the power of her four-year-old children to read, and to write absolutely symmetrical hands, the great

teacher herself justly places less value upon than she does upon the ability of these babies to see discriminatingly, to hear accurately, to co-ordinate their mus-

cles and control their bodies. Of course the reading and the writing are the more or less incidental flowering of all this preparatory education. The real miracle of the method lies in the basic fact that what is learned is learned instinctively. It differs from preceding methods in the principle that nothing is taught the children by direct instruction; instead of this the children are supplied with toys or work designed to set in motion the instincts belonging to their ages. These instincts are the fulcrums, and the function of the teacher is no longer to instruct but to stir and guide these instincts by supplying them with means to express themselves.

"There are many technical terms attached to the playthings or 'materials' of this system which are far more difficult than the thought underneath them. To the Italian these Latin words are of course everyday, undress terms, but to us they have a flavor of dictionaries and superwise methods, altogether false to the simplicity and naturalness of the devices. As soon as one realizes this, one sees, too, how many of the technical playthings devised for the children of crowded city tenements might be supplemented by the natural playthings lying all around country children. Indeed, these always have been used by country children, only without a realization of their significance, and of course without the utilization of anything like their full value or any ordering of them into a system.

"Now, it is right at this point that it seems to me that Fieldtown has a big chance. What I want to do is to gather children between three and six years of age in my house five days in the week, between ten and four o'clock, to see what fruit these new ideas can be made to produce in the country.

"It is my belief—and I say it solemnly, after much thought—that this education properly given would go far toward solving the question how to keep children on the farm. It would do so in two ways: by making their senses keener for the vision of country beauty, and by developing, through its intensely practical and utilitarian methods, a capacity to perform easily and perfectly those special tasks which belong to the farmer and the women of his family. Yes, it really seems to me that Maria Montessori's method, evolved in the crowded tenements of Rome, has its very biggest message for the farms of the United States!"

Fieldtown gave a marvelous response that evening to the message of the Italian educator. Fourteen children were enrolled on the spot, and I agreed to open the class just four weeks later.

EDITOR'S NOTE—All inquiries will be answered personally. They should be directed to The Fireside Editor, and contain a stamped, self-addressed envelope. If correspondents who have already written will kindly comply with this request they will receive answers at once.

For Deep Stains

By Helena A. Korte

EXPERIENCE has taught me that the use of sandpaper or anything similar, will quickly injure enamel, causing a roughness and increased difficulty in keeping the enamel white. A good quality of sand soap is just as effectual, and will not hurt the enamel if rubbed on a cloth and used with plenty of soap.

Sand soap used on a cloth wet with kerosene oil will remove most stains, and even incrustations. Recently, finding that iron and other mineral stains, caused by water left standing, were not wholly conquered by this treatment, we dissolved oxalic-acid crystals in a little water and applied the solution with an old dish mop, as it was too strong for the hands. The result was entirely satisfactory. The bathroom furnishings looked like new.

Too frequent use of the acid might injure the enamel, but occasional use will not. An oxalic-acid solution is what plumbers use for deep, obstinate stains.



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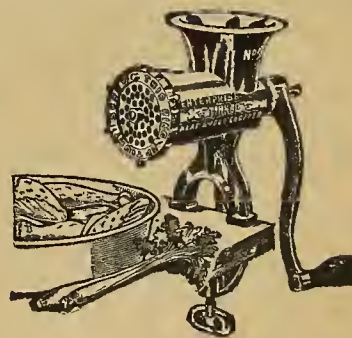
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Meals that are Easier and Quicker to Get

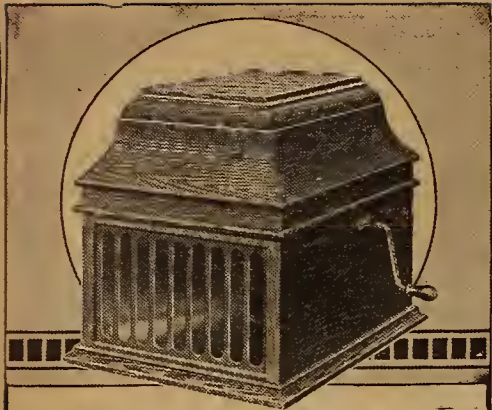
The splendid dishes which can be prepared are only one reason why there should be in every farm kitchen an

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CHILDREN

Easter Play—Work for Little Fingers

By "Big Sister"

DID you ever help to make a "duck house?" No? Here is a chance to make one all by yourselves. Little pasteboard boxes may be used, but this one is made of two wooden safety-match boxes. Take out the little inside boxes and glue the outside ones together. Put them under a book while drying, so they will stick tightly together. We used a little scrap of red velvet to cover the boxes with, and cut first a strip just long enough to reach around three sides of the two boxes but not the bottom, then there was a scrap left for the ends of the drawers or inside boxes. With a toothpick spread glue over one end of each drawer; then scrape off all you can, so it will not soak through the velvet; then press this end onto the velvet until it sticks fast, and then you can cut the extra velvet away from the edges with your sharp scissors. Glue a piece of paper or thin cloth on the other end of each drawer, trimming it very close, as a very little edge sticking up will keep these tiny drawers from slipping in and out. Put a little bright paper in the bottoms, also. Turn them over and glue a strip of red baby ribbon the whole length of the box, and turn under a little loop in front—with more glue—for a pull. When the other boxes are dry enough to handle put glue on all the edges especially, so that the covering will not work loose and get shabby. Then scrape again, and press the velvet into place, making it nice and smooth. If it is too wide you can trim off when it gets dry. If the edges of your boxes are white you must color them with crayola before you put the cover on. Put a piece of paper on the bottom, and the "duck house" is done when you have perched a little Easter duck on top of it and put two or three more in the park, which is a piece of pasteboard covered with green paper and fenced in with a drawing-paper fence.

to the thick paper, and paste all on the card in the colored space. Print your Easter greetings on the card and make some more for all of your friends, for they will be delighted with these little favors which you have fashioned with



An easter duck house

your own fingers and so woven time and patience and love into them—things that all the money in the world cannot buy but which add value to the gift.

The Years Between

By Anne Porter Johnson

THE schoolhouse was a huge affair, And built right up-to-date; It towered at least four stories high, I'm sure—when I was eight. The windows were of monstrous size, The cupola was great; The yard was, say, a half mile square Or more—when I was eight.

The fence was carved with rare design, And ponderous was the gate; The trees reached clear up to the sky, They did—when I was eight. The school bell had a deafening sound When boys and girls were late; It could be heard for miles and miles, I know—when I was eight.

Sometimes in dreams I take my books, My dinner pail and slate, And scamper off to school, just as I did—when I was eight. But now the whole thing's wizened up, With tears I contemplate The dear old schoolhouse—now so small! So big—when I was eight!

Penelope and the Convict

[CONTINUED FROM PAGE 18]

anyhow? She's as batty as a loon, but you'd have thought I had no sense either, the way I walked into her trap."

Maybe I wasn't indignant! I didn't wait to put any powder on my nose this time, for I didn't want Aunt Minerva to have a chance to explain matters.

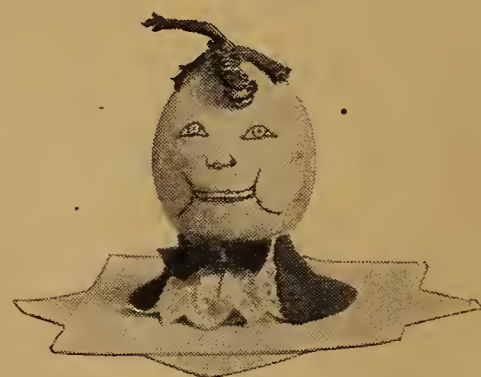
"Pardon me," I said as I entered the sitting-room with as much dignity as I could command. "But I am not at all crazy, as you intimate. It was a very natural mistake of mine to take that striped suit you have on for prison clothes, and I assure you I had every expectation of getting that two hundred dollars' reward myself when I locked you in the toolhouse, for I thought you were the convict."

It was fully a minute before the young man could seem to grasp the significance of what I said, and he kept looking at me as though I were something on exhibition, and between his roars he managed to yell out: "Ye gods! Me the convict! Me? The convict? Oh, if I only had a chance to tell Dad!"

Of course it was very mortifying. Everybody in our village knew the story by the next day, and some of the people acted so silly over it; and as for Ed Brinkle, he insisted on boarding with us for full six weeks, and sometimes I got real provoked at the way he and Aunt Minerva got along together. You might have thought he was an only son. But I will say for him that while I considered him awfully fresh he did act square about the money, for he insisted on dividing up with me, which was more than lots of people would have done. He put his share away towards a motor boat, which it seems his heart was set on, while mine, as you know, represented part of the tuition at the School of Arts and Crafts.

By a coincidence Ed Brinkle's stay at our house terminated the very day I started for New York, and as his home happens to be in that city, more to please Aunt Minerva than for any other reason, I let him assume the responsibility of seeing me safely to the school.

Aunt Minerva said she had a presentiment that I wasn't going through the winter without any mishaps, but she can't help those feelings. I feel sorry for her sometimes. As for myself, I looked forward to a delightful winter, and my anticipations were fully realized.



An easter-egg man

mounted on cardboard, or put in tiny baskets with tissue paper straw, and—but there I ought not have started, for there is no end. However, I did take time to make this cute little "curlicue," which will give you an idea of what you can do with ink and crayola and glue and a few other things.

An Easter Card

Let us make an Easter card before we put the playthings away. If you cannot draw a little chicken about two inches high, find a picture of the one that "has not scratched yet," color it yellow, cut an S-shaped piece from thick white paper and tissue paper—the fancy-paper envelopes photos come in are lovely for the thin piece. Next a piece of stiff paper the size of a post card. If white it should be tinted a delicate blue or other color, putting the color at one side and shading off to the white. Paste the chick on the thick S-shaped piece, lay the tissue over it, and draw a line across the chick's neck on the tissue; then make a jagged cut across this line and slip the chick's head through it; stick the tissue



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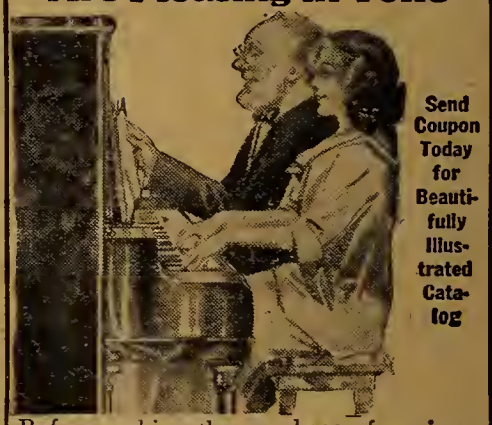


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THE fashion page in the April 11th issue of FARM AND FIRESIDE will be devoted to designs for children's clothes—simple but effective styles for summer weather. Graduation dresses in a variety of charming designs will be illustrated in the April 25th issue. Every girl who is graduating from school or college will find just the designs she wants for her dress shown on this page.

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No. 2522 No. 1

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No. 2520

No. 2352

No. 2452

No. 2519

No. 2451—Long-Shouldered Blouse: Draped Revers
32 to 42 bust. Material for 36-inch bust, two and three-fourths yards of twenty-seven-inch material, or one and five-eighths yards of forty-two-inch material, with seven eighths of a yard of contrasting material, five eighths of a yard of all-over lace, and three and one-half yards of lace edging. Price of this pattern is ten cents

No. 2522—Fichu and de' Medici Collar
Cut in one size only. Material required for No. 1, one-half yard of net. Material for No. 2, seven eighths of a yard of four and one-half inch lace. Cream rather than white is the preferred tone for neck accessories this spring. Sheer laces, fine batistes, and soft nets are the favored materials. The price of this pattern is ten cents

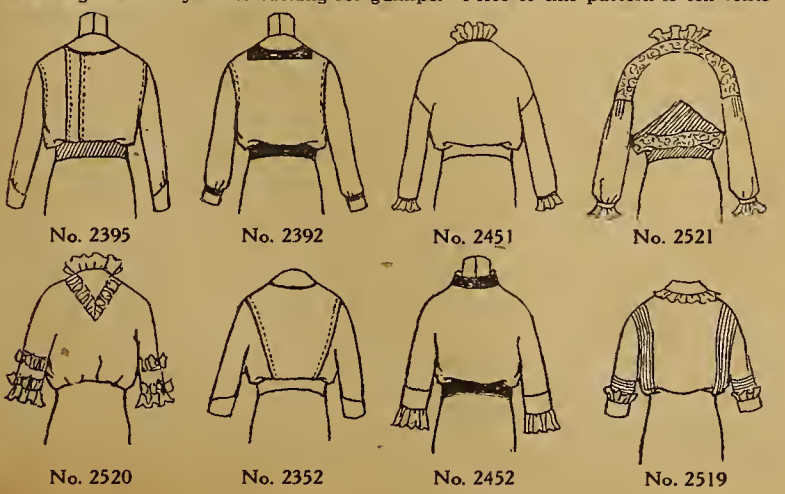
No. 2523—Two Vests with Flaring Collars
Cut in one size only. Material required for No. 1, one-half yard of white net, one-eighth yard of black net, and one and one-fourth yards of black ribbon. Material required for No. 2, one-half yard of crepe. The net vest in a soft creamy tone is a most charming finish for a waist. The price of this set of patterns is ten cents

No. 2352—Surplice Blouse with Kimono Sleeves
32 to 42 bust. Quantity of material required for 36-inch bust, three and one-fourth yards of twenty-seven-inch material, or two and one-fourth yards of forty-four-inch material, with one-half yard of contrasting material for collar and cuffs, and three eighths of a yard of tucking. The price of this pattern is ten cents

No. 2520—Kimono Blouse: Yoke and Neck Frill
32 to 42 bust. Material required for 36-inch bust, three and one-fourth yards of thirty-inch material, or two yards of forty-four-inch material, with one-fourth yard of net and four and one-half yards of ribbon. This is an especially attractive model for a white net blouse with a touch of bright color. Price of pattern, ten cents

No. 2519—Tucked Frill-Trimmed Blouse with Vest
32 to 44 bust. Material required for 36-inch bust, four and one-half yards of twenty-seven-inch material, or two and five-eighths yards of forty-five-inch material. In fine batiste, lawn, mull, or voile this simple model is most effective trimmed with frillings of the waist fabric. The price of this tucked waist pattern is ten cents

No. 2452—Kimono Blouse with Japanese Collar
32 to 42 bust. Material required for 36-inch bust, two and three-fourths yards of twenty-two-inch material, or one and three-eighths yards of forty-five-inch material, with one yard of contrasting material, one and one-half yards of lace for frills, and seven eighths of a yard of tucking for guimpe. Price of this pattern is ten cents



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YOU or some other boy or girl will soon own “Hustler” and his complete outfit, nickel-plated harness and buggy. The Farm and Fireside Pony Club is now open to all boy and girl readers. “Hustler” is the third pony from the left in the photograph above. He is a beautiful light bay Shetland, with a fluffy mane and tail—as full of fun and as gentle as a playmate could be. “Hustler” is about 40 in. high and weighs nearly 350 pounds.

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THREE ponies in all—two besides “Hustler”—will be given to members of the Pony Club. And in addition hundreds of other valuable prizes and thousands of dollars in cash. Now is the time to join. You have just as good a chance to win “Hustler” or one of his brothers as any child in America. But send your name and address to the Ponyman right away.

How to Join the Pony Club

Farm and Fireside is one of the oldest and best farm papers and has already made dozens of boys and girls happy by giving away real flesh and blood ponies. But the Ponyman has never had a finer pony than “Hustler” to give any boy or girl. Write your name and address on the below coupon, and send it to the Ponyman to-day. You will be surprised at how easy it is to become a member of the *Farm and Fireside* Pony Club. The Ponyman will at once send you a Membership Certificate, pictures of “Hustler” and all the other ponies and tell you the easiest and quickest way to become a member of the Pony Club and a sure prize winner.

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You are positively sure of a fine prize, once you become a member of the *Farm and Fireside* Pony Club. Every single member of this remarkable club will be handsomely rewarded for the slight task he is required to perform. Here are some other prizes that will be awarded to Pony Club members, all in addition to “Hustler” and his outfit and two other Shetland ponies.

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| Diamond Ring | Cash Prizes |

Dozens of Pony Winners

Here are the names and addresses of only a few of many boys and girls who have won ponies from *Farm and Fireside*. If you would like to know how easy it is to win a real live flesh and blood Shetland pony just write any of these children.

- Duke—Won by Lurline Smith, Santa Rita, N. M.
- Colonel—Won by John Cutler, Jr., Sharpsville, Pa.
- Comrade—Won by Hugh Metzgar, New Philadelphia, O.
- Daisy—Won by Johnnie Kielen, R. 4, Madison, Minn.
- Beauty—Won by Wilbur Corey, R. 9, Auburn, N. Y.
- Dick—Won by Daryl Porterfield, Emleton, Pa.
- Jack—Won by Virginia Jamison, Iola, Kan.
- Fuzzy—Won by Allen Webber, New Carlisle, O.
- Teddy—Won by Viva McNutt, Vandergrift, Pa.
- Wuzzy—Won by Marguerite Lawson, Hopkinsville, Ky.
- Pete—Won by Lena Purchell, Halcottsville, N. Y.
- Captain—Won by Howard Laidlaw, Walton, N. Y.
- Jerry—Won by Alf Erickson, Stanhope, Ia.
- Spot—Won by Tom Clark Pennington, London, Ky.
- Ginger—Won by Robt. Harrington, Amherst, Mass.
- Billy—Won by Herman Morton, Kernersville, N. C.
- Gipsy—Won by Leona Collins, Mason, Ohio.
- Trixie—Won by Irma Musante, New London, Conn.

“Hustler” is the Prince of Pets

“Hustler” is just as proud and stylish as he can be. The picture really is not half good enough of him, because “Hustler” is a beauty. He is a genuine, pure-bred Shetland pony. You will travel for days without finding his equal, because there are only a few pure-bred Shetlands in America. Once you own “Hustler” you will wonder how you ever got along without him. How your little friends will envy you when you take them out for a ride to the nearest village or to school or a picnic. You would then be the happiest child in all America. and thank the Ponyman for this generosity.

CUT OUT ALONG THIS LINE

Ponyman, FARM AND FIRESIDE
Springfield, Ohio

Please tell me all about “Hustler,” his two brothers and the other prizes. Also how I can win “Hustler.” I do not own a Shetland Pony now, and would like to join the Pony Club.

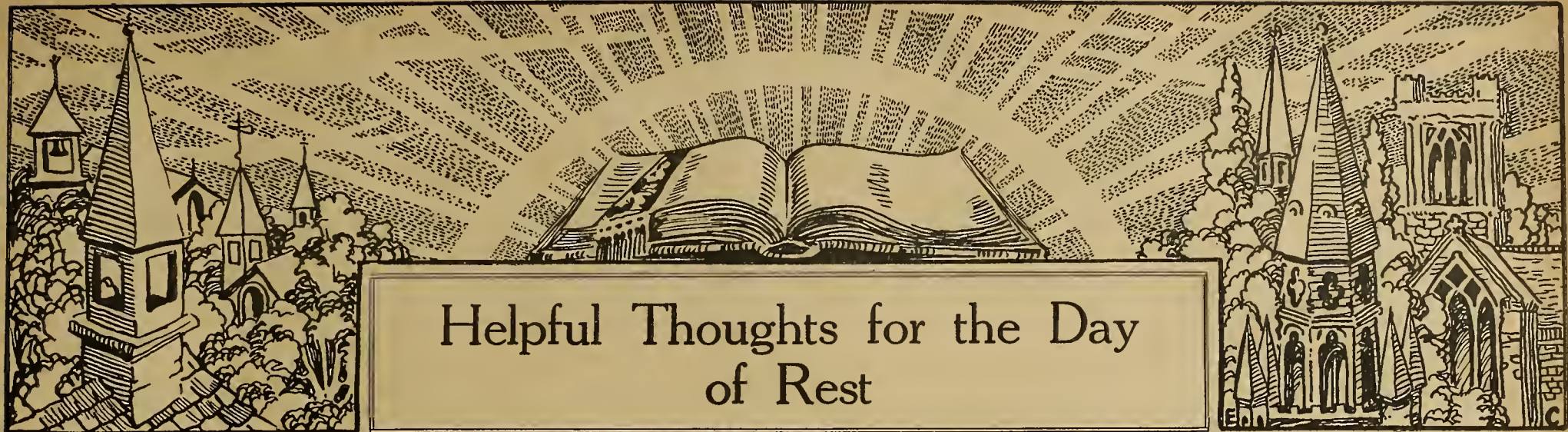
My Name _____

Street
or R.F.D. _____

City
and State _____

Date _____

← Mail This Coupon To-day



Helpful Thoughts for the Day of Rest

The Power of an Idea

By Richard Braunstein

THE world of ideas doesn't bulk as large as the world of flesh, but it lifts more. Behold a 200-pound laborer, with pick and shovel and chisel and hammer, quarrying the rock with slow and tedious process; and behold a 100-pound man with a stick of dynamite and an idea, and notice the difference in the work accomplished when the day's work is done. Once men swung the cradle among the golden wheat heads in July, and other men came on to bind the golden sheaves. Then ideas, like fairies, leaped the fence and sent the steam binder with the force of fifty horses into the field, cutting and binding, and threshing and winnowing, and bagging and loading the wheat, while the farmer rode upon the engine seat. The difference was the power of an idea.

When our forefathers came to this country in the painfully slow days of the sailing craft they were many weeks in crossing. Now it is possible to leave Liverpool on Tuesday and be in New York City in time for church on Sunday.

Let Us Think

Every great invention existed first in the mind of the inventor. The Clermont's wheels revolved in Fulton's brain before they churned the waters of the Hudson. Telepathy sent a wireless message from the brain of Morse before telegraphy flashed its first laconic message between Baltimore and Washington. Edison saw things in the daytime long before his inventive genius enabled other people to see things better at night. The Titanic's engines hummed the ocean's pavement to the ambitious dreams of Ismay before they drove her forward to her burial in the caverns of the sea.

Every great sculptor, artist, or musician must have been a poet first. A poet

is a maker—a maker of inchoate substances into lovelier and livelier forms. The angel in the rough stone is first of all an angel in the sculptor's brain. Before man was made in the image of God he existed first in the thought of God. If we are God's poems God himself must be a poet. The world is simply God's thought, materialized, incarnated, translated.

Dr. W. T. Dawson says: "To be a young man or woman is to be a millionaire in hope. A nation's future is with her young people, for what the youth of twenty thinks the nation will soon think." Therefore it is well that we teach the rising generation to think. It is well that we lay extra stress upon ideas. The great American novel has yet to be written; the greatest painting has yet to be created. Great buildings have to be erected, and marvelous feats of engineering skill are to be accomplished. The world waits for the person with an idea. We are looking toward our rising generation, for in this direction lies the hope of the future. The great questions of the day, the moral issues involved, who shall solve them? The great sermons that must be preached in order to turn rebel hearts to the Father, who shall preach them? Christian American homes, who shall make them? The abandoned farms of our country, who shall reclaim them? Who is sufficient for these things? The young men and women with ideas.

Quit you like men, be strong;
There is work to do;
There's a world to make new;
There's a call for men
Who are brave and true;
On! on with a song!
Quit you like men, be strong;
There's a year of grace;
There's a God to face;
There's another heat in the great world
race;
Speed! speed with a song!

What Are the Big Things?

By F. A. Nisewanger

I HAVE been thinking about a remark that a woman caller made the other day. She came in breezily from a brisk walk, glanced accusingly at a doily in my hand, and announced:

"There is the reason that we women, as a sex, do not do bigger things! We fritter away our time on a smattering of little things—a bit of embroidery, a daub of paint (a Christmas sketch was at that moment drying on her easel), a few stories or articles, a little music and study, and so on. Men do not live and work that way. They start for some worth-while point and forge straight ahead, scorning little side distractions. And men do things—big things that count for something."

There is a good deal of truth in it,—isn't there?—but the situation offers compensations after all. Taken all in all, I suppose there are not nearly so many big women, with big public records back of them, as there are men; but in the front ranks of scientific, artistic, literary, and most material progress there are found enough women to demonstrate the ability of the sex, and there is, after all, a wonderfully appealing picture in that of the home-maker who can sing and play even a little for her family and friends, who paints and embroiders a little, and is tasty in home decoration.

One Bachelor's Ideal

In fact, there is a distinct need of a lot of these comfortable small things to fill in the chinks and make a solid and safe structure of life. Bricks do not make walls without mortar to hold them together, and the bigger the man the more he respects and appreciates the multitudinous small things that go to make up a busy, congenial home life.

Perhaps you noticed the young bache-

lor, who made quite a hit with the readers of a prominent woman's paper with his theory of the ideal married life. This is about what he said: "When I marry, my wife shall be as untrammelled as I. I shall take it as entirely matter of fact for her to come into my study any evening, gowned for a journey, and remark, 'I must catch the 10:45 for Philadelphia, John. I'll wire you in the morning.'"

The Home Ideal

The theory is perfect—isn't it?—from the standpoint of the equality of the sexes? I, too, believe in woman's suffrage, because it seems to me that the world needs her much the same as does her home, to help make it a clean, fit place for her boys and girls to live in; but that bachelor was a little too much for me—and I couldn't help feeling that he was a little too much for himself, for as a general thing I should expect a little more warning than that before my husband rushed away to a distant city.

In thought it might be all right for this bachelor's wife to "wire" him from Philadelphia "the next morning," but in practice I suspect that he would be wiring her at home after a few such experiences. If not, what "John" wanted was not a wife and home, but a boarding house, a club, and a congenial bachelor friend to theorize with when he felt in the mood, for his scheme meant entirely separate interests and a childless home.

We cannot live for this week or this year alone. Consciously or unconsciously, we are living for thirty or forty years from now, and thirty or forty years from now we shall largely be living in to-day through memory. "Big men and women" will then want their grown children around them, and will want memory's pictures of hours together with little children, with most of the evenings at home instead of on the "10:45 for Philadelphia."

Eighteen Three-Dish Menus for Clubs—By Elizabeth L. Gilbert

Recipes for the Menu

GELATIN PEACHES—The first menu is easily prepared. Use any gelatin, molding it in small cups. Turn it out and surround with canned or ripe peaches, peeled and halved.

Use any good cake recipe, baking the cakes in gem pans and icing them to match the color of the gelatin.

JELLIED CHICKEN—Prepare chicken as for stewing. Cook until it slips easily from the bones, and see that you have one and one-half pints of liquor left after removing the chicken. Take the meat from the bones and cut into small bits, season with salt, pepper, and celery seed. To the liquor add one tablespoonful of butter and one of gelatin; pour over the shredded chicken and set in a cold place to harden.

SANDWICHES—These are to be cut in triangles, buttered, and dressed lettuce used with the white bread, chopped nuts with the brown.

APPLE SALAD—For the salad, remove the tops from perfect apples (red and tart). Take out as much apple as you can and leave a solid shell. Chop the apple, mix with nuts and chopped celery; moisten with salad dressing and pile lightly in the apple cups.

BEANS AND BISCUIT—A big pot of beans, done when the guests come, easily keeps hot until lunch time. The tiny tea biscuit may be baked at noon. Just before serving time, moisten the tops of biscuits with milk, and reheat. These are just as good as if baked the last minute.

HAM SALAD—Chop together one pint of the best lean, cold boiled ham, one small head of white cabbage, four hard-boiled eggs, two large pickles. At serv-

ing time pour over it the Salad Dressing given below, very cold.

SMALL PIES—Make a rich pie crust, line gem pans with this, and fill with a good pumpkin pie mixture. Bake until they puff up and brown. A spoonful of whipped cream at serving time is a charming addition.

SALAD DRESSING—One cupful of good vinegar, one tablespoonful each of sugar,

PIMENTO FILLING—Add to the above salad dressing recipe six hard-boiled eggs, chopped, ten cents' worth of cheese, chopped, and a ten-cent can of pimentos, drained and chopped. When cold spread between thin buttered slices of day-old white bread.

BEEF SANDWICHES—For these run sufficient cold boiled beef through the meat chopper, and to it add enough salad dressing to moisten.

Suppers That Make the Mouth Water

1—Gelatin with peaches; small cakes; coffee.

2—Jellied chicken; lettuce with salad dressing; thin bread and butter.

3—Brown-and-white sandwiches; apple, celery, and nut salad, in red apples; malted milk.

4—Baked beans; small hot biscuit; coffee.

5—Ham salad; buttered wafers; tea.

6—Small pumpkin pies; mixed nuts; milk.

7—Cheese straws; cocoa; mixed home-made candy.

8—Scalloped oysters; pimento sandwiches; coffee.

9—Beef sandwiches; junket; coffee.

10—Potato salad; nut brown-bread sandwiches; tea.

11—Frozen whipped cream; cake; coffee.

12—Cherry gelatin; mixed sandwiches; cocoa.

13—Small mince pies; buttered pop corn; milk.

14—Baked potatoes; small corn "dog-ers"; green-gage plum ice.

15—Canned peaches; gingerbread; coffee.

16—Chicken salad; small rolls; tea.

17—Deviled eggs; lettuce sandwiches; ice cream.

18—A bag lunch.

salt, and butter. Bring to boiling point and stir into it one beaten egg, one-half cupful of milk, and one level tablespoonful of flour made smooth in milk. When cold add one cupful of stiffly whipped cream.

JUNKET—The junket is made by warming milk slightly and adding to each quart or portion of a quart one tablespoonful of liquid rennet mixed in gently without stirring. Flavoring can be added according to taste.

BAKED POTATOES—Bake the required number of potatoes until done, then carefully remove the contents from a slit along one side. Mash, season, and beat until light, return to the "shells" and serve at once.

CORN BREAD—One tablespoonful of melted lard, one pint of sweet milk, one beaten egg, two tablespoonfuls of white flour, two teaspoonfuls of baking powder, one teaspoonful of salt, enough sifted corn meal to make a batter that will pile up on the spoon. Bake in gem pans to a golden brown. Serve with butter.

GREEN-GAGE ICE—One quart of (stoned) canned green gages, enough sugar to make very sweet, one-half pint of water in which has been dissolved one tablespoonful of gelatin, the beaten white of one egg. Freeze as you would ice cream and serve in sherbet cups.

GINGERBREAD—Two eggs, one cup of butter, one cup of brown sugar, one cup of Orleans molasses, one cup of sour milk, one teaspoonful of soda stirred into the molasses, four cups of flour, two tablespoonfuls of ginger, adding two teaspoonfuls of baking powder to the flour. When taken from the oven, spread with one teaspoonful of butter creamed with maple molasses.

CHICKEN SALAD—For this, cook a large chicken till the meat slips from the bones. Chop dark and light meat separately; when ready to serve put a tablespoonful of dark meat, then a tablespoonful of salad dressing and a spoonful of white meat on top.

BAG LUNCH—The bag lunch was the crowning event of the year. Each one brought a paper bag with enough of three things in it for one person. The hostess served coffee at this picnic, and we exchanged recipes.

COLGATE'S COMFORTS



From a copyrighted photograph

Out of doors in Winter Time

Jolly hours in the frosty air, the glow of winter's fun, are often followed by roughened cheeks, chapped hands and other reminders of exposure. There is pleasant protection in Colgate Comforts. Simple precautions will avoid these drawbacks to wholesome pleasure.

Colgate's Talc Powder

Delightfully soothing, with just the right proportion of boric acid and other sanative ingredients to make it absolutely safe for you and your children. You have your choice of six perfumes and unscented.

Colgate's Cold Cream

Another winter necessity—a genuine safeguard to the skin and a good partner to our Talc. One professional masseuse writes: "Rub the cold cream into face and hands before applying the Talc. It gives a smooth and effective support to the powder."

Colgate's Ribbon Dental Cream

Used all the year 'round fortifies your health by keeping the teeth clean and sound. Use it twice a day.

COLGATE & CO., New York.

Established 1806.



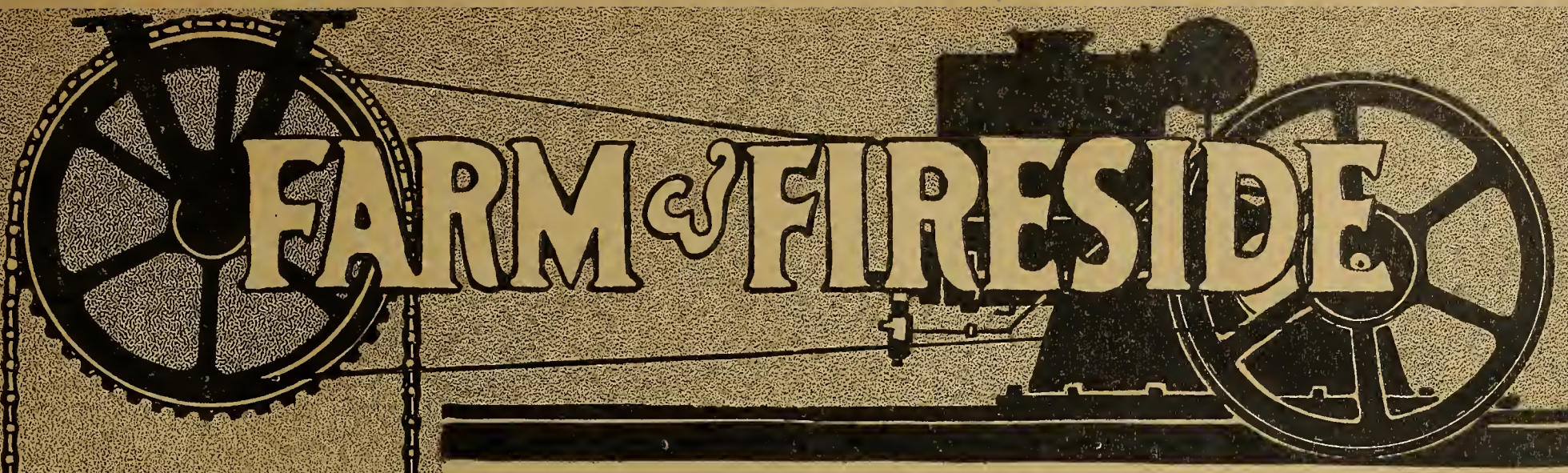
—and be sure to use Cashmere Bouquet Soap, a most luxurious toilet requisite.

Good Teeth
Good Health



Cleanliness
Comfort
Charm





FARM & FIRESIDE

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Give this picture a title - see page eight.



ENGINE GANG PLOWS

OUR line of Engine Gang Plows embraces several different styles, and we are prepared to meet the requirements in any section, and for either large or small farms. A brief description of these styles are given herewith.

P&O MOGUL. Made in sizes from 5 to 12 bottoms, each bottom controlled by an individual lever. Has several exclusive patented features, the principal one being the bunching of the levers toward the center of the platform, enabling the operator to handle the bottoms within a minimum space on the platform. By far the best known engine plow on the market.

P&O MOGUL POWER LIFT. Made in 4, 5 and 6 bottom sizes, the power lift feature raising and lowering the bottoms, and provided with auxiliary hand levers allowing any one bottom to be raised or lowered individually of the others, a new feature in Power Lift Plows. This is the ideal one-man outfit.

P&O SENIOR. Made in sizes from 3 to 6 furrows, all bottoms being raised or lowered at one time by the controlling lever which is operated from the rear of the plow.

P&O JUNIOR. Made in 3 and 4 furrow sizes, all bottoms being operated at one time by the operator from the front platform. This is a plow that can be operated by the engineer. The 3-furrow plow can be converted into a 4-furrow plow by the addition of a fourth plow attachment.

P&O DISC. Made in 4 and 6 furrow sizes with a running platform, the levers all pointing to the center of the platform. The 6-furrow plow

can be equipped with 8 discs when ordered, but in either case the strip of ground cut measures sixty inches, the 8-furrow series merely cutting narrower furrows.

GENERAL CONSTRUCTION. P&O implements have always been noted for great strength and simplicity of construction. This applies to everything we make, including our entire line of Plows, Harrows, Planters, Cultivators, Stalk Cutters, Potato Diggers, etc. It applies particularly to P&O Engine Gang Plows, which are stripped of all superfluous parts, making them as simple as possible, and strength is secured by the use of heavy materials and necessary bracing, and in this we carry out our policy of building implements that will stand up under the strains when in the field. Every farmer who ever used P&O implements knows this.

We will be pleased to send our catalog on Traction Engine Plows, or if interested in our general line we will send the late edition of our catalog on miscellaneous implements. Write direct to us at Canton, Ill., or to our nearest Branch House.

Remember that P&O Light Draft Plows and other implements have been used since 1842, by three generations of American Farmers, and that everything we make is

BACKED BY AN UNQUALIFIED GUARANTEE.

Parlin & Orendorff Co., Canton, Ill.

BRANCH HOUSES

Minneapolis, Minn.
Oklahoma City, Okla.
Sioux Falls, S. D.

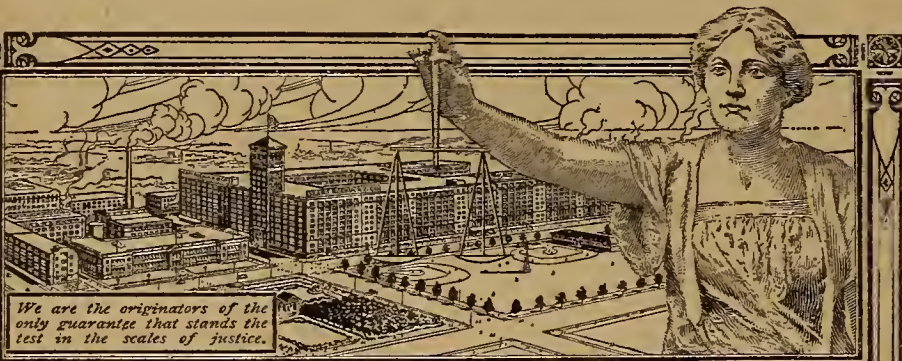
Spokane, Wash.
Portland, Ore.
Houston, Texas.

Denver, Colo.
Pasco, Wash.
Kansas City, Mo.

Dallas, Texas
Omaha, Neb.
St. Louis, Mo.



426



We are the originators of the only guarantee that stands the test in the scales of justice.

David Bradley Tongueless DISC HARROWS

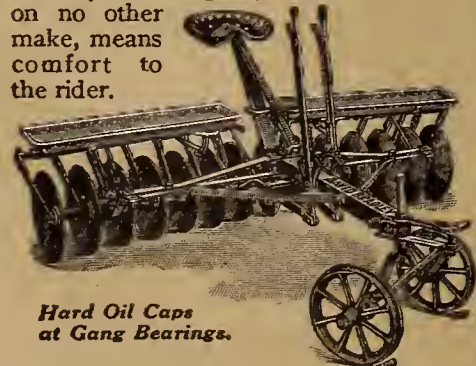
Thousands of progressive farmers agree with us that the David Bradley Tongueless is the finest disc harrow made. Built up to the highest standard of quality and sold at a price that makes it the greatest value obtainable.

Always remember that you are the sole judge of your own satisfaction when you try a Bradley Implement.

The complete line of Bradley Disc Harrows (more than forty styles and sizes), are shown in our big General Catalog, but if you want our new Disc Harrow and Implement Book which also describes the complete line of Bradley cultivators, plows, spreaders, planters, etc., besides, buggies, wagons, harness, gasoline engines, supplies for dairymen, poultrymen, fruit growers, etc., just say "Send me Disc Harrow Book No. 72F77 on a postal card and mail to

THE Bradley Disc Harrow advantages mentioned below, and many others, are fully explained in our new Disc Harrow and Implement Catalog.

Heavy all steel frame, rigidly braced. Flexible gangs (operated by convenient independent levers) can be set at any angle. Discs cut uniform depth because they are held in place by an adjustable steel yoke. Low hitch, perfect balance and direct pull from gang bearings mean *light draft*. Forward truck relieves horses from neck weight. Bearings run in oil soaked maple boxes and are lubricated by *hard oil cups*. Scrapers operated by foot levers easily reached from seat. The Bradley Patent Spring Seat Post, found on no other make, means comfort to the rider.



Hard Oil Cups at Gang Bearings.

Sears, Roebuck and Co., Chicago

New Ideas on Old Topics

A Steel and Wire Agronomist

AN EDITOR in New Mexico received a letter from a man who wrote on the letterhead of the American Steel and Wire Company of Chicago and signed himself "Agronomist."

The editor looked the matter up in his well-thumbed dictionary and found that an agronomist is one who is engaged in the study or practice of agronomy, or the management of lands—in other words, a farmer.

The editor wondered why the American Steel and Wire Company should employ an agronomist. When anybody in the Southwest wants to know the answer to any such question he writes Prof. H. M. Cottrell, the agricultural commissioner of the Rock Island Railway Company. This inquirer did so, anyhow, and received the following reply:

Your note received stating that you cannot figure out what connection the steel and wire trade has with Kafir corn; likewise what use a steel concern has for an agronomist. You ask me to explain.

The agronomist of the American Steel and Wire Company represents the steel corporation that wants to sell steel. Suppose that men on every 320 acres in eastern New Mexico handled their soil right, used milo maize for a chief crop, Kafir and cane for silage, and milked from fifteen to twenty cows, every 320 acres in your section would support as comfortable a farm as is found on 160 acres in Iowa. Each farm would be fenced and cross-fenced; would have a good residence, windmill, barns, silo, irrigation plant for the garden, a good set of farm implements in which iron and steel are used, a good huggy, and one out of every four or five farmers would own an auto, in which steel is largely used. Each farm would have thirty or forty milk cans, of which steel is the chief metal.

Why Steel is Needed

Were New Mexico developed in this way the Rock Island would have to use more rails, more engines, and more steel freight cars to haul out your products and to haul back the things which your sales would bring. All this would furnish a demand for the products of the steel corporation. Last year the American Steel and Wire Company spent \$600,000 in practical work to improve farming. They realize that until the farmers become prosperous they cannot reach their highest trade, and they are quietly spending this money each year to get the farmers of the Southwest to earning a good dividend.

Really, it's the most natural thing in the world,—isn't it?—when one comes to think of it, for a great steel company to hire an agronomist. Some of us get a little peevish, sometimes, at the number of outsiders who are butting into the farming game and telling us how to do our work. But they have a real interest in our work. They make themselves offensively numerous about conventions and farmers' meetings sometimes; but most of them have something worth our study just the same. Kafir corn for New Mexico, for instance, and alfalfa for most of us.

A Water-Witch Experience

By J. W. Suddard

IN THE January 3d FARM AND FIRESIDE I notice an article by Fred Telford, entitled "Our Confidence in the Water Witch," to the conclusions of which I take decided objections because I have tried it myself on two occasions and it has worked like a charm.

In my younger days my father bought a farm and built a house on a hill about one hundred and fifty feet above lake level. The ground behind the house sloped down to a swale which was only about ten feet above lake level.

He tried digging a well in several likely looking places but failed to find water, and the neighbors told him that on that "hog's back" he would have to go below the lake level to find water, and for several years all water for house use was drawn from a spring some distance away.

Having heard of the "water witch" and his method of procedure, I cut a crotch from a thorn tree and chased myself back and forth over that hill for some time. Finally the stick went down. Then it took considerable crisscrossing to find the direction in which the vein ran. I found water could be had at twelve feet.

My father was very skeptical, but we dug the well. We found water in the specified distance, and the well was never without water as long as I was on the place.

My next experience was back a few years ago. I bought a farm on which I desired to build a house, and wanted to put in modern conveniences. I wished to have a pump on the back porch of the house, and so I resorted to my old friend the thorn crotch.

I was bothered at first because one way I seemed to find water at twenty-two feet, and another way it seemed to be forty-two feet below the surface. Finally, by careful work, I decided there were two veins,—one at each level,—so I carefully marked the

spot, had the earth removed down to the rock, about five feet, and went for a well-driller.

The man in charge wanted to know how deep I expected to go for water, and I said there were two veins, one at twenty-two and another at forty-two feet. As the first seemed rather weak I imagined, I told him, that we would have to go to the second level. As we had thrown five feet of earth from the top there would likely be thirty-seven feet to drill.

He laughed very hard, but said he would bring his machine the next day and start in.

When he had drilled twenty-two feet he hunted me up and made known that fact. I said, "Well, Blackhurst, you seem much amused over it. What do you find?" He said, "I found the vein and, as you said, it seems a little too weak to give water through a dry time, but how did you know it was there?"

I said, "Never mind, drill away to the forty-two-foot level and let me know the result then;" which he did, and was again bumbling over with mirth. "Well," I said, "what about the water?" He said, "I haven't taken the drill out yet, but come over and I will hoist it out and bail out the mud and see what it is like."

He soon found the vein was a strong one, and said, "There is no danger of my being called back to drill that hole deeper."

Build Roads in Springtime

MOST of the road engineering done by the local road officers consists in spoiling the roads for three months so that they may possibly be a little better for the other nine—and this is only a possibility. Work done in the dry months of late summer and fall is often worse than none at all. The rank weeds, clods, and sods are mixed in with the dry earth, and a horrible, water-absorbing mess is the result.

The earth should be moved in the spring when it is moist and free from trash, and when the hard-baked surface of the late summer is absent. The machinery will work more easily and the earth will be more economically moved. The soft and moist earth will soon pack hard and take a crust which, if given a few dressings with a King drag, will be in fine condition to shed the winter rains and bear the heavy traffic of the fall. A spring-made road is the best and cheapest.

The Proper Use of the Drag

A GLANCE at a wallow where hogs have puddled the sides of a hole in the ground will show the ideal state for the surface of a road. It should be hard and baked and impervious to water. The King drag used when the road is wet will give it this surface. "Wet" does not mean slushy; but if there are ruts and holes the drag should be used in the mud to take these depressions out. Ordinarily the drag does the best work when the road is moist but not muddy. The drag is the thing with which to plane the road which is roughly sawn out by the road machine. Where the road is over twenty feet wide the crown should be not less than six inches higher than the sides, nor more than a foot higher. The King drag will pare off the shoulders at the sides which keep the water from running off. The wide shallow side ditches made by the road machine are of the best sort, as they are not apt to wash into gullies. It is seldom that a road over twenty-five feet wide is necessary. To plow up, dig over, or in any way loosen the bed of a road is a crime against good road-making. Leave it and build on it.

Window Fly-Trap

By L. S. Webster

TAKE two boards ten inches long and four inches wide (A). Nail a piece six inches long and wedge-shaped at the top to one side, and make a hole (a) in one of them to empty flies out. Saw a line (C) through this to within one-third inch of top



of wedge. This makes the ends. Now take two four-inch boards as long as your window is wide for top and bottom of trap. Draw a narrow strip of wire screen through saw swath in ends to stretch across length of trap, and nail securely. Next fold more wire cloth as in B, and nail to inside of trap on wedge ends, then up the sides to the top.

Take a sharp stick and punch holes in the wire cloth at top of wedge every half inch the entire length so flies can crawl up into top of trap.

Tack a piece of tin over hole (a) for a door, and you have a trap to set in the window that will catch every fly that tries to get in or out.

Domesticating the Mechanical Horse

The Tractor is Easy to Handle, Never Gets Tired and Eats Only When He Works

By James A. King

THE tractor is no longer the wild, untamed broncho outlaw of its experimental days. It has been tamed into a steady, reliable old dobbie of the fields. It is true that there are experimental makes still on the market, whose worth has not yet been thoroughly proven. But there are also makes that have been tried and tested through a series of years. And these old established makes have thoroughly proved that traction engines are well adapted to do many field and farm tasks that heretofore have been done only by horses or oxen. I have had four years' experience in their use and so am not simply theorizing on this subject.

The things which make a good traction engine useful and beneficial, where conditions warrant its purchase, are several. They are cold business reasons which challenge the consideration of any thoughtful man.

The tractor is not a single-purpose machine. It is adapted to a wide range of uses throughout most of the year. They are unusually well adapted to run all kinds of belt-driven machinery such as grain separators, ensilage cutters, corn shellers and shredders, feed grinders, hay balers, and circular saws. But they are equally useful for pulling loads on the road and in the fields.

Tractor Plowing is Perfect Plowing

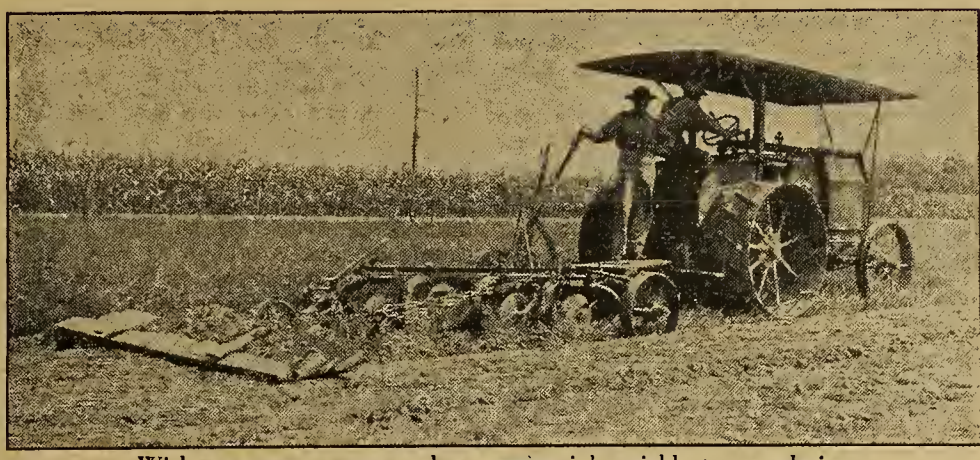
Plowing was the field task for which the tractor was first used. It is still the one for which it is used most. This is the hardest job that horses are asked to do, and is the longest drawn-out single task. Contrary to a very general opinion among us, the best time for plowing is not any time when we get around to do it. The time that plowing is done has a great deal to do with the yield. Plowing influences the physical condition and, consequently, the productivity of the soil. It also regulates to a great extent the amount of moisture the soil will have during the growing season.

For these two reasons it is important that you get the plowing done quickly at the best time, which is all too short for the most of us. By using the very successful automatic engine guide, or self-steering device, and automatic self-lift plows, one man can successfully operate an entire traction plowing outfit all by his lonesome. And to the man who has a large acreage to plow it sounds mighty good to hear that with such an outfit he can plow from ten to twenty acres all by himself in a ten-hour day.

But this is not the only desirable feature about a traction plowing outfit. Because of the great untiring force of the tractor you can plow just as deep as you want to go. You can hitch onto the deepest-working subsoiling plows or machines and tear up that tough, stubborn subsoil without having your conscience hurt you because of the hard work it makes for this mechanical plow horse. You do not need to let it stop and rest. You can plow and prepare the seed bed at one and the same time. I have often hitched both disks and smoothing harrows behind the gang plows. Such a combination does as near an ideal job of tillage as a man has yet devised a means of doing.

You Can Combine All Seeding Operations

Personally I always felt there was one place where a tractor gives a greater advantage even than in plowing. And that one place is seeding. Here again it is that large amount of untiring energy under the control of one man that gave the great advantage. By means of a very simple combination of ordinary horse-drawn implements you can combine into one single operation all the operations of preparing your seed bed and putting in the grain, so that, by traveling once over the field, the entire task of seeding has been completed. The combination I have used most consists of disk harrows set so they are double-disking. Immediately behind these are hitched the grain drills. If you wish to harrow behind the drills the harrows may also be hitched on farther behind. When drilling on cornstalk ground I dragged a railroad rail between the engine and the disks, and this successfully crushed the stalks. The tongues of the drills rested on the frame of the disk harrows in front of them. A rough platform may be fitted on the drill tongues, and a half-day's supply of seed may be stored on it in sacks so it will not be necessary to stop the outfit to fill the seedboxes of the drill. This scheme puts the seed into the freshly stirred, moist, warm earth and insures the earliest possible germination. Since the disks and the drills come after the tractor, you



With a tractor you can rush a plowing job quickly to completion

need have no fear of the ground being injured by packing.

Spring seeding is interfered with by the weather more often than is any other farm job. And the factor of time is of more critical importance in this job than in any other. In the spring the horses are soft and out of condition; you cannot push and hurry them in order to finish seeding while conditions are best for it. But the domesticated mechanical horse has no feelings, is always in condition, and never tires. So when the season and ground are just right for seeding you can go out with such an outfit and slap in your grain with no let-up, running day and night if you want to.

For years tractors have been used successfully for hauling binders, the larger powered ones hauling as many as six eight-foot binders at once. By means of a patent binder tongue each binder is made to turn a corner as easily as can be done with horses when using the ordinary tongue truck. By using the engine to pull a number of binders you need not worry about getting the grain cut, even if the weather is hot. If you have but one binder you can arrange with your neighbors to use their binders and cut their grain. One year I cut over five hundred acres of small grain with

an engine and two eight-foot-cut binders, by running them from dew to dew. One eighty-acre field began to crinkle on me, so we started in at sunrise, threw the engine into the high speed of four miles an hour (it was a forty "brake" horsepower engine), and cut until that field was all down.

In regions where the ground bakes hard soon after harvest, a tractor permits you to use a combination of binder and plow. This combination consists of a seven-foot left-hand-cut binder and a six-pow right-hand fourteen inch gang plow. First the harvester is run around the field twice. Then the plow is hitched to the tractor and the harvester to the plow so that the bundles are dropped onto the freshly plowed ground.

Good for Stump Pulling, Too

The various uses to which a tractor can be put will depend a great deal upon the farm and the ingenuity of the farmer. Digging and filling ditches, building and maintaining roads, hauling loads of all kinds, pulling stumps—these are only a few of the jobs at which the handy man can use his tractor to good advantage.

One of the most unique field schemes ever carried out with a tractor originated with a man in Oklahoma. Right

behind his tractor he hitched two disk harrows so they would double disk. Just behind this was put a two-row lister with no seed in the boxes. Still back of this was a corn-planter set to drill the corn. Then a smoothing harrow, hung under the planter tongue, was put between it and the lister. With this outfit he put in his corn. The disk harrows thoroughly pulverized the surface of the ground. The lister opened up two furrows a foot or more deep. The smoothing harrow refilled these two furrows with mellow, finely pulverized soil. The corn-planter drilled the seed corn into this ideal seedbed. Germination was quick and sure under such conditions. He drove around and around, beginning at the center of the field; so when planted, the field consisted of two long rows coiled from the middle to the outer edge of the field. A narrow driveway was made from the middle of this coil to the side of the field nearest the house. When this man went into the field to cultivate corn he used a two-row cultivator and drove around and around, just as it was planted. He did not have to raise the shovels and turn around each time he crossed the field, and the horses did not tramp down most of four rows at each end.

First Cost and Upkeep

You see, to sum it all up, the advantages which a tractor has over horses grow out of the great amount of untiring energy which is under the instant control of one man. This makes it possible to do a large amount of one task at one time. Or you can do several associated things at one time. This means that less man labor is needed for each acre or other unit of these jobs, thus helping to solve that great problem of farm labor. By enabling you to do more than one thing at once, certain jobs can be done more thoroughly and to a much greater advantage than with horses.

The items of first cost, operating expense, and upkeep are also of interest. There are farms where the use of an engine of fifteen tractive horsepower will enable the operator to do his year's work with fifteen less horses than he could without it. In such cases the question of first cost is easily settled, for it will not cost him as much as fifteen good young horses. On other farms, or groups of farms contained in a partnership deal, the full number of horses represented in the power of the engine will not be displaced. In such cases the various advantages to be found in the use of a tractor as compared with using horses must decide the question.

The cost of operating the tractor as compared with horses will depend upon the number of days in the year that each is used, and the kind of fuel the engine uses. The daily fuel cost for a tractor that does the work of fifteen horses will be less than the daily cost of feed for those fifteen horses. This is true even when the engine burns gasoline at the present prices, and is even more true when it burns kerosene. The engine is using fuel and oil only when it is working; the horses must eat whether they are working or standing in the barn. The housing problem also comes in as an important item. A "garage" for the largest and most expensive of these domesticated mechanical horses will not cost as much as an equally good barn to protect a team of horses and their year's food supply. The average annual repair bill for a tractor is from three to five per cent. of its original cost. Harness repairs, shoeing and veterinary bills for horses will usually exceed this percentage.

Why Farm Boys Become Motormen

The tractor question has still another side which is the most important of all. And that is the great big question of the boy. Probably no other farm equipment a man can buy—unless it is an automobile—will be so powerful an influence in keeping a restless boy at home as will a good tractor. It gives the boy a chance for which he has just naturally been itching, and itching, and itching. That is a chance to do something big and spectacular. This desire which is natural in the average-day boy is perhaps more responsible than any other one thing for the fact that fully ninety per cent. of the motormen on the street railways of our large cities are farm boys. And ninety-nine cases in a hundred the boy would not be in the dirty, grimy, lonesome city, with his hand all day on the controlling lever of a street car, if instead he could be out on the old farm with his hand on the throttle or steering wheel of a throbbing, chugging tractor, really doing the work of the world in a modern worthwhile way.

Tractor Hybrids

Crosses Between Gasoline Engines and Scrap Piles

An Auto Spraying Rig

By T. F. Click

WITH the auto spraying rig shown in the picture I have gone up a forty-five per cent. grade where the ruts were six inches deep and rough in proportion. The engine develops two and one-quarter horsepower, and the rig will travel at about the same speed as a heavy team of horses.

I made this auto spraying rig at home from material on the place. I first took an old McCormick mower; then with 2x4 oak studding made a frame 8 feet long and 2 feet 3 inches wide. The frame was placed on the mower. Then I took two 2x4's five feet in length for a coupling pole. One end was bolted to the main frame and the other end straddled the rear axle of another set of mower wheels. The steering is done with the hind wheels because they can be turned short. The front part of the frame is too wide to allow turning with the front wheels. I made no change in the mower except to take off the tongue and the mower bar and the mower-bar rigging.

After bolting the frame to the mower I placed the engine on about the middle of the frame, crosswise, so that the pulley of the engine was in line with the knife-wrist wheel of the mower, on which was placed a six-inch pulley. Then I nailed a heavy piece of plank crosswise of the frame on each side of the engine's skids to hold the engine in line. I also bolted pieces of plank over the engine's skids so as to hold them down. The engine is fastened in such a manner that it can be moved freely a few inches crosswise of the frame to tighten and

loosen the belt. This does away with a belt tightener, which would take up power. I move the engine with a lever on the same principle as a wagon brake. One motion tightens the belt and makes the rig travel. The opposite motion loosens the belt and my "traveling scrap pile" stops.

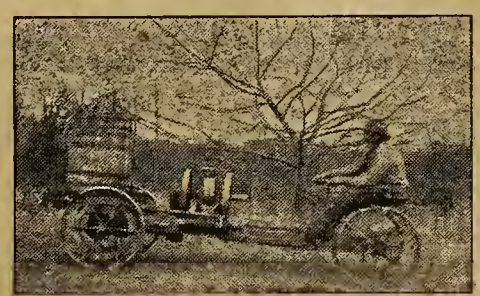
I am using a three-ply four-inch rubber belt for a drive belt, which will drive the rig anywhere I want to go. As to the cost of making this rig: The only thing I paid for was the lever and connections for the shifting arrangement, for which our blacksmith charged five dollars. This rig will haul a barrel of water, run a sixteen-inch circular saw, drive a corn-sheller, cut fodder, grind feed, and cut our ensilage and spray the orchard.

This Tractor Develops 28 H.P.

By T. A. Black

THE gasoline tractor shown in the illustration below was made from a second-hand Pierce-Arrow automobile and discarded machinery parts. The tractor has three speeds ahead and one reverse, just as in the car from which it was made. It develops twenty-eight horsepower, and the total cost, including that of the automobile, was nine hundred dollars. It is used at Middlebrook Farm, Dover, New Hampshire, where for two years it has taken the place of from four to six horses.

It hauls the double-acting thirty-six-disk eighteen-inch harrow shown in the photograph seven hours on ten gallons of gasoline. Besides doing satisfactory work in the field it is also used on the road for hauling hay and grain.



Cost of blacksmith work was \$5

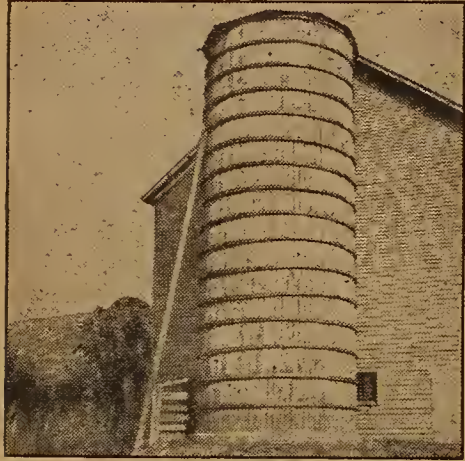


Works equally well in field or on road



Know the Merits of All Silos—Then

THE "best silo" is largely a matter of personal preference. These pages are aimed to present the merits of some of the principal types of construction, so that after looking them over you can select the kind most suited to your farm. The descrip-



In a silo of these proportions the compression of silage is good

tions of building are simply outlines of the principles of construction, and should not be taken as rules or specifications for building. The question of price is important, and, though exact costs cannot be given for all localities, some idea of the expense has been given in most of the silo descriptions.

Good judgment in silo buying includes a study of freight rates, materials, and everything that will contribute to the best silo at the lowest price. If you want to build a silo and are in doubt as to the best size and kind, send a full description of your conditions, also your preference as to kind of construction, and FARM AND FIRESIDE will be glad to help you plan it.

The Solid-Concrete Silo

THE solid or so-called "monolithic" (one-piece) concrete silo is a popular form of construction. A silo investigation in Missouri revealed the fact that every man having a solid-concrete silo was well satisfied with it, and of one hundred men having trouble with other kinds of silos thirty-eight said they would build their next silo of solid concrete.

Unlike many other forms of construction a solid-concrete silo can be built four times as high as the diameter, and this proportion can even be exceeded without overstepping the bounds of safety if the foundation is made very solid. Tall, slender silos give greater compression than those built short and squat. This makes the silage keep better, and it also gives a greater tonnage in the same number of cubic feet of space.

A 16x60-foot silo holds as much as two silos 16x40 feet, because of the increased pressure by the added height.

The greatest danger to be guarded against in making a silo too high is that it is hard to fill and also hard to climb.

The construction of the first solid-concrete silo that you build should be supervised by a contractor or skilled concrete mason who has had silo experience. If such a builder cannot be had, ask your experiment station to send a silo expert to assist in getting things started properly. Put in your application two months before you need him.

Either wooden or metal forms may be used. Always use reinforcement.

Concrete silos have been criticized because of the corrosive action of silage juices on the inside concrete wall. Nearly all such corrosion occurs in the bottom few feet of the silo, where there is actual liquid, but the extent of the



A well-built solid-concrete silo is impressively attractive

juice action is usually exaggerated. If the bottom one third is given a coating of cement wash every year or two the effect of the juices may be safely disregarded.

The erection of a solid-concrete silo requires at least three men fairly familiar with concrete construction. When once commenced the work must be carried to a completion with reasonable dispatch. The cost varies greatly, depending on the kind of forms used, the source of gravel and sand, and the number of skilled workmen hired. The smallest cost for a first-class concrete silo is about two dollars per ton capacity. More often the cost is three dollars, and may run up to four or five. But the first cost is practically the only cost; depreciation and repairs are exceedingly small. If a strong wall is built a water tank can be built on top of the silo, thus saving the cost of a water tower.

Concrete-Block Construction

THE essential points of a concrete-block silo that are sometimes slighted are, first, reinforcement; second, airtight construction; and, third, a cement wash on the inside. Effective resistance to the outward pressure of the silage is usually secured either by cables or hoops placed in the mortar every three tiers of



The concrete-block silo at the right cost \$500 and holds about 150 tons

blocks, or by hooking the blocks together with bent rods laid in mortar, thus binding each block to its neighbor.

An airtight wall depends on skilled workmanship both in making the blocks and the mortar in which they are set. Use only a good grade of Portland cement and pure sand. Test sand by filling a bottle a third full with an average sample of it, then add water until the bottle is three fourths full. Shake well and allow to settle. If a coating of mud settles on top of the sand within twenty-four hours the sand is too dirty to use. Clean gravel is also important.

The advantage of a concrete-block silo over solid concrete construction are these: You can use a few small forms over and over; the concrete can be mixed in small amounts and fewer men are needed to handle it; the work of making the blocks can be done at odd times.

A concrete-block silo is fire-proof, rat-proof, and practically wind-proof because of its weight. The foundation must be extra firm and below the frost line. The cost of this kind of silo is from \$2.50 to \$4 per ton of silage held.

Pit and Bank Silos

THE pit or underground silo is simply a hole in the ground in which to pack ensilage. Imagine an immense stone jar sunk in the ground and you have the essential idea of the pit silo. Among its good points are these:

It is tornado-proof; it is cheaply made; it can be built at odd times; and the silage cutter needs no blower or elevator. Silage will not freeze in a pit silo. Pit silos can be dug deeper any time desired. Another good point is the ease of refilling after the silage settles. With a pit silo, too, the silage can be tramped way to the top, thus giving full use of all the capacity.

The strongest of all points in favor of the underground silo is its economy. The cost for material is sometimes less than one dollar per ton capacity. Among the drawbacks of the pit silo are the following: A pit silo is not practical unless the ground water never rises higher than the bottom of the silo. If water seeps into the silo the silage will be of poor quality and perhaps ruined. If the soil has a tendency to cave in, a pit silo may be dangerous. Some danger also exists

in the formation of carbonic-acid gas in the bottom of the pit silo. This is the same kind of gas that is sometimes found in old wells.

The gas is formed soon after the silage is put in, but after the first month the formation nearly ceases. If the silo has been filled to the top the ordinary air currents will carry the gas away. But before going into a pit silo that has been unused for several weeks lower a lighted candle or lantern ahead of you. If the flame stays bright the air is safe.

Pit silos should be made round and perfectly plumb. The first thing to do is to make a concrete collar by digging a trench big enough to go below the frost line and about one foot wide. This is filled with concrete and the concrete collar is built up at least high enough to turn surface water. If made four feet above ground it acts as a wall to keep stock away.

After the concrete collar has been made, digging may be commenced on the inside. If the ground is firm, plaster made of cement and sand may be applied directly to the earth, but if the soil crumbles, fine-mesh poultry wire, or, better still, metal lath should be securely staked to the sides of the silo or anchored in any other firm way. The plaster is then put on the wire.

One disadvantage of the pit silo is the labor of getting the silage out. With an above-ground silo the filling is done by machinery and the silage is simply thrown down. With the pit silo the silage must be hoisted out.

A cement floor is not necessary, but it helps to keep in the silage juices.

Various combinations of pit silos and other types have been successfully constructed. One of these is the bank silo. This silo is built at the edge of a slope, and enough of the slope is cut away to allow for a door frame from which silage can be thrown out just as from an above-ground silo. The opposite side is even with the ground and can be filled without blower or carrier.

The pit silo has proved most successful in western Kansas, Nebraska, Colorado, Texas, and New Mexico where the ground water is low and lumber is relatively expensive and difficult to procure.

Brick as Silo Material

BRICK silos are curiosities in some localities, still a good many of them have been successfully built. For two



Brick is a good standard silo material. Note the thinner wall at the top

thirds of the way up the thickness of the wall should be twelve inches (a brick and a half). Eight inches is enough for the top one third. This thickness does not include the 3/4-inch plaster which the inside receives.

A good way to reinforce a brick silo is to lay twenty-penny nails in the wall with the heads projecting about two inches into the silo. Use about twelve nails for every square foot of surface. When the wall and the cement mortar have thoroughly hardened put a good grade of woven-wire fencing around the inside of the wall, lapping somewhat, and then pound the nails over the wire to clinch it thoroughly. Use fencing that has straight horizontal wires, for coiled or kinky wires will not lie flat against the wall.

When the wire is thoroughly fastened coat it with cement mortar so as to cover the wire fencing. The average cost may be estimated at three dollars per ton capacity and upward.

Successful Eight-Sided Silos

A TYPE of silo that has won considerable popularity is made of pieces of wood (usually 2x4's or 2x6's) from five to eight feet long, laid horizontally one

on top of the other in the form of an octagon. This leaves corners, but they are not sharp enough to interfere very much with the settling of the silage. These silos may also be made with ten or twelve sides if desired. The smallest number of sides a silo should have is eight.

The simplest of these octagonal silos is made of 2x4's which are merely nailed on top of each other until the desired height of silo is reached. One form of this kind of silo has a tongue about the center of the horizontal piece which fits



The well-built octagonal silo has many good points in its favor

into a groove, thus tending to make the silo more nearly air-tight than would be the case with a flat surface. Vertical strips beveled to tightly fit the corners on the inside give increased smoothness and act as tracks on which the silage can slide as it settles.

One advantage of this kind of silo is that it can be increased in height simply by adding more pieces to the top. It can also be erected a few feet at a time when there is time for such work, and skilled labor is not required, neither is reinforcement nor scaffolding.

The doors are cut out of the side of the silo after it is built. Cutting is done on a bevel, and the pieces taken out are made into doors that are put back in their original places, thus insuring a perfect fit. The outside should be painted or covered with prepared siding to help it resist decay. The cost of this silo is around three dollars per ton capacity, but varies greatly with lumber prices.

Practicability of Metal Silos

IN AUSTRALIA the metal silo was one of the earliest to come into use. In fact, it was one of the few that would protect its contents from white ants. The principal objection raised is that the silage juices will corrode the metal. This contention is not valid, for metals have been found that will resist these juices. Then, too, the metal can, as an additional safeguard, be coated with asphaltum or an enamel that prevents the juices of the silage from touching the metal.

Among the good points of metal silos are these: They are easy to erect, airtight, fire-proof, and can be made higher simply by the addition of more sections as needs may require. They require no hoops or reinforcement, are smooth inside, and silage settles well. They can be taken apart and moved; they neither crack nor dry out; they are shipped in small sections and can be loaded on an ordinary wagon.

Metal silos cost about in proportion to their value. Those of thin steel are



Metal silo made of pure anti-corrosive iron are not short-lived

cheap and short-lived. A much better grade of silo is pure anti-corrosive iron, which is scarcely affected by silage juices or the weather. The cost of a high-grade anti-corrosive pure-iron silo is about \$3.75 per ton capacity.

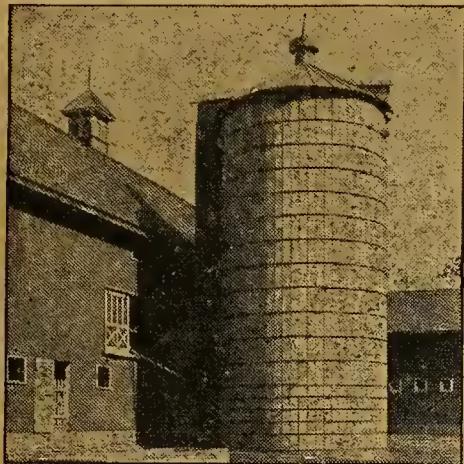
Choose the One that Fits Your Farm



Concrete-Stave Silos

AS THE name implies, the concrete-stave silo is made of concrete staves or slabs. The two principal kinds are rectangular and "diamond-shaped." The rectangular slabs are thirty inches long, ten inches wide, and two and one-half inches thick. The diamond-shaped slabs have the top and bottom points cut off so the shape is rather that of an elongated hexagon.

Hoops are used as for the wood-stave silo, but they do not need to be tightened



The concrete-stave silo can safely be built sixty feet high

or loosened because the concrete neither shrinks nor swells.

The thickness of two and one-half inches is not enough to cool the silage much when it ferments, and this is claimed to result in absolutely perfect silage without damage by mold around the edges.

The inside of the silo when completed is coated with an acid-resisting glaze of porcelain nature. The cement-stave silo requires no paint or repair, but must be built by an expert in order to be successful. The cost of this silo averages from three to four dollars for every ton of silage it holds.

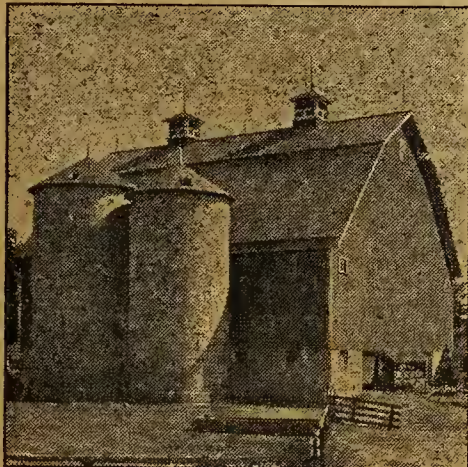
Panel Silos

A NUMBER of panel silos have recently come on the market, though they have been used in Australia a number of years. The principle of construction is simple. Panel silos are made of a combination of strong upright steel ribs between which are placed horizontal wood panels. The wood is placed so that the grain of the lumber is horizontal, and as lumber does not shrink lengthwise there need be no tightening nor loosening of hoops.

Points on Tile Silos

THE grade of tile is important. Some tile is vitrified all the way through, and others are merely half-baked and glazed on the surface. Therefore deal with a reliable company that will guarantee its tile. Among the points to strongly commend tile silos are these: The tile silo is attractive in appearance; is heavy enough to resist wind pressure when empty; does not require painting except an occasional wash of cement on the inside; is exceeded by no other silo in ability to resist the action of the acid in silage; can be put up by any first-class mason; is fire-proof; and, if well constructed, preserves the silage excellently.

A tile silo should be reinforced. In



The first tile silo was O. K., so he built another like it

some makes of tile, grooves are provided so that steel bands or cables can be laid in them and concrete mortar then filled in around the metal, preserving it for all time. Other forms of tile do not contain a groove for receiving the reinforce-

ment, and steel wires must be laid in the mortar between the tiles. The foundation of a tile silo must be well drained, so there will be no chance for water seeping into the bottom tile and freezing. The tiles must also be set flush on the inside to make a smooth wall.

The cost of tile silos varies greatly. A fair basis on which to figure would be \$3 to \$4.50 complete for each ton of capacity.

Selecting the Wood-Stave Silo

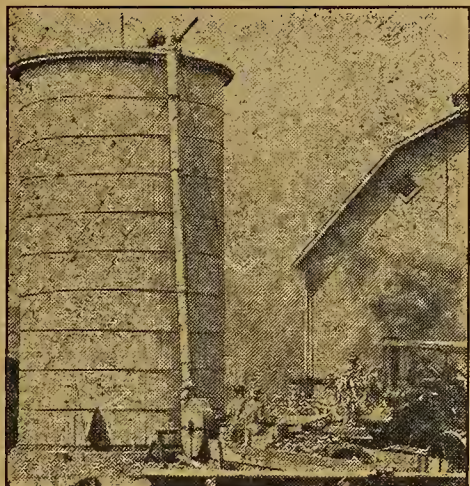
WOOD-STAVE silos are twice as numerous as all other kinds put together. One of the strongest recommendations for the wooden silo is the slowness with which wood conducts heat. Silage must ferment and cure in order to keep well. Any material which conducts the heat away from the silage as soon as it is developed tends to reduce the keeping quality of the silage. Wood is one of the best wall materials for properly curing silage.

Another advantage of the wood-stave silo is that many of them are portable. They can be used for a number of years, and if the owner moves he can take his silo with him.

The wood-stave silo is also easy to build. Some have been put up in less than half a day. While not as permanent as some other kinds, a good wood-stave silo cannot be termed short-lived. If preserved with paint or a good wood-preserving oil a wood-stave silo will last from fifteen to twenty years.

Wood-stave silos can be home-made, but to be successful they must be built as well as the patent manufactured silos. If you buy the latter class, which is usually the most satisfactory, a few points are important. First, the dealer or manufacturer should be required to give a written guarantee in which the quality of material is specified, and in which the manufacturer also agrees to deliver it in first-class condition at your station. Silo staves may be greatly damaged in loading and unloading. Do not accept staves with loose knots or broken tongues or grooves. The guarantee should also assure prompt delivery and legal protection in patent infringement cases. The doors must be guaranteed to be absolutely air-tight, and smooth on the inside.

A stave silo should be anchored with guy wires to resist wind pressure when empty. A roof is really not essential,



There are over a dozen good makes of wood-stave silos to choose from

but it serves well to keep out the snow. The hoops will need to be tightened or loosened as the staves shrink or expand. If they are not kept tight, air may get in and spoil the silage, but if not loosened when the wood expands the silo may in time become too small for its foundation. In selecting a wood-stave silo do not be led astray by such little matters as the form of anchor, the kind of roof, and the particular kind of door fastening. The main thing to watch is the kind of material and the way the material fits together. Good wood-stave silos ordinarily cost two dollars per ton capacity and upward.

The Gurler Silo

THE Gurler silo (named after H. B. Gurler, a prominent dairyman, who first brought it before the public) is one of the least expensive home-made silos. The frame is much like that of the house wall. A circular foundation is first made and 2x4 studding is set on it. Wood sheathing one-half inch thick is nailed to the inside of the studding, completely covering the silo except the door frame. Beveled lath is nailed to the inner surface of the sheathing and is finally

plastered with concrete mortar. The sheathing acts as reinforcement, and the plaster makes it air-tight. The silo can be made still stronger by built-up wooden hoops made of one-half inch sheathing and nailed to the outside of the upright studding.

The entire outside of the studding may be sheathed to improve the looks of the silo and preserve the studding, but such sheathing is not necessary for the proper keeping of the silage. A Gurler silo will cost on an average from \$1.50 to \$2.50 per ton capacity. When well built and taken care of it will give good service for from twelve to fifteen years.

The Plastered-Concrete Silo

THE plastered-concrete silo is merely a framework coated with concrete. The shape is cylindrical and the usual thickness about three inches. It has the advantage of doing away with forms and requiring less concrete than silos cast in one piece. A good framework is made of metal lath temporarily supported by wooden studding which is subsequently taken down.

When the trench for the foundation has been filled within six inches of the top, the metal lath, which comes in strips about eight feet long by eighteen inches wide, is put in lengthwise with the ends



Gurler silo built by Mr. Gurler himself on his farm in Mississippi

lapping about three inches. The trench is then filled to the top with concrete and the metal lath will extend above the foundation about a foot. A scaffolding is now erected inside the foundation. Two-by-four studding, sixteen inches apart (measuring from the centers), is now put on the foundation just outside of the metal lath. Brace the studding on the outside and top, and be sure it is plumb. A door-frame form is provided.

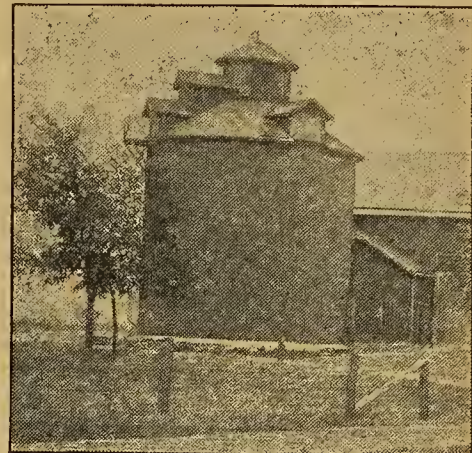
The metal lath is now fastened to the inside of the studding with double-pointed tacks, so that a complete cylinder is formed. The metal lath in itself is usually sufficient reinforcement, though strands of heavy wire completely encircling the silo may be used for added safety. You are now ready to plaster the inside. The first coat is made of one part of cement, two and one-half parts of sand, and ten per cent. as much hydrated lime as cement. Use in this first coat a bushel of hair for every three hundred square feet of surface to be covered. The mixture for the second layer of plaster consists of one part cement and two and one-half parts of sand. It is applied in three coats, giving a total thickness, including the first coat, of at least one and three-quarter inches. In applying this cement begin at the top and work down. Put the coats on as rapidly as possible. The third and last application is a plaster made of equal parts of cement and sand, and should leave the inside surface perfectly smooth.

As soon as the wall is hard the inside scaffolding may be removed by passing it through the door opening. Then put up the scaffolding and plaster the outside with an inch-thick layer of concrete applied in two coats, using one part of cement to two and one-half parts of sand. The total thickness of the wall should be about three inches. The average cost of building this kind of silo is from about two to four dollars per ton capacity.

The Wisconsin Round Silo

THE Wisconsin round silo was one of the earliest silos to appear. It is made by first constructing a foundation of the usual kind and then erecting studding about one foot apart all around the foundation. The studding is fastened at the top temporarily and half-inch sheathing is applied horizontally around the

sheathing is on, cover it well with a layer of tar paper and then cover by another layer of sheathing, breaking joints so that the wall will be air-tight. The outside need not be covered, but the silo will last longer if it is covered with tar paper and clapboards. No hoops are



This particular silo is not high enough in proportion to its diameter

needed for this kind of silo, as the horizontal construction makes the plates take the place of hoops.

The cost of this silo is one dollar per ton and upward. The life of such a silo is twelve to fifteen years.

Double-Walled Silos

SILOS with double walls cure the silage in the same way cooking is done in a fireless cooker. When the fermentation of the silage takes place the heat cannot escape and all the molds are killed by the heat. A good double-walled silo is made as follows:

First a concrete foundation is made. Above it 2x6 studding is erected. A sheathing of patent lath is then nailed on the studding diagonally from right to left outside and from left to right inside. By reversing the direction the strength of two-ply wood is secured. No. 8 wire reinforcement is then drawn tightly over the sheathing and a heavy grade of two-inch mesh chicken wire is nailed on next. Over the whole, both inside and outside, is put a coating of concrete plaster to a depth of one inch. The wood serves as a non-conductor of heat, and the concrete keeps the wood from decaying.

This silo can be built with ordinary labor, together with the help of a good plasterer or a workman experienced in concrete. The manufacturer of this silo furnishes full plans and specifications for a nominal sum. The total cost of a hundred-ton silo, including material and labor, is in the neighborhood of \$2.25 per ton capacity.

Chilling Effect of Stone Silos

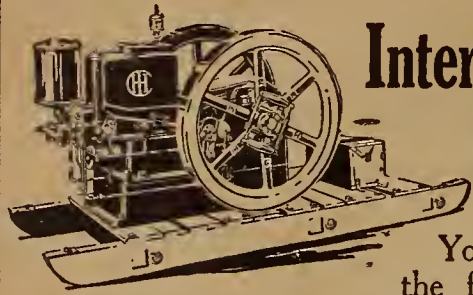
A STONE silo is simply a high circular stone wall. Where stones are plentiful a silo can be built of them at a small expenditure for material, but the labor of building is very great. The wall should be from sixteen to eighteen inches thick at the bottom. It may taper slightly on the outside as it goes up, but the inside wall must be kept plumb. Set the foundation stones below ground in cement mortar; lime mortar sets too slowly under ground. The inside of a masonry silo must be plastered smooth and brushed with a broom up and down.

The chief criticism of a stone silo is the chilling of the silage by the heavy stone wall during its fermentation. Its strongest point is its permanency.

A stone silo ordinarily needs no reinforcement, but it is best to be on the safe side by embedding steel cables or hoops in the mortar between the stones.



This stone silo is as good to-day as when it was built twelve years ago



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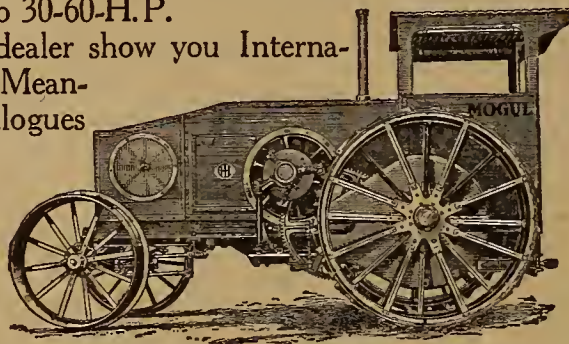
Farmers who today have not a first-class engine about the place are losing time and money. If the pump, wood saw, cream separator, grindstone, washing machine, husker and shredder, ensilage cutter, corn sheller, etc., must be run by hand or other makeshift laborious power, farm efficiency and the profit it means keep out of sight.

International engines have a long list of good features you should know about. They are made in all sizes from one to fifty-horse power: in all styles, vertical, horizontal, air and water-cooled, portable, stationary or skidded. They operate on either low or high-grade fuels. I H C Oil tractors, for plowing, threshing, etc. 6-12 to 30-60-H.P.

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For the Mechanically Inclined

Selecting the Kitchen Range

A KITCHEN range is one of the hardest things in the world to get acquainted with. Like the new horse it doesn't do all the things claimed for it, and it has some annoying peculiarities that weren't mentioned by the agent.

In the first place find out about the stove's diet, for you can't get a hard-coal stove to burn back numbers of FARM AND FIRESIDE. Such stoves are humanly intelligent.

A stove that is claimed to burn all kinds of fuel equally well is nearly always worthless jack-of-all-fuels that won't burn any. So get a stove that has real fondness for some standard fuel of which you have a plenty, and it probably won't insist on smoking in the house and spitting hot ashes on the floor.

Now it's handy to have a stove with a plate-glass front, thermometer, and reservoir, but those things do not especially interest the hungry man of the house who wants a plate of flapjacks every thirty seconds for a half-hour running. Besides, the stove doesn't really need a lot of ruffles and cosmetics to be a good one. The reservoir is all right for a camel, and the glass front for the dude who can't afford real diamonds.

The two things that make a stove good or bad are the firebox and the oven.

The firebox wants to be big, and the ashpan too. Such a stove can take care of itself without being poked in the ribs and shaken up every little while to give real service.

Think of Setting Hen When You Buy a Stove

A large oven, too, isn't as temperamental as a saucy little one that flares up and cools off every time it is asked to bake a pan of muffins. The big oven settles down like a good steady old hen that knows her business, and you can trust it for results.

A stove that has all parts of the body that come in contact with the fire lined is a great hot-weather comfort. Asbestos makes a good lining. It keeps the heat in confinement at work cooking instead of giving it the run of the house. A fire seems to want to be hot when you want to be cool, and vice versa.

A poor stove will encourage this bad incentive; a good stove won't permit it. And now for the rust question. A stove that gets chronically rusty has an unforgivable habit. Rust keeps company with poor stove metal. Pure rolled iron is the most rust-resisting of all metals of which stoves are usually made. Smoke gases have hardly any corroding effect on it; even in the presence of moisture it preserves its youthful metal bloom. Rolled steel corrodes more quickly, but if the metal is thick and asbestos-lined the stove may live to a black old age.

Insist on Being Supreme Judge

Cast iron is addicted to the rust habit little less strongly than steel, but steel has the advantage in being less brittle and breakable. So there you have the really important things in stove-buying except for your guarantee. A stove is full of surprises, and you don't really know it till you have used it for the last time. Still, the first thirty days give you a chance to get acquainted with your stove in a superficial honeymoon sort of way, and if of agreeable disposition for that long you are doubtless safe in keeping it. But if it acts up make the dealer or manufacturer take it back. So be sure your guarantee gives you the privilege of being supreme judge and having the last word in deciding whether or not to make the new stove a part of the family for better or for worse.

What is a Good Carburetor?

By James A. King

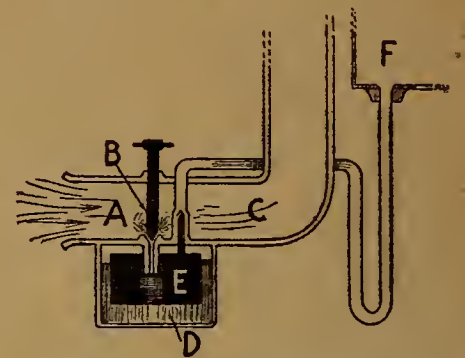
A CARBURETOR is a contrivance for mixing the fuel of a gas engine with the proper amount of air. When this mixture enters the engine it must consist of such proportions of air and fuel that it will give a powerful explosion when ignited. The fuel must be sprayed into a fine vapor or mist and thoroughly mixed with the air. For these reasons the carburetor has also been called the "mixer."

When the fuel leaves the carburetor it is not a true gas; it is simply a vapor. The heat inside the engine cylinder changes this vapor or spray to a true gas. The quality of a carburetor depends on its ability to do these three things properly: 1. Furnish air and fuel in the correct proportions at all times. 2. Break up the fuel into a fine mist-like vapor so that it will all reach the cylinder in this condition. The fuel vapor must not form into large drops on the sides of the passage from the carburetor to the cylinder as it rushes along this passage. 3. Mix the fuel vapor and the air thoroughly. If this is not done the charge will not burn with a quick, sharp, powerful explosion.

Practically all the carburetors used today are of the type known as "float feed." They consist of the following necessary

things: 1. A float chamber which contains the liquid fuel (D). Some sort of a float (E) keeps the fuel automatically at a constant level in this chamber. 2. An air passage (A, C) through which either all or only a part of the air passes on its way into the engine cylinder. 3. A spray nozzle (B) which connects the float chamber with the air passage. As the air rushes over this spray nozzle on its way to the cylinder it sucks out a little fuel in the form of a spray or vapor which mixes with the air as they rush along together. F represents the fuel tank.

All the various makes of carburetors on the market are simply different arrange-



ments, combinations, or adaptations of these fundamental necessities. They also combine, with these, various methods and arrangements by which the governing and regulating systems control these parts of the carburetor.

GASOLINE engines have been almost a ruinous competition to the windmill manufacturers of this country. In Holland the gasoline engines very largely drove out of use the old wooden windmills the pictures of which are familiar to us all as a part of every Dutch landscape; but now steel windmills are gaining in use on the engines. A huge windmill fifty feet across has recently been installed in Friesland to pump off the water from a swamp of 1,850 acres. It handles 65,000 gallons of water an hour. The position of Holland at sea level, and near the ocean, gives a wind movement which is very reliable.

Road Machine and Drag

MANY people have conceived the idea that the only machine needed for road-making is the split-log drag. But the U. S. D. A., which supports the best road bureau in the country, makes the statement that "the earth road can best be crowned and ditched with a road machine, and not with picks, shovels, scoops, and plows."

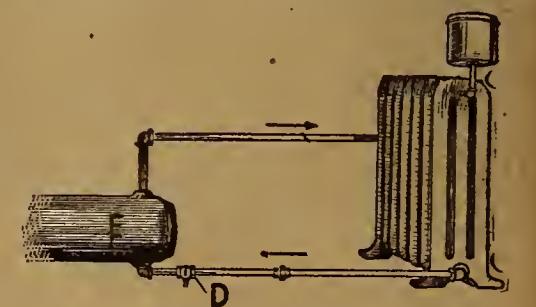
This bureau does not seem to consider the split-log drag for such purposes at all. "One road machine with a suitable power and operator will do the work of many men with picks and shovels, and in addition will do it better." A road machine in bad hands is a road spoiler, but in proper hands it is an indispensable tool for the progressive road district.

Cooler for Gas Engine

By A. G. Simpson

I JUST learned of a unique system for cooling the jacket of an engine that uses the circulating water system of cooling. It is adapted for use with either stationary or portable engines. The one in question is being used on a stationary engine in an elevator. I see no reason why it should not be very satisfactory.

An ordinary heating radiator is used for cooling the water. The radiator really should be elevated slightly above the bottom of the engine cylinder (E), though not so shown in the sketch. It is connected to the engine in the same way a radiator is connected to the boiler for heating a house. An expansion chamber is arranged by means of a small open hopper connected into the system at any point, but elevated above the top of the radiator. Provision



should also be made for draining the system, locating the drain cock (D) at the lowest point.

The natural expansion of the heated water carries it from the engine to the radiator. Here it is cooled by passing through the various cells of the radiator, and then returns to the engine jacket. The number and size of cells in the radiator will naturally depend on the size or power of the engine.

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Finding Jobs for the Idle Engine

Mr. Chug-Chug is Always Willing to Work but He Has to be Shown How

By Raymond Olney

A FARMER who had purchased a small gasoline engine primarily for the purpose of pumping water for his stock was not satisfied with this one-job scheme. He came to the conclusion that it wasn't earning him enough money in return for the amount that he had paid for it. He asked himself why his engine need stand idle a good share of the time any more than a hired man should? Didn't it represent a considerable investment the same as the hired man's wages? To be sure it did, and it was up to him to get busy and devise means of increasing its usefulness. The dollars and cents income from this investment would be measured by the hours per day that he could keep it working.

The line-shaft idea appealed to him as the most practical solution of his problem. Each machine would have a certain fixed position, likewise the engine. The shaft would be the medium through which the power would be delivered to each and all of the machines. To run any one of them would be simply a matter of putting on a belt. It would mean convenience and an enormous saving in time and labor compared to moving the power here and there.

The Right Size of Line Shaft

His engine, as guaranteed by the maker, was capable of delivering about one and one-half horsepower to the line shaft. Aside from pumping water, he decided that it would run the cream separator, the churn, washing machine and wringer, the grindstone, and other small machines if necessary. He also found that there was sufficient room in his milk house for these machines, and that they could be arranged very conveniently for the work that each had to do.

He then set out to secure information regarding the kind and amount of materials that would be needed and the proper method of installing the plant. He concluded that the best source from which to get this information was someone who had had experience in putting up line shafting and who could be relied upon to tell him just what was needed. This he obtained from a man who was old at the business, and as he was of a mechanical turn of mind himself he was confident that with what was told him he could install the shafting with his boy's assistance.

They figured that one and three-sixteenths inch cold-rolled steel shafting would be heavy enough for the purpose, and that the hangers should be placed about six feet apart. With the normal speed of the engine as 500 r. p. m. (revolutions per minute), and considering the machines that it was to run, they decided that the best speed for the line shaft should be not more than 200 r. p. m. The disadvantage of too high speed is that it increases the wear on the shafting and bearings.

The next step was to determine the sizes of the various pulleys that were to be used on the line shaft to drive the different machines.

The method of doing this takes into account four things: (1) size of driving pulley; (2) speed of driving pulley; (3) size of driven pulley; and (4) speed of driven pulley. The first driving pulley is on the engine and the first driven pulley is on the line shaft. If any three of the above factors are known the fourth may be found by the rules at the top of the page.

Iron Pulleys Were Chosen

With the given speed of the engine as 500 r. p. m. and that of the line shaft as 200 r. p. m., then with a 5-inch pulley on the engine the size of the (driven) pulley on the line shaft, to which the engine is belted, will, according to rule No. 2, be 5 times 500 or 2,500, which, divided by 200, gives 12½ inches as the answer.

The cream separator was equipped with a 12-inch pulley and the proper speed at which it should run was 60 r. p. m. The 10-inch pulley used on the churn was required to run at 200 r. p. m., and the churn proper at about 60 r. p. m. The normal speed of the washing machine was about 100 r. p. m. with a 20-inch pulley. The 12-inch pulley on the pump jack had a speed of about 250 r. p. m. The grindstone with an 8-inch pulley should run at about 150 r. p. m.

Knowing the sizes of pulleys for the different machines and the speeds at which they should run, and also the speed of the line shaft (200 r. p. m.), he found the proper sizes of the different pulleys to be used on the line shaft by means of the above rules. In determining these, however, it was necessary to keep in mind that the pulleys on the line shaft, excepting the one belted to the engine, were driving pulleys, while those on the machines were driven pulleys. The sizes were found by means of the first rule given. The following sizes of pulleys were needed on the shaft:

1. Churn—10 times 200 divided by 200 equals a 10-inch pulley.
2. Washer—20 times 100 divided by 200 equals a 10-inch pulley.
3. Pump—12 times 250 divided by 200 equals a 15-inch pulley.
4. Grindstone—8 times 150 divided by 200 equals a 6-inch pulley.

This man decided to use iron pulleys, as they were in most common use, and a good governor pulley on the line shaft to get the right speed for the cream separator. It is important that the cream separator should run at a constant speed with as little varia-

To Find Size and Speed of Pulleys

1. To find the size of the driving pulley, multiply the size of the driven pulley by its speed (revolutions per minute) and divide by the speed of the driving pulley.
2. To find the size of the driven pulley, multiply the size of the driving pulley by its speed and divide by the speed of the driven pulley.
3. To find the speed of the driving pulley, multiply the size of the driven pulley by its speed and divide by the size of the driving pulley.
4. To find the speed of the driven pulley, multiply the size of the driving pulley by its speed and divide by the size of the driven pulley.

tion as possible. Where a governor pulley is used, a good way to obtain the proper speed is to make chalk mark on the rim of the separator pulley. Then while it is running count the number of times the mark makes a complete revolution in one minute, and regulate the governing adjustment to get correct speed. Loose pulleys on which to throw the belt when you want to stop a machine but not the engine are not essential, though they are desirable.

In the arrangement of the machines, convenience is of the first importance. It is a good plan to belt the engine near the center of the line shaft so as to eliminate as much as possible the twisting strains on the shafting. With this data at hand it only remained to secure the materials and install this small but labor-saving farm factory.

One thing that makes the gas engine appreciated is its dependable nature. The hired-hand problem is getting to be serious. We all have heard the cry, "There is not enough good farm labor to go around at prices farmers can afford to pay."

The hired man can and does quit his job at slight provocation, can be idle for a while and be reasonably certain of picking up another job any time he chooses. So grave

man naturally assumes much of the same status in the land owner's intellectual and economic scheme as his land, his machinery, or his live stock.

As an inevitable result of this sort of thinking into which the farmer has subconsciously grown, the hired man is made to feel that he is a part of the equipment rather than of the human element in the scheme.

There are other reasons for this attitude on the part of the farmer. It is claimed with some justice that the character of hired help has materially changed in the last few years. This is true. But the farmer doesn't realize that his help has changed as he has changed. As the farmer has grown to be more of a master of his situation, the help has necessarily grown to be more of a servant.

Those who are not of the stuff from which good servants are made have hunted other jobs. They have become land owners, renters, or have gone to the city. As a rule one of two things is true of the man who works on the farm to-day. He lacks the initiative which makes of him a valuable helper, or he is in a tangle of circumstance that makes of him a hired hand against his will.

First Provide a Steady Job

As long as the chance of owning a farm was open, there were plenty of good men willing to work on the farm until they could save enough to start. As this kind of opportunity grows less, this same class—the best help that any farmer ever had—grows less.

If a man has ambition and energy—the qualities which make him valuable—he isn't going to stay in a position that shows him nothing but an impassable barrier to anything better. It isn't human.

I do not wish to be understood as saying that the farmer is harsh or autocratic. As a rule I haven't found him so—assertively. It is a condition which is felt rather than expressed. The hired man sees his employer in a position of independence. This independence may not be as real as it seems, but everybody has told the farmer that he is the most independent man on earth, until he has come to believe it, and the mentality of the average hired man is not bullet-proof against this contagious doctrine.

Perhaps the forced convictions of his own narrow sphere, bounded by high-priced land and an eight months' job on the farm, or the somewhat seductive view of the part played by a human atom in the city, has given him a picture of the boss as being worse than he really is.

Of course you realize that long hours and the partial isolation of farm life has something to do with the scarcity of farm help. Man is a social animal—even though he is only a hired man. And a day's work overlong, together with an impoverished social life, turns a lot of men toward the town. Candidly, I don't think that this fundamental condition will be materially relieved by scolding about the deficiencies of the hired man.

As to conditions of sanitation and safety, these of course are no better for the boss than for the hired man. They are not the best in either case. But I think these two factors have little effect. They are a part of the environment, and while they might influence a man who has come from the city to the farm, they are accepted with little criticism from those who have grown up under them.

As I see it, the cure of the situation is more and better hired help in which the farmer can put more confidence and with which he can co-operate. This desirable condition cannot be accomplished until some things are done first. You can't get that kind of help until you provide the necessary conditions to attract them. That means a steady job, better wages, and being recognized as an equal. And for most men who will ever be worth anything in society it means the hope of some day owning a farm.

Going deeper this means, on the part of the farmer, diversified farming to provide work the year round; system, to divide it into a fair day's work; and more profit to the farmer, so that he can pay bigger wages.

The Doubtful Blessing of Acquisitiveness

For the class who want to be home owners it means that some of the inflation must come out of land values, so that a farm and the stars won't both look so equally out of reach. There is undoubtedly a large class of men who would make the best kind of help if fairly treated; in fact, I think there is a large percentage of men who are good for nothing else, and who under sanely arranged conditions would remain in this category quite to their own content and profit and contribute very largely to the stability of the rural communities. Given a steady job at fair wages, and provided with a house, garden, cow, and chickens, this type of man would be better off and would be a more valuable element, both in the social and the producing scheme, than he could ever hope to be as the owner of a farm.

But the renter can't provide all of this; the average farmer won't either, because he is accursed with the somewhat doubtful blessing of acquisitiveness, or because his natural sense of humanity has not been quickened. What the solution is I haven't the slightest idea; and, furthermore, I haven't the slightest doubt that every professor of agriculture in every college in the United States could tell us all about it.



The line shaft is one of the best ways to distribute power to stationary machinery

has the farm-labor question become that the National Commission on Industrial Relations has taken it up.

No side of the problem is more interesting than the hired man's attitude toward his employer. The following discussion was written for the commission by William Johnson, until a year ago a farm hand in Wisconsin and now assistant editor of the "Farm Magazine," Omaha, Nebraska.

How Machinery Affects the Hired Man

By William Johnson

I CONFESS to a good deal of skepticism as to the ability of any commission to cure existing difficulties. All the trouble arises from things that are largely fundamental. What Professor Laumann calls the insurmountable "individualism" of the farmer plays a big part in the situation. And you can't cure that unless you make farming something radically different from what it is now—different from what in the very nature of things it must be.

The farmer is more independent now than he has ever been. And he knows it, subconsciously at least. He reflects it in his actions. Machinery multiplies the result of his efforts. He can till more land, and it doesn't make as much difference if a hired man quits now as it did in the days of the cradle or reaper.

His very ability to till more land grows into land hunger. This means more "individualism."

It all works out to produce on the part of the farmer a feeling of secure aloofness. He's independent of any set wage. A good year or bad, he still lives. It's being borne in on him that he is the most vital unit of society. He has always believed this, and now that the whole world is telling him so he has reached a mental sureness as to the verity of his position which makes him intellectually chesty. This does not tend to make him democratic in his ideals. The hired

FARM AND FIRESIDE



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An Engineering Supplement

Devoted to the Best Ways of Getting Farm and Household Work Done

Motors, Horses, and Fuel

WHO produce the food of the world are obliged to do the work with horsepower. And the horse is condemned by engineers as the most wasteful power plant in the world. Edison once said, "The horse is the poorest motor ever built." He eats twelve thousand pounds of food a year, says one. Another declares that he eats ten pounds of hay for every hour he works. And his "thermal efficiency" is given as only two per cent., which means that out of a hundred pounds of power put into him in food, he delivers only two pounds at the whiffletree.

Yet this poorest of all motors has more than doubled in price in the last ten years. He eats as much as ever, and what he eats has gone up in price as much as he has. He can't pull any more than he used to pull, but his harness, his barn, and almost everything we hitch him to has gone soaring in value.

And yet people blame us for the high cost of living when we have to produce it with an old hay motor of this sort which, because it is alive, has to be stoked with hay, corn, and oats whether it is working or not. How can they expect their food to come cheaply when ninety-eight per cent. of the fuel used in the engines which produce it is wasted?

Of course the roll-top desk farmer will tell us to get tractors. Good advice, perhaps, for those to whose conditions tractors are adapted. But as a matter of fact no wheel has as good tractive qualities as a horse's foot. Where there are stumps, stones, hills, small fields—in short, under the conditions of the majority of farmers no tractor has as yet been shown equal to the horse.

The fuel of the tractor has gone up too. One company we know of is marking time with a promising traction plow waiting for cheaper fuel. They could sell their entire output for years if they could promise the successful use of kerosene. A Cuban firm buys their plows, but uses alcohol made from the refuse of its sugar mills. The whole motor world, so far as farming machinery is concerned, would be alive with activity if we could see our way to cheaper, more flexible, lighter tractors and cheaper fuel. Tractor farming is making mighty strides—under the greatest difficulties. As for the farmer, if he had cheaper power he could produce cheaper food.

How to Know Good Paint

PAIN is to the structure on which it is used what skin is to the body. It keeps out the principle of decay. Just as the human body festers and sloughs off when the skin is broken, so wood disintegrates without a skin. The main difference is that in the case of the body the process is more rapid—and painful. The absence of pain is in favor of the skinless building; but in another way the skinned body has an advantage. It grows a new skin, while the building wastes away and comes to ruin, and never, never grows a coat of paint.

In both cases the skinless state lets in bacteria of decay. The bacteria which enter wood, work slowly but surely. Where there are joints, cracks, hollows, or punctures in the wood, moisture gets in, and moisture is just what the bacteria of decay want. They flourish in it.

The skin of a building is applied with a brush, and fills all cracks, hollows, joints, and punctures. No carpenter can lay boards so close that moisture will not penetrate between them, but paint can shut out water completely.

A skin should be complete and water-tight, should resist weather, and be so tough and flexible that ordinary grief of wear and tear will not affect it. Two things make up a paint—a thinner to make it flow, and a pigment, or solid portion, to make it stay. This is true of all paints.

There is just one good thinner—linseed oil. Farmers sometimes complain of the cost of good paint.

Well, the growers of flax profit by this high price, for linseed oil is made from flax. Any paint which is made with a thinner containing less than eighty-five per cent. of linseed oil should not be used, and a really first-class paint should use ninety-five per cent. Some paints use as much as twenty per cent. of turpentine in the thinner. These are swindling paints and should not be used. The rest of the thinner, aside from the linseed, should be Japan drier, which is more than half linseed oil. Only a very small amount of turpentine is found in any good paint.

Some paints use a thinner carrying as much as fifty per cent. of benzine. This is another swindle. The only proper use of benzine about a painting job is for cleaning metal surfaces so paint will stick to them. It is useful for this, but should not be in the paint, where some cheap-john paint-makers so often put it.

Some poor paints contain as much as forty per cent. of water in the thinner. This is a swindle, net. If there is any substance in which water should not be found it is in paint.

The proper pigment, or solid matter, to use in farm paints is white lead. Zinc white is a largely used pigment, and is good for certain uses. Oxide of iron and red lead are also used, but white lead is to paint what gold is to the currency—the basis and standard. To tell of the various wicked and deceitful things used in the place of good pigments in paints would take a page.

You may mix paints yourself, you may hire a painter to mix them, or you may buy ready-mixed paints. Some ready-mixed paints are bad, but there is no reason to think that the village painter is any more to be trusted than the man who puts up the mixed paints.

Most of the bad ready-mixed paints are made by fly-by-night manufacturers with no reputation, and



Paint enhances the durability of good architecture

often without any discoverable post-office address. Ready-mixed paints made by good concerns are reliable, and usually better than you can mix yourself, because they are put up under factory conditions, are uniform, and are mixed as they should be. They are far safer to use as the skin of your building than the paints mixed by any local painter, unless you know him to be straightforward in every respect.

Wanted—A Title

WHAT does the picture on the front cover mean to you? The artist had a definite thought in mind when he drew it, but what does it suggest to you? For the best title a cash prize of \$5 will be awarded, \$3 for the second best title, and \$1 each for the next eight, making ten prizes all together. The title may be original, or it may be an appropriate quotation, in which case the name of the author should be given. The shorter the title the better; you may send as many as you desire. Address the Contest Editor, Farm and Fireside, Springfield, Ohio, and mail your letter before April 10th.

Down-to-the-Ground Education

A CLASS in horseshoeing has received instruction in Cornell University this winter. Such classes should be opened for the students of all the agricultural colleges. No horse is better than his feet, and few feet are better than their shoeing. Few horseshoers know anything useful about the anatomy of the foot, or the scientific relations between shoeing and foot diseases and the movements of the horse.

A horseshoer should be a man of as much knowledge and skill as a dentist. Since surgery passed from the hands of the barbers into those of surgeons, no work of which we can now think has been so unwisely abandoned to the rule-of-thumb worker as horseshoeing. The Cornell course was open to all residents of the State free of charge. With this work freely taught in the colleges there is no reason to doubt that the time will come when it will be studied and practiced as a part of the work in the consolidated rural schools.

LONDON reports a shortage in cotton for the mills of the world. The American crop, which makes up seven tenths of the world's supply, amounted to over fourteen million bales, the largest in history except for the year 1911. For all this, the surplus when the new crop begins to come in is smaller than usual.

The Farmer as an Engineer

EVERY farmer is an engineer, whether he knows it or not. The engineers of the various agricultural colleges are teaching the things farmers have always had to teach themselves, and teaching them better; but they are the same things. They study agricultural machinery, but it was the farmer himself who invented most of the machines they study.

More than ever the farmer must be an engineer now. It took engineering to shear sheep with the old shears, and good engineering, too; but now it is best done by shearing machines operated by power. It took engineering to house cows in the old barn, feed them the hay and grain, water them economically, milk them by hand, strain and set the milk, and churn it; but it takes better engineering to build a sanitary barn, keep out contamination from the milk as is now necessary for the best markets, build and fill a silo, carry away the manure in a carrier, milk with machines run by gasoline engines, separate the cream with either a power machine or one run by hand, and get the cream to market in good condition. Yet to all these things we must come if we have not already done so.

And the end of the new agricultural engineering is not yet. We must have a water supply in the house, run by gravity, power, or hydraulic ram. We must dispose of the sewage—civilized life will soon require it of such of us as have not already made the break to the new system. We must have bathrooms and sanitary closets. We must have lighting systems, wherever possible, in which we will use some sort of gas, gasoline, or electricity. The children must have these things or they will go where they can get them. There is no use kicking against progress. There are neighborhood laundries to build, and creameries and cheese factories. The whole matter of better schoolhouses will soon resolve itself largely into a matter of buildings—buildings and teachers.

Then there is the whole field of tractors. This industry has not yet begun. American inventiveness will one day bring forth machines for every sort of farm—and machines which will be cheaper than hand labor. The farmer of to-day needs to study and understand the internal combustion engine—and the farmer of the future will be an expert. The farmer is the best equipped average man to handle the modern machine in the world. He runs his engines and his motor cars more economically than the average town man, because he lives with machines of many sorts. He is an engineer, and he will steadily become a better one. From typewriters to tractors is a long range, but the farmer covers it, and not half badly either.

Ten Comforts That Pay Their Way

- | | |
|--------------------|-------------------|
| 1. Cream Separator | 6. Gas Engine |
| 2. Manure Spreader | 7. Washing Mach. |
| 3. Running Water | 8. Fanning Mill |
| 4. Typewriter | 9. Sewing Machine |
| 5. Telephone | 10. Automobile |

The Cream Separator

By D. S. Burch

ONE day the live stock gathered
To gossip and debate;
'Twas down beneath the oak tree in
The pasture near the gate.
They talked about their rations
And their concrete feeding floor,
For animals are smarter than
We give them credit for.

The wisest of the creatures was
A motherly old cow.
"This farm's a pretty good one,"
She began, "except somehow
It doesn't seem complete without
A separator that
Will take the nice rich milk we give
And skim out all the fat."

"You see the skim milk's fine," she said,
"For calf feed and for pigs,
And then there's just the cream to haul,
Which only takes light rigs
Instead of heavy wagons
To perform the hauling stunts.
The skim milk stays upon the farm
And fattens all you runts."

"It's money in the pockets of
The man who raises stock;
He makes his gains much quicker and
We bring more at the block."
There must have gone a message to
The owner of that cow,
He thought it over—and he owns
A separator now.

The Manure Spreader

By Chas. B. Driscoll

SCATTER manure, rich manure, over the
hungry land, but pray be sure, doubly
sure, you do it with careful hand.

Back of the stable, its richness is spread
while the land in the valley lies wasted and
dead. All through last summer your corn
crop grew pale, while you sent to heaven a
pitiful wail, crying, "Oh, why can't I ever
raise corn? Why do I labor, and why was
I born?"

What is the matter? I work like a
dog in summer and winter, in heat and in
fog, yet somehow old Brown, who rides
silly machines for spreading manure, has
bushels of means. While he is thus wast-
ing his valuable time in riding about with-
out reason or rime, here do I labor and
ceaselessly toil to wrest a bare sustenance
out of the soil."

Why do you weep, needlessly weep, over
your barren fields? There in a heap, fast-
drying heap, is the stuff that would bring
you big yields.

Friend, learn a lesson from old Farmer
Brown. The next rainy day why not drive
off to town and buy a machine that will
wake up your land? You can raise crops
on your glistening sand if you will but
scatter that unsightly pile carefully over
your fields. Not worth while? My dear
sir, I regret to admit, you're a chump, or
you wouldn't leave riches lie there in the
dump. Casting your bread upon waters
that run may sometimes look foolish. It
isn't all fun, but they say if you do it the
bread will come back with a whole wagon
load of fat loaves in its track.

Cast the manure, strong manure, onto
the land to-day, but do be sure, doubly sure,
you do it the modern way.

Running Water in the House

By Alice Lindsey Webb

MOTHER'S birthday's coming soon;
Want to give her something nice?
I know what she'd like—we'll get it!
Times are good; we've got the price.
We'll just tap that spring on Baldy,
Run another pipe line in
From the windmill to the kitchen.
Why, it's been a downright sin
That we've let the girls and Mother
Work that pump in rain and cold,
Wearing backs and arms and shoulders,
Prematurely growing old.

Tell you what, we'll have a boiler
Hitched up to the kitchen range;
Then the sink will have two faucets—
Hot and cold! Won't it be strange,
When you want to wash the dishes,
Just to stand and let 'er run?
Used to lug that old teakettle,
Boiling hot, and weighed a ton.
And we'll have a modern bathroom—
No more washtub week-end souse;
It will be just like the city—
Running water in the house!

E-W

The Typewriter

By Berton Braley

YES, we have a typewriter now,
And Father is pleased as a boy,
The wrinkles are gone from his brow,
He pounds on the keyboard with joy;
His writing was awful judged,
It lost him both friendship and pelf,
'Twas torture for others to read,
And he couldn't read it himself!

But now that the typewriter's here,
It puts all such woes on the blink;
His letters are perfectly clear
And no one tips over the ink;
No pen point to sputter and blot,
No pencil to break and to smudge,
Make Father unpleasantly hot,
Or give him a frown and a grudge!

No, Father's a business man keen
Who acts in a businesslike way,
And thumps on the writing machine
His various letters each day;
The copies are neatly on file,
The wrinkles are gone from his brow,
He does things in up-to-date style,
For we've got a typewriter now!

The Rural Phone

By Chas. B. Driscoll

MY FATHER lived on Pigwig Farm and
worked it forty years. When horses
died my father cried a bucketful of tears.
He was a skillful farmer and it broke his
heart to see a good horse lie right down and
die as easy as could be when up at Farm-
ington there lived a veterinary man who
had the dope to put the hope in any horse-
flesh fan, for if the doctor only could make
certain to arrive before 'twas dead, my
father said, he'd keep the brute alive.

It's different now at Pigwig Farm. Our
horses never die. When one gets sick we
know right quick we do not need to cry.
Instead we use the telephone—the greatest
crop that grows. We phone the doc at one
o'clock and everybody knows that he'll be
here at one-fifteen with chime bells on his
coat, with cleaver keen in his machine to
save old Dobbin's goat.

Sometimes I hate the rural phone. The
women will hang on, or stand, all day dis-
cussing May and Carl and Lou and John.
But let the women have their fun. It
drives away their blues, and even men will
now and then inquire about the news.

My Partner, the Gas Engine

By D. S. Burch

LITTLE helper, little friend,
With impulsive heart of fire
And electric nerves that send
Jumping thrills along each wire.
It's a pop-pop and you're off,
Racing till I throw the clutch.
Then you gasp a bit and cough,
But it doesn't stop you much.

So you separate my cream
And you run the fanning mill.
We're a pretty lively team
When we both work with a will.
When I've had you turn the grindstone
You have never seemed to mind,
Nor grumble or accuse me
That I had "an ax to grind."

Jack Loaferslouch that worked for me
Before gas-engine days
Would always rather argue
Than try to learn my ways.
But since I bought my engine
I have lived up in the air,
For we get along just splendid
And are cronies now for fair.

The Washing Machine

By Alice Lindsey Webb

HER hands were like lilies, I said.
"Don't doubt it; but what could she do?"
She knit while she read,
And baked all her bread,
And did up the week's washing too.

Her hands were all wet from the tub?
And roughened and red? Not a bit;
The washing machine
Just worked on serene,
While ladykins looked on and knit.

"But who turns the crank?" Well, you see
The engine that's running the saw,
The feedmill and churn,
Gives power "to burn,"
So why get her hands coarse and raw.

I saw she was working too hard,
So I fixed up these things for my wife.
Blue Monday has gone,
And I'm glad, for one,
To see some real joy in her life.

I'll give you a piece of advice:
Make happy your own household queen!
Just smash up the tub,
And say, "No more scrub!"
Then get her a washing machine.

The ten time-saving and labor-
saving devices listed opposite have
demonstrated their ability to pay
good dividends on their cost if there
is sufficient work for them to do.
How many of them have you?

The Fanning Mill

By D. S. Burch

CLEAN seed, good yield,
No weeds in field.
Farm pays, you smile.
Life seems worth while.

Seed poor, doesn't grow.
Weeds fill every row.
Hard luck gets blame,
But that's wrong name.

Good sense will win.
Face luck, then grin.
Wise men all know
It's time to blow.

Fan dead seeds out,
Put trash to rout,
Cleaned seed, O. K.
Hard luck good-day.

A Song for the Sewing Machine

By Alice Lindsey Webb

OH, THE pathos of the mother
With her needle-roughened fingers
Toiling on into the weary midnight hours!
Oh, the precious time that's wasted,
And the endless seams all basted,
Till the milk of human kindness often
sours!

If you're patching, mending, darning,
Till your fingers ache and tremble,
When a good machine would do it in a
wink,—
Really wasting time and money,—
In this age of milk and honey,
You're a century and a half behind, I
think.*

I can tuck, and plait, and ruffle,
Do the shirring, puffing, hemming—
The attachments are the cleverest I've
seen;
I can finish all I've planned,
Much more quickly than by hand.
Pray, then, why should I not treasure my
machine?

*The first known sewing machine was patented July
24, 1755, by a German tailor.

The Farm Automobile

By Chas. B. Driscoll

I'M a plain corn-plowing farmer and I
wear blue denim pants; I can't play golf
nor tennis, and I never learned to dance.
I still get up at five o'clock and feed my
squealing hogs. I've always got some work
to do, in sunshine or in fogs.

I'm here to make confession and to offer
a defense. I've been accused of recklessly
indulging in expense because a year ago
to-day I purchased a machine—an auto-
mobile, motor car—you catch just what
I mean? Some neighbors held their
diaphragms and winked a little bit. They
said I'd "blowed my bank roll," that I
"thought that I was It," and predicted I'd
be crying before a month had passed, be-
cause I had invested in a toy that wouldn't
last.

Now listen while I figure up just what
that auto cost, how much I've earned by
means of it, how much was gained or lost.
My bill from Jenkins' Auto Shop includes
just every cent—first cost, repairs, benzine
and oil, and this is what I've spent: Two
thousand silver dollars, or their equal in
long green. "A fool there was?" Just hesi-
tate. We'll see what can be seen.

Regarding now the credit side I find:
"One mother-in-law, in perfect sound con-
dition, without a scratch or flaw and weigh-
ing half a quarter of an English standard
ton. Worth half a million dollars—see
Bradstreet, R. G. Dun, or see my wife,
whose income lasts while her fond parent
lives, or see that parent's will and what
to charity it gives."

We saved the dear old lady one night,
when chores were through, by driving 40
miles an hour to Doctor Ripperoo. She
had appendicitis, and a minute or two late
would have placed my valued relative
within the pearly gate.

Another item reads: "Time saved and
used in plowing land, worth just \$200."

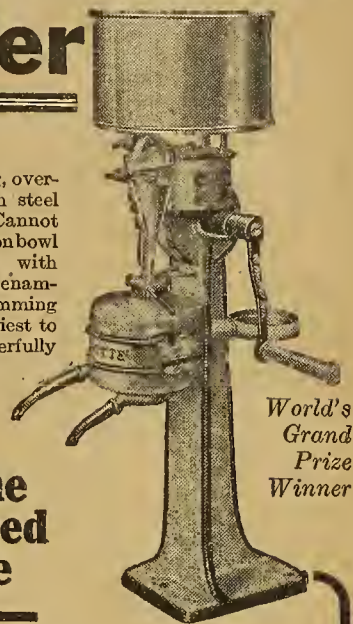
Another: "Cash in hand, resulting from
a trip to town to sell some real estate, three
thousand bones and fifty cents."

This is an estimate: "Pleasure, at cur-
rent values, about 20,000.00 sous, to which
add 40,000 more for keeping off the blues."

A chump you call me, do you, for buying
that machine? You make me laugh, my
gentle friend, your insight is so keen.

Greatest Cream Separator Offer

Self balancing, over-
head bowl with steel
ball bearings. Cannot
vibrate. Cast iron bowl
chamber lined with
white bath-tub enam-
el. Greatest skimming
efficiency. Easiest to
clean. Wonderfully
easy to operate.



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The Melotte—the wonder-
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lotte—the world's grand prize win-
ning cream separator, now offered
to any responsible American
farmer on the first bona fide free
trial, no-money-down offer ever made
on any separator, and at the same price
you would pay in Belgium, plus only
\$1.75 for water freight.

All others who have pretended
to offer you a free trial have taken
care to get something out of you
first. But we don't want anything.
The Melotte, introduced only one
year ago, has swept the country. And
now the duty is off—the Melotte comes
in free. You win!

Duty Free Save \$15.25

You win! on this tariff reduction.
The Melotte—the wonderful imported
French-Belgian cream separator—the
prize winner all over Europe—now of-
fered at an unheard of price in America.
The duty is cut right off. You get
the full benefit. Save \$15.25.

Not a Penny Down —30 Days Free Trial

Your simple word that you
would like to see this cream separa-
tor in your own barn or dairy house
brings it to you instantly. We don't want a cent
of your money. We give you a free trial that
is a free trial in every sense of the word. No
C. O. D.—no lease nor mortgage. Watch your
profits go up. Watch the increase of the
amount of cream, then, if you do not believe
that you ought to have a cream separator, just
send it back at our expense. If you decide
you want the Melotte, keep it on extremely easy

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These monthly payments
are so small that you will hardly
notice them. You only pay out of
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the separator right in your dairy house while you
are paying for it. In reality you do not pay
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**RUMELY
OilPull
TRACTOR**
LA PORTE, ILL.

Burns cheap, easily obtained kerosene or distillate, at all loads, in all climates, at any kind of work.

The perfection reached in the OilPull tractor has given it such prominence in the oil-burning tractor field, that, unconsciously perhaps, the term "OilPull" has been applied to any oil-fuel tractor. But there's only one OilPull because—

The name OilPull is registered in the U. S. Patent Office. It belongs exclusively to the Rumely Tractor.

None but the Rumely OilPull burns kerosene and the cheaper fuel oils efficiently all the time.

There are more than 4000 Rumely OilPull Tractors now in successful operation and every one is burning the fuel it was sold to burn.

The Rumely OilPull still holds the record for lowest fuel consumption won at the Winnipeg Contest in 1912.

Flexibility of control is an exclusive feature of the OilPull—made possible by the Secor-Higgins Oil-Fuel System, which is patented and controlled by the M. Rumely Company. By this system the supply of fuel is made to conform exactly to the power need of each instant.

There's Only One OilPull—Rumely, LaPorte

The Rumely OilPull Tractor is oil-cooled—no danger of radiator freezing. Danger from fire is minimized when the OilPull is your power.

Built in three sizes, 15-30, 25-45 and 30-60 horsepower. We have the right size for your farm and for the work that you have to do.

The OilPull is simple, durable and easy to operate. Anyone can run it after a little instruction. It furnishes cheap, reliable power for plowing, harvesting, hauling and road making as well as for all sorts of belt work.

Behind the OilPull is the sixty-one year's experience of the M. Rumely Company in building power-farming machinery. Our 49 branches and 11,000 dealers are ready to furnish service and supplies at all times.

Ask for OilPull Catalog No. 353.

Rumely Products Company
(Incorporated)
Power-Farming Machinery
CHICAGO, ILLINOIS

Ad-942

Cheaper Motor Fuel Substitutes That are Taking the Place of Gasoline

By James A. King

Motor Spirits

"MOTOR SPIRITS" is the name given to a new gas-engine fuel placed on the markets during the past year. It is claimed to be superior to gasoline for all power purposes. Of especial interest to the owners of gas engines is the fact that it is cheaper than gasoline.

Gasoline, naphtha, distillate, kerosene, fuel oil, lubricating oils and greases, paraffin, and many other commercial products are obtained from crude petroleum by the process known as distillation. The various grades of gasoline (by some people called naphtha) are the first of the above list to be distilled out of crude petroleum. Then come the different grades of kerosene, and then what is commonly called engine distillate.

It's Cheaper Than Gasoline

One of the fortunate things about motor spirits is that it is distilled from what is left of the crude petroleum after all the different grades of gasoline and kerosene have been removed. So the development and use of it will not reduce the supply of these old and familiar fuel and illuminating oils. The exact proportion of the crude petroleum which can be made into motor spirits depends a great deal upon the character of the crude oil itself and what oil field it comes from. It seems at present that this proportion will average about one fourth to one third.

It is a little heavier to the gallon than is gasoline. Therefore it should give a little more power, if used properly. It is now about fifteen per cent. cheaper, a fact that is good news to engine owners. Naturally its production has not been very widely developed in this one year, so one cannot buy it at every crossroad as he can gasoline. But in a year or so its distribution should be just as general as gasoline, in this country.

The Odor is Unpleasant

Motor spirits has already been used extensively in automobiles, motor trucks, motor boats, stationary, portable, and traction engines. Some users report they cannot start an engine as readily in cold weather as they can with ordinary engine gasoline. Others report they have better success with it. Some report that their engine carbonizes a little faster on it; others say they find no difference. The one universal criticism is its pungent odor. It contains a small percentage of sulphur and other foreign substances found in the crude oil which give a slightly unpleasant odor both to the oil itself and to the exhaust gases when it is burned. These ingredients could be removed; but to do so would increase the cost, thus defeating one of the main reasons for developing this new fuel.

Any difficulty encountered in using it is more likely to be the fault of the engine or the operator than of the fuel itself. It requires more heat and a higher temperature to vaporize every bit of this fuel than is necessary for gasoline; but the spirits will begin to evaporate at a lower temperature than will ordinary engine gasoline. When starting in cold weather you should "flood" your carburetor a little more. Then, to get the best results, run your engine a little hotter than on gasoline.

Most Engine Operators Waste Gasoline

You need a big, rich, hot spark to get the best results. The carburetor needs a little more careful adjustment according to the load the engine is carrying. But if you look after these things carefully you should have no trouble in using motor spirits, and should have no more carbonizing than with gasoline. You should certainly be willing to give this careful attention when it means saving, on the present price basis, fifteen per cent. of your fuel bills.

According to my own observations this care would produce a still larger saving because it is so easy to operate an engine on gasoline that most operators do not get as low a fuel bill as they should.

Strain Your Gasoline

STRANGE as it may seem, a large number of car-drivers do not do this important thing. They grab up any old bucket or can, fill it with gasoline, and dump it into their fuel tanks. This practice often causes an immense amount of trouble.

It is no trouble to strain the gasoline as it goes into your fuel tanks. A very fine copper gauze can be had which will strain out all dirt and foreign particles. And when wet with gasoline no water will pass through it. Probably the best and surest strainer is chamois skin. But many people do not like to use it because the gasoline passes through it so slowly.

A good scheme is to have a cup-shaped strainer fitted into the opening through which the fuel is poured into the tank.

Some manufacturers supply such a strainer with their cars. This should be removable so it can be picked out and its accumulations removed each time after filling the tank. This will prevent its being washed into the tank from the sloshing around of the fuel as the car is being driven. A collapsible strainer of this kind can be easily made at home by sewing a small bag of chamois to a wire hoop which is a little larger in diameter than the opening in the fuel tank.

A Kerosene-Gasoline Mixture

WHILE motoring with an acquaintance in Kansas last fall I learned that he used for his touring car an engine fuel composed of five parts of gasoline and one part of kerosene. He had but the one carburetor, which was the original one which came with his car, and he handled his engine in exactly the same way as if he were using nothing but gasoline.

In proportion to the cost of fuel he was able to get more mileage out of his car than by using gasoline alone, and none of the few engine troubles encountered were attributable to the use of kerosene.

Kerosene Carburetors

THE liquid fuel of a gasoline engine must be thoroughly changed into a true vapor before it is ignited. It is much more difficult to properly vaporize kerosene than gasoline. This fact presents the chief problem in making a kerosene carburetor. Another problem is the proper control of the heat of the engine. Kerosene heats it up much more than does gasoline. Now an engine works best and most economically when the cylinder is just as hot as it dares be without binding the piston and "pounding." If the cooling system is designed to work properly when burning gasoline, the engine will get too hot when burning kerosene. And if designed for burning kerosene it does not get hot enough to work well on gasoline.

Heat the Fuel, Not the Air

The most successful kerosene carburetors seem to be those which heat the fuel as it goes to the spray nozzle. By heating it almost to the boiling point the rush of air over the spray nozzle produces a fine, mist-like spray mixed with pure fuel vapor. The part of the spray which is not yet a true vapor is quickly changed into that form by the heat of the engine as it is drawn inside the engine cylinder. Some manufacturers heat the air instead of the fuel.

This is not so good, for a very simple reason. The power of a charge depends on the actual amount of fuel and air mixture in the cylinder. As air is heated it expands so that there is not so much of it in a cubic foot. For this reason, heating the air instead of the fuel actually reduces the power of the engine by reducing the amount of mixture which can be taken in at each charge. For this reason I consider it better to heat the fuel than to heat the air.

The cooling system should be designed to give best results with gasoline. Then a water spray can be used to control the extra heat that is produced when burning kerosene. This water spray is provided for in the carburetor. A second float cup and spray nozzle are provided. Soon after one begins to burn kerosene the engine gets hot and begins to "pound." When this pounding is noticed the water nozzle should be opened up gradually, a little at a time, until the pounding ceases. This causes a little water spray to be drawn into the cylinder with the charge of mixed fuel and air.

The Water Spray Prevents Carbonization

Whether the water vapor is simply changed into steam by the extra heat, thus cooling the engine, or whether it is actually broken up into the original elements, is not known. The important fact is that the use of the water spray controls the extra heat successfully and keeps the engine properly cooled. Its use also, in some way or other, prevents the deposit of carbon in the cylinder—one of the meanest difficulties encountered in producing a successful kerosene carburetor.

The best kerosene carburetors combine these two features: 1. Some method for heating the fuel so as to give complete vaporization before ignition. 2. A water spray for controlling the extra heat and preventing carbonization of the cylinder and piston head. They all use gasoline for starting. Some of them run it through the same cup of the carburetor as they do the kerosene. In such cases, after the engine gets warmed up in good shape, a valve in the gasoline pipe is closed and one in the kerosene pipe is opened. In others there is a special jet or nozzle for spraying gasoline direct into the intake pipe without its passing through the carburetor proper.

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My Auto and I

A Case of Mechanical Love at First Sight, Our Misunderstandings and How We Get Along Now

By W. V. Relma.

ABOUT four years ago I got the automobile fever, bought a machine, and took to the road—often to the roadside. I don't recall now just what was the immediate cause of my buying, but in the fall I had determined to buy an automobile. I knew as little about autos as anyone possibly could; possibly it was this state of blissful ignorance that caused my downfall. Realizing my ignorance, I felt sure that if I entered the smoky, oily place where machines were sold, and laid down my money, I'd probably get a Model-A Lemon.

So I determined to learn all I could about them before spring, when I intended to buy. I sent for catalogues of all kinds of cars, bought motor magazines freely, and struck up a close acquaintance with the garage men in general. I also examined a number of second-hand cars.

One day I answered a newspaper ad offering a car cheap, and made arrangements with the owner to meet him and try his car. He showed me the most dilapidated affair I ever saw, offering to sell for a hundred dollars. He took me for a ride and allowed me to drive. I almost bought because of the excitement of the experience.

I Paid for a Thorough Demonstration

I next looked at a small machine which was very popular then, and is still seen occasionally. The agent was the first real salesman I had met in the auto game. Most of them allowed me to walk into the garage, look around, and poke any car I chose in the ribs, without comment, but this man actually presented the details of his machine in a plain way. So I made arrangements to go for a demonstration. I told him I wanted to learn about machines in general and his in particular; also, that I didn't want any "around-the-block" demonstration, but that I wanted to go out for half a day and try the car for comfort. So, as I did not wish to be under obligations to him, I offered to pay for his time and expense.

We went out and he drove a while, answering my numerous questions, then he allowed me to drive and explained fully each thing I did and why, and I believe it was the most helpful single experience in my auto career. I was paying for my experience, but it was the cheapest auto knowledge I ever bought; and I got more than I paid for. The agent allowed the oiler to run dry, and we burnt out a bearing just as we got back to town. This taught me the first and most important lesson of automobile driving. Use plenty of oil, use good oil, see that it is always working. More automobiles are spoiled from lack of lubrication than any other one cause.

I told this agent I would take his machine if it was repaired by a certain date. It wasn't finished by that time, and having in the meantime seen another car I liked better I bought the latter.

Getting My Auto Home

I got a friend to coach me in driving it. The first day we took a thirty-mile trip in the country through heavy mud, and were so long on the road that we had to leave the car in a garage and return home on a traction car. The machine stayed there for several days, and as my friend had gone away I determined to go after it myself, although I doubted my ability to get it home. Having never started it I had considerable trouble in cranking up and getting started at the garage. Finally I got out and to the edge of town when the car, with a few dying gasps, stopped and refused to budge. So I got out with my best professional air, although with a sinking heart, and raised the hood.

A man standing on a hill near-by and a plumber-looking chap in overalls equipped with wrenches and pliers came to my rescue. An ignition wire had gotten loose.

The overall chap soon discovered this and remedied it. I gave him a cigar (these cigars I had purchased for such emergencies, as I don't smoke myself). I went on my way more cheerfully till about halfway home. Then I encountered a hill with sand upon it and got stalled. I was stalled in front of a house where a pretty girl was standing at the gate. I got out and remarked to the girl that it was pleasant weather for pushing automobiles about—just cool enough in fact. With the aid of her small brother I got the car over to the side of the road where one wheel would get traction upon solid ground, and was soon on my way, and without further mishap got home.

After having acquired a certain amount of skill in driving I was in constant fear of punctures. I had never owned a bicycle and knew nothing about making tire repairs, so I began to study up on this point. To this day I can't imagine a more horrible fate than that of a novice who has bought a second-hand machine with bad tires, and who has tire trouble on the road, because to me there is no more irritating trouble. However, my machine was new and the tires were oversize (by that I mean larger than necessary), and it was a long time before I had a puncture. A friend of mine who recently bought a machine has practiced in his garage the art of taking off and putting on tires so as to be prepared for road emergencies. I believe this is a very good practice.

On one occasion a friend and I started out gaily about dusk one summer evening. After going a short distance we stopped without warning at a spot opposite three half-grown boys who were sitting upon a fence. Of course they laughed as I lifted the hood and looked in with half-suppressed vexation.

I noticed a loose wire waving inside, and had just sense enough to attach it to the point where it apparently belonged, and we were soon upon our way.

That taught me my next important lesson. Look the machine over every morning for possible trouble, and every two weeks or so go over it very carefully and grease or oil all out-of-the-way parts.

Now I do not mean to say that it is good to develop an aggravated condition of "tinkeritis," but just a good common-sense looking-over.

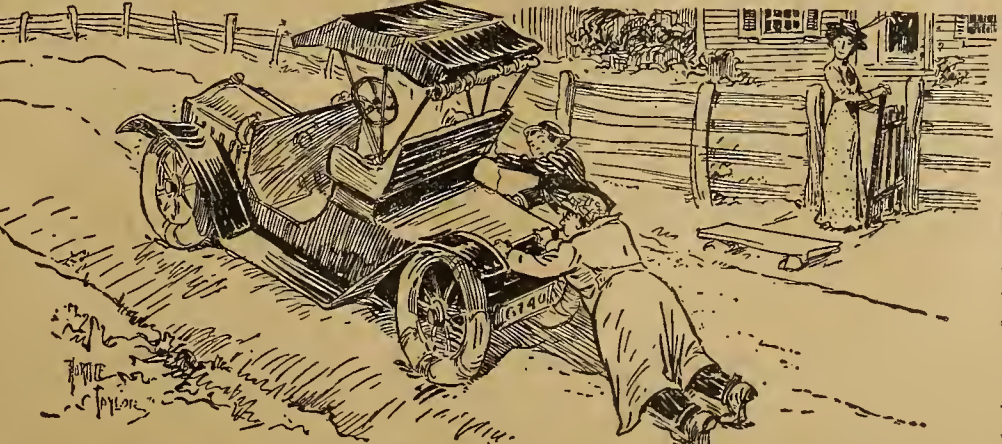
Experiences with Public Garages

On another occasion I was with a friend, making a long trip, and we had a very annoying experience. After stopping in four or five garages for night storage and various supplies, we had a blowout in an old tire which we had expected to go at any time.

"Oh, that's all right," my friend said. "I have an extra already inflated on the rear to put on." So we took it off of the tire holder and removed the water-proof cover. The most dilapidated old tire imaginable met our gaze. Somewhere during our travels a substitution had been worked. It would have done no good to try to locate it, so we patched up the old casing as well as possible and limped into the next town, where twenty-five dollars was spent for a new tire.

A great many of the losses of owners come from the ignorance or carelessness of garage employees. Sometimes a car will be pushed around and a headlight broken or a fender bent. Sometimes a tool will be borrowed and forgotten. A radiator will be drained and not refilled. In fact, there are a thousand and one apparently small things that can happen in a garage which the too trusting owner will have to pay for.

Yet to me there is nothing more enjoyable on a cool sunny morning than to sit behind the wheel, traveling smoothly along a good road, conscious of the healthy hum of my engine and knowing I am able to make my way faster or slower anywhere my fancy takes a notion to dictate.



I remarked that it was pleasant weather for pushing automobiles about

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There are 18,000 Red Clover Seeds in a single ounce; 288,000 seeds in one pound. There are 15,000 Alfalfa Seeds in a single ounce; 240,000 seeds in one pound.

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One pound of Red Clover Seed gives an average of 6½ seeds per square foot per acre.

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If every seed grew and produced a plant, one pound of seed would supply all the plants the ground could support.

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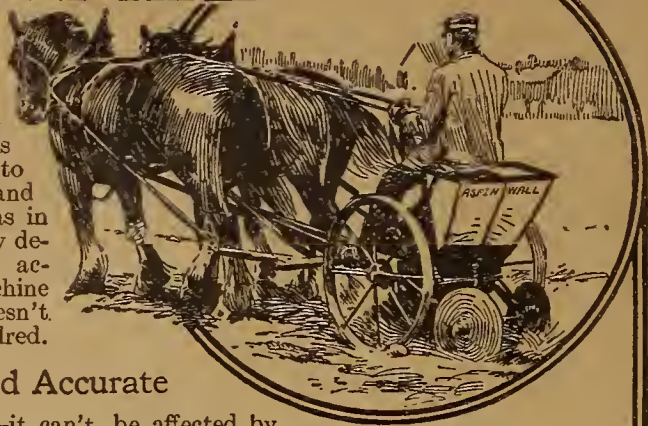
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It can't forget a hill—it can't be affected by the cold, and the size of the seed doesn't matter. Over twenty-five years of successful experience backs up this original and perfect potato planter. Six iron hands drop the seed in every hill. Every seed is properly covered. Ask us for descriptive matter and read why the

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John Deere Plow Company, Moline, Illinois

Fires and Fuels

Ways of Getting Best Results from Stove and Furnace

Regulating the Coal Heater

By E. T. Reich

FIRST, for the benefit of those who may not have had the opportunity to give much thought to the subject, we shall briefly allude to the science—so to speak—of combustion.

When coal is burning, the carbon of the coal combines with the oxygen of the air and forms a gas known as carbon dioxide; and there should always be sufficient outlet for this gas, therefore never shut the damper entirely off in the pipe. Other gases are also formed in small quantities.

Dead or stagnant air is clammy or heavy, and it is difficult to properly regulate the heat of an apartment filled with this kind of air. Besides, such air is poisonous to breathe. Open the doors and windows and let the air from outside sweep out this stale air and see how quickly things will live up! The fire burns up brighter, the air seems lighter and easier to breathe, and your stupid languor begins to vanish.

Keep a Good Bed of Coals

Do not think to economize fuel by small and frequent feedings. Whether it be a hard or soft coal stove or a furnace, fill the firebox or magazine full, and close off drafts gradually, always leaving sufficient outlet in the pipes for coal gases. And if you would get best results keep firebox free from ashes. If properly regulated a base burner will roast meats and cook beans, potatoes, apples, pies, puddings, bread, and cake.

Shake down well, and thoroughly clean out ash and soot chambers; leave drafts open until firepot is red all around; then close up, and in about thirty minutes your stove is ready for use. To prevent ashes sifting down on your baking, cover with sheet iron, or turn one pan over the other, or use a meat roaster.

The following true incident illustrates the difference between economic and extravagant regulation of stoves.

It's All in Knowing How

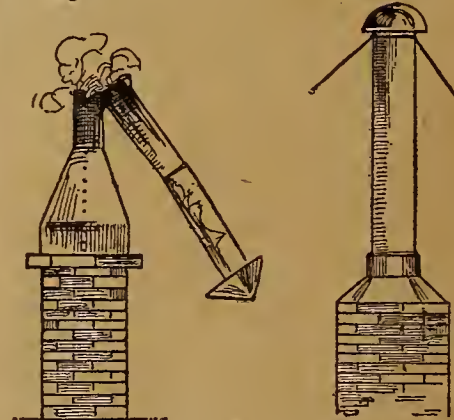
A family having purchased a large coal heater sent for the dealer shortly after and informed him that he could take his stove back. "It's no good. It takes too much coal and gives out too little heat." In the quiet manner characteristic of this particular dealer he informed them that he would like permission to run the stove for a short time, and proceeded to do so as follows:

He first opened all the drafts for about ten minutes, then shook the grate thoroughly to remove the bed of ashes from bottom of the firepot. The ashes had been preventing the stove from getting enough air and also prevented the fire from being in the bottom of the firepot, where it belonged for proper radiation of heat. When the firepot was glowing hot he filled it up full and rounded, then in a few minutes closed the front or current draft. About half an hour later he closed the pipe damper about two thirds. The stove became so hot the family had to open the doors to other apartments, and this fire lasted half a day without replenishing. A hint to the wise is sufficient.

Chimney Top That's Permanent

By George W. Brown

OUR greatest chimney trouble was with an extension top to the kitchen flue, and quite all farmhouses have these extension tops, sheet-iron affairs. After spending twenty-three dollars for four of these sheet-iron tops in twelve years we decided to try something else, for they had the aggravating habit of buckling over and smoking us out.



We bought a ten-foot cut of six-inch well casing at a cost of three dollars at the salvage yard, painted it black, put on a hood made from an old copper wash boiler, set it upon a cement cap, braced it with heavy guy wires, and after four years' use there is no indication that we will ever be obliged to repair this extension chimney in a lifetime.

Since then quite every neighbor in our section has copied our example.

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The demand for Edwards "Reo" Steel Shingles has become so big that we now sell them from factory to user for less—actually LESS—than common wood shingles. And we pay all freight! LOOK INTO THIS MONEY-SAVING PROPOSITION BEFORE ROOFING YOUR BUILDINGS. SEND POSTAL TODAY AND GET FACTORY PRICES.

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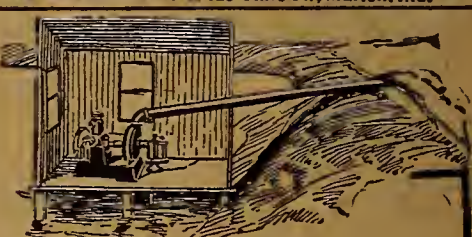
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Write for new booklet showing all types; 32 pages of irrigation information—how to measure water-flow, how to figure power needed, etc. Mailed free if you write.

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"RANGER" BICYCLES



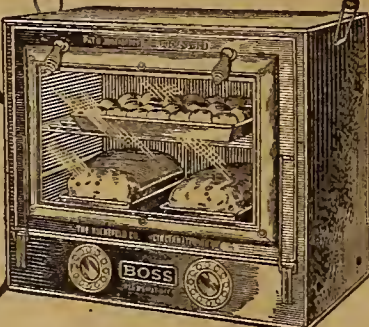
Are equipped with puncture-proof tires, imported roller chains, imported English flanged sprockets, English featherweight steel mud guards, imported Brampton pedals, motor style saddles, hams and grips, and other distinctive features possessed by no other bicycle. No effort or expense has been spared to make the "Ranger" the World's Best Bicycle. Improved factory methods and greatly increased output for 1914 enable us to make a marvelous new price offer. Something very special to the first purchasers of 1914 models in each town. Write us today. **WE SHIP ON APPROVAL** without a cent in advance, to any person, anywhere in the United States, and prepay the freight. We only ask you to examine and try the "Ranger" without a cent expense to yourself before you think of buying any other bicycle. **10 DAYS FREE TRIAL** is allowed on every "Ranger" bicycle. Not a cent cost to you if you do not wish to keep it after riding it for 10 days and putting it to every test. Our "Ranger" bicycles are of such high quality, handsome appearance and low price that we are willing to ship to you, prepaid, for your examination and trial, and leave it entirely to you whether you wish to keep it or not.

LOW FACTORY PRICES—Our great output, perfected methods and machinery enable us to offer you direct from the factory the best bicycle ever produced at a price that will be a revelation to you. Do not buy a bicycle or a pair of tires until you receive our large complete catalog and learn our direct factory price and remarkable special offer. **SECOND-HAND BICYCLES**—A limited number taken in trade by our Chicago retail stores will be closed out at once, at \$3 to \$8 each. Descriptive bargain list free. **RIDER AGENTS WANTED** in every town and locality to ride and exhibit a sample 1914 "Ranger" bicycle furnished by us. In your spare time you can take many orders for our bicycles, tires and sundries. Write at once for our large Catalog and a remarkable special proposition we will make you on the first 1914 models going to your town. **TIRES, lamps, cyclometers, parts, repairs and everything in the bicycle line at half usual prices. Do not wait—write today for large catalog containing a great fund of interesting, useful bicycle information. It only costs a postal to get everything. Write it now.**

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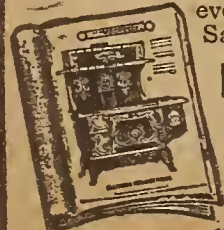
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A Kalamazoo Direct to You And Gas Stoves Too



Plumbing in the Farmhouse

Sanitary Equipment That Can Be Installed by the Amateur

By William D. Brinckle

THE plumber shakes his head regretfully. "Very sorry, but we can't sell you that tub unless you pay us to put it in for you; we have a contract with the manufacturers to that effect, you know."

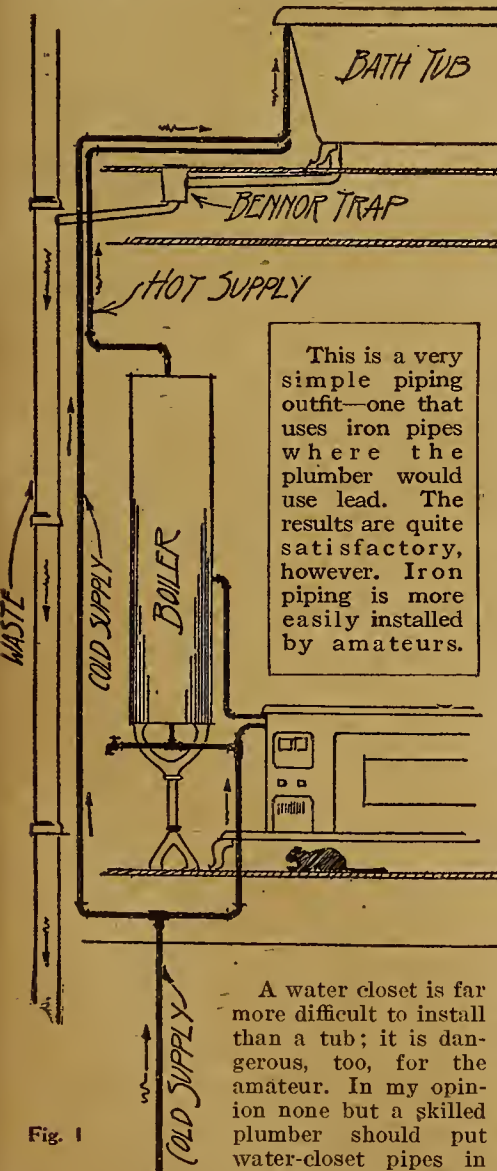
So you bid him good day and try another plumber; but it's the same story—the Bathtub Trust and the Plumbers' Association have an iron-clad agreement. If you want to buy your fixtures outright you'll have to deal with the mail-order houses. Many of these concerns advertise complete bathroom material—piping, fixtures, and all. Generally, full instructions for installing come with this material. Still one must be a rather good mechanic to do the work.

Just putting in a bathtub isn't so serious a matter; it is only a question of getting the pipes perfectly tight. Cover all joints with red or white lead before screwing together; then, after you have finished the system, test the whole thing by forcing in air under heavy pressure. You must have an air pump and a gauge to do this. If the pressure stays up for an hour or so your system is right; otherwise look for the leak. You'll hear the air hissing out of it if you listen carefully. A substitute for the air test is to pour some essence of peppermint down the pipes; any leak will smell strongly enough for you to find it.

Be Sure the Joints are Tight

Fig. 1 shows a simple piping layout. The cold-water supply pipe from the pressure tank, or other source of water supply, runs up to the tub; but a branch is taken off to the water-back in the kitchen stove. (You can buy a stove all fitted with this water-back.) Connect this cold pipe to the bottom of the hot-water boiler, and also to the bottom of the water-back; then run another pipe from the top of the water-back to the hole that you'll find in the side of the boiler. Finally run a hot-water pipe from the top of the boiler to the bathtub.

If the waste pipe runs out into an open drain no trap is needed, but if you run it to a closed cesspool or sewer you must put in what is known as a "Benmor" trap, to keep sewer gas from coming back. A plumber would lay a lead pipe from the tub to the trap, but it is impossible for an amateur to make the proper "wiped joints" to this lead pipe. Therefore you will have to be content with iron pipes, even though they are not quite as satisfactory.



This is a very simple piping outfit—one that uses iron pipes where the plumber would use lead. The results are quite satisfactory, however. Iron piping is more easily installed by amateurs.

A water closet is far more difficult to install than a tub; it is dangerous, too, for the amateur. In my opinion none but a skilled plumber should put water-closet pipes in a house; the slightest leak may eventually mean disease and death for the family. If you must put in your water closet yourself get a "frost-proof hopper," and set it in a special little outdoor room, built on the kitchen porch or some such place. Fig. 2 shows you how to set it; the maker will give you more detailed directions if you write and ask him.

The old oaken bucket is beautiful for its sentiment. But it is less efficient than a pump, which in turn is now abdicating in favor of modern plumbing. Water on tap and sanitary sewage disposal give the farm home the main comforts of the city.

The Comfort of a Bathroom

By Mary H. Talbott

ALL of us who know the farm home which has no bathroom can readily remember the hard work which taking a good bath means, so much carrying in of water and then carrying it all out again, besides the splashing on a floor that was not intended for splashing. And with this remembrance comes the wonder that so few houses in the country have bathrooms when they cost less than a piano.

The water supply in the country house is usually a spring or well, either of which can be utilized to fill the storage tank which is required to supply the bathroom with water. The most convenient and economical means of forcing water into the storage tank, however, depends upon the situation in each case. The source of the supply, the amount required, the need of power for other purposes, the available fuel, and the cost of labor will all have a bearing on the matter. The hydraulic ram and the windmill will have the advantage of operation without fuel, but the ram requires at least eighteen inches of water-fall, and the windmill is not very dependable. The gas engine requires fuel and attendance; an electric motor is ideal, but electricity is not often available in the country.

Remember That Water is Heavy

If a ram is used its size will depend upon the amount of water required and the height to which raised. A small one can be installed for fifty dollars (pipe not included) which will deliver water to an elevated tank. As the wearing of the ram is only in two valves, the expense of maintenance is small. The cost of piping depends upon the distance of spring or other running water from the tank.

A popular way of securing a supply of water is by the use of a windmill, which costs from fifty to one hundred dollars to install and practically nothing to operate. A tank sufficiently large to carry the family over a windless period will help, but even then you may not always have water. Windmills are to a great extent giving place to engines that supply water in all weathers, and which have the advantage, too, of making it possible to get along with a smaller size of storage tank. The cost of a good gas engine large enough to pump water depends on the depth of the well, its distance from the house, and the quantity of water needed daily, but it will be somewhere between one and two hundred dollars. The cost of operation is small. A gallon of gasoline will pump fifty to seventy-five barrels of water from the average well.

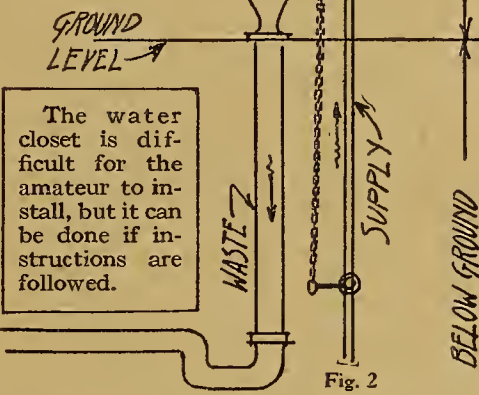
The cost of the engine does not include the tank, the size of which will depend on the amount of water required by the family. It is best to place the tank somewhere else than in the attic, as water is heavy (62.5 pounds per cubic foot), and there is danger of overloading the attic floor unless it is very well braced. Tanks are not expensive. An open galvanized steel tank of 100-gallon capacity can be bought ready-made for about eight dollars, while a 500-gallon tank will cost about sixteen dollars.

There are localities where most of the water supply is obtained by storing in a cistern the water which falls on the roof of the house during rainy weather; and in other places the well water is so hard that rain water is desirable in the kitchen and bathroom. If the water has been piped to a sink in the kitchen you can supply a bathroom at very small expense. A small force pump placed at one end of the kitchen sink, with the suction pipe reaching to the cistern, and the pump connected with a barrel or tank in the attic, will in ten minutes furnish a small family with water for a day. The tank can also have a direct connection with a rain-water leader which will keep the tank full in rainy weather. In this case there must be an automatic cut-off which will send the water to the cistern when the attic tank is full. The force pump costs from seven to fourteen dollars,

and the installation about fifteen dollars in case you do not care to do it yourself.

The bathroom with tiled floor and sides is ideal, but tiling is expensive and needs frequent repairing. A bathroom can be made very sightly and sanitary if over the unfinished wall, to a height of five feet, heavy burlap is stretched and then finished with two coats of good white enamel paint. This gives a wall surpassing tile in many respects; it is easily cleaned, costs considerably less than tiling, and neither cracks nor falls away with the settling of the building if the bathroom is in a newly built house or an addition to the old house.

The fixtures of the bathroom may be cheap or as expensive as one may wish. It is not wise, however, to buy tin fixtures, as they are not sanitary and are unattractive as well. For less than a hundred dollars one may have an enamel bathtub, lavatory, and toilet, made without seams or joints and with nickel-plated faucets and pipes. The value of seamless fixtures cannot be overrated. Never have bathroom plumbing out of sight; let each pipe be in full view, and the closet, bath, or basin be unhidden by any sort of woodwork. There is quite as much danger from the dirt which is apt to gather around concealed pipes and beneath enclosed sinks, bowls, or closets as there is



from the admission of sewer gas. The simplest way to prevent the accumulation of dirt is to make it easier to be clean than to be dirty. Therefore keep the plumbing fixtures where there is plenty of light. Have no more wood than necessary about the fixtures of the bathroom, for wood which is constantly wet has a tendency to decay. Therefore avoid tubs with wooden rims and toilets with wooden wash-down closets.

Use a Non-Absorbent Floor Covering

With the standard fixtures the pipes supplied are as a rule nickel-plated, which is not especially important except for looks. The fitting of the pipes is a matter of the greatest moment, for if all joints are not tight there is danger of gas coming up from the cesspool or vault. Sometimes the gases are not odorous and are not discovered until a member of the family becomes ill.

Where there are no sewer pipes the drainage from the bathroom must be into a cesspool or vault. In many cases the vault of the old privy can be used, and the only expense then is for the connecting pipes.

It is the part of wisdom to cover the floor of the bathroom with linoleum; it is non-absorbent and easily kept clean. There should be no curtains to the windows, but the glass panes should be either frosted, or covered with the paper which is now made to imitate stained glass. This insures the same privacy as the curtain and is far more sanitary.

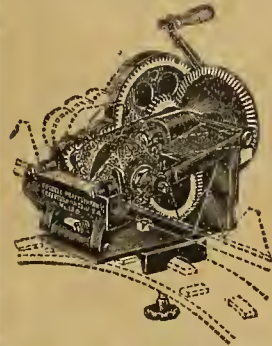
Many little luxuries may be added to this simple bathroom equipment if desired; as, for instance, a shower bath. Towel racks may be had at from ten cents to two dollars, so may soap dishes. The handy man of the house can make a medicine chest; but if there is no one who can fashion one they can be bought for three dollars and up, but never let them become filled up with bottles of old medicines.

Not only is the bathroom a great convenience, but it is fast coming to be looked upon as a necessity, not only for comfort but even more for health and cleanliness. If you are alert for new improvements on the farm do not overlook the bathroom, especially when its cost is so little in comparison to the many comforts it brings.

Goodell-Pratt's

SICKLE GRINDER

No. 158



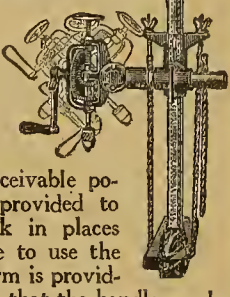
Have you a Sickle Grinder? You probably bought a cheap one and threw it away long ago. We don't make a cheap one. Ours has cut gears, reamed bearings, steel spindle and the best grinding wheel which we could get. It has an oscillating motion which can be thrown off by means of a lever at the back.

Special Introductory Price, \$10.00
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Universal Clamp Drill

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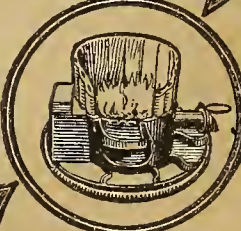
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This extra security advantage costs you nothing. The increased wear and mileage received from a Diamond Squeegee Tread Tire is so apparent that many motorists use them all the year around from the viewpoint of economy alone.

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Modern Farmer

"IT MUST be great to be a modern farmer," Said Mr. Man-Who-Never-Saw-a-Hoe. "With daily checks direct from Swift and Armour."

He's better fixed than any man I know. With auto, telephone, and daily papers, And domicile to date and neat and trim, With incandescent lamps and other capers, No city chap has got a thing on him. You recollect what Sherman said of Shiloh. They tell me that's what farming used to be

Before they had the tractor and the silo— But now it's naught but joy and ecstasy."

"I'm tiring of that line of conversation," Said Mr. Man-Who-Tills-the-Fertile-Soil, "And brand it as a baseless fabrication

That he who lived of yore did all the toil. I hear so much about your ancient hero— The hardships of the old-time farming game, To which the modern farmer's tasks are zero,

I'm truly getting sick and tired of same. We're far, as yet, from where the gates are pearly,

And 22 below is quite as cold, While 4 A. M. comes just as blooming early As in your talked-of good old days of old."

TAKE back all the unkind things you have said and thought about the heretofore despised Russian thistle. A Kansas professor recommends its use as feed as but little inferior to alfalfa, which, if we happened to be a cow, wouldn't make us particularly strong for Kansas professors.

EVIDENTLY that hen at Corvallis, Oregon, that laid 300 eggs in a year is after the record of the hen-and-a-half that laid an egg-and-a-half in a day-and-a-half; and, granting Sundays and holidays off, she's got it.

What Struck 'Em—a Cyclone? Colton (S. D.) "Courier"

MRS. MAUDE CARTER was busy Saturday gathering up her music pupils.

IT WOULD be easier to understand why the president of the New York Central road were seeking the simple life of a farm if he happened to be the president of the New Haven road.

THE Georgia farmer's daughter who picks tomato worms and sells them for fish bait evidently does not believe in waiting for the worm to turn.

THE Pigg family goes into court at Madison, South Dakota, to have its name changed to Page, but at last reports Commodore Hogg of the U. S. N. was perfectly satisfied, thank you.

M. A. C. is interested in that Oregon hen that lays 300 of 'em per annum, and suggests that Uncle Sam issue a call for volunteers and organize a few Amazonian regiments of her kind, whereupon he could snap his fingers at the cumbersome Sherman Law and make quick work of the egg trust. (Oregon papers please copy.)

Advisory

MAUD MULLER was raking the meadow sweet with hay when the county adviser dashed up in his car.

"Here, stop that!" he called out peremptorily. "A gasoline tractor will do as much raking as forty girls, and it will cost less for clothes than one!"

Saying which he threw on the clutch and vanished in a cloud of dust, for his time was valuable.

DOCTOR GALLOWAY, a Scotch veterinarian, is an advocate of wooden legs for cows which have the misfortune to break a leg. He has supplied cows with these artificial limbs, and says the cow, for every purpose except speed, is as good as new in a few weeks. Some cows we know might be all the better for a wooden leg or so.

Stop! Look!! Listen!!!

ALL owners of land who have placed same on the market are hereby duly warned that, before becoming too communicative as to productiveness of same, it would be well to learn whether inquirer be a prospective purchaser or just an income-tax collector.

THE fact that J. W. Nutt of Castana, Iowa, recently topped the Sioux City market with his hogs adds weight to the rapidly growing notion that there isn't much in a label after all.

A. R. T. solicitously inquires what has become of the old-fashioned farmer called Zeke who wore only one pants' leg in his boots, chewed hay, and said, "I swan!" At last accounts he was seen cutting across the meadow Forty, headed toward the village of Oblivion, in company with the old-fashioned agriculturist who carried a red bandanna handkerchief, wore chin whiskers, said "By hickory!" and answered to the name of Si.

If, as one agricultural expert says, hens need to be amused to become good layers, why not read them some of the stuff that is put over by the agricultural experts?

Ingenious Uses for Concrete

A No-Tangle Hitching Post

By A. L. Osborn



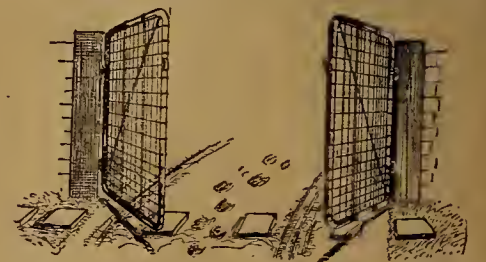
THE ingenious hollow concrete hitching post illustrated is a novelty in its line, but its merits are self-evident. The post, which is six feet long, is made in a mold inside of which is a core to make it hollow. The top is six inches square and the bottom twelve inches.

An iron ring with an inch opening is embedded in the top of the post so that it encircles and protects the top of the hole in the concrete which leads to the inside of the post. A strong tie chain is passed through the ring to the inside of the post and a harness snap fastened to the outside end. A small weight is attached to the other end and the post is set two and one-half feet in the ground. Tie your horse to this post by means of the snap and he will not get tangled up in the chain, for the weight inside takes up all the slack.

in the center so a single horse can easily pass trough without danger of stumbling.

Set the concrete blocks in the ground so that the top is not over one inch above the surface. The next time that the roadway is muddy you will be able to open the gate and to walk across the gateway without going up to your ankles in mud.

The blocks may be made flat if desired, which saves concrete, but must not be too



thin or they will not stay in place and may break if run over by a loaded wagon.

Concrete Jacket for Caldron

By Alonzo Price

THE original jacket used with this feed cooker was made of rolled steel. It finally rusted out from exposure to the weather, for it was not sheltered, and a new jacket had to be provided. I decided to build it of concrete. The old steel jacket was used for the inner form, and the caldron was left in its place in the steel jacket so as to make sure that it would fit when the concrete became dry. The outer form was made by placing around the

Concrete Stepping Stones

By R. W. Green

THOSE who are personally acquainted with a muddy gateway will appreciate this simple plan for keeping out of the mud. Make enough concrete cubes, a foot on an edge, to go across the gateway and yet leave room for wagon and horses to pass between them. This will take about seven cubes. Also leave the space a little wider

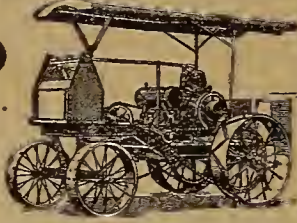
Wadsworth Light Kerosene Tractors

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Note the Price:

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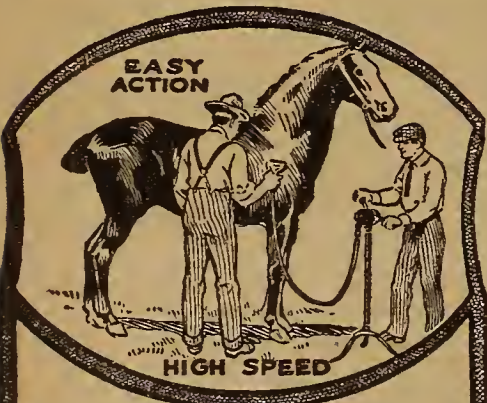
Just think of it! A high-grade, reliable tractor for \$600 to \$990. In proportion to horse power, it will do anything a heavy tractor costing three times as much will do! Absolutely best, cheapest power for plowing, harrowing, disking, harvesting, building roads, logging, spreading manure, hauling loads up to 15 tons weight. Better than stationary engines for operating threshers, ensilage cutters, feed grinders, pumps, wood saws and other machinery requiring belt power.



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Stewart Ball-Bearing Clipping Machine

Turns easier, clips faster and closer and stays sharp longer than any other. Gears are all file hard and cut from solid steel bar, enclosed, protected and run in oil. Has six feet of new style flexible shaft and celebrated Stewart single tension clipping head. Get one from your dealer, every machine guaranteed. CHICAGO FLEXIBLE SHAFT CO., CHICAGO, ILL. Write for free new catalog of most modern line of horse clipping and sheep shearing machines.



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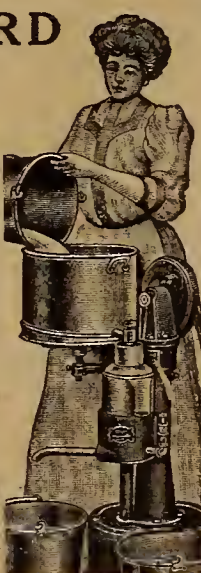
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cooker a piece of woven-wire fencing with the ends fastened together. A nine-inch space was left between the wire and the steel jacket. One-inch boards were then stood on end just inside of the fencing, and the wire was stapled to them so as to hold the boards in place. A frame was made for the door. We used the same door as before, but placed it on the outside of the concrete jacket.

A piece of stovepipe eight inches long placed over the opening in the steel jacket provided for a pipe to preserve the outlet for the smoke. The concrete was mixed in the portion of one part cement to five of gravel and sand. Barbed wire was used for reinforcement, one strand being placed every two inches in height. The total diameter of the concrete jacket is four feet



Capacity, sixty-five gallons

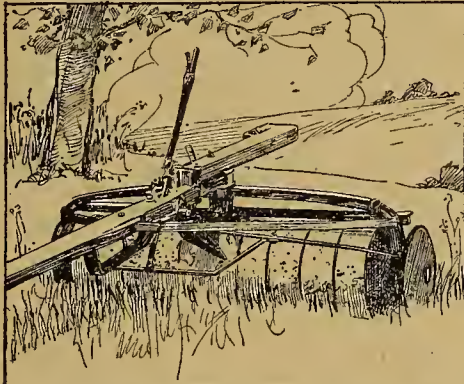
six inches, and the height two feet eight inches. The caldron holds seventy-five gallons. About three fourths of a cubic yard of gravel and four sacks of cement were required, and the work was done in one day by two men.

Land Roller Made from Disk

By John Y. Beaty

I HAD an old disk and needed a land roller. I had a little cement left from making a barn wall, so the thought occurred to me that I could make a roller out of the disk. Accordingly I made a mold that would fit onto the machine, and mixed the cement.

It did not take long to make the transformation, and the roller has given good



It's now as good a roller as it was a disk when new

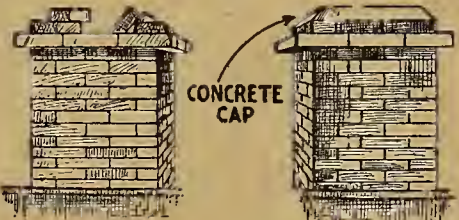
satisfaction ever since. I have run over stones with it, and it has had some pretty hard bumps, but the cement has never cracked. I used a cement mixture a little richer than is ordinarily used for the barn wall.

Chimneys That Don't Need Watching

By Geo. W. Brown

BAD chimneys are dangerous. Insurance companies tell us that seventy per cent. of their paid losses originate from defective flues and broken-down chimney tops.

Of all chimney materials brick is my choice, if built right. Brick chimneys look well and stand for years. But the tops must be firm or they will soon look dilapidated and cause trouble.



Bricks came tumbling down the flue

The concrete cap keeps the bricks in place

One cold stormy night the bricks from one of our chimneys came toppling down the chimney and broke the damper, smoking us out. We made a concrete cap, set it upon the top of the chimney, and now the bricks stay in place perfectly.

Boston, Mass., Feb. 5, 1914

Dear Farm and Fireside:

We have your letter stating that with your March 28th number you will issue a supplement devoted to engineering problems on the farm.

We note the list of subjects, including everything from a cream separator to an automobile.

We think it just as necessary for a farmer and his wife and children to rest as it is to work. If they do not rest, and rest intelligently, their work will suffer. Aside from sleep the most restful thing in the world is good music. Mental worries and physical weariness are forgotten when music gets a hearing, so that a good player-piano becomes as much of a necessity on the properly equipped farm as is the silo or cream separator. The father, the mother, the sons and daughters—each and all—can play and enjoy and rest.

If any of your readers are interested we would be glad to send catalogue and full information regarding the Emerson Player-Piano.

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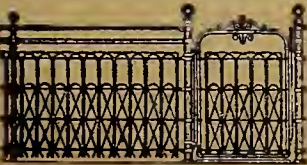
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Now because this helper happens to be made of paper and ink, instead of flesh and blood—Because it comes through the mails, instead of on two feet—Because its employers are more commonly called subscribers, and its name is the Woman's Home Companion, instead of Martha or Anne (or whatever most helpers names are)—It is a helper none the less—an unfailing source of time-saving, worry-saving, labor-saving, dollar-saving suggestions. It serves.

TO HAVE the April Companion is to have *Fashion Insurance*. This number alone, by giving a complete review of the Spring styles, *insures* you against the only clothes that are truly costly—the clothes you never wear. Whatever your income, whatever your needs, you should study the April COMPANION before spending a cent on your Spring outfit. It gives you the important decrees from the fashion centers of the world. It tells you, for instance, that higher hats, wider hip draperies, more eccentric collars, and flaring tunics are the things that Paris proclaims. It pictures for you the latest and smartest fabric combinations, and gives you explicit directions for making certain gowns. It invites you to discuss your dress problems, personally, with the COMPANION'S fashion expert.

BUT the April COMPANION goes further. It knows that its employers are confronted by a thousand other problems: How to decorate the home; How to prepare new and tasteful dishes for the table; What to discuss at the next meeting of the woman's club; How to make good babies Better Babies.

It knows, too, that they will need entertainment, so it introduces them to *Sergeant Dicks*, and to *The Liar*—a charming young lady of five summers. Molly Elliot Seawell reveals more of the secrets of *The Diary of a Beauty*; and Ellis O. Jones writes a play in one act for amateurs—*Mrs. Pipp's Waterloo*.

There is another *Montessori* article by Mary Heaton Vorse; an explanation of militant violence in England; an inspiring Easter sermon by Dr. Jefferson, and photographs of a hundred of the best of the Better Babies.

WESTERN EDITION

ESTABLISHED 1877

FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

SATURDAY, APRIL 11, 1914

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U. S. Department of Agriculture



The goodman spanned his plow;
'Tis time to run, 'tis time to ride,
For spring is with us now.—Leland.

LOOK FOR THESE GOOD THINGS SOON TO COME!

How to Co-operate

Everyone wants to know how. And there are plenty of rules to follow, many of which have been given us by those who want us to co-operate but who have never done so themselves.

Raising Turkeys

"No, I can't," you will answer. "Blackhead gets them always." Or perhaps you have had great success.

What About Sweet Clover?

That question was asked dozens of times at the farmers' schools this past winter. And there were many and varied answers. We know what the plant is.

The Scarecrows are Coming

The world is getting better, no doubt of it. Eugenics is improving the human race physically and mentally. In fact everything is getting so good that all we have left to improve is the scarecrow!

John Pickering Ross Says

"Unskilled horsemen make more and worse mistakes in caring for the in-foal mare than in any other part of the business."

What Books Do You Read?

There are many books put on the market from time to time. Some are worth your while and some are not. No one can tell you what you ought to read.

Are You a Girl Graduate This Year?

If so, you will be interested in our next fashion page. Here you will find just the prettiest and daintiest dresses specially designed for graduation wear.

WITH THE EDITOR



ARE the rural schools practical? No doubt some of them are. No doubt, either, that most of them are not. We are often blamed because we don't pay our teachers high enough salaries—and we are to blame.

We expect professional work from people to whom we pay far less than professional remuneration.

This is our fault, but there is another side to it; and the other side is also our fault.

If we had a hired man doing less work than his wages should be, we should examine the case before raising his pay.

If we should decide that the sort of work done is so unproductive that to pay him better wages would be a losing investment, the sensible thing is to do one of two things: either change our management so as to give him profitable work, or hire a cheaper man.

The same question should be asked in the matter of paying higher wages to teachers. Are we giving them work to do which is worth more than the salaries we are paying them?

Treat the Boys and Girls Right

If our boys and girls are given the right sort of education at home they will not desert us and go to the city. They will stay on the farm if they are so educated as to feel that on the farm they may become able, successful, happy men and women.

In an Iowa county the rural pupils were examined as to what they wanted to do with their lives. Most of the boys, and almost all of the girls, answered that they meant to leave the farm when they grew up.

Two years afterward the boys and girls in the same schools were asked the same question. Most of the girls, and almost all of the boys, answered that they meant to stay on the farm.

What had made the change? Just this: the teachers had been given more practical work to do in the schools. They had been giving the teaching a farm slant. They had been working in the schools on farm matters, and the girls had been studying cooking, sewing, housekeeping, and the care of the house and children.

Books cannot give us this new sort of rural school. Men and women can. A book is dead and dry, and must always be. The schools would be better off, I verily believe, if every textbook were destroyed.

And yet books in their place are a good thing. The publishers of school-books are trying to fill the new demand for a really rural school.

Some Very Good Problems

I have before me a "Rural Arithmetic" published by Ginn & Company. Its author, John E. Calfee of Berea College Normal, has done a good piece of work as far as it goes.

But there are some fine problems in the book. Here are some of them: "A self-binder that cost a merchant \$100 was left out in the open for two years, and then sold for \$50. Money being worth 6 per cent, estimate the cost of this carelessness."

This is good, but why not have stated it in terms of farm use, instead of lugging in the merchant? "If a hired hand while cultivating young corn covers up 10 hills to the acre, what is the value of the corn destroyed, counting 2 ears to the hill and 100 ears to the bushel, at 60 cents per bushel?"

This is good, but here's a better one: "Keep a strict account of the amount of feed given a flock of hens for a month, and the number of eggs laid. At the local price of feed and eggs, determine the profit or loss on the flock for the period."

This leads right into farm operations. Calfee's Rural Arithmetic is a far better book than the ones I studied, but he should revise it "upward."

Robert Guier

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FARM AND FIRESIDE



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THE DOG OR THE SHEEP, WHICH?

By Herbert Quick

THE importance of the dog peril will be recognized when we find out what dogs have been doing in the United States. Mr. C. E. Cleveland, a Shropshire breeder of Multnomah County, Oregon, says: "Of all the trouble that farmers have in this county, the dog causes more than all other things combined. At one time we had as many as fifty flocks in our small county, and now not ten can be found. Almost every farmer lost a few and had others with ears torn off by dogs—mutilated so they died or had to be killed. We have had many flocks chased and worried. I have asked a number of farmers why they did not keep sheep, and their reply is, 'I once had a nice flock, but the dogs killed so many that I sold the rest to the butcher and quit.' The county is now settled, and around the small towns there are twice as many dogs as formerly. I could not keep sheep then and would not try it now."

Mr. D. H. Sloan, a Shropshire breeder of Ashland County, Ohio, says: "Dogs have almost put a stop to the sheep business near here." Mr. Lee R. Scott of Washington County, Pennsylvania, says: "In our county the dogs have done more to drive the sheep out than the legislation in regard to free wool has done. A well-known wool-buyer has told me that the best delaine wool grown for worsting purposes is produced here and in the panhandle of West Virginia. In thirty years' raising and growing sheep I have had several visits of dogs, one year six times, with appraised losses of about \$150. I have had several such losses amounting to from \$10 to \$40. The fear of dogs makes a great many men sell their sheep, and keeps others from going into sheep husbandry. I could name perhaps twenty flocks of registered sheep which have been scattered, principally on account of dogs."

Mr. G. G. Sumner of Bradford County, Pennsylvania, who has kept sheep for twenty years, says: "There are two reasons why sheep-raising is not profitable, one is dogs and the other the cost of fencing. Many would keep sheep but for the fear of dogs, as this is a hilly section and sheep thrive better than any other kind of stock. Many flocks are being sold for the same reason just at present. The tariff may have some influence, but the main cause is dogs."

Mr. Frank Kleinheinz, sheep husbandman in the University of Wisconsin, says: "I know positively that many farmers sold off their sheep on account of dogs, and that the fear of this injury to sheep has discouraged so many farmers that we would have at least fifty per cent more sheep in the State of Wisconsin to-day if it were not for this fact. And it is almost too sad for me to say that at farmers' meetings where I have been called upon to talk about sheep-raising in Wisconsin some of the oldest farmers have got up and told me that there is no use talking sheep in their locality—not because the farmers were not aware of the profits derived from sheep on the farm, but because they could not afford to raise sheep for dogs to feed on. I often feel very much discouraged and disheartened over the dog problem in our State. Last winter I worked at our legislative session day and night to get a law

THE faithful dog is the most expensive animal in the United States. The dog, and the dog alone, stands between the farmer and profits from sheep, and he alone is responsible for a good deal of the high cost of living in the matter of clothing and meats. We have had a great deal of correspondence with farmers who know what they are talking about, and propose to submit for the consideration of farmers generally, and of such members of legislatures as may read it, a consensus of opinion of many farmers in the United States on this question. This is the first article of a series.

passed. My bill was passed in the assembly and senate, but unfortunately was called up for reconsideration and killed. May the Lord spare me for a little while longer, so I can get into the fight again."

Messrs. R. and W. Postle of Franklin County, Ohio, have been in the sheep business about twenty years. They say: "A good many more around here would keep sheep if it were not for the dogs." Mr. R. B. Rushing of Illinois says: "I am very well acquainted for several miles about me, and I am sure that there are not half as many sheep raised as would be the case were there no dogs to give trouble. One of my near neighbors who used to raise large flocks of them, entirely quit business on account of dogs. He told me that before he would go to the expense of making the kind of fencing that would be required to keep out the

Messrs. Wm. M. Bigham's Sons of Adams County, Pennsylvania, are breeders of Hampshire sheep. They say: "We believe the fear of loss by damage from dogs is more of a hindrance to sheep-raising than any other one thing (leaving out the recent tariff). There would be many more large flocks around here if the danger from dogs were removed. We are confident the number of sheep kept in our section would be doubled if the dogs were removed. Speaking for ourselves, we fear the dog more than tariff legislation."

Messrs. John Rinebold & Son of Seneca County, Ohio, are Shropshire breeders. They say: "The fear of dogs keeps many farmers out of the sheep business—men who would keep a few at least, if they felt that it would be a safe business." Mr. C. T. Brettell, manager of the Fillmore Farms in Bennington County, Vermont, is a breeder of Dorset sheep. He says: "There are very few farmers in my locality keeping sheep, for the simple reason that there are too many dogs kept. Many men around here would like to keep a flock of sheep, but do not dare to on account of the dogs. Two of our neighbors suffered heavily from dogs getting into their flocks this fall, one man losing his entire flock and the other several head. We had two occasions this fall when we had to have men to guard our sheep at night, and it was quite a length of time. The first time we lost three head by dogs, and the next time they worried a couple of them but did not kill them. Had we not had the Dorset breed our loss would have been much greater."

Messrs. Orrin Frase & Sons are breeders of Shropshire and Delaine sheep, Summit County, Ohio. They say: "If it were not for the dog nuisance we would like to buy cheaper pasture land farther back from the two cities, Barberton and Akron, and put on 1,000 ewes, as mutton is going to be high for years to come,

but the dog makes it unsafe to pasture far from home. Were it not for the dog the United States would be carrying double the number of sheep to-day. We are within three miles of Barberton and five miles of Akron, with a combined population of about 115,000, and we are sheep-farming on land worth \$150 per acre. Both cities are mutton hungry, and we are trying to feed them, but the dog compels us to count our sheep by the hundred instead of the thousand, and we will have to continue to protect them with a few big steers and two good double-barreled shotguns."

Mr. W. G. Crenshaw of Orange County, Virginia, says in a letter to Mr. John Pickering Ross: "If public sentiment could be aroused so as to enable us to raise sheep it would be a great benefit, both to producers and consumers. Personally I do not expect to try again, as I am sixty-four years old, and I despair of a change in Virginia in my



"I once had a nice flock of sheep"

time. It is difficult to put down in dollars the loss by dogs. In the past fifteen years I have had three separate flocks, amounting in all to about 375 ewes. In each case we run along very well for two or three years, then the dogs got in, killed a few sheep, and so upset them that further breeding was out of the question, and I had to send the poor ewes to the butcher. When all went well I averaged from lambs and wool

dogs he would quit the sheep business altogether." Mr. H. L. Wardwell of Otsego County, New York, says: "I could sell a great many sheep in my vicinity if the farmers were not afraid of dogs. I have been keeping sheep on this farm for the last twenty years. Twice during that time I have had sheep killed by dogs. All New England would be stocked up with small flocks of sheep were it not for this dog nuisance."

fully \$625 annually, and the cost of grazing was trifling. I dare say their manure and the good they did to the grass was fully equal to the cost of their keep. No other stock gives so satisfactory a return, but we are debarred from the business by dogs."

This is a striking instance, very calmly told, by an entirely reliable man. The situation is not quite so bad everywhere—in fact, where the sheep business has become firmly established and there is a strong sentiment in favor of the sheep as against the dog, conditions are much better. Mr. George Schaap of Marion County, Oregon, an experienced sheep-breeder,

"OF ALL the trouble that farmers have in this county, the dog causes more than all other things combined. At one time we had as many as fifty flocks in our small county and now not ten can be found."

"Dogs have almost put a stop to the sheep business near here. In our county the dogs have done more to drive the sheep out than the legislation in regard to free wool has done."

says: "I do not think the sheep industry here suffers to any great extent on account of dogs, but I think the sheep have a bad effect on the dog business." Prof. E. J. Iddings, animal husbandman at the Idaho Agricultural College, says: "In the West and Northwest but little trouble is had with sheep-killing dogs. Here the trouble is to keep the coyotes away in the newer and less settled districts. I cannot say that in our State the injury to sheep by dogs is a factor that needs to be considered in successful sheep-raising, and our farmers rarely ever take this factor into consideration." The testimony of other sheep-growers in the far Northwest shows that the favorable conditions mentioned by Professor Iddings do not extend over

Oregon and Washington. They affect only Idaho.

In Gallia County, Ohio, according to John A. Irion, a breeder of both Southdowns and Shropshires, conditions are very good. "Our commissioners," he writes, "pay all damages done by dogs, and farmers have no reason to fear them on that account. Very little damage of that sort is done in our county. The sheep business is gaining and is one of the best businesses on a farm." Mr. A. J. Legg, Nicholas County, West Virginia, where more than half of most farms is in timber, and flocks run at large, informs us that he has kept a small flock of from ten to thirty sheep for twenty years, with losses from dogs of only two old sheep and one lamb. He says: "Fear of loss from dogs has very little influence over the sheep industry in this immediate neighborhood. However, I think there is more danger than formerly from dogs about 'new mining towns.'"

Mr. Paul H. Brown of Minnehaha County, South Dakota, says: "There are too many of us feeding and breeding sheep in this vicinity to allow the dogs to affect the industry; we make it too unhealthy for the bad dogs. Public sentiment is all in our favor and not with the dog, as I believe it is in some localities. We all feel safe here in the sheep business; we are never able to find the owners of the dead dogs. We are in a strictly agricultural district, far enough away from a big town to be out of the range of the trespassing dogs from there. We are only three miles from a small town, but that community is entirely dependent upon the rural districts for its support, and no merchant there would think of doing anything to hurt his trade with his customers. No, we are safe from dogs, and dog sentiment too."

This is a very interesting letter, showing that, after all, public sentiment is at the bottom of every evil, including sheep-killing dogs. Mr. J. C. Zinser of Clackamas County, Oregon, tells of a similar situation in his neighborhood. "I have kept sheep here," he writes, "for the past six years, and must say that our

community has been exceptionally free from dog troubles. During this period I have learned of but one instance of depredations by dogs, and in this case the dog was promptly traced and killed. The reason for this condition is to be found in the fact that sheep are pretty generally distributed and no mischievous dog could live long."

Here we have a picture of paralysis in one of the basic industries of the world, extending from the Atlantic to the Pacific, and existing in the South as well as the North. People interested in the sheep business may well bring these facts before their legislators.

"MANY would keep sheep but for the fear of dogs, as this is a hilly section and sheep thrive better than any other kind of stock. Many flocks are being sold for the same reason just at present. The tariff may have some influence, but the main cause is the dogs."

"Many farmers have told me there is no use talking sheep for them, that they cannot afford to raise sheep for dogs to feed on."

Almost all normal people are fond of dogs. The man or woman who will defend the present conditions of things in the world of dogs and sheep convicts himself of being a dog worshiper whose proper time for living would have been in Egypt when the dog god Anubis was worshiped. There are sportsmen and ignorant dog lovers in the country who have been up to this day more influential with legislators than farmers have ever been, and who have insisted that the dog god Anubis must be worshiped every year in the sacrifice of thousands of sheep killed by dogs, of hundreds of thousands ruined by their worrying and persecution, and of millions which would be bred if the reign of the dog could be broken.

College Students for Summer Help

An Earnest Plea for a Thorough Study of the Work Problem on the Farm

By J. M. Taylor

WITH interest in farm life rapidly being awakened it would naturally seem that the age-old, stubborn, and aggravating summer-help problem is about to solve itself because of an annual rush of all unemployed men from the cities to the farms as soon as the ground is open for spring plowing. But the truth of the matter is that any farmer who has been anticipating the arrival of such a millennium is doomed to bitter disappointment. The reason is twofold.

In the first place the average city man who desires to make his living through a return to the farm desires to do it independently, as an owner and director, and not as an employee. If he has a little money he either buys or leases a farm and sets out to operate it himself. In too many cases he possesses a false notion that a farmer's work consists of planting a crop, sitting down while it grows, and then harvesting it. When he discovers that he has made a fatal mistake he throws up his hands in disgust, disposes of his farm, and takes his way back to the city instead of remaining to profit by his experience and learn the methods of practical farmers. Such a man is of no value as a farmer, nor would he be of any value as a farm hand. He took to the farm through laziness. He has had an idea that, next to a tramp, the farmer has the easiest time of any man in the world. He bears no part whatever in the solution of the farm-help problem.

The second type of city man who is subject to vagaries of employment thinks in exactly the opposite direction. He clings to an idea that a farm hand works from sunrise to sunset seven days a week, that he is half-fed, underpaid, and cruelly overworked. To his mind every farmer is a skinflint and every farm hand an idiot—otherwise he would not be a farm hand. This type of man regards the farm hand's status as a sort of later-day slavery. Rather than submit to it he prefers to starve on a city street corner or turn to burglary as a means of livelihood. Plainly, the farmer's problem cannot be solved by means of this class.

The Poor College Student is Misunderstood

There is, however, one sadly maligned and much misunderstood type of men to whom we might turn in our hour of need and be met with open arms. These men are the college students. Some of us have already discovered this fact, others are verging on the discovery, but far too many utterly refuse to consider the college man as a possible factor in the case. They persist in regarding the student with a mixture of contempt and suspicion generated partly through failure to understand the type as a whole, and partly by the stories of college pranks and escapades which are so frequently circulated. In the eyes of these farmers, college students may be divided into three classes: the buffoon, the snob, and the mollycoddle, in the order named. And there is where they are apt to make their tremendous mistake.

It is sadly true that the pranks and wild orgies of college students which are annually chronicled by the national press would fill a very sizable scrapbook. But it is likewise true that the crimes committed by farmers in various portions of the country occupy considerable space in the daily papers. It is therefore no more reasonable to classify all students because of the doings of some than it is to look upon all farmers as criminals because some of them are. It is never the quiet, steady man of strict business whose name is heralded under scare heads, yet such men form the great bulk of the American people. Likewise the college students who never appear in police court or have their names spattered across the front pages of the yellow press form the main bulk of American college men.

But, granting that the foregoing is true, why should it follow that college men make valuable farm hands?

Because in the main they are intelligent, keen thinkers, industrious, and, above all, full of life and vigor. Almost every college man prides himself to some extent on his physical fitness, and because of that fact he will work himself to a standstill rather than admit that some other man in the field with him can do more work in a day than he himself can do. He is thoroughly imbued with the spirit of contest which is ever rife in colleges, and he regards his labors as a sort of contest between himself and his fellow workmen to decide which represents the better type of men. Such a spirit is contagious, and wherever you find a farm which employs college men look for one where good-natured rivalry exists among the workers.

Many Students Want to Work on Farms

The purposes of the student are all too frequently overlooked. The student is in college to make himself an expert in some particular line. In the majority of cases he is dependent, wholly or in part, on his own efforts for the funds necessary to complete his course. During the college year he resorts to all manner of schemes by which he can eke out his existence with as little drain as possible on his resources. But the summer months he regards as his legitimate harvest period. During those months he will gladly accept any line of work which will pay him the maximum of money at a minimum of expense. He puts his soul into his work and scrimps himself on his board and lodgings that he may save the more money. But it must not be overlooked that in some communities every summer thousands of work-hungry students are temporarily turned loose. There are not jobs enough to go around. The result is that many of them are forced to grub along, seizing the temporary employment that turns up from time to time.

Now is the time for us to secure men who are not only willing but eager to work on farms. After nine months of a steady diet of indoor brain work these men regard any kind of physical work in the open as a pleasant vacation. They jump at the chance to do farm work, or, as the entire curriculum of farm labor is expressed in their vernacular, to "pitch hay." First and foremost the physical labor appeals to them, for it gives them an opportunity to harden their muscles. Second, the wages, though not princely, are as high as they could expect to draw at any another branch of labor, and they have no board to pay. Through some strange psychological quirk this fact that he does not have to pay board appeals remarkably to the average student, perhaps because board forms his heaviest drain during the school year.

The Farmer

By Alice L. Webb

WHO used to be the butt of jokes?

The farmer.

Who stood in awe of city folks?

The farmer.

Who bought gold bricks and said "I vum!"

And wished that he had stayed "tew hum"?

Who got least for his work, by gum?

The farmer.

Who buys the autos nowadays?

The farmer!

Who pays the tax for good highways?

The farmer!

Who feeds us all from day to day,

And gives us good, strong men? I say

Who owns this blessed U. S. A.?

The FARMER!

Perhaps the strongest point in favor of this particular class of temporary farm labor is in many cases the ease with which it may be recruited. One way which might be used to far greater advantage by farmers is to advertise in a college paper. A small ad inserted in one of those papers costs very little, and is certain to bring replies from many more men than the advertiser needs. Another and equally advantageous way is to solicit the help of the college employment bureau. Every college has such a bureau where all men desiring work for the summer are registered. If we wish to employ one or more students we can write to the registrar of any college and from him secure the names of the men in charge of the college employment bureau. We then need only to write to the bureau, stating the kind of men we want, the wages we will pay, and any important facts which occur to us in order to receive, probably by return mail, a statement from the bureau regarding certain recommended men, and the applications of the men themselves.

Many of us, however, do not wish to employ men as early in the summer as the colleges close. That makes little or no difference. As I stated in a foregoing paragraph, many men are unable to secure employment during the entire summer, and are forced to content themselves with whatever odd jobs they can pick up. Those men remain on the registry lists of the college employment bureaus, and the farmer need only apply to the bureau when he is ready, to be placed in immediate touch with them. Thus at any time throughout the summer he can secure college farm hands who will gladly stay with him until the colleges open in the fall, which is usually as long as he needs them, unless his farming operations are specialized.

Watch Out! There are Some Bad Ones

It must be borne in mind, however, that there are right and wrong kinds of college men to hire, the same as is true of any other class. It is better to leave the typical college hero alone; such men are inclined to be afflicted with swelled heads, and are of less value than their more obscure fellows. Furthermore, it is better to hire freshmen or sophomores than upper classmen. Such men realize that there are other years to be tided over before they finish their courses, and will usually work doubly hard in the hope that they will be hired the following summer.

Certain allowances must also be made for college men. They demand a certain amount of recreation, for they are full of life. Don't hamper them if they want a little play occasionally. Furthermore, it must be remembered that a student is not a tramp nor a roustabout, and cannot be treated as such. If he makes a mistake he will consider a call-down just, if it is delivered in a straight man-to-man fashion, and he will not repeat the mistake. He will not, however, stand for what, in his vernacular, is termed "rough stuff" without retaliation.

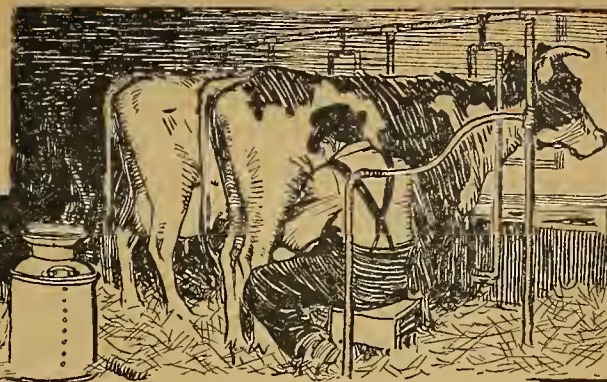
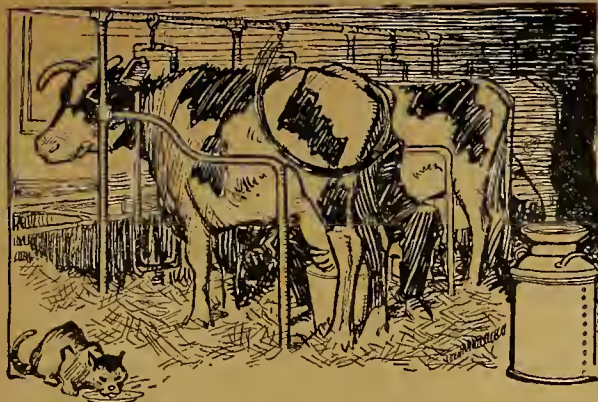
Another mistake that some of us farmers make is in striving to live up to the old motto that "a boy is a boy, two boys half a boy," etc. A student is not a boy, and while one student is valuable two are more so, for they will not only strive to outwork each other, but their high spirits will keep alive good nature on the parts of the other hands, and spirited good humor is valuable when the necessity arises to rush in several loads of hay ahead of a shower.

The American students offer a mighty helping hand to us American farmers if we will seize it. Every year hundreds of students go into the Far West to work through the summer as harvest hands. The Western farmers realize their value and vie with each other in the effort to secure students for their fields. Why let these men go West when there is a crying need for their services in the fields of the East and Middle East? It is to the farmers of this particular section that I would plead, at this time.

The White Whirlpool

By D. S. Burch, Associate Editor

Illustrated by J. Norman Lynd



8—The System Acts Like a Whirlpool—

It Draws to Itself Capital and Labor

THE preceding articles of this series have shown different uninvited agencies to be engaged in the milk business, as well as the producer. These agencies secure about sixty per cent of the price the consumer pays for milk, and the producer receives forty per cent.

"Give us better milk and we will give you better prices" has been represented by dairy experts to be the voice of the consumer. To which the producer replies, "Give us better prices and we will give you better milk." There's the deadlock. The philanthropist has gone ahead and produced excellent milk, but in many cases has not been able to sell it at a profit.

The Law of Self-Preservation in Action

The producer who must make his living from his cows knows this, and he wants to see the prices guaranteed before he emulates the example of the philanthropist. The prices paid for milk affect the quality in the following way. A temporary rise in price reduces the quality of the milk, and a permanent rise improves it. When some two years ago the price paid to milk shippers in Waukesha County, Wisconsin, was the highest on record, more cows were bought, barns were overcrowded, and the cows fed to the limit so as to get the full advantage of the temporarily high prices. Because of the crowded conditions the milk was poor. Much of it was very dirty, and some of it was watered. On the other hand, a general year-round increase in the scale of prices paid producers brings with it the element of industrial stability and prosperity which is always evident in a dairy which is making money.

The easiest place to cut down expenses when profits from the dairy are getting low is in the amount of labor devoted to cows and stable. Dirty cows and dirty stables go with poor milk; so when a dairy is unprofitable and the producer naturally gives less time to his cows and more to a source of income that promises better returns, the milk supply will be bad. This state of affairs is not pleasing to the consumer, inspector, and the other members of the firm Milk Producer & Company. But it complies with the law of self-preservation which is stronger than any dairy law. So if the firm Milk Producer & Company is not able to see that the producer gets a wage that enables him to live comfortably, the quality of milk from commercial dairies will never be first-class. That this side of the milk question is beginning to be understood by the consumer is evident from information given me by the president of one of the New England milk associations, who announces that prominent business men in Boston are aiding the producers' organizations in their campaign for better prices.

Advantages of Written Contracts

The milk dealer nearly always sets milk prices. He has been able to set them because he is the most powerful commercially of all in the business. However, the contract system of buying and selling milk is evidence that the producers are not willing to leave the matter of price altogether to the dealer. A milk dealer of my acquaintance maintains that any contract is objectionable for the reason that it involves uncertainties, and that grasping dealers can use these uncertainties as arguments to establish such low prices that all the risk is borne by producers. While that contention is true to a certain extent, a contract has the merit of giving the producer some say in the question of what the prices shall be, and also some-

thing definite, to figure on. Nearly all important milk-shipping associations have contracts for at least six months, which is about the right length.

In contrast with this plan is the conference of the New York Milk Committee held in that city the last part of September. Many different interests were represented. Mr. Miller Cross of New York City, whose only interest in attending the meeting was that of a disinterested consumer, sums up his impression in the following statement:

My own personal opinion is that this meeting did not get anywhere. In the first place very few of the speakers knew what they were talking about. Each one had his particular narrow viewpoint of the situation, which might have looked perfectly true to him, but which did not consider the viewpoints of the other elements involved. There seemed to be a great difference of opinion in regard to facts, even as to the wholesale and retail prices of milk. The meeting eventually developed into a line of producers fighting a line of wholesalers, the consumers remaining more or less neutral, favoring the producer, if either side.

The opinion of a disinterested onlooker is always worth considering, for it points out faults which we sometimes cannot see in ourselves. The question of a financial agreement satisfactory to all is simplified by reducing the problem to a number of two-sided affairs. The price the producer receives is a matter between him and the dealer. If they are agreed the next question of a satisfactory price to the consumer can be settled between the consumer and the dealer. Thus a three-sided agreement is made without confusion.

Tuberculin-Testing is Economy in the End

A dairy organization needs for its officers business men of good judgment rather than orators. It needs men who are sincere and are not using the farmers merely as a background for their own personal ambitions. It needs men who feel that the strength of the organization depends chiefly on a thorough knowledge of the conditions they seek to improve.

Sometimes, through lack of information, a dairy association may be mistaken in the attempt to bring about better conditions, and instead make conditions worse. A dairy association at Waukesha, Wisconsin, has been fighting the Milwaukee ordinance requiring milk to come from tuberculin-tested cows. The case was carried to the U. S. Supreme Court, and the Milwaukee ordinance was upheld. At Flint, Michigan, on the other hand, the milk-shippers' association favored a similar ordinance and opposed an amendment which would permit milk from untested herds to be sold. Those producers said they had no desire to go back to the old system. The Waukesha association was wrong and the Flint association was right.

The question of tubercular cattle is becoming tremendously important. A good many producers are standing in their own light by hanging onto their diseased cows or refusing to have them tested.

A Missouri dairyman was offered twenty-five good-looking cows at a surprisingly low price. When he went to look at them he took with him a friend, a veterinarian. Everything went well until the prospective buyer said, "Well, I'll take them if they pass my friend's tests; he's a veterinarian." The attitude of the dealer changed. He assured the buyer that the cows were all

right; but the test was made, and every cow was found to be diseased.

Taking the country as a whole, about one twentieth of dairy cattle in untested herds are tubercular, and a large amount of statistics, which, however, are not entirely conclusive, indicate that one tenth of human tuberculosis is of bovine origin.

The cost of testing cows for tuberculosis is not necessarily expensive. It costs about ten dollars for a herd of eight animals, though the charges will vary with individual veterinarians. When from twenty to forty cows are tested at a time, fifty cents per head is the usual fee. These figures are from Wisconsin. In small herds the cost may be from a dollar to two dollars a head, seldom over that. The knowledge that a cow is free from the disease is certainly worth that price.

Guide Rules in Dairy-Farm Management

Besides the big commercial problems, we have the field of individual trade in which many successes have been made, especially with butter, buttermilk, and cottage cheese. A private trade brings out business ability and gives the satisfaction of dealing with the consumer direct, as well as being independent of dealers. But the consumer always wants his full money's worth, and the product needs to be high-class and deliveries prompt and certain.

As a guide to those who are looking for better ways of conducting their business, here is the gist of the experiences of dairymen who have made exceptional successes:

1. Milk can be produced most economically on high-grade farms that will produce corn and clover or crops of equivalent feeding value.
2. The maximum flow of milk is in the producer's control. Cows should be bred to freshen when prices are highest.
3. Even though milk is not sold on a butterfat basis, a knowledge of the test of every cow's milk is needed in order to breed intelligently.
4. Calves that will make highly productive cows can usually be raised cheaper than they can be purchased, and they should be given a good start on whole milk.
5. Dairy cows with good milk records, and known to be free from disease, are worth twice as much as cows of uncertain production and health.
6. The partly covered milk pail improves the quality of milk over one hundred per cent.
7. Overcapitalization is one of the chief causes of dairy failures. Certified milk sells on an average for six and one-half cents more per quart than average market milk, but barely half of the certified-milk plants are financial successes.
8. High-grade equipment deteriorates more slowly than any other kind, therefore the best should be used to as great an extent as can be afforded. Insanitary equipment is worse than none.
9. To maintain the fertility of a dairy farm selling whole milk, haul on it every year, from an outside source, one ton of manure or its equivalent in commercial fertilizer for every cow kept.
10. The loss of fertility from a sale of cream is insignificant when the skim milk is fed on the farm.

You've Felt the Whirlpool's Pull, Perhaps

And now we are ready to conclude. Every reader can add from the richness of his own experience to what has been said. The workings of the dairy

business as a whole have been outlined, but you know your own local problems best. You are the best judge of the services you are getting from your educators, scientists, inspectors, dealers, and all the rest. Business is a struggle in which the largest profit is nearly always secured by the most capable. The better we know the intentions of our business partners, and the more fully we understand the game we are playing, the greater is our chance for coming out a winner. The producer has in many places been forced by the aggressiveness of his partners to accept payment for his services out of all proportion to his real earnings, based on values of production.

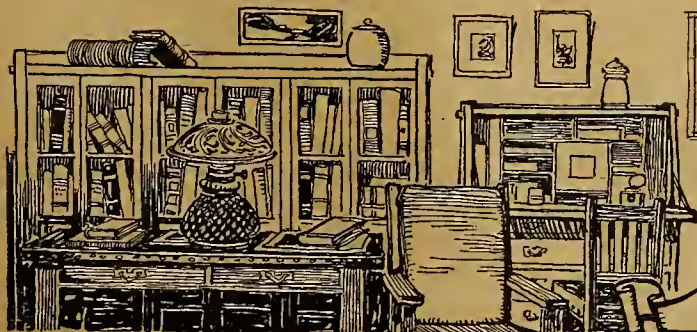
The White Whirlpool is a reality. From the time every stream of milk goes swirling into the pail till it crosses the consumer's threshold in bottled form, it is a part of the great commercial system that acts like a whirlpool. It attracts money and labor, and mixes them up in a seemingly bewildering way. Many fortunes have been made and lost in the dairy business.

The thing that each partner is most interested in is stopping the leaks that affect himself. His associates' troubles do not concern him much. The supply dealer doesn't worry about the breakage in milk bottles, but the milk dealer does. The inspector isn't especially concerned about the cost of a concrete floor that he orders put in, but the producer thinks about it a good deal. So it is largely a question of every man for himself, and the ethics of the milk business can stand a great deal of improvement.

—And Don't Leave it to the Leaders

The ability of a dairyman to handle his herd so as to develop good cows and produce milk economically is important, but more important than this is his control over the marketing of his products. In only a few places do the dairymen dominate their market. In the co-operative creamery districts of Wisconsin and Minnesota where the farmers own the creameries, conditions are unusually prosperous. Many dairy farmers receive cream checks of from two to three hundred dollars a month, and have all their skim milk, young stock, and manure besides. In some of the creamery sections of California similar conditions prevail. The strongly organized milk-producing organizations of the Elgin district of Illinois and of Los Angeles are also doing well. In perhaps a score of other places dairymen have taken their welfare into their own hands and are getting fair prices without haggling or supplicating. The whole question is one of attitude and action, of knowing the business and the right course of action to take. The commercial power of a dairyman increases as he becomes better posted. Leaders, who assume to show the way out, may be mistaken and go astray. Chosen representatives may neglect their duties and with false assurances conceal what they are really doing or not doing. But when the people themselves know certain things to be wrong, and how these things may be made right, changes come quickly.

The best way to better conditions in the dairy business is to read about it and talk about it, to exchange ideas, to study retail and wholesale prices. If there are better ways of producing and marketing milk than we now have, an enlightened public opinion will soon find it out and point it out, and the improvements will be permanent. Let others make investigations, listen patiently to their reports, but do your own thinking and draw your own conclusions. [THE END]



Profitable dairying is based on a thorough study of all sides of the business, fondness for cows, and practical experience

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
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Ask Farm and Fireside Farm and Fireside is in a position to answer questions for subscribers. In fact, you purchase the privilege of asking Farm and Fireside when you subscribe. State your question clearly and send your letter to "Ask Farm and Fireside" Department, Farm and Fireside, Springfield, Ohio. Your question will be answered by personal letter if you give your name and address

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HERBERT QUICK - - - - - Editor

April 11, 1914.

Public Grain Inspection

SENATOR McCUMBER of North Dakota is pressing his bill for the government inspection of grain, with some prospect of success. The principle of the bill is right, and should be adopted. We have had inspection of grain at the terminal markets by local boards long enough. Most of the inspection is in the hands of political machines which do not possess the confidence of the grain producers of the country. The Department of Agriculture has worked out scientifically correct grades of corn, and will soon be ready to announce proper grades of other grains.

Standards are things to be applied by scientific experts, and not by local political bodies. In the main the grain-buying organizations have been so influential with the powers appointing inspectors that it may quite properly be said that the buyers have inspected the grains themselves, both going into the elevators and coming out. This is not just. Inspection should be under a general authority, so that it will be uniform at all terminal markets. The abuses of the present system are well-known and numerous. They cannot be even mentioned here, but are embodied in many public documents, and have been printed in these columns and elsewhere. It is time they were ended.

Dual-Purpose Mistakes

IT MAY as well be conceded that the average farmer desires to produce both beef and milk. He may be mistaken as to the economy of this, or he may not be; but he thinks he knows what he wants, and all the arguments of a generation have failed to convince him that the special-purpose animal is what he wants to keep. For the beef specialist the question is settled: he wants the specialized beef breeds. For the specialist in dairying the matter is equally clear: he has made up his mind to keep the special dairy breeds.

But there are hundreds of thousands of farmers who are struggling without much sympathetic aid from farm press or experiment-station workers to produce both milk and beef at a profit. The condition is recognized by some of the experts. One good cattleman who is the editor of a farm paper says, "Breed 'em for beef, and handle 'em for milk." The same idea is expressed in a recent issue of "Hoard's Dairyman" in an article in which it is suggested that the milking of the special breeds of beef cows may be a means of reducing the expense of rearing their calves. In other words, that beef cows may be made to yield some milk over and above what is needed to rear the calves for feeding. This is exactly what the average farmer wants to do, but he seeks to secure cows which will give milk in profitable volume, from the milk

viewpoint alone, and at the same time grow calves which will be profitable from a beef viewpoint.

Whether or not he can do this is sometimes debated with more ferocity than the case seems to require. The manner in which he seeks to do it is here the point under discussion. Many of us are breeding dairy cows to beef bulls, or vice versa, thinking to get dual-purpose cows in that way. Some few good dual-purpose cows may be got by that mode, but it is a bad kind of breeding for all that. Such cross-bred cattle will not breed true. Their calves may be beef cattle, or dairy cattle, or scrubs—most likely the latter. A herd cannot be bred except by using cattle which will breed true. A dual-purpose herd in which the cows will give an average mess of ten quarts of milk a day for ten months in the year, or a yield of 6,000 pounds of good milk a year per cow, will be a profitable dairy herd. If at the same time these cows will drop bull calves which as steers will sell as medium to good beefes in the stockyards, they will rank as good beef animals. If these qualities are sure to come regularly in the breeding the man who has them will have a true dual-purpose herd. It is claimed that the Milking Shorthorns and the Red Polls have these qualities. If so, it is well to look to these breeds for the farm cows of the future, for those farmers, at least, who will not take up the special breeds. But the ruinous practice of crossing special beef breeds on special dairy breeds should be abandoned. Whatever may be right, this practice is certainly wrong.

Landlord and Tenant

IN A RECENT speech the British Chancellor of the Exchequer, Lloyd-George, said things regarding the proper relation of landlord and tenant which may sound odd to American ears.

"You want to see to it," said Mr. Lloyd-George, "that if a man [referring to a tenant farmer] is turned out of his house and home, and is deprived of his livelihood, he gets, first, compensation for all he has put into the land. If he has improved it the improvement is certainly his. 'Render unto Caesar the things which are Caesar's.' In the second place, if a man is turned out of his house and home without adequate reason or sufficient cause he should be compensated for being turned out, for the loss of his livelihood, for the break in his life, for the fact that he may go on for years without getting another opportunity of making a living, and generally for the damage done to him by tearing him away from the soil in which he has been planted."

Such words as "the soil in which he has been planted" sound like sarcasm when applied to the American tenant farmer, who generally rents his place from year to year. But the things described are, many of them, now a part of English law, and Lloyd-George lays down the complete accomplishment of all of them as the program of the present British Government. Can any intelligent American landlord offer any good reason why we should not work toward the establishment of the same principles of tenantry here?

Helping the Irrigationists

THE number of people who have made failures on the government reclamation projects has been a very depressing thing to all concerned. Most of the settlers were unused to the conditions, and found that irrigation is a thing that cannot be mastered in a moment. The Government made many mistakes, and the settlers made more. There was a scarcity of capital in the hands of the settlers and a surplus of red tape on the part of the Government. In some cases there was much suffering and intense discontent. It is good to know now that the Government expects to take up in a systematic way the sympathetic assistance of the settlers.

Stallion Grafters

WARNING is sent out that dishonest horse dealers are working up stock companies to own stallions in West Virginia. They inveigle groups of farmers to pay from \$2,000 to \$3,000 for a stallion, or from \$1,200 to \$1,800 for a jack, on the co-operative plan. The "co-operation" consists in some local man and an outsider "co-operating" in selling an animal for twice what he is worth, to a neighborhood of farmers. Good imported stallions may be bought for from \$1,200 to \$1,800 of reliable importers and breeders, and jacks should not be priced higher than from \$600 to \$1,200. Even though breeders may sometimes pay more, these prices are high enough for the average farm neighborhood. The main point is, however, that the fellow who comes into a neighborhood working up a co-operative company to purchase something which the farmers have not felt the need of should be carefully looked up, for he is likely to be a man whose statements as to the soundness or breed of the animal cannot be trusted.

Raising Dairy Heifers

THE way to induce us to raise our dairy heifers is to show that it pays. Professor Fraser of the Illinois Agricultural College is one of the experts who believes that it does pay. "The Illinois Experiment Station," he says, "bought a cow that produced an average of 11,390 pounds of milk and 405 pounds of butterfat a year," and instead of perpetuating her great qualities by rearing her calves, sold them to a butcher. This he calls dairy race-panic.

A prominent Illinois dairyman says that "the heifers we raise from our best cows are better producers with their first calves than the average mature cows we can buy." Others say the same thing, and it is no doubt almost universally true. The Agricultural College is raising calves at the expense for milk of \$3.45 per calf—150 pounds of whole milk, worth \$2.25; and 400 pounds of skim milk, worth \$1.20. "These prices are liberal," says Fraser, "as they are paid at the farm, and no money or labor is expended in hauling." The advancement of arguments like these will turn the minds of heifer slayers in the right channel. The restrictive-legislation balderdash will be quite likely to have the opposite effect.

Egg and Cream Circles

AN "EGG CIRCLE" is just a circle of women—or men—who have hens; and its purpose is the selling of eggs. Each stamps his eggs with his number and the number of his circle. All the eggs of the circle are shipped to the same distributor—dealer or commission merchant—who disposes of them to the trade. If an egg is bad it can be traced back to the seller. There are many of these "egg circles" in Ontario, and some of them have been getting from two to fifteen cents a dozen more for their eggs than the ordinary market price. The Nebraska Agricultural College recommends the plan to the poultrymen of Nebraska. We recommend it to thinking people everywhere.

We also recommend to the dairymen of Nebraska, and those other States in which the centralizer creameries are operating, the formation of "cream circles," but especially to the cow owners of Nebraska. Already these "cream circles" are successful in Oklahoma. The farmers get together and sell their cream to the same creamery. Acting as a body they can get better terms. And they need better terms, for they are as a rule getting from four to six cents less per pound of butterfat for their cream than it is worth. The "cream circle" is just as good a thing as the "egg circle."

IN KENTUCKY all labels on poison bottles must carry a prescription for the antidote, if there is one. Such a law should be adopted everywhere.

Farm Notes

Chinch Bug vs. Quail

By Edgar S. Jones

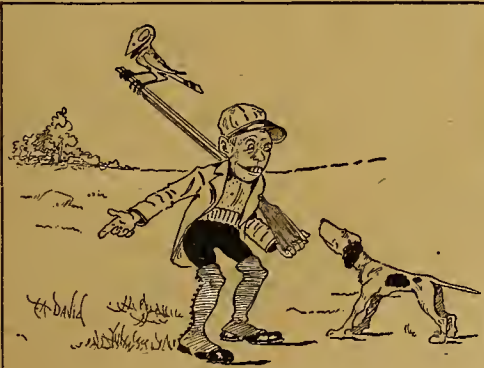
IN COMBATING the destructive chinch bug many practical measures have been tried, and some in a way have temporarily aided in holding in check the propagation of this little bug that costs the farmers of the United States at least a \$100,000,000 annually.

The chinch bug after he is full grown in the fall seeks a place of refuge for the winter. This hiding place is usually in grass heaps, under leaves, and in stalks along the grainfields. The first brood usually attacks the wheat or rye and at the harvest time leaves these fields for the cornfields. The bugs that produces the second brood are found in the early grainfields, and as they multiply very rapidly attempts are made to destroy as many as possible before they leave these fields for the corn or the meadows.

In the present-day fight the methods employed are makeshifts for the reason that a whole community or county must act in unison or the results are scarcely noticeable. One plan suggested is to burn in the early springtime all the heaps of grass where the bug is supposed to be wintering. Another method that is often used is to place a line of thick oil around the edge of the field in which the bugs are working. Just inside this line holes are to be dug so that the hogs will fall into these holes as they crawl back and forth along the oil line, after which they may be killed. Some farmers make a furrow around the field and then drag a brush or a log in the furrow until the dirt has become finely pulverized. By regular dragging a number of bugs can be killed at each round made. Quite often a spray is made and placed upon the stalks of corn as the bugs enter the field.

Under present conditions it is necessary to combat with crude measures the appearance of the chinch bug, otherwise the losses would be much more extensive than they are now. It is not suggested that less attention be paid to fighting the chinch bug with the means at hand, but that greater protection be given to the natural destroyers of this insect pest. If the law of the survival of the fittest applies in all cases, it is reasonable to believe that the ultimate check to the propagation of the chinch bug will come about by the birds that eat them at all stages of their life history. Among the birds that eat millions of these pests may be mentioned the quail, the meadow lark, and the English sparrow.

If the chinch bug is to be practically eradicated we must depend upon the efforts of the quail, as his home is in the brooding grounds of the chinch bug. Nowadays things that are done have a certain degree of the idea of permanency about them, hence the first step in the permanent destruction of the chinch bug is a more complete protection of the quail that assists also in lowering the losses caused by the cotton weevil, the grasshopper, and the potato bug.



"What you pointing me for, dog? I'm no bird!"

Book Reviews

VILLAGE IMPROVEMENT, by P. T. Farwell. The author has given us a pretty thorough review of what has been done and what may be done in the way of making our surroundings more suitable for life. Practically every feature of prominence during the last ten years is discussed. A splendid work for every person interested in club, church, or school work. Sturgis & Walton Company, New York City. Price, \$1 net.

FARM MOTORS, by A. A. Potter, is a practical engineering hook of 253 pages on gas and oil engines, automobiles, and farm tractors. It is well illustrated and contains tables on automobile troubles, showing the amateur just how to proceed in starting a dead engine. The price of this hook is \$1.50 net. Published by McGraw-Hill Book Company, 239 West 39th Street, New York.

THE ANTI-SALOON YEAR BOOK FOR 1914 has just been issued. It contains 244 pages, and is well illustrated with maps showing

wet and dry territory. Statistics and charts show the situation on the liquor problem in all parts of the country. Sold by The American Issue Publishing Company, Westerville, Ohio. Paper bound, 25 cents, postpaid; cloth bound, 50 cents, postpaid.

THE FUNGI WHICH CAUSE PLANT DISEASE, by F. L. Stevens, Ph. D. Doctor Stevens' name alone recommends this hook. It is strictly a book for the scientist; in that field it will be invaluable. The Macmillan Company, New York. 754 pages. Well illustrated throughout.

THE WORK OF THE RURAL SCHOOL, by J. D. Eggleston and Robert W. Bruere. This is a book of 282 pages by two educators who speak for that new kind of rural school which we are gradually getting, and which makes good wherever it has a chance. It has chapters on the community survey, the health of the children, school government and the course of study, the widening outlook of the rural school, co-operative demonstration work, consolidation and transportation, and in short covers plainly, sensibly, and skillfully the whole field of rural-school development. A fine book for school officers, superintendents, and teachers. Harper & Brothers. \$2.

ON BOARD THE GOOD SHIP EARTH, by Herbert Quick. In this book the editor of **FARM AND FIRESIDE** has embodied his ideas as to our duties and relations as tenants of the earth. A great agricultural editor says of this hook: "While it is not an agricultural book, it embodies the true principles of agriculture; and while not a religious book, it gives the true basis of true religion." Bobbs-Merrill Company, Indianapolis. \$1.25.

THE OREGON FARMER. That is the title of a 136-page hook just out from the Oregon State Immigration Commission and the Oregon Agricultural College. It is a remarkable book, for it tells what the farmers and their wives are doing in the State—real facts given in such a style that they are interesting. That fact and its editing by the college faculty make it very practical. Every farmer in Oregon ought to have a copy, and it would do anyone in any State good to read it. When a state college hitches up with the farmers to produce such a book as this there must be a great deal of good in both the institution and the farmers. No man who is thinking of Oregon as a future home can afford to neglect this hook. The hook may be secured from C. C. Chapman, state immigration agent, Portland, Oregon.

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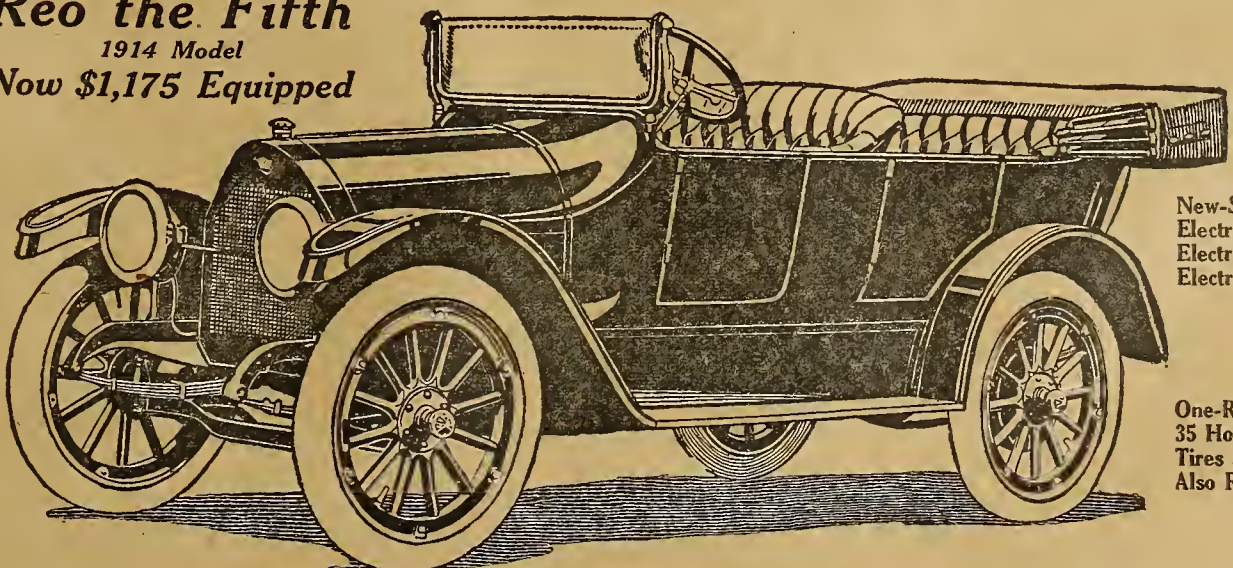
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Garden and Orchard

Forestalling the Frost

By James D. Bowman

THERE may be places where the problem of late frosts is not a pressing one, but certainly West Virginia is not one of them. On the border, so to speak, between the North and the South, it becomes every spring, as it was during the Civil War, the fighting ground between the forces of the North and the South.

Just when we think that old winter has folded his tent, like the Arab, and silently stolen away, and accordingly trust our tender seeds and plants to the soil, back he comes again, making one last effort to regain his lost ground, and, hitting us a blow, retires leaving sadness and desolation behind.

This was the case to an unusual degree last spring. In late April the danger of real freezing seemed past. The fruit trees were in full bloom, the petals having in some cases fallen from the peaches, and indications were good for a big fruit crop. But on the morning of April 21st the mercury dropped to 23, and about all peaches and most other fruit were killed.

After this it warmed up, going to 80 or 90 in the shade, except for a very slight frost the last day of April. In early May the temperature ran regularly to 90 or above. Winter seemed past and forgotten. We now planted everything. By May 10th I had in over 800 tomato plants. Then what should have been expected happened. There was a slight frost the morning of May 8th, but warmed up after. However, on May 10th there was a heavy frost, followed on the 11th by a blasting freeze, the temperature falling to 28. We had worked all evening covering most of our plants with boxes, cans, buckets, etc., but nearly all were killed, together with hundreds of plants in cold-frames.

Taking a hoe I drew loose soil over a couple of rows of early beans, but they froze under an inch of soil. All the orchard fruit that escaped the April freeze now succumbed along with the bulk of the small fruit crop. Young shoots a foot long on the grapevines were all killed. Even the potatoes, with early corn, got theirs.

So great was my loss that I felt dazed for a few days as if a brick wall had dropped on me. After I recovered my thinking faculties I cast about to see if I could learn any lessons from my hard luck that might stand myself or neighbors in hand another time. I picked up, but mostly from others, some points worth remembering.

On a trolley car I met a neighbor a few days after the freeze. He is a gardener in a small way, and usually quite successful. When I heard him assert that he had saved all but a couple of his plants I naturally had my curiosity aroused. He was quite willing to gratify it, only stipulating that I hand it on when I had a chance. Here is his idea, but in my own words instead of his.

The tops of plants must be kept dry, protected from dew, plenty of air allowed to circulate near the ground. Said he, "It had been better for you to leave your plants unprotected than to turn things over them, leaving close, dead, stagnant air around the plants. They will sweat and freeze before plants not covered at all." I knew this to be true, for of plants not covered perhaps 25 per cent pulled through.

A Simple Method That Worked

He used a lot of boards or shingles, perhaps four or five inches wide, sharpened. He pushed two in the ground, one on each side of the plant, with tops together, and then he stuck down one on each side so as to leave an open space at corners for air. He explained that the loss of the two plants was due to the carelessness of some member of his family leaving the shingles open at the top. Said he, "My son's garden joins mine, and he lost all his plants. He had them covered with cans, buckets, etc."

Another man to whom I related this corroborated it by an experience of his own, whereby he saved his early beans by doing what he could with the time and means at his disposal. He had a few rows of early beans that were large and fine. He had not much time, but he gathered up some bricks and set them on edge along at short intervals across the rows. On these he laid some broad boards he chanced to have, making a canopy-like covering over each row, the sides being open and unprotected. He says he saved them all, while neighbors who covered stuff very carefully lost nearly all.

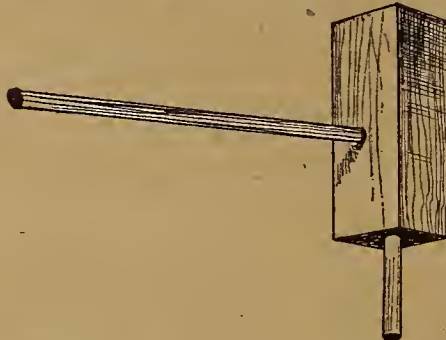
The lesson is obvious. It does not matter much the means employed so you cover the tops of plants, leaving a free circulation of air, thus keeping the foliage dry. Tender plants so treated stood a temperature of 28 degrees without injury. The covering should not be removed till the sun is well up and frost all gone.

I also noticed that there was much difference between different varieties of tomatoes in their susceptibility to frost. The most noticeable was the fact that both in the field and cold-frames the Earlians were all killed, while other varieties, like Stone for instance, growing beside them would, many of them, escape.

Mallet for Setting Plants

By Bert Culbertson

TO THE farmers who use a stake in making holes in which to set out plants I wish to give a new way. Take a piece of timber 6x6x18 inches, in which bore two 1 1/4-inch holes 2 inches in depth (note sketch). In the one hole place a hickory handle about 36 inches long, and in the other place a peg 8 inches in length. The



holes in the ground are made by using this just as you would a mallet. The peg makes the hole, and the end of the mallet keeps the ground around the hole compressed, thus preventing the annoyance of dirt falling into the holes. It saves time and worry and does the work in a hurry.

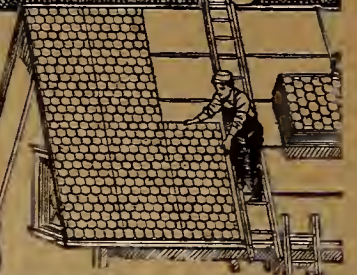
Six Potatoes to the Hill

By C. M. Weed

MANY people seem to think that when a plant is reproduced by cuttings or tubers rather than by true seeds the matter of selection is of small importance. They claim, for example, that small potatoes are as good for seed as large ones, and that in the growing of potatoes selection of any sort is of little value.

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Potatoes selected for seed from hills that had eight or more marketable tubers

But it is true, nevertheless, that crops propagated by tubers, like the potato, offer many opportunities for selection. Two of the most important of these are resistance to disease and productivity. If any plants survive when the rest die from fungous diseases, like early or late blight, the tubers should certainly be saved, for one may thus hope to establish a blight-resisting strain of the greatest value.

In regard to amount of production it is pretty well established that the best time to select the seed potatoes is when the crop is dug, and that these should be saved from the most productive hills. The production of many potatoes of marketable size is of more importance than the production of a few of very large size. A few years ago a Western potato-grower began this method of selection by saving seed only from those hills which had at least six potatoes large enough to sell, and no small ones. At first only sixteen per cent of the hills came up to this standard, but in five years he increased the percentage to seventy.

The photograph shows a selection of Green Mountain potatoes made from hills in which at least eight potatoes of marketable size were grown. They run quite uniform in size and will serve very well for a basis for future selection.

In case one has not begun by hill selection, the best way is to begin with the selection of tubers of moderate size from the cellar bin.

Hogshead Drainage

By Frank Baird

QUITE by accident I hit upon a simple device by which I was able to increase the value of a large garden plot at least fourfold. When I came into possession of the plot, which was 100 by 150 feet, I was told by the former owner that at least three fourths of it was almost useless. It was soil of great fertility, deep, rich, and of undoubted productive power; but owing to the fact that it was undrained it was generally the first of June before it could be worked.

Even at that late date, when it was plowed, owing to the fact that the hot sun had baked the surface, it was always lumpy, and of course unfit for successful cultivation. He informed me that it was useless to set strawberries as I proposed doing, for he had tried them, and those that were not killed by ice in the winter were thrown out by the soil "heaving" in the spring.

Notwithstanding this I had it plowed as soon as possible—this was May 26th—and about the middle of June succeeded in getting most of it set out with cabbage plants. They had a hard struggle. I set them low, with hollows around them, to insure more moisture; but, in spite of all my efforts, almost every morning I would find that some of the lumps had rolled into the hollows and crushed or broken my plants. The work of the summer was exasperating as well as disappointing.

The next summer I tried potatoes. The lumps were as bad as ever, and I had much difficulty in getting the potatoes properly hoed. Not till fall did I get the light that meant a new garden for me.

One day just before the ground froze I was talking with a neighbor. I remarked that the one defect in my plot was that the water lay on it late in the spring, and no matter when I plowed it, or how hard I worked, it was always lumpy.

"You should do as we do," he said; "sink a hogshead. Where there is higher ground all around, as there is around your lot, we dig a hole down to the gravel and set in a hogshead. The place for yours is in that southwest corner. The whole garden slopes slightly in that direction."

He gave me a few instructions and promised to send me a large molasses hogshead. In less than an hour this had arrived. I got a mau to place it in the low corner, and then dig shallow drains across the west, or rear, end of the lot, and also about halfway along the north and south sides. These were left open, but the hogshead was covered with planks, while over these was put sufficient earth to bring the top of the hogshead level with the garden. The two drains led into the hogshead under the projecting ends of the planks. The hogshead cost sixty cents, work a dollar.

I have tested the device now for two seasons. The results have been wonderful. I can plow now early in May and the soil is as free from lumps as an ash heap.

EDITOR'S NOTE: A more permanent similar plan is to dig the hole to gravel and fill with small stones.

E.W

How to Plant Trees

By Maud DeWitt Pearl

IN SCIENTIFIC farming it has been found that it is not always the most careful methods which bring about the best results. At the experimental farm at Woburn, England, a series of experiments was undertaken to have on hand a practical illustration of the difference between careful and careless methods in planting trees. But instead of the results which they expected to obtain for the purpose of serving such a valuable lesson, the instigators of the experiments were the ones instructed.

Two plots were used in the experiment. In one the roots of the trees were very carefully spread out, the earth finely pulverized and sprinkled over them. In the other plot the trees were carelessly placed in the holes, the earth thrown in hurriedly and rammed hard around the roots. Greatly astonished were the investigators when they found the carelessly planted trees outstripping those which were so tenderly handled. Believing that some factor was at work which they had not taken into account, they repeated the experiments, even twisting and tying the roots of the carelessly planted trees into bundles, yet the same results were obtained. An examination of the roots of the trees under the two experimental conditions showed that nine tenths of the old roots of transplanted trees are of no use to them. Their tips are usually injured when the trees are first dug up. Of the new roots which form, not more than fifteen per cent develop in the region of the old root tips. Mostly they start farther up toward the stem, and often on the stem. Also in those trees where the earth is tightly packed around them the new-forming roots have a much better opportunity for close contact with the soil. This was shown by the quantity of earth which was held enmeshed when the trees were dug up.

EDITOR'S NOTE: The experiment here described explains the good results that have frequently followed planting fruit trees and shade trees in this country according to what is known as the "Hitchings Method," originated and employed by Mr. Grant Hitchings, a New York orchardist.

His method is to cut off all lateral roots, leaving merely a few stubs an inch or two long, some of which, after planting the tree, will be only a few inches below the surface of the soil. Holes in which to plant the trees are made with a crowbar, and the dirt is solidly rammed about the taproot and stubs after planting.

The branches of the young tree are cut off to correspond with the "dehorned" roots when the Hitchings method is followed. This method of planting is particularly good for rough and rocky land where digging the holes is a hardship.

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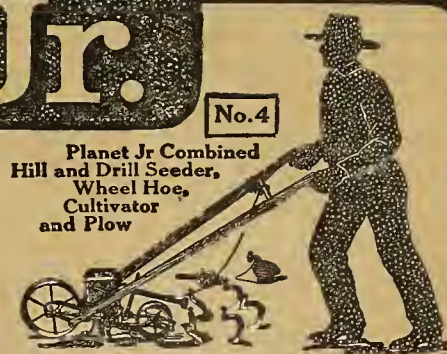
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Poultry-Raising

The Brooder Stove

The Production of Healthy, Wholesale Chicks
By Levi French

"NECESSITY is the mother of invention," and necessity it was which drove the poultrymen of Petaluma to devise some means of brooding and rearing chicks whereby a man would receive adequate returns for his time and labor. Under the old system of raising chicks in small flocks in box brooders heated by lamps or hot-water pipes (or, worse still, the fireless brooders) the number of hens which a man could keep and care for was out of all proportion to the number of pullets which he could raise up each year to replace the old hens in his flock. With incubators of the present day almost anyone with ordinary intelligence can hatch out young chicks by the hundreds, or thousands even, but the number which such a person can raise to maturity under the old methods of brooding is strictly limited. When raising them in large numbers the labor cost becomes a very serious item.

The plan of brooding as evolved here on the Pacific coast consists simply of placing 1,000 or 1,500 chicks, all in one flock, in a large room heated by a small stove, and absolutely without hovers or brooders of any kind.

The stove, which is a small sheet-iron affair, has a burner in the bottom arranged for burning distillate, a low grade of gasoline selling here at from 6 to 10 cents per gallon. This stove is placed near the center of the room, which should be 12 or 14 feet wide and from 20 to 26 feet long.

The fuel is kept in a small elevated tank outside the building, and is conducted to the stove through a small pipe running under the floor and coming up through the bottom of the stove. In this pipe near the tank is placed a needle valve and a regulating dial by which the flow of oil to the burner is regulated. When this valve is once adjusted the heat of the room will vary but little through the night. By the use of a thermostat connected with this valve the flow of oil may be automatically adjusted to the rise and fall of the temperature of the

room. At night the chicks simply lie around on the floor, drawing near to the stove or getting farther away, as best suits their comfort.

When the chicks are first taken from the incubator and placed in the brooder house, a circle of muslin or of inch-mesh wire netting one foot high is placed around the stove to keep the chicks from straying too far from the stove until they learn to locate the source of heat. This circle should be about 10 or 12 feet in diameter, and is taken up by the third day, giving the chicks the run of the entire room.

The floor inside of this circle is covered with sand, and on this sand the food is scattered. After the second day the sand is covered with an inch of finely cut alfalfa or alfalfa leaves. When the wire around the stove is taken up the entire floor is covered in this manner, and the depth of this litter is gradually increased as the chicks grow older. After a few days, chaff or finely cut straw takes the place of the alfalfa, and by the time the chicks are ten days old this litter is 5 or 6 inches deep. In this litter all of the grain food is thrown. When the chicks are about a week old they are allowed out upon the ground. Here, instead of a number of little pens, each with its gate to be opened and closed several times a day, we have one large yard often enclosed by a portable fence which is removed as the chicks grow older, thus giving them freedom to range at will.

Keep the Chicks Warm

When the chicks are first placed in the brooder house they will range themselves at night in a circle completely surrounding the stove, but as they grow older the tendency seems to be for them to separate in little colonies in different parts of the room. Should they become cold, particularly just at roosting time, there is danger of their piling up and smothering, so it is necessary to keep them warm until they get settled for the night.

When the chicks are four or five weeks old, low perches are placed around the sides of the room, and in a surprisingly short time many of the chicks are sleeping upon these. At six to eight weeks of age the larger cockerels are removed and placed in the pens where they are finished for broilers, while the largest of the pullets are removed and placed in colony houses on the range. This prevents the brooder house from becoming overcrowded, and gives a better chance for the development of the chicks which are left behind. Frequently they are all taken out by the time they are eight or ten weeks old and the house filled up with another hatch.

While the advantages of this system are many—saving in labor; saving in cost of equipment; more than doubling as it does the capacity of the brooder house; and producing more and better chickens at a given age—let me not think for a moment that a system has here been evolved by which chickens may be raised without work. I know, indeed, of no system of raising chickens where "the Man Behind" counts for more than here. We know that, given a few good motherly old hens, almost anyone can raise a few chickens; with the brooders and portable hovers, perfected as they are at the present time, the rearing of a limited number of chickens artificially does not present serious difficulties even to the novice; but the man who cares for from 3,000 to 10,000 baby chicks every day surely has a man's job on his hands, no matter how he goes about it.

But by the use of the brooder stove he is relieved of a large part of the petty detail of his work and can give his time and attention wholly to the intelligent care of the chicks; can thus put himself in the way of realizing adequate returns for his time and labor.

That this system has its limitations no one will deny. For the small breeder, or one who raises but a few chickens, and those few perhaps at different times, it would not prove profitable, as the full cost would be nearly as great for a few as for a larger number. Again the chicks must all be of the same age. All being placed in one flock and being fed together, the strong will trample the weak if even three or four days difference in age exists.

Given a thousand or fifteen hundred chicks all of the same age, it has been demonstrated that in this way more and better fowls can be raised with less work and expense than by any other method in use at the present time.

Let Chicks' Tongues Alone

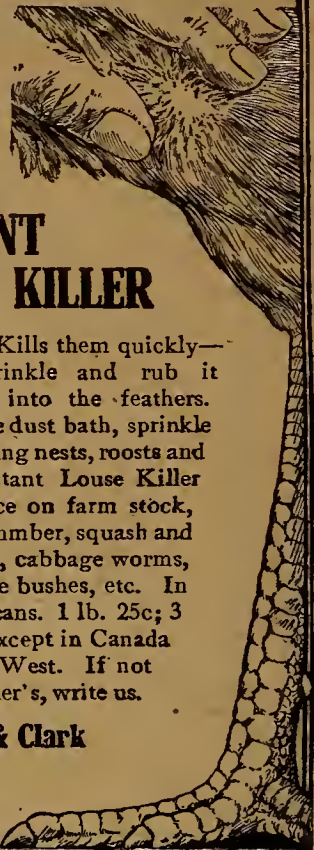
By Fred Grundy

I WAS once asked to settle an argument between two poultrymen. It concerned the hard, pointed, shell-like substance found on the point of the tongue of small chicks. One of the poultrymen claimed that this should be removed or it would make the chick sick. The other maintained that the substance was natural and should not be removed.

There is a lot of nonsense and superstition in the chicken business. Fifty years ago, when I was a little chap, I often saw people gouging the end of little chicks' tongues off with their thumbnails to rid

Don't Let Lice Get Hold of Your Flock

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with any other incubator. Belle City has won Eight World's Championships and thousands have made 100 per cent perfect hatches. Send for my New Book, "Hatching Facts." It tells of big money making successes. My low price will surprise you. Write today.
Jim Rohan, Pres., Belle City Incubator Co., Box 100 Racine, Wis.

Tells why chicks die

J. C. Reefer, the poultry expert of 1602 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books.

POULTRY PAPER 44-124 PAGE periodical, up-to-date; tells all you want to know about care and management of poultry for pleasure or profit. Four months for 10 cents. **POULTRY ADVOCATE**, Dept. 90, Syracuse, N. Y.

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them of the "evil" hatched with them. I used to pity the poor little things.

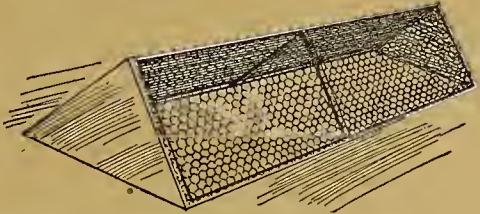
If the parent stock is healthy and the hatching properly done, the chicks always come out in fit condition to live and grow. The less nonsensical surgery and dope with strange compounds that they are subjected to the better for them.

Let the tongues of young chickens alone. I have hatched and raised thousands and thousands of chicks and never once found it necessary to amputate any part of their anatomy. All that chicks need is plenty of good plain food, water, grit, exercise, sufficient warmth for comfort, sanitary sleeping quarters, and protection from their natural animal and insect enemies. If you provide all these things you will have no chick troubles of any consequence.

A Folding Chicken-Run

By Fred G. Turner

GET spruce furring strips at the lumber yard, 7/8x2 inches. Cut three pieces 6 feet long and six pieces 2 feet long. Make a frame for one side, using three of the 2-foot and two of the 6-foot pieces. Now use one long and three short pieces for the other side, and reinforce all joints with galvanized iron or tin. To each of the last-mentioned three 2-foot pieces attach a 4-inch strap hinge at the free end and connect to side of the other frame; this will allow you to set it up in A shape, or fold together. Two yards of table oil-cloth will cut two widths; use one on one side of the frame just made, which should be used on the north side of run. Set any style of coop on west end. Cover south side and east end with fine-mesh wire. It is always best to use a coop with a tight floor, but removable for sanitary reasons. At night pull the coop to a clean place and set the portable run in front for use next day; move often. A foul run kills more chicks than all other causes. Sanitation and green grass, also dry quarters, are first aids to strong stock. A cross or excited hen cannot get to the side of these runs to



step on the baby chicks. When you are through with them fold the wire in on the end and close flat for storage. For use without a coop, oilcloth may be placed over open end as shown in sketch.

For Eggs Feed Skim Milk

FEEDING skim milk to make pork is about the same as "casting pearls before swine," as demonstrated by different experiment stations.

A three-year experiment conducted at Purdue (Indiana Experiment Station) shows that skim milk is worth almost four times as much when fed to laying hens as when fed to hogs. Two pens of hens exactly alike as to breeding and rearing were used for the experiment, and were fed and housed exactly alike, except one pen was furnished a liberal supply of skim milk, and no meat or other form of animal food was fed.

The skim-milk pen averaged 133 eggs per hen per year. Those getting no skim milk averaged only 36 eggs per hen per year. The milk-fed hens returned an average net profit of \$1.40, and the milkless hens a loss of a trifle over 4 cents per hen.

It is now well known that sour skim milk is the best preventive of bowel trouble that has been found for young chickens, turkeys, and all poultry.

Breed from the Earliest Layers

EXPERIMENTS carried on for three years at the poultry department at Cornell College of Agriculture, New York, show that a group of White Leghorn hens of the same age that began laying at an average age of eight months old laid an average of 451 eggs each in the first three years of their production.

The second group, which began to lay when averaging eight and a third months old, laid 411 eggs each during the three years' period.

The third group did not begin to lay until they had reached an average age of 307 days, and laid 328 eggs each during the three years of production.

Stated differently, the first group, which began to lay at an average age of eight months, laid an average of 123 eggs more per hen during the three years' production than did the group that did not begin to lay until the hens reached an average age of ten and one-fourth months. This means in dollars and cents about one dollar more income per hen each year from the hens that began laying at eight months old than from those that delayed laying until two months later.

Select your breeding stock from the hens that begin to lay when young.

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Buy Prince Albert in the first store you hit. Tippy red bag, 5c; tidy red tin, 10c; also in handsome pound and half-pound humidors. You can now get P. A. all over the civilized world.

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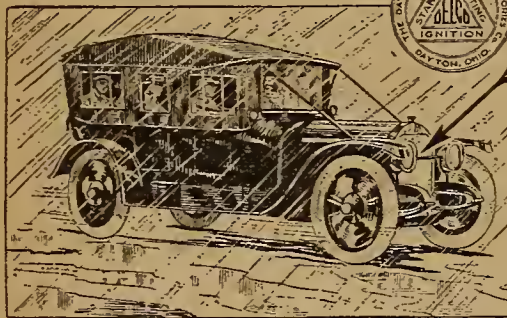
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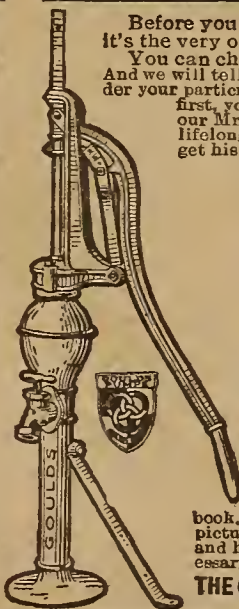
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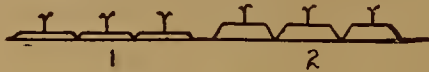
Crops and Soils

How Do You Plant Corn?

By J. O. Claitor

IT IS an interesting study to notice the different ways people have of planting corn. Here in the South many are the ways.

1. The old-time way, and one still followed by many, is to root out the old stalks,—generally cotton stalks,—drop the corn in the furrow, and cover with the same plow. It takes four to six furrows per row and a trip to drop the corn, and perhaps a trip with harrow. This method makes good corn because the sharp shovel used cuts deep, but it is too slow. The land is practically level.



2. Another more common way is to bed out the old rows with a turning plow two furrows, middle breaker (lister) one furrow, harrow, and run planter on top of bed. This takes shorter time than No. 1, but corn is usually too high to be worked easily or to stand drought.

3. A method same as No. 2 in breaking, but dragged down by drag or section harrow. This is much better, as the corn is more nearly on a level. The drag or harrow also saves time by taking about two rows to a trip.



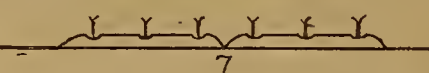
4. Here is a better method: On high dry land break the land well in beds, harrow if you like, and make small lists in water furrow with two-plow cultivator, or two furrows with single plow. Run planter on list. You now have the corn below level, and you can put dirt around it every time you cultivate, and cover all weeds and grass. Use harrows as small cultivators while corn is small. This method is good when a drought comes.



5. On low lands where drainage is essential break as in No. 4, and run a sharp fourteen-inch buzzard-wing sweep on top of bed ahead of planter. This enables you to save hoeing—a very important consideration.

6. Or, you can break the land flat in beds of two or three rows, harrow, and run planter.

7. Same as No. 6 except run a sweep furrow ahead of planter.



The first essential is always good breaking and preparation, and methods No. 4 to No. 7 make cultivation easier and more effective.

The Crows Stay Away

By Mrs. J. W. Hoover

MY HUSBAND had difficulty, because of the destructiveness of crows and black-birds, in getting a perfect stand of corn even after testing the seed, until he hit on this way of treating the seed. He is now assured of a perfect stand, providing weather and soil conditions are favorable. He follows the directions given below for treating seed corn with sheep dip.

Take the seed corn out in the sun and spread on an old blanket or cloth about an inch thick, then prepare sheep dip as directed for dipping sheep; sprinkle this over the corn until all the kernels are damp. Leave it spread out in the sun a few hours until dry, so that it will work in the planter all right. Now take a few quarts of common corn and soak in a solution twice as strong as the above mixture, and after the field is planted throw this soaked corn broadcast over different parts of the field. The crows will soon investigate, so this should be done before leaving the field. They do not like the scent of the corn, and when they dig up any of the planted corn and smell the dip they leave it in disgust. Chickens also will not eat this corn.

The whole amount of seed should be treated, for the crows are hard to beat. One year my husband could not plant one corner of a field. It was too wet. Then when he did plant it he was in a hurry, and so planted without treating the corn. He thought that as the crows had gotten fooled out of the rest of the field they would not try this corner, but they took almost all of it, and it was too late to replant. His motto now is, "A stitch in time saves nine." This beats any scare-crow, shotgun, or poison, as there is no danger to anyone.

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But let dyspepsia or indigestion get hold of one, and all endeavor becomes a burden.

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"At times my appetite was voracious, but when indulged, indigestion followed. Other times I had no appetite whatever. The food I took did not nourish me and I grew weaker than ever."

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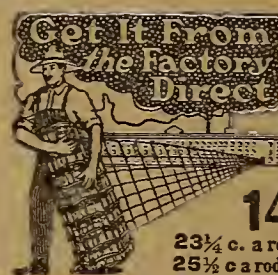
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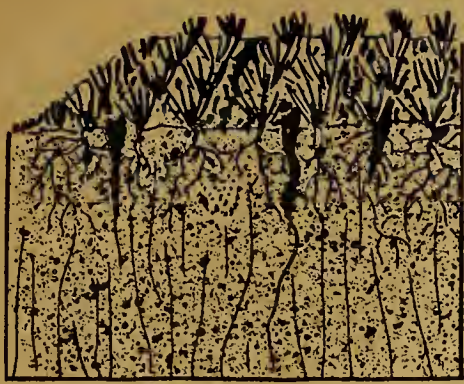


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The Adventures of Arnot and Homer

A Page for the Boys

By John Y. Beaty



Here the stubble was not disked

ONCE upon a time there were two boys, and their names were Arnot and Homer. Now, perhaps you will be surprised when I tell you that these boys had no legs and no hands, but they were just as much alive as you.

Arnot was a grain of oats, and Homer was a grain of barley. It chanced that these two boys were under entirely different conditions. One lived on a farm owned by Mr. Grinell, and the other lived on a farm only a mile away, owned by Mr. Parker.

Mr. Grinell was a good farmer, but Mr. Parker was lazy. Of course, living so far apart, Arnot did not know Homer, and Homer did not know Arnot; but I chanced to learn the story of their lives.

Arnot was in a bin with several thousand other grains of oats, and one day Farmer Grinell came to the bin with a sack. He fastened the sack on two nails on the wall, and with a big shovel scooped Arnot and a whole multitude of his brothers into the sack. He tied the sack, put it on his shoulder, and carried it to a shed where he set the sack into a barrel of water.

It so happened that Arnot had not been grown on the farm of Mr. Grinell. Mr. Grinell had bought the seed oats from another man, and in the same field in which Arnot grew there was an enemy. This enemy was Mr. Smut.

Perhaps most of you boys know that smut is carried from one plant to another by very small particles of dust called spores. Mr. Smut, who lived in this field of oats, broke himself into a million pieces, and the wind carried these pieces all over the field. Two of them settled in the head where Arnot was born, and attached themselves to him.

Arnot had scarcely noticed their presence, but when he was dumped into the barrel of water he began to realize that these two spores were in trouble. They

cold there, however, because in turning over the surface soil the disk had turned under part of the stubble from the previous crop, and Homer found that there were large open spaces between himself and the air above. It was a long time before he started to grow at all.

When he did begin to grow he found it difficult to secure food. Just beneath where he lay the soil was very hard, and it was very difficult for him to send the small rootlets far enough into this firm soil to secure food. It was, of course, upon these small rootlets that he must depend for the food which would make him grow into a tall plant.

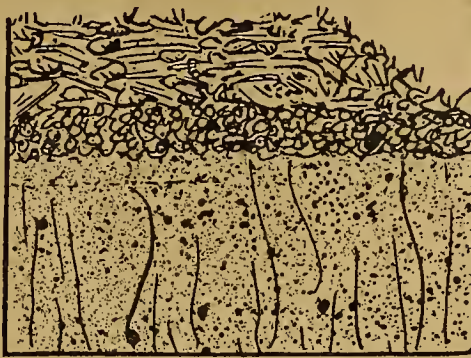
The Roots Died Because They Lacked Water

It so happened that rains did not come at the proper time that year, and although Homer made a brave start his rootlets died after they had penetrated the hard soil about two inches.

Perhaps I had better tell you right here that a seed cannot grow unless it is supplied with food which is dissolved in water. A seed, you know, does not have a mouth and teeth with which to break up particles of food into smaller portions that can be digested.

The experience of Homer was similar to the experience of thousands of his brothers who were planted in the same field. A few of them, it is true, did grow into barley plants, but they happened to fall in a portion of the field that had moisture near the surface.

Now let us go back to the farm of Mr. Grinell and see what became of Arnot. After Arnot was rid of the two smut



Disking stubble prevented cracks in ground

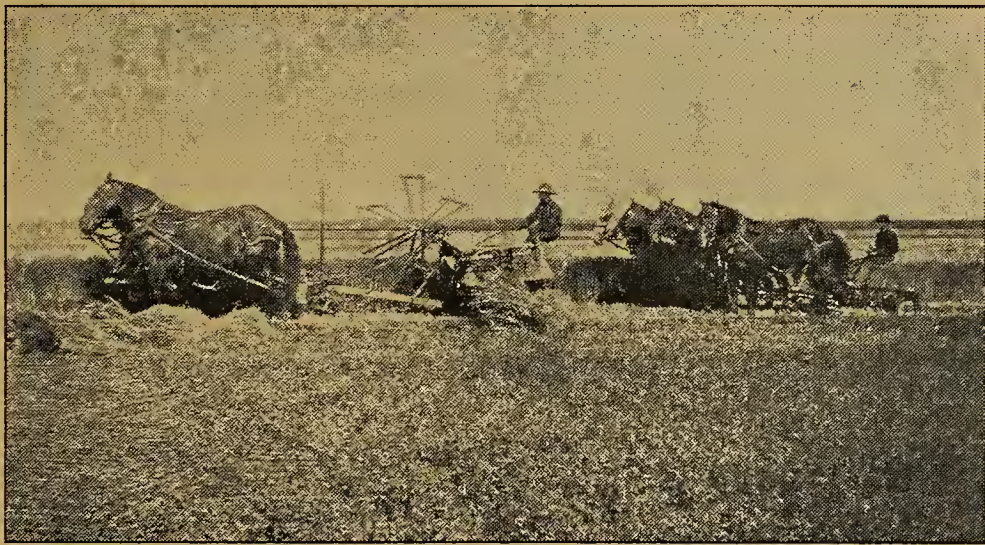
had happened in the field of Mr. Parker. He had done nothing to the soil after harvesting until the following spring, and so before he ran the disk over his field in the spring the soil was in the condition shown in this picture.

Notice how hard the ground appears to be. There is no layer of loose soil on the surface, and as a result the ground is cracked. See the black streaks, they represent the cracks. When this soil was disked in the spring it did not make a good bed at all for grain.

Farmer Grinell did not stop with the disking in the fall. Early the next spring he sent two men to the field—one with a plow, and the other with a disk. The man with the plow started in first and turned over the soil to a depth of eight inches. This you will see turned the soil that had been on the surface onto the bottom of the furrow, so the stubble and the loose soil at the surface were then about eight inches below.

This of course made the bottom of the furrow filled with a loose soil, but there were no large air spaces.

The man with the disk drove over this plowing at once and, as you will see



Farmer Grinell had run a sharp disk harrow behind the binder

by one of the photographs, cut it up thoroughly. When he had gone over the field once he turned his horses around and started in the other way, going at right angles to the first disking. In this way a bed was made for the oats eight inches deep, loose on top, compact below.

Now when Arnot was planted in this field he found that both below and above him the soil was in fine shape. There was plenty of moisture for his rootlets to secure, and so he grew, and grew rapidly.

The Yields Large and the Returns Big

But now let us see what happened to some of the brothers of Homer who did succeed in growing. Some of them grew to maturity and produced heads of barley, but they had not been rid of their enemies before the seed was planted, and as soon as the grains of barley developed in the head the spores of Mr. Smut began to grow, and these spores took the plant food from the grains of barley until when the time came when the grains should be ripe all of the heads were found to be empty. The smut had literally eaten them up.

So it was that Farmer Parker lost his entire crop by making two mistakes: he did not destroy the damaging spores on the seed grain, and he did not prepare a suitable bed in which the seed might grow. Farmer Grinell, however, reaped a big harvest.

I wonder how many of you boys who read this could make a list of the things you have learned. Let me give you a start by mentioning a few that seem to me to be most important:

1. Seed grain has enemies that may be killed before the seed is planted.
2. Seed of all kinds must have a compact seed bed in which to grow, one that is loose on top, however. While it costs more to properly prepare the seed bed, the yields are always larger and the returns greater.



He sent two men to the field—one with a plow and one with a disk

wiggled and squirmed and told him that if he could not get them out of the barrel of water they would surely die.

Arnot noticed that the water was not exactly like the rain water with which he was familiar, but of course he didn't know that Farmer Grinell had mixed a chemical in the water for the very purpose of killing the smut spores. (That chemical was formalin, perhaps you've heard of it.)

Homer had a different experience. That spring Farmer Parker planted a field of barley, and Homer was one of the seeds he used. But Homer was not taken to a shed and given a bath before he was put in the seeder. Consequently half a dozen smut spores that were attached to him remained, and he suffered the consequences.

As I said before, Farmer Parker was lazy, and so, instead of plowing his fields, as he should, he used a disk harrow and cut up the surface of the soil and sowed the barley with this slight preparation.

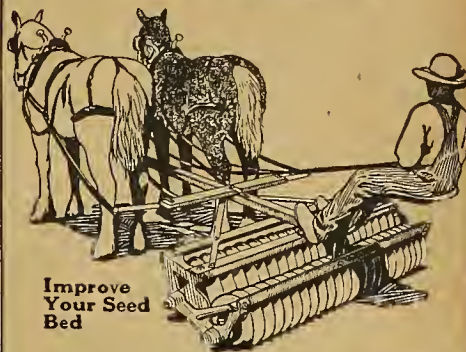
Homer found a new home about an inch below the surface. It was rather

spores which had been clinging to him, Farmer Grinell took the grain out of the barrel and dried it on a big canvas, then he put it into a disk drill and planted it in the field. Arnot found a better bed than had his cousin Homer, and so he grew and thrived.

In the previous fall Farmer Grinell had run a sharp disk harrow behind the binder, and while one of his men was cutting the grain another was pulverizing the soil. The result of this treatment is shown very well in one of the accompanying drawings. Notice the drawing which indicates where the stubble has been disked after cutting. By this picture you will see that the surface of the soil was broken up. The pieces of stubble were partly turned under so that they began to decompose during the winter whenever the sun came out. So the soil in this field did not crack because the loose soil on the top kept the moisture in the soil.

The drawing just across from this points to soil conditions where the stubble had not been disked. It shows what

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The frame is of angle iron construction, securely bolted and braced. Seat is placed so the weight of the driver balances tongue, taking neck weight off the horses. Rear gang is removable.

Gangs are flexible, that is the rear gang works independently of the front gang. They thoroughly pulverize uneven ground.

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I cannot undertake to describe this engine—HERE. But drop me a postal and I will tell you how it does away—almost altogether—with ruinous VIBRATION and FRICTION—with excessive WEIGHT and BULK—with many other features that render ordinary engines so costly, so short-lived, so inefficient and so cumbersome. In the meantime—note in sectional view of the "TEMPLE" above, three of its radically "different" features, and what these mean to ENGINE USERS:

INVERTED CYLINDER—with HEAD on BASE—close to the ground—eliminating vibration, causing engine to run quietly and smoothly, delivering maximum power with minimum consumption of fuel (gasoline, kerosene, alcohol or distillate).

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GARDENING

BY T. GREINER

Picked Points from Recent Fruit-Growers' Discussions

THE Western New York Horticulturists met at Rochester, New York, in January, as usual. It will be of interest to professional fruit-grower and amateur alike to be told of the newest points and developments in that field of human endeavor. At these meetings the teachings of the scientists and theorists have to pass the test of results reported by the men of field practice, and the attentive and thinking hearer can easily ascertain what is truth and what fiction. It is thus at all such and similar meetings, and it is only the part of ordinary wisdom for anyone interested in these things to attend the meetings within easy reach, or do the next best thing—read the reports.

Lime-sulphur is yet the standard general spray mixture. This is stated on the authority of Professor Parrott of the New York State Station. Lime-sulphur is dependable. We don't as yet know this of the several newly advertised compounds or solutions.

No need for the New York fruit-grower to go outside of the State for parasites of the San José scale. We have them. Yet they are fickle creatures. They are not dependable. Better spray anyway.

The fruit-tree leaf-roller is a new pest, and often very destructive to buds. Miscible oil in a 1 to 15 solution sprayed when buds are swelling, says Professor Parrott, will destroy 80 to 98 per cent. of the eggs of this pest.

Doctor Reddick of Cornell has for three seasons made rather large tests with dust "sprays," using sulphur in finest division with twenty per cent. of fine arsenate of lead added, and making three summer treatments, and got as good results in controlling apple scab and insects, especially the codling worm, as with liquid sprays, at least in a season of mild infestation. The materials may cost fully as much as the materials for the liquid sprays, perhaps even more, but the work can be done in a third of the time. This is important, as time is pressing in the treatment for these pests. Ten per cent. of arsenate, he says, would probably have been sufficient instead of twenty.

According to the statements made by Doctor Bizzell of Cornell there is at present little prospect of a material increase in our available nitrogen supplies, unless we can get it finally by direct manufacture from the atmosphere. The farmer will have to depend quite constantly for some time on materials he has obtained, and on the utilization of legumes. A factory in Norway and another in North Carolina are now making calcium nitrate direct from the atmosphere, but their output thus far is not commercially important. About a dozen concerns, all except one in Europe, manufacture another form of nitrate, known as cyanamid, which contains about 15 to 17 per cent. of nitrogen in highly soluble form. The disadvantage of calcium nitrate is its strong affinity for water. The factory in Niagara Falls, Ontario, produces about 31,000 tons of cyanamid a year.

Mr. George Friday, a Michigan extensive and expert peach-grower, still plants Elberta to the exclusion of almost all other varieties. He believes in growing his own trees rather than buying from nurseries, as he wants to insure getting the right varieties, and trees in best possible condition for planting. Many trees are left too long exposed after digging in the average nursery, or shipped with roots mildewed, or leaves already started, in spring. Vegetables may be grown for two years in a newly set peach orchard, tomatoes (early) being especially promising in his case. Little pruning is done for the first two years. After that some heading back may be done, but the new wood should be left all through center of tree. There is where most of the fruit can be expected to grow.

What about our progressiveness? If earlier fruit-growers are now called old fogies, says John Hall, present fruit-growers will be called old fogies by fruit-growers twenty-five or fifty years hence.

Raspberry anthracnose has been troubling the fruit-growers of this and other States quite a bit for a long time. It is now found that much can be done in checking this disease which affects especially the blackcaps, and also the purple sorts (Columbian), by spraying the dormant wood with a strong solution of iron sulphate, or (green) coppers, a pound to the gallon of water, and following this up by two sprayings with Bordeaux mixture during the forepart of the growing season. A few days or a week before the buds actually push out is the right time for applying the first or dormant spray.

Persons in the ownership of orchards in western New York are extremely fortunate, says President William C. Berry. If you have orchards, by all means keep them.

Professor Hedrick of the Geneva (state) Station has kept careful account of the cost of growing apples, and of the profits, under intelligent management. The net income from the orchard averaged during the ten-year test period \$93.74 per acre, equal to 18 3/4 per cent. on a \$500 investment. He expects the orchard to do as well or better during the next twenty years. Probably this is above the average. "Many are losing; a few are winning. Just as in most other enterprises."

The question of tillage versus sod mulch in orchards has been often and heatedly discussed at these meetings. Professor Hedrick states that for every dollar he has taken out of the sod half of the test orchard he has taken \$1.54 out of the tilled half. If these figures are correct the argument is conclusive.

Apples are found more highly colored on sod than on tilled trees. They are also earlier and drier. The tilled fruit is about two weeks later, keeps better, and is of higher quality. The tilled trees now are much better in general appearance.

As Professor Hedrick facetiously remarks, let the hired man stay at least two feet away from the body of the tree. He will hit it even then.

According to Hedrick the use of lime is hardly ever needed for tree fruits, at least in this State, and it may be positively harmful to small fruits.

Currants can stand a little shade. The crop ranges from 1 1/2 to 6 tons per acre. Perfection, says Professor Taylor, is a good commercial sort, but not so vigorous in growth nor as productive as Wilder. The fault found with the Wilder is that it has a tendency to make an excessive wood growth, and is therefore hard to control.

Doctor Lipman, director of the New Jersey Station, explains why we have to use so much phosphoric acid, proportionately, often much more than the crops use. The phosphoric acid, he says, moves much more slowly in the soil than does potash, and most of our fertilizers, therefore, contain more phosphoric acid than other elements. The movement of plant foods is also faster in lighter than in heavier soils. From the application of organic matter to the soil we expect a contribution to the water-holding capacity of that soil. The soil moisture is a most important matter. We have not enough rainfall during our growing seasons to produce a maximum crop. The ordinary farm rotation, even with manure applications, does not maintain the organic contents of the soil to produce maximum crops. Organic matter must be put into the land by growing legumes or in any other way. Lime plays an important part in the circulation of plant foods in the soil. Doctor Lipman does not seem to think much of basic slag. As fruit-grower he would not pay more than \$12 or \$14 per ton for slag analyzing 17 or 18 per cent. phosphoric acid; for other besides fruit crops he might not use it at all. A small application of acid phosphate may hasten the germination of seeds. Land plaster has not the power to neutralize acid in the soil.

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Seed-Potatoes Cut Quickly

HERE is a method of cutting potatoes which will double the bushels of seed cut in a day. Instead of sitting on a box before your pile of potatoes and cutting them with your jack-knife into a pail, make a table as follows:

Use one-by-four-inch material for the legs thirty inches high in front, forty-two inches in rear; nail one-by-four braces on the sides, leaving front open.

Seed Potatoes Cut Quickly

Here is a method of cutting potatoes which will double the bushels of seed cut in a day and avoids sitting on box before your pile of potatoes, cutting them with your jack knife into the pail. Make a table as follows:

Use 1x4-inch material for the legs, 30 inches high in front, 42 inches in rear, nail 1x4 braces on three sides, leaving front open. Nail the side to project.

The Market Place

Erratic March is Past

By Lloyd K. Brown

THE \$9 hog made his first appearance for the year at Chicago on March 14th. Previous to that date the market had gotten into a rut. Packers were fighting every advance and were indifferent buyers. They were aided in their efforts by a lighter Eastern demand and by a moderately large supply, as at that time the receipts were enlarged by the marketing of the reuter hogs and other liquidation incident to March 1st.

From now on, however, there should be an improvement. The hogs still in the country are in strong hands, and will be fed until the price satisfies the seller. Eastern demand has increased slightly, and with the close of Lent is expected to improve more. Southern demand for meat, which has been slack, will pick up before long, so that a greater activity can be looked for in the yards. We are entering the season of bad roads and heavy spring work, so that farmers will not be marketing many hogs. It looks as if there should be a strong market around \$9 for some time. Of course the high figure will draw many hogs out of holder hands and thus keep the prices from advancing much, but the reverse can also be expected; as soon as the price drops much there will be a curtailment of marketing. The offering has greatly improved in weight and quality until it is the best that it has been this season.

Only a moderate pig crop is prophesied for this spring, as there was such a heavy loss through Iowa last season, and Iowa had the largest number of hogs last year. The Kansas City country saved a goodly number of brood sows despite the heavy liquidation at the time of last year's drought.

The provision market has been slow and low as compared with live-hog prices, due to a temporary lack of demand. The month of March, always an erratic one, is past and a firmer tone will be evident in the pit transactions.

The Fruit Outlook

By A. J. Rogers, Jr.

THE most damage done to the tree fruits at this writing has been on the more tender variety of peaches. I have examined hundreds of Elberta buds in my vicinity (northern Michigan) and find the vast majority dead or injured. Carmen and Triumph buds, on the other hand, appear to be in better shape and should produce at least a fair crop of peaches. From reports coming from Michigan, New York, New England, and the East Central States this condition appears to be similar. Reports from Colorado, Oregon, and Washington show all fruit to be in excellent condition. Frosts have occurred in Arkansas, Missouri, and Texas, but the extent of the damage is not known.

The winter damage to the buds has been caused by a peculiar general condition throughout the country. A very mild December and January started the buds, which made them susceptible to the later cold snaps. The minimum temperature this winter on my farm was 9° below zero, and only a few days of zero weather. This caused more injury to the Elberta peach buds than the severe winter two years ago, when the minimum temperature was 17° below zero, and we had nearly a month of weather varying in temperature from minus 5° to minus 17°. That winter the wood was severely injured. This spring the wood appears to be in excellent condition, and to all outward appearances the buds also.

A longitudinal section of the bud will show at once whether it is alive, injured, or dead. The live bud is green in color throughout. The injured bud is brownish green in the center. The dead bud is dark brown in the center and somewhat shriveled.

Don't Market Unfinished Sheep

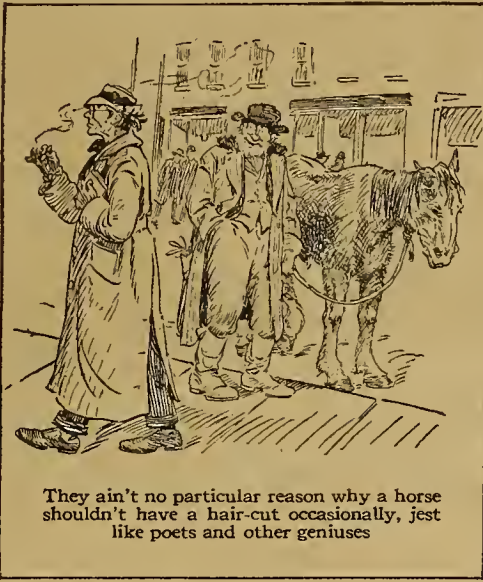
By J. P. Ross

SO FAR as it is possible to foresee the future of anything as fickle as a market, that for sheep appears to be settled on a firm basis. Neither rejected tariffs nor approaching frozen carcasses from the ends of the earth are going to rob the American sheepman of the success which is his due. That prices of all good kinds of sheep—and even of some not so good—have for so long continued on fairly satisfactory lines, free from violent fluctuations, should act as an incentive to every farmer to breed as many lambs as he can provide for. The increasing demand for fat medium-weight ewes and wethers which has brought their prices within reasonable distance of those of lambs is likely to be permanent, since no doubt it is largely due to the influx of working people from the east and south of Europe, who prefer fat mutton to any other

food, and who will acquire the American habit of spending their wages freely on creature comforts.

This call for mature sheep should bring into use great areas of high lands hitherto neglected which are well suited to the maintenance of the hardier breeds of sheep. With the help of forage crops, either as hay or silage, and without any great expenditure on grain or other costly foods, sheep can be brought to maturity on these lands with little labor or risk so long as they are provided with water and salt and are safely folded at night.

It is needless here to give details of market prices which can readily be found in the daily papers; but I want to repeat a



They ain't no particular reason why a horse shouldn't have a hair-cut occasionally, jest like poets and other geniuses

word of caution, perhaps too frequently reiterated in these columns, to the effect that the temptation to rush unfinished sheep to market because for a few days prices have been booming should be resisted, for often when they get there the rocket has exploded and they are but just in time to catch the falling stick. Send them in as soon as fit—neither sooner nor later.

Wool is in good demand, and rising prices are predicted by all experts.

DON'T BE DEFRAUDED -GET THE GENUINE



The great popularity and the heavy demand for the famous Martha Washington Comfort Shoes made only by the F. Mayer Boot & Shoe Co. of Milwaukee, have caused dishonest dealers to sell cheap and inferior imitations to their customers when the genuine Martha Washington was wanted and asked for.

Mayer Martha Washington Comfort Shoes

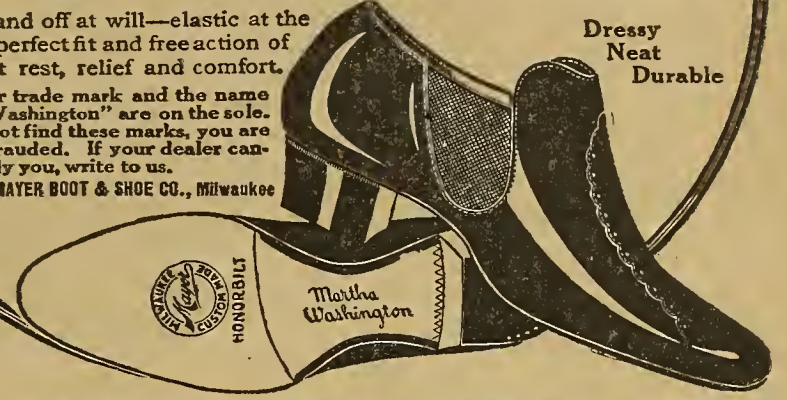
Slip them on and off at will—elastic at the sides insures perfect fit and free action of the foot. Get rest, relief and comfort.

The Mayer trade mark and the name "Martha Washington" are on the sole. If you do not find these marks, you are being defrauded. If your dealer cannot supply you, write to us.

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Neat
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APPLETON QUALITY MANURE SPREADERS

EITHER ENDLESS OR RETURN APRON STYLE

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APPLETON STANDARD OF EXCELLENCE

Low enough for every convenience—Lightest Draft—Easiest Running.

Write Today for Free Booklet Showing these Machines or General Catalog showing complete line of

Silo Fillers—Gasoline Engines—Huskers—Shellers—Grinders—Wind Mills—Wood Saws—Pump Jacks, Etc.

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209 Fargo Street, BATAVIA, ILLINOIS.



Touring Car, regular equipment, \$1050, f. o. b. Detroit
With electric lighting and starting, demountable rims, over-size tires, tire carrier, \$1200, f. o. b. Detroit

The Car for the Farmer's Family

Why does the Hupmobile cost the farmer less to operate?

Why is it, in fact as well as name, "the car for the farmer's family?"

The reason—why starts way back in the earliest stages of Hupmobile history.

It began the day that Hupmobile engineers first took up their drawing boards to design the car.

Other makers were inspired with the general idea of building cars whose low price would sell them in large quantities.

Hupmobile engineers had the after-cost fully as much in mind as the first cost.

"In due time," they said, "the people will find out that second cost is even more important than first cost."

So they designed a light car, to begin with—but a light car with an amazingly strong full-floating rear axle.

They built a light car—but they put into it an extraordinary proportion of strong, specially selected steels.

They built a motor, not merely designed to make the car go, but designed to keep it going sweetly and smoothly after years of continuous use.

They worked out, gradually, the long-stroke type of motor—a motor which greatly increases the power, but helps the lightness of the car to keep down the cost of up-keep.

They hunted for every possible source of friction—every shaft, every bearing, every gear.

They knew that whenever one surface moves upon another surface

in a motor car it causes friction—and friction means wear, and breakage, and repair cost and loss of power.

So every such part—every part which transmits power from the motor to the road—was scrutinized again and again and again and designed and re-designed, to the end that Hupmobile up-keep cost should be a low cost.

If you want proof that they succeeded where others failed—see how much higher is the price paid for second-hand Hupmobiles than for some other cars.

Second-hand Hupmobiles sell for a higher price because they are not worn or in need of rebuilding—because they are still silent and smooth and powerful after traveling tens of thousands of miles.

The first design itself and the improvements we have since made on it are what keeps down the cost of running a Hupmobile.

That is why the Hupmobile farmer pays out less money than his neighbor for the pleasure and convenience of running a car.

But reason or no reason, the Hupmobile does cost less to maintain and operate; it does call for less repair; it does call for fewer replacements; it does give greater tire mileage; it is easy and inexpensive in oil and gasoline.

Every farmer who owns a Hupmobile will tell you so. Tens of thousands of owners will back them in the statement. Even if we couldn't point out the reason—the fact is enough.

What other owners have experienced you will experience.

You are safe in buying a Hupmobile.

Hupp Motor Car Company, 1289 Milwaukee Ave., Detroit, Mich.

Center control—either side front entrance. Vibrationless steering wheel. Short turning radius—40 ft. "Lively" motor—quick response to throttle.

Little of customary motor vibration. Dash control of hot and cold air to carburetor. Simple carburetor—no delicate adjustments necessary. Certain clutch action.

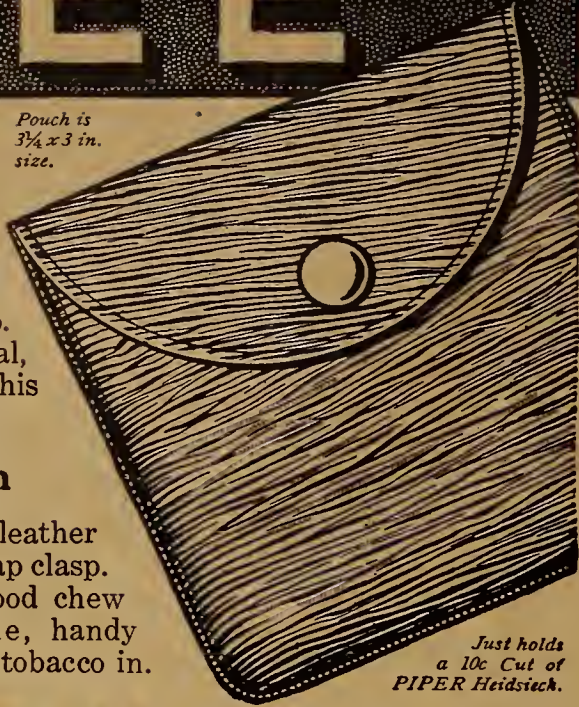
Simple, infallible oiling system. Rain vision, ventilating windshield. Quickly adjustable side curtains. Low center of gravity—good looks, easy riding,

few skids, no turning over. Gasoline tank under cowl, nearly over carburetor, assuring constant flow of gas. Improved tire carrier. Rainshield magneto.

All moving parts enclosed. "Streamline" body—only now being adopted by highest priced cars. Accessibility and lightness in weight of starting system. Four spare fuses in fuse box cover.

FREE

Pouch is 3 1/4 x 3 in. size.



Just holds a 10c Cut of PIPER Heidsieck.

No matter what tobacco you are now chewing, if you will try PIPER Heidsieck you will become a permanent user of this famous tobacco. To induce you to make a trial, we will send you free, this genuine leather

Tobacco Pouch

Strongly made of fine tan leather with a flap and patent snap clasp. Every man who loves a good chew will prize this handsome, handy leather pouch to carry his tobacco in.

PIPER Heidsieck

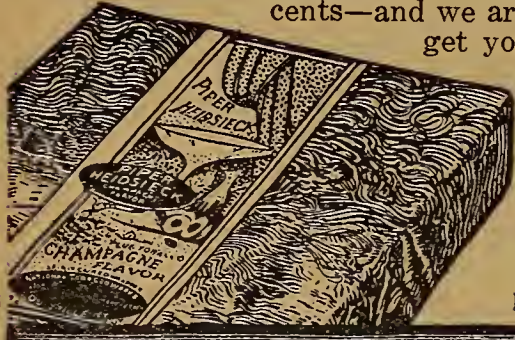
CHEWING TOBACCO (CHAMPAGNE FLAVOR)
Sold Everywhere in 5c and 10c cuts

PIPER Heidsieck is the highest type of chewing tobacco in the world. Every leaf of ripe, golden brown tobacco used in "PIPER" is carefully selected from Nature's choicest crops, clean, sweet and mellow. The flavor of "PIPER" is different from all other tobaccos made—a rich, wine-like, delightful taste which never fails to make a friend.

We Want You to Try PIPER Heidsieck

Send 10 cents and we will send a full-size 10c cut of "PIPER" and this handsome leather pouch FREE.

The tobacco, the pouch and mailing expenses will cost us 20 cents—and we are glad to spend the money to get you to try "PIPER" just once.



We know that once you have started, you will become a permanent friend of this wonderfully wholesome, healthful and satisfying tobacco.

In writing us please tell us the name of the dealer of whom you buy your tobacco.

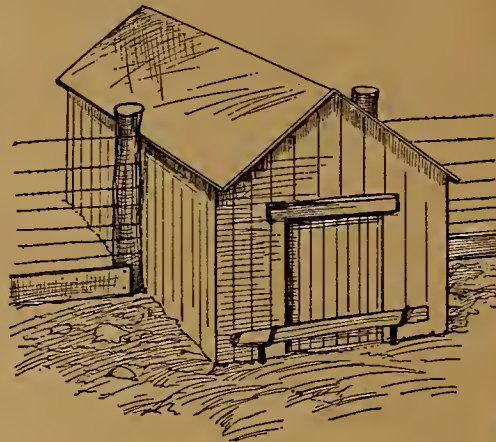
THE AMERICAN TOBACCO COMPANY
Room 1160 111 Fifth Ave., N.Y.C.

Live Stock and Dairy

Pasturing Hogs Profitably

By Hollister Sage

THE pork made from pastured pigs is the pork that pays. Skill is required to make the pasture do its best for swine. Half-acre lots are excellent, with a house in each, the swine to be allowed to feed in a lot until it is trampled and cropped down, and then kept out of it until recovery has taken place. Vetch, rape, clover, alfalfa, cowpeas, and many other crops will in this way go much further than when fed continuously. A lot may be plowed and sowed while the one adjoining it is being



The hogs have access to but one lot

fed. But houses for rest and shade are indispensable; they are a part of the balanced ration, and without them swine do not do so well. A good system is to place a house in the division fence, with a swinging door in each end. With one door barred the hogs have access to but one lot.

THERE was a ham and bacon show at the Farmers' Round-up at the Agricultural College of Utah in February. Home-cured meats only were admitted. Some day we may decide that it pays to buy our hams and bacon at the cost of feeding, rather than at the cost of feeding, plus buyer's profit, plus transportation, plus packer's profit, plus jobber's profit, plus transportation, plus retailer's profit, plus hauling back to the farm. Anyhow it's worth looking into.

Sensible Hog Quarantine

By R. E. Rogers

OF COURSE it would be foolish for me to state that I could tell just what would keep hogs healthy during an epidemic of what everyone calls cholera. But one instance that had extraordinary results is worth relating.

A neighbor who farms on a medium scale recently built a concrete hog house divided into four pens. When the cholera broke out in our neighborhood he immediately shut all his hogs up in this house, and kept them shut up. There was no possible chance for any communication between these hogs and others that were sick, except by the feeder carrying the infection on his feet when traveling from some other feedlot to his own.

No preventive or cure was used, nor was any special method of feeding practiced. Yet to my knowledge he was the only farmer in the neighborhood who didn't lose hogs. Most of his neighbors lost more than half, and several buried their entire herd within a few weeks.

A HORSE never should stand a single day idle in the stable. If there is no work for him to do turn him out in yard or pasture so that he will take abundant exercise. Horses will do better if allowed roomy box stalls in stable.

It's the Man After All

IF "IT takes a rogue to catch a rogue," it also takes a scientist to catch a scientist. S. H. Hall of the New York Experiment Station has collected some figures which milk inspectors and boards of health will have a hard task to overthrow. Mr. Hall has investigated the actual results which follow the reconstruction of the dairy barn at the New York Experiment Station, with special reference to the quality of milk produced before and after the changes were made.

The wooden interior finish was replaced by concrete plaster, and the old stanchions, floors, and mangers in the stable were taken out and so-called sanitary equipment was installed. The long hair was clipped from the udders and flanks of the cows. Here are the results:

1. Ceiling the stable with lath and cement and whitewashing the interior and painting the woodwork had no measurable effect upon the milk.
2. Clipping the udder and flanks of the cow led to a slight increase in the number of germs in the milk, instead of the ex-

Make a Cosy Room of your Attic

Just think of all the uses you have for a cheerful, cosy room in the attic. A maid's room—a children's playroom—or a clean store room, absolutely proof against dampness, vermin and mice. You can do this, quickly, easily and inexpensively with

UTILITY

The ONLY 5-Ply Wall Board

Think of five layers of tough fibre board, cemented into one permanent sheet with hot asphalt under tons of pressure—thoroughly moisture proofed outside. We use 5 layers because it gives us that much more strength than the usual 2 or 3 layers. It is a simple, easy matter to nail Utility to studding and joints, anywhere in the house where plaster could be used. Never chips, checks, cracks or falls off. Takes calcimine or flat tone paints beautifully.

Free samples and free book, "Utility Interiors" on request.

The Heppes Company

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Also Manufacturers of Asphalt Paint, Asphalt Roofing in any Finish and Utility Wall Board.



EXCEPTIONAL OFFERING IN NEW YORK STATE'S BEST FARMING LAND

Three Farms of 250, 200 and 150 acres each, located in the outskirts of the city of Oneida, in the well known farming county of Madison, N. Y.

Excellent Houses and buildings; and large dairy barns in perfect repair on each farm.

Entire Acreage thoroughly underdrained and in the highest state of fertility, and is capable of, and is producing, thoroughly satisfactory yields.

At the Prices which we are offering these fine properties, they offer remarkable values for immediate purchase.

Correspondence solicited

THE BURT OLNEY CANNING COMPANY ONEIDA, N. Y.

More CIDER

from less apples can be produced with Original Mount Gilead Cider and Grape Juice Presses than any other. This press is a

BIG MONEY MAKER
We can show you how \$1200 a year can be made in the cider business. Sizes 10 to 400 barrels daily. Hand or power. All power presses have steel beams and shafts. We make cider crushers, apple-butter cookers, vinegar generators, filters, etc. Fully guaranteed. Write for Catalog. HYDRAULIC PRESS MFG. CO. 126 Lincoln Ave., Mt. Gilead, Ohio.



DELAWARE FARMS Unusual opportunities now. Cheap lands near best markets. Very profitable. Fine climate. State Board of Agriculture, Dover, Delaware.

Only \$2 Down One Year to Pay!

\$24 Buys the New Butterfly Jr. No. 1. Light running, easy cleaning, close skinning, durable. Guaranteed a lifetime. Skims 95 qts. per hour. Made also in four larger sizes up to 6 1-2 shown next. (Leaves in cream. Postal brings Free catalog folder and "direct-from-factory" offer. Buy from the manufacturer and save half. (12) ALBAUGH-DOVER CO. 2159 Marshall Blvd. CHICAGO No. 5/4

ABSORBINE

Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is an

ANTISEPTIC AND GERMICIDE (NON-POISONOUS)

Does not blister or remove the hair and horse can be worked. Pleasant to use. \$2.00 a bottle, delivered. Describe your case for special instructions and Book 5 K free.

W. F. YOUNG, P. D. F., 284 Temple St., Springfield, Mass.

I Stand Behind EVERY Buggy I Make

Every vehicle I sell you is made of the finest, toughest, most sinewy Second-Growth Hickory—split, not sawed. You can't be dissatisfied. I guarantee them all to the limit!



Two Year Guarantee 30 Day Free Road Test

And, in addition to all that, my Direct-to-You Plan saves you \$25 to \$40 on every vehicle I make.

This book shows 125 Styles for 1914.



SEND YOUR NAME ON A POSTAL FOR MY BIG BOOK

Get the facts regarding buggy prices. Get a buggy that will make your neighbors green with envy—and pay \$25 to \$40 less for it. H. C. Phelps, Pres. THE OHIO CARRIAGE MFG. CO., Station 23, Columbus, Ohio

MAKE YOUR BIKE A MOTORCYCLE

at a small cost by using our Attachable outfit. FITS ANY BICYCLE. Easily attached. No special tools required. Write today for bar-

gain list and free book describing the SHAW Bicycle Motor Attachment. Motorcycles, all makes, new and second-hand, \$35 and up.

SHAW MANUFACTURING CO. Dept. 47 Galesburg, Kansas.

DEATH TO HEAVENS! NEWTON'S

STANDARD REMEDY CURES HEAVES, COUGH, DISTEMPERS AND INDIGESTION. Cures Heaves by correcting the cause—Indigestion. Prevents Colic, Staggers, etc. Best Conditioner and Worm Expeller. Used by Veterinarians for 30 years. The first or second \$1.00 can cures heaves. The third can is guaranteed to cure or money refunded. \$1.00 per can at dealers' or sent direct prepaid. Booklet free. THE NEWTON REMEDY COMPANY, Toledo, Ohio.



Do You Want This

1914 Model

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AUTOMOBILE



\$3000 TO \$5000 A YEAR AND A BIG PERMANENT PAYING BUSINESS

We want a good man in each community to work with us on our wonderful new plan. We want Special Agents everywhere to travel by automobile and handle our immense retail business and we equip these agents with latest model Ford Touring Cars.

This Offer is Open to You

No matter who you are or where you live. No experience necessary. We teach you everything. No capital required. Everything furnished. Splendid chance to make \$3000 to \$5000 per year and get this automobile besides. Write us at once—today. Don't put it off. Full details of our plan, how to get started, etc., will be sent at once.

WILBUR STOCK FOOD CO., 760 Michigan St., MILWAUKEE, WIS.



pected decrease. The reasons for the increase are not assigned.

3. Cleaning the cows with a vacuum cleaner resulted in practically the same number of germs in the milk as cleaning with a brush and curry comb.

4. The use of a partly covered milk pail gave one hundred and fifty per cent. purer milk than when milk was drawn into an entirely open pail. This speaks well for the tightly closed pails.

Mr. Hall believes the producer has been required in many cases to spend money where it has done little good. The difference between good and bad milk is found chiefly in the personal habits of the milkers and those who handle the milk after it is drawn. This is something that is hard to control by inspection. Clean milk depends mostly on the personal character and conscientiousness of the producer. FARM AND FRESIDE has held this opinion for a long time, and we hope that the scientists will in time find it out too. One thing which the bulletin did not mention is important: the sanitary equipment, while not necessary for the production of clean milk, is an excellent thing because it can be more easily kept clean, and thus saves time. Time is more valuable than it used to be. This fact should not be overlooked.

THE Oklahoma Agricultural College has distributed 1,300,000 doses of blackleg vaccine to the cattlemen of the State since July, 1900. On many farms and ranches all the young cattle are vaccinated as a matter of course. Blackleg is most active when the pastures are fresh in the spring, and when they have been revived by rains after dry weather.

Fat, thrifty cattle are most likely to be taken, and it does not often attack calves under four months of age, nor mature cattle over two years old. It takes six to ten days for the vaccine to give immunity, so that losses will occur for that length of time in many cases where the vaccination is put off until the disease breaks out.

Don't Use Her Milk

By Dr. A. S. Alexander

AN URGENT letter comes from a reader in Wisconsin who says: "I have a heifer two years and five months old. She has just had her first calf. Before calving, her udder became very hard and swelled a lot. She refused to eat and her bowels did not act right. We treated her; in fact, the near-by veterinarian treated her, but the results have not been satisfactory."

The cow may be afflicted with tuberculosis, and for that reason she should be tested with tuberculin at once. This can be done by any graduate veterinarian, and it will have no bad effect if she is not affected with the disease. Until this has been done, and she is proved to be free from tuberculosis, it would be unwise to use her milk. The disease is incurable, and if she has it she should be destroyed. If she proves to be free from tuberculosis give her twice daily in her feed a tablespoonful of a mixture of two parts salt and one part each of ground gentian root and nux vomica. If she will not take it in feed, shake it up in this gruel or flaxseed tea and give it as a drench. It is an appetizer. The salt is added to tempt her to eat the drugged feed. If the medicine has to be given as a drench the salt may be omitted. Whisky in two-ounce doses may be added to the drench if the appetite does not quickly improve. Let her have plenty of outdoor exercise every day. Grass will do her good.

THERE are some people who still eat raw pork. Some of these die from trichinosis. Summer sausage is prepared by drying, salt pork by salting, and ham and bacon by smoking. None of these processes can be relied upon to kill the trichina, and all such meats should be well cooked before they are eaten. Intelligent people ought not to need this advice, but as long as "Westphalian Ham" is served in all the best eating places it is just as well to repeat the warning occasionally.

That Lazy Separator

WITH a keen appreciation of dairymen's needs, a speedometer-manufacturing concern has invented a device about as big as a large spool (see sketch) that can be attached to the crank shaft of a cream separator to tell the operator whether he is turning at the proper speed.

The numbers on the speedometer are in sight all the time, and inform him if he is turning too fast or too slow. Most separators are turned too slow and cause a loss of butterfat in the skim-milk equivalent, according to government reports, to over 1,600,000 pounds of butter a year.

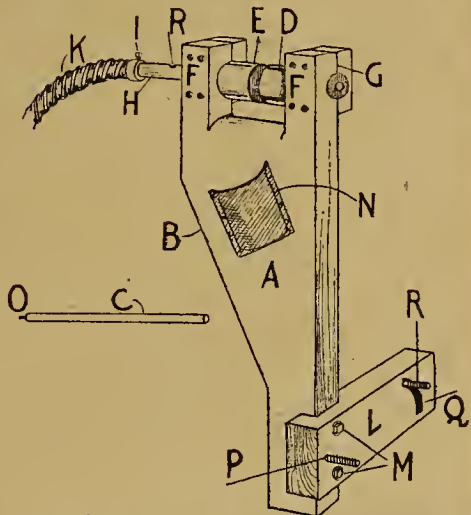
Numerous inventions are helping us to reduce our losses, but even if a separator-speedometer agent never comes for our order, we can use a timepiece more faithfully than heretofore in order to maintain the correct separator speed; anything to save that valuable butterfat, anything to stop guesswork in the dairy and on the farm.

E.W.

Power Horse-Clipper

By Clifford E. Sternberg

THE standard (A) is made of soft pine, planed, 1 1/4 inches thick, 30 inches long, 9 inches wide at the top, and 3 inches wide at the bottom. The notch in the upper end of the standard is 5 inches deep and 5 inches wide. The lower edges are cut off, making a round corner. The slant (B) begins at 9 inches from the upper end, and 8 inches from the lower end. The 1/2-inch shaft is 12 inches long. It turns in a babbit box. The end of the shaft is filed off, leaving a tongue (O) 1/2 inch long and 1/4 inch thick. D is a loose pulley. By running the belt over onto this pulley saves unnecessary dulling of clipper plates. The tight pulley (E) is fastened by a set screw to shaft (C). Both pulleys were made from 2-inch shafting. They have a 2 1/2-inch face. The boxes (F) are made by bolting a block 3 inches long, 2 inches wide, and 1 inch thick to the back of the standard at G. The boxes are babbited. The sleeve (H) is held by the box (F). G is the adjustable box. The sleeve (H) is 6 inches long, 1 inch in diameter, with a 1/2-inch hole lengthwise through it, to fit the shaft (C). The set screw (I) holds the hose clamp to the sleeve (H). The hose clamp slips up over this sleeve. It is adjustable so that the drive chain, when loose, can be tightened.



The canvas hose (K) is wire wound. The tightener (L) is a wooden block 10 inches long, 5 inches wide, and 2 inches thick. It is bolted to the standard by two bolts (M). The bolt (P) holds the tightener to the bed piece of the engine. The slot (Q) forms the tightener by tightening bolt (R). The leather pocket (N) is to hold the clipper head when not in use. If the pulleys do not come in line with the engine pulley, change the thickness of the tightener block (L). The clipper should run about 1,500 revolutions a minute, or just fast enough to make the clipper cut well. I secured the clipper head and hose from an old hand machine. The hose should be 10 or 12 feet long.

A WRITER in the "Technical World Magazine" makes the statement on what seems to be authority that there are five rats for every human being in the United States, or 500,000,000 rats. They all eat, and what they eat is less than what they destroy. On a basis of weight, allowing two pounds to the rat and a hundred pounds to the average person, the rats weigh one tenth as much as the people; and without any allowance for waste by rats their maintenance costs us a tenth as much as our own food. The rat is the most destructive of all beasts. If any animal ever gets the upper hand of the human race on this earth it will be the rat. They are demons of cunning, and can live in any climate.

The Expert Driver

By Clifford E. Davis

LEARN to become an expert driver. The experienced driver knows that the whip is the wrong thing to depend upon in a tight place, and the use of it invites disaster. In order to come through close shaves the driver must have the love and confidence of his team, and this can only be won by kindness.

I have known men that claimed to be expert drivers in the woods who made a great hullabaloo, cracking whips and yelling, and managed to avoid accidents, but put them out on a big road and they couldn't drive at all. I saw one driver who was noted as the "best driver who ever hauled bark." He had on a big load of bark and had to pull against a hillside side-wise, then make a sharp turn down a steep hill. A pine tree stood close to one fore wheel, and an oak close to the opposite hind wheel if he went on. I told him, "You are going to strip every bit of your load off, for the wagon will slide." He did not use any whip, eyed the situation carefully, and then spoke softly to the team. Well, sir, he made the turn and came around safely, and the edge of the load merely brushed one of the trees. That is what an expert can do.

To an expert driver the city jam has no terrors, but the ignorant, careless, or rattled driver is a terror to all teamsters, just as a drunken engineer is a menace to all trainmen before and behind him.



DE LAVAL CREAM SEPARATORS

are the cheapest as well as the best

LOOK AHEAD!

DON'T TRY TO SAVE \$10.00 TO-DAY IF it means a loss of 25 cents a day for all the years a cream separator may last you.

THAT'S JUST WHAT YOU WILL DO IF you buy a cheap or inferior cream separator simply because its first price is a little less than that of the De Laval.

WHEN A PRUDENT MAN BUYS A cream separator he knows that what he is really paying for is not just so much iron, steel, brass and tin, whether it is called a separator or not.

WHAT HE WANTS IS A MACHINE TO perform a certain service, and he must be sure of the machine doing the work for which it is intended as thoroughly and with as little effort as possible on his part.

THOUSANDS OF BABCOCK AND other tests have proved that the De Laval skims closer than any other cream separator under any conditions, and particularly under the harder conditions always experienced at times.

JUST THINK WHAT A LOSS OF AS little as 10 cents' worth of cream at each skimming means to you in a year—twice a day for 365 days—over \$70.00; and with as many as ten cows the cream losses alone from an inferior separator usually amount to more than this.

CREAMERYMEN, WHO ARE DEPENDENT on their separators for business success, have long since found out the difference

between De Laval and other separators, with the result that De Laval factory separators are almost universally used the world over today.

DE LAVAL SEPARATORS ARE IDENTICAL in all sizes, for one cow or a thousand, and the differences between separators are just the same with the smallest machine and the largest. They mean as much relatively to the little as the big user.

THEN THERE IS THE SAVING IN labor because of the easier running and greater capacity of the De Laval over other machines and the less care required in cleaning and adjustment, worth at least 10 cents a day.

AND THERE IS THE INDISPUTABLE fact that the De Laval machine lasts from ten to twenty years as against an average of from two to five years in the case of other separators, or five times the average of competitive machines.

THESE ARE THE REASONS WHY De Laval Separators are cheapest as well as best, why thousands of other machines are yearly being replaced with De Laval's and why their use is rapidly becoming as universal on the farm as in the creamery.

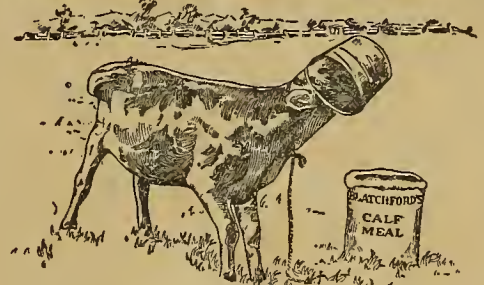
IT SHOULD BE REMEMBERED, moreover, that if first cost is a serious consideration a De Laval Separator may be bought on such liberal terms that it will actually save and pay for itself, as many thousands of them have done.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

The De Laval Separator Co., 165 Broadway, New York
29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

"Licks the Bucket Clean" Blatchford's Calf Meal

As good as New Milk at half the Cost.



100 pounds makes 100 gallons of Perfect Milk Substitute.

Send for pamphlet, "How to Raise Calves Cheaply and Successfully Without Milk."

At your Dealers or

BLATCHFORD'S CALF MEAL FACTORY WAUKEGAN ILLINOIS

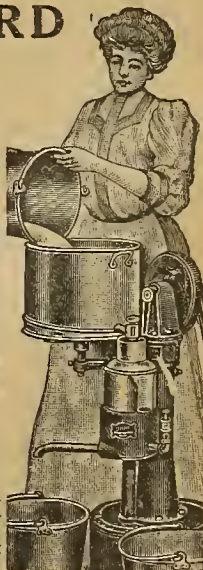
\$15.95 AND UPWARD SENT ON TRIAL AMERICAN CREAM SEPARATOR

Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You

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(205)

Live Stock and Dairy

A Misshaped Foot

By David Buffum

FROM North Dakota comes this inquiry: "I have a colt two years old. When she was a sucking colt she injured her foot. I put powdered lime on the sore, and it healed up very quickly. The hoof, however, has grown longer and to a point. Some have advised me to trim her hoof. She has good use of her legs, only she has to lift the one higher than the other in order to clear the point when she walks. She is inclined to walk on the back part of the foot."


The best treatment for the too long toe is to pare it down as nearly to its proper form as the condition of the foot will permit. But one must remember two things: First, that a colt injured in the way described often travels on that foot a little more on the heel and a little less on the toe than if the injury had not occurred. Therefore do not attempt at once to lower the fore part of the hoof too much, but "feel your way along," as it were, not attempting to lower it beyond what is comfortable for the colt. Second, that in a misshapen foot the inside, as well as the part that is visible, is distorted; and you must be careful in your paring not to draw blood.

Your object of course is to have your colt travel well, rather than the mere appearance of the foot. This must be kept in mind; but you can undoubtedly greatly improve the shape of the foot so that it will look well, even if not exactly like the others.

Good Son of Prepotent Sire

By J. P. Ross

THIS is a likeness of a son of the Percheron Leon, whose picture has already appeared in FARM AND FIRESIDE. It is a fair example of the prepotent powers of a good Percheron, for the mother was a rather ordinary little mare. His only claims, individually, to distinction are that he has worked incessantly on farm and road for eight of the ten years of his life; has



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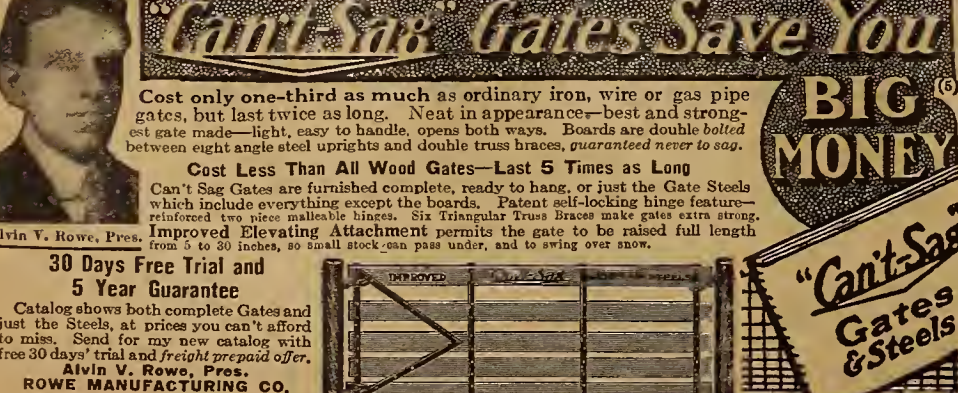
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The FARMERS' LOBBY.

IT IS now practically certain that before the adjournment of the present Congress session legislation will be passed providing for the creation of a new class of banks under federal charters, for the particular business of handling farm-land loans. It is the outcome of the work of the United States commission that was created to study the co-operative land-mortgage banks and co-operative rural credit unions in European countries, and to recommend measures adapted to American conditions, by which the benefits of cheaper money for the farm and the farmer might be gained for this country. The Lobby has heretofore discussed the work of this commission abroad. The legislation which resulted from its labors has now been formulated, has been approved by President Wilson and Secretary of Agriculture Houston, is accepted as an administration bill, and at the time of writing is the subject of hearings before a joint subcommittee representing the Senate and House committees on banking and currency. As there is every reason to believe it will be law by the middle of the current year, its provisions are of the profoundest concern to every farm borrower; indeed, to a great number of people who are not now borrowers on farm security, but who would like to be if they could do so on the advantageous terms that it is believed will be possible if the legislation takes effect.

Farmers Pay Big Interest

SOME time ago the Lobby pointed out that American farmers are borrowers to the extent of about six and a half billion dollars. On this their annual interest charge is reckoned at \$510,000,000. This interest charge as well as the cost of running their farms must be paid before the farmers can get wages or profits or returns on their own investments. Comparing the rates that American farmers pay on their loans with the rates that the American Government and other classes of American borrowers pay, or making the comparison with the rates that foreign government, foreign commercial borrowers, or foreign farm borrowers pay, the conclusion is inevitable that the American farmer is paying altogether too much interest. He has the best farm security in the world, and yet considering the quality of that security and the comparison of his with other interest rates he is paying higher interest than any other great borrowing class pays on equally desirable security.

Our country has fallen behind the European world in providing facilities for making the farmers' credit available. Our banking system has grown up around the theory of providing money as cheaply as possible for industrial, transportation, and commercial enterprises. The farmer's needs have been rather forgotten in our system. Our banking facilities have not sufficiently recognized the need of making the peculiar kind of loans the farmers need. The legislation now about to be enacted aims to fill up this gap in our system.

A good deal of controversy has been raised about the question of whether the best type of institution for this particular business of making long-time, low-rate loans to the farmer would be based upon the *Landschaften* or co-operative system of Germany, or on the *Crédit Foncier* or joint-stock bank plan of France. The pending legislation solves this riddle by the neat device of providing both systems. But whether the banks are organized as joint-stock or as co-operative institutions the fundamental purpose is absolutely to separate the business of long-time loans to farmers from the short-term commercial loan business that is now the chief function of our bank.

How to Organize a Land Bank

TO ORGANIZE one of the co-operative land banks, ten or more people, combining a minimum of \$10,000 capital, may associate themselves and take out the charter. They will be permitted to receive deposits up to only 50 per cent of the capital, and may make only loans on first-mortgage farm security. The loan must not exceed 50 per cent of the value of the property. Loans may be made for either one of three purposes: to complete the purchase price, to equip the farm, or refund an old debt.

In making the loan, however, two distinct classes are recognized. Long-term loans may be made, running up to not over 35 years, so arranged that semi-

Lower Rates of Interest on the Way

By Judson C. Welliver

annual payments shall be made, each payment to include the interest to the time of payment and also such proportion of the principal as, when this system of payments is extended over the entire life of the loan, will cancel the entire principal at the end of the loan period. This is the amortization system by which the loan is made automatically to extinguish itself through the plan of partial semiannual payments. It is from this system that the greatest benefits are expected for the American farmer, just as the largest benefits have accrued to the European farmers from a similar system. The bill provides for the creation of a Commissioner of Land Banks, one of whose most important duties will be to prepare a table of the exact payments that must be made on loans running for different periods and at varying rates of interest in order to amortize the loan at the right time. It must be understood that there is no purpose to make interest rates uniform throughout the country. Some people earnestly insisted that this ought to be part of the scheme. They pointed out that there are great inequalities in different sections: the most fortunate agricultural States can get all the farm loans they want at five per cent, while other States, usually those which need this kind of loans the most, may pay double that figure. But the reply to the demand for a uniform interest rate was that its effect would be to take the money away from sections which are now supplied at the lowest rates, and to invest it in sections which could pay a considerably higher rate, and could better themselves. The ultimate effect of this tendency would be to cause inflation and dangerous speculative conditions in those communities that would suddenly find themselves getting an unwonted supply of cheaper money, while the sections from which that money was being withdrawn would confront a serious contraction of their supply of capital and consequent business depression.

This was the argument that prevailed and the determination was that the factors of free and open competition should be depended on to adjust ultimate rates. From the experience of other countries and the testimony of students of problems that has been taken during the hearings here in Washington, I have little doubt that the correct policy has been adopted.

It should be explained that in addition to making long-time amortizing loans the farm-land banks will also be permitted to make short-time loans running up to five years without the amortizing feature.

Can Issue Bonds up to Fifteen Times Its Capital

IN ORDER to get capital to loan to its customers on these terms, the farm-land bank is permitted to issue land bonds up to fifteen times its capital. These bonds will be secured by the farm mortgages taken by the bank and by it held in trust, and the amount of bonds issued by a bank must at no time exceed the aggregate of the mortgages it holds. The interest which the farmer pays on his mortgage must not exceed by more than one per cent that which is paid on the bond. This margin of one per cent must pay the expenses and profits of the bank. For instance, if the bank is able to sell its bonds at four per cent, it may charge the farmer as high as five per cent, but not higher. The experience of Europe with this kind of bank has shown that competition between them will rapidly and very greatly reduce this margin which is devoted to expenses and profit. For example, the first bank of this class ever organized in Hungary began lending money at five and one-half per cent; the rate fell to five, to four and one-half, and finally to four per cent. Its allowance for expenses and profits was at the beginning one per cent; it fell to one half of one per cent, then to one third, one fourth, one fifth, and to-day stands at only one sixth of one per cent. There is every reason to believe that similar institutions organized throughout this country and competing among themselves for business would in a comparatively few years take over the great bulk of the farm-loan business of the nation and reduce both the interest rate and the expense ratio in about the same way. An important feature of the legislation written into it for the protection of the farmer is that at any time

after five year he may have the privilege of paying off his entire loan if he wishes.

This is authorized in order to protect the borrower against the possibility of a declining interest rate. There are sections of the country in which a borrower might to-day hire money on the 35-year plan at seven per cent and fancy himself getting a good thing, yet before his loan were half paid out the current interest rate in his section might fall to five per cent, so that if he were compelled to pay for the entire period under the original contract he would suffer seriously. As it stands, the farmer is protected against the possibility of a falling or a rising interest rate placing him at a disadvantage.

The Land-Mortgage Banks Are Not to Be Taxed

AS HAS been stated, the farm-land bank will be permitted to loan and issue bonds only to the amount of fifteen times its capital. The bonds of course may be sold to general investors anywhere, though the bank will be permitted to loan only in the State in which it is chartered to do business. As the semiannual payments of interest and the proportionate parts of the interest are paid in, the bank will use these in making new loans, so that a sort of endless-chain proceedings will be in operation, turning over the capital constantly. The reason for providing that a bank may loan only in the State in which it is chartered is the belief that this restriction will help to prevent the possibility of the whole system falling under the control of the money power somewhere and thus having its purpose of effective competition destroyed.

The land-mortgage banks—here comes one of the most important features of the entire system—are relieved of all taxation, municipal, county, state, income, everything. This applies to their capital, the bonds issued, the mortgages held, and the income of the institution. It was found necessary to make this sweeping exemption from all taxation because the state laws vary so widely as to the taxation of mortgages. So it was decided to do away with all taxation, and it is calculated by the authorities that this alone represents an average saving of one per cent in the farmers' interest. Moreover, granting this very important privilege to the land bank is expected to insure that within a very short time the existing mortgages, which in many States are taxable, will be taken up and reissued in the form of land-bank loans. The practical operation of this feature is worth explaining in a little detail. Suppose ten farmers in a neighborhood get together and find that they are borrowing in the aggregate \$100,000 on mortgages. Mortgages in their State are taxed. Obviously, the amount of the tax is added to the interest they must pay. They find that by putting in a thousand dollars each they can organize a land bank, loan their money to themselves, sell bonds which are not taxable under this law, and loan the proceeds of these again to themselves, and so on until they have paid off their old loans which were taxable, and substituted new and non-taxable ones. In a case of this kind—and it is hoped this will be a very common case—the land bank would be little more than a neighborhood organization: Neighbor Jones would be president, Neighbor Brown would be vice-president, the rest of the neighbors directors. The bank would own no pretentious banking building or other real estate. It would be altogether similar to one of the old-fashioned co-operative building and loan associations.

Nebraska Farmers Would Save One Fourth

HERE is a little computation which was used by Congressman Ralph Moss, one of the best-informed authorities on this subject, to illustrate what the farm-land banks would mean to a typical agricultural State. From census reports he figured that mortgages on farms in Nebraska aggregate \$62,373,472; interest at six and one-half per cent, \$4,054,275. By converting these into land-bank loans at four per cent, the interest would be reduced to \$2,494,938. Adding the full one per cent for administrative charges, \$623,734, the total of interest and administrative charges would be \$3,118,672; that is, there would be a savings in the annual interest paid by the farmers of Nebraska of \$945,603, or almost one fourth of the amount of interest they now pay. Moreover, it is confidently believed that the administrative charge would not nearly absorb the entire one per cent [CONTINUED ON PAGE 23]

What Shall We Do With Our Grounds to Beautify Them?

By Eben E. Rexford and Estelle Cavender

OF LATE years the Great American Public has begun to listen to the Gospel of Beauty as preached from many pulpits, and to-day the good seed sown by those who were pioneers in the movement of civic improvement has begun to bear fruit. Most of us can remember when a home surrounded by trees and shrubs and flowers had little, if any, more selling value than the one whose owner had made no attempt to beautify it. But to-day the place that is made attractive by trees and well-kept grounds will sell for a good deal more than the one lying alongside it, of equal and perhaps greater value in all respects save that of beauty. We, as a people, have come to understand that there is real money value in the beautiful, and that the outlay of a reasonable amount in the improvement of the home grounds is one of the wisest investments we can make, in case we should ever desire to sell, and many of us believe that a beautiful home affords generous interest on all that we put into it in the pleasure it gives the owner and the occupants of it. Beauty is no longer a luxury, and when the public taste becomes educated to a proper appreciation of it it will be considered a necessity.

The owners of many homes set out to beautify them by planting trees and shrubs about them in a sort of haphazard fashion. This is better than not doing it at all, for a tree, even if sadly out of place, is far better than no tree. In the majority of instances the planter does not stop to consider conditions, or to look ahead. He simply sets out the tree in what seems the handiest place to plant it, wholly regardless of present surroundings, and with no thought of what it will be a dozen years hence, if nothing happens to it. Perhaps, by sheer good luck, he locates it where it can have ample space for development, and where it will prove to be a beautiful feature of the home grounds, but this does not always, or often, happen. We see homes all about us in which trees occupy positions where no tree ought to be, and the places where a tree could do itself justice and do excellent work in making the home attractive is left bare. Such mistakes could be avoided if we were to go at the beautifying of the home in a more systematic fashion. The fact is, most of us who have homes that we have sought to improve by our own efforts have not considered it worth while to set about the undertaking in dead earnest. The work has somehow seemed too much like playing at landscape gardening to be taken seriously. Too late we discover the mischief that results from lack of plan and system, and though we may try to remedy matters by making changes we generally fail to attain satisfactory results.

If before planting a tree or shrub we were to look the home place over carefully, and try to see things as they will be likely to appear ten or a dozen years hence, we would avoid many of the mistakes we make. It is quite important that we should look ahead, with the eye of imagination, to the time when the sapling we plant to-day will have become a tree of considerable size, or the shrub that makes but little show and takes up so little room when first set out will have a spread of several feet. There should be a definite plan to work to. Decide on what you would like to have the home and its surroundings look like,

and find out from observation or the advice of others who have had experience along this line about how to go to work to produce the desired result, and then let everything that is done tend toward that end. Do nothing in a haphazard way or on the spur of the moment. Form a mental picture of the place as you would like to have it, and work with this always before you. If you do this you will not be likely to do anything that later on will have to be undone, or left to be a constant source of annoyance to you.

No home can afford to be without trees, and shrubs, and vines. These, properly used, will make beautiful the plainest place, and, seeing them, we will forget all about the house, nine times out of ten. Their beauty will make us blind to ugliness. The home we live in is not home, in the true sense of the word, unless there is something about it beautiful enough to photograph

cannot be removed, especially if it is a rain barrel or next year's woodpile, whose usefulness is unquestioned.

But why should one want to remove them? All "beauty spots" have their foundation somewhere, and why not let it be a rain barrel or a woodpile?

Nasturtium seed sown at the base of a rain barrel will thrive beautifully if given a little support by means of a string and tacks, and a few asters with a fern or two planted next to the nasturtiums will give a change of scenery at the other end of the season.

Then that next year's woodpile can be turned into a profitable beauty spot. Its eastern end, which has been a catch-all for all the old bottles, tin cans, and the like, can be done away with by cleaning up and by sowing pole beans around its base. As the bean plants grow they must be supported by strings tacked to the wood. The woodpile holds dampness in the

ground, and you will find beans for the table all summer, especially if the woodpile is in the shade. A few asters in front of the beans turn this catch-all into a beauty spot that is self-supporting.

Screen-Planting About the Farm Home—There probably is no landscape adornment that adds such an attractiveness to the decoration of the farm home as a well-located screen-planting. These screens may be in a straight line, grouped for effectiveness, or be in broken contour to vie with the outline of the premises, and they may be of deciduous or ever-green varieties that are permanent, or may be perennial or annual in growth.

We have growing about our farm home here a very elegant screen surrounding the rear of our house, consisting of clumps of the very popular Lombardy poplar. We know of no planting that will grow into decorative effect as quickly as this species of poplar, and with so little care in training. Trees eight years from planting have attained a height of thirty feet.

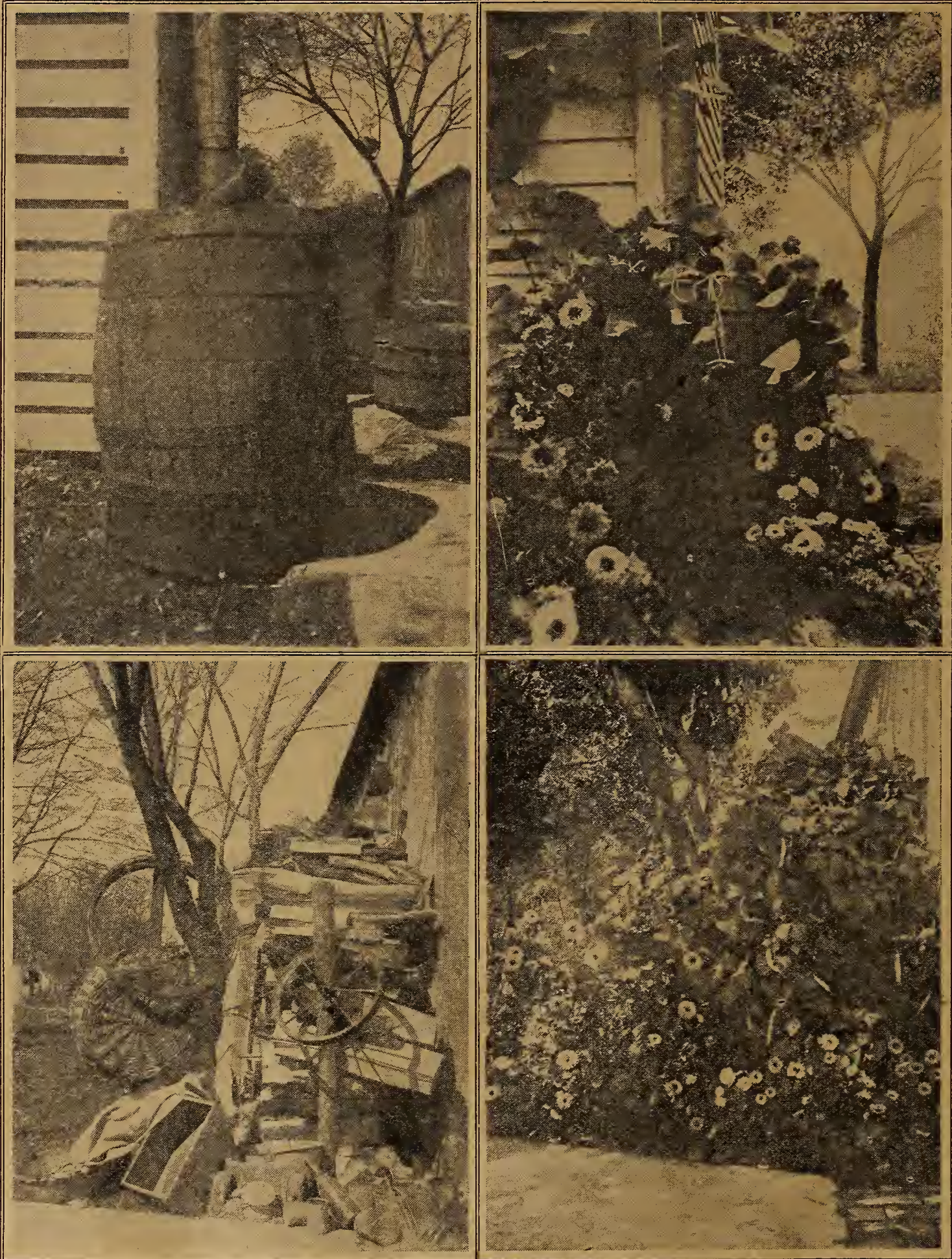
A very pretty screen for a rear wall or division is formed from planting *Ricinus Zanzibarensis*, or castor bean. The red-veined varieties with their broad tropic-like leaves are extremely handsome in single ornament, group, or straight line planting, and satisfy the eye. For lower-growing screens the perennial phloxes are successful, and also the kochia or tree cypress. This planting, with its feather-like foliage turning from emerald-green to a crimson hue and then to amber late in the season, is an

aspect of adornment the entire season. The hardy hibiscus is also employed about our premises in screen-planting, and gives splendid effect and is very pleasing with its abundance of showy flowers during the summer season.

Another beautiful low-growing screen that gives us good effect, especially along our driveways, are the irises in variety of colors from the common blue to the delicate fleur-de-lis of pale lavender.

Their flag-like clumps of leaves last all summer long, and add contrast to the closely clipped lawn, outlining driveways and footpaths.

There is unusual beauty in home adornment where taste is exercised in its keeping, and we should encourage it about our farm premises, especially through the careful planting and the training into screen effects of the Lombardy poplar.—GEO. W. BROWN.



Two scenes of "before"

As they looked "after"

itself unfadingly on the plates of memory so that, go where we may, it will always seem the pleasiest spot on earth. We owe it to our children to make it such a place, and the only way in which to do this satisfactorily is, as I have said, to plan out the work from the start and keep at it in a systematic way, keeping in mind the fact that beautiful homes never happen. They are evolutions of study, and forethought, and hard but most delightful work. The man who beautifies his own home will prize it far more than he will the home that he hires someone to beautify for him.

Eyesores and Beauty Spots—In the springtime a great many folks have some corner about the place which is an "eyesore" to themselves and others. They study the problem over, and sometimes find that it

HIS MOST THRILLING MOMENT

By May Moore Jackson

Illustrated by John Rae

In Two Parts—Part One

SOMETIMES I think no other moon is quite so—well, persuasive, so apt to make one forget both caution and good judgment as the beautiful August moon; always so big and round, hanging so low in the sky when it rises, and somehow seeming curiously near, and friendly.

It was under the old elm in my own dooryard, on the night the August moon was full, with the lace-like shadow of leaves splotching the cloth of the little table Jimmie and I had between us, and little sparkles of light shimmering on the ice in our glasses, that I, Cornelius McQuisten, unpretentious owner of a certain

time I've told you my oldest boy will be called for you!—and how shall I be laying by for them—the wife and boy—if I can't keep my paper going by putting good material in it day by day, and where am I to find the material save by turning over mossy old stones like you to find what hides beneath? Uncle Neil, more's the shame that you refuse to let me know of it. There was a moment!"

Jimmie is the only living being that claims kinship with me, and the only soul that has ever called me anything but "Neely," a name for which I feel a hatred that is only just.

"There was a moment, you graceless lad," I stormed in dudgeon, "but I warn you that it never thrilled, and never will, any but myself."

"Let's have it, darlin'," cooed Jimmie flippantly, but his hand gripped mine and his blue eyes were alight with a look my foolish old heart just dotes upon.

"I'm sorry you couldn't have known my father, Jimmie. It was only in the earlier days, the pioneer days you might say, that he was known as a hard man—cold as a wedge and cutting as ruthlessly to the heart of whatever he undertook, be it the training of a child or the figuring out of a new way to turn the channel of a river. He was an astute man ever, but just, lad, and upright and fair-minded, a true gentleman always; and though as a child I never learned to babble my little joys and woes to him, I learned to know and love and watch for his smile, his rare smile, so incredibly soft and winning in that stern face.

"My mother was a pretty woman, so pretty that she might have wound my father round her littlest finger if she had ever learned the trick of using her lovely eyes; but she mostly kept them meekly hidden, though even then her lashes were so dark and silky that I've seen my father look at her as though the spell cast upon him by her beauty were more than he could bear, and his great chest would heave with the quickness of his breath, while she stood before him, so slight and graceful, so like an innocent white flower in her beautiful wifely submission that yet was never servile.

"My childhood was a very lonely one, partly because we lived in a sparsely settled neighborhood where there were no other children of my own age, and partly because, as a little shaver, I had the frailest health, and it may have been that—I hope so at least—which cursed me with a terrible timidity. I was never allowed to have either pet or playthings, and spent many long hours with my parents, who were deeply religious, in Old Antioch Church, where I learned much of the awful wrath of God and little of His loving-kindness.

"On a certain bright morning in September, when I was six years old, my mother washed my face and hands with unusual care, roached my hair over her slim finger, put on my little Sunday jacket and my beautiful new red-topped boots, and turned me over to my father, who led me silently out of the yard and down the road in the direction of the school-house. I was going to school!"

"A proud moment, that," mused Jimmie, gazing at the oleanders and puffing away at his brierwood pipe.

"So it was, lad, a proud moment indeed, I remember it well; but in spite of a fair-beginning things went amiss at school. For two long years I was scared, scared of everything—of the boys older and larger than I who bullied me and sneered at my clothes and my hair, my hair with its fat 'roached' curl on the top of my head that my mother turned over her finger with such loving pride each morning; I was scared of the master whose harsh voice always made me jump in my seat when he spoke my name; of the girls, most

of all the big ones who petted me and took my part against the lads who taunted me, for all of which I cordially hated them, every one, Jimmie lad, though I was too well-mannered to let them suspect such ingratitude, and underneath my Sunday jacket a fire was smoldering, a fire of bitter resentment against all my little world and my own utter helplessness to make my place in it different from what it was.

"Things went amiss at home also, though I brought home reports of fine progress as far as lessons were

concerned. My mother grew more and more tender as my father grew more silent, and indifferent; and it was gradually borne in upon me that I was a terrible disappointment to him for reasons I couldn't seem to surmount, battle against them as I would. You see, I didn't grow physically, and he was a giant of a man. I was afraid of him, and this seemed to awaken in him a sort of contempt that stung like the lash of a whip, for, you may have guessed, I passionately admired and loved my big, stern father, and longed

with my whole starved heart for his love in return.

"A terrible climax came in my life on the day I was accused of having stolen some pennies from little Susan Blimmer's desk. It happened at the noon recess. Susan was weeping bitterly, the pennies were gone, and Reddy Donovan said they were in my pocket, and unless I turned my pockets inside out

to prove they were empty of money I was a sneak, a coward, and a thief! Think of being called a thief!"

"You never took that, Uncle Neil?" roared Jimmie, whose eyes were just two flashes of blue fire. "You choked the words down the dastardly throat of him that spoke them?"

"Jimmie," I pleaded, "think, lad, for the love of heaven, try to think how little I was, and how lonely; and there was that in my pocket which meant the only companionship my lonely child heart knew, something the other children must not see, for they would laugh at it—a magic talisman that could change my world in the twinkling of an eye into a realm of valiant deeds, and myself into the doer of them, but which was nevertheless only a poor tin soldier, rusted and battered, that I found in the road where some child had dropped it. To them it would have been a paltry toy enough, but out in the middle of our pasture field, with none but the sad-eyed cows to see, it instantly became alive and real, a giant in stature like my father, a mighty general, holding all the awful craft of warfare in the hollow of his two hands, dashing always into the thickest of the fray, splendid and unafraid, and beside him, on the wild black horse of my imagination, rode I, helping him to cleave a way to victory through such fearful carnage as the world has never seen! No, I would not reveal him by turning my pockets inside out!"

"Wurra, wurra," moaned Jimmie, "but that was a black day!" He sunk his head between his hands and dug his fingers into his hair.

"I told you, Jimmie," warned I, "that you'd be disappointed in this tale. Shall I go on or have you had enough?"

"Go on!" he commanded sternly. "I'll not have you leave off at the ugly place where you branded yourself as a coward. Go on to the time where you came to your senses and played the part of a man, if there was such a time; and there must have been." Jimmie glared at me as though the occurrence I had been relating had taken place yesterday instead of fifty years ago.

"As for that," I answered him huffily, "you must judge for yourself. We are as the Lord made us, and we can't all be heroes." [TO BE CONCLUDED]

Our Roads!

By Jessie Field

DON'T you almost get out of patience sometimes when you think how much we need good roads in the country, and all it means to us in getting our products to market and in getting to see one another, and how it wouldn't be very hard to have them—and then how we just fool around about it and let them stay about as bad as it is possible for them to be? Here and there where there is a farmer who cares a lot for his community there's a stretch of good road, but most of it is bad enough a good deal of the time. It really is. Even such an optimist as I am must admit it, and the wild strawberries and violets by the sides do not make the mud any easier to get through.

But country schools can make them better. Country boys and girls can do anything when they get started and the way is pointed out. First of all our school decided to appoint a committee on good roads. We voted on these names, and three boys and two girls living in different parts of the district were elected. This committee was empowered to gather information about roads, to investigate the condition of all the roads in the district, and to present this to the school with recommendations as to what we could do to make the roads better.

The committee felt its responsibility. They wrote to the Department of Agriculture for bulletins on roads; they wrote to the state highway engineer, who sent some pictures of good and bad roads; they organized the school to get information as to the condition of each quarter mile of road in the district and how it might be improved, and made this into a chart; and they looked for the men in the county who seemed to know most about good roads. They recommended for immediate action the split-log road drag, and its use after each rain. And now we have good roads.



stone quarry and gravel bar, spare, bald, on the sunset side of life, with nothing whatever that is interesting or unusual appertaining to myself, have been persuaded, much against my better judgment, and only because of the moon as I verily believe, to tell what was the one most thrilling moment of all my life.

Now understand, for myself I do not believe that anything that has ever happened to me will be of the slightest consequence to any one in the world, but there is Jimmie Kilgour to reckon with.

Jimmie is twenty-three, a most arrogant age for a lad. He has red hair that would curl if he didn't keep it shaved so close to his head that it can't—he hates curly hair. His eyes are of true Irish blue, "set in with dirty fingers," as the Irish say. He has the whitest teeth I ever saw, and a dimple in one cheek when he laughs. There are some brown freckles over the bridge of his nose, and in moments of excitement he lapses into a hint of a brogue.

In the terms of his own elegant English, Jimmie "blew into" our village two years ago come the 17th day of November, and within twenty-four hours after this thistle-down procedure he had sized us up for a set of fossils,—regular moss-backed ones,—and at once decided to remain in our midst and kindly unfossilize us through the medium of a daily paper. And the idea of a newspaper in Burnsdale was as sacrilegious almost as though Old Antioch Church at the end of Main Street had tilted its belfry rakishly and shocked us with a wink of its round window eye.

Jimmie is not one, however, to hold even speaking acquaintance with obstacles set in his way, and he is now the proud owner, editor, reporter, and enthusiastic booster of the Burnsdale "Evening Blade."

How or why he became a friend of mine in the early days of his hard struggle, what there can possibly be about me that would attract such radiant youth as his, I do not pretend to know. What I do know is that on the few evenings when his chair under the elm in summer or beside the log fire in winter is unoccupied, when his old brierwood pipe lies on the table unlighted, I have a feeling of desolation that dismays me. On such nights I go to bed very early.

We had it out between us a few evenings since. "There will have been a supreme moment in your life—there always is in every life," quoth Jimmie stubbornly.

"You will remember that my parents lived well past middle age and passed away peacefully, leaving me this house where my father was born and lived, where I have lived all my life. Nothing eventful in that, is there?"

"There was a supreme moment," nodded Jimmie with that solemnly wise look that always aggravates me.

"The business was established when I came into it, has prospered moderately, and made me a comfortable living. Any food for romance in that?"

"There was a moment!" reiterated Jimmie, just like a silly parrot.

"I never was in love; never married; have had the same housekeeper for forty years. I go to bed every night, year in and year out, at half-past nine, save the nights when you profanely keep me awake till ten. I rise at six winter and summer, and my daily duties vary but little."

"Whist!" cried Jimmie, leaning forward in his chair and piercing me with his blue eyes. "Uncle Neil, there was a moment, and it's the cruel man you are to withhold it from me. Don't you expect me to marry-wan day, and have childer? How many's the



"Go on to the time where you played the part of a man"

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"The First Day of the Week They Came Unto the Sepulchre at the Rising of the Sun"

The Community Builder

By Harry R. McKeen

Chapter I

THE story the writer has to tell is little different in possibilities from that which might be told of any other small village and its trading territory. There may be slight differences in the physical conditions of the soil and the nationalities of the people, but the problem is the same, whether it be in Missouri, Oklahoma, Dakota, or upon the Pacific coast or the so-called East.

There is but one vital question anywhere: manhood, womanhood—character. All other questions circle about this as the spokes of a wheel about the hub. The great problem is how to build character.

Men are constantly telling us that unless this particular problem or that particular problem is solved "so and so," this country will go to the everlasting demerit "bow-wows."

Solve the problem of building character aright and all the other problems will automatically solve themselves. The problem in its final analysis is that of the individual. Get enough of him right and the social and political problem is solved.

In the hope that it may inspire, help, or encourage some other community, here briefly are outlined some things that have been done in the community over which the writer was a pastor.

The beginning is insignificant in the light of the problem, but it shows the possibilities. It will take a generation to see the fruition of it all.

The aim is to build character, and thus so far as possible bring the kingdom of God on earth, so that men can get some joy here and now as well as be assured of greater pleasure in the hereafter.

The object is to bring joy, to give instruction, to give inspiration, to work together for a better community.

For years the writer had a growing consciousness that all was not right in the rural field. This began to dawn upon him when as a city youth he spent his summers upon a farm. It became more pronounced as he served rural communities as a school-teacher. Educationally it became a certainty when he left the country and went to the city school. The contrast was notable.

He understood it a little differently when as editor and politician he came in direct contact with the grow-up rural and village population, and by association and companionship learned the true conditions of their lives.

The whole situation in all its comedy and tragedy was revealed to him when he lived among and touched the lives of the rural people as an itinerant preacher, serving a six-point circuit charge, embracing a territory 17x22 miles in extent. The grief of it all has so indelibly stamped itself upon his life that he has determined to do something to alleviate these conditions and if possible bring a little more light, joy, and comfort into the lives of the rural people.

His first efforts resulted in a failure. The people of his parish did not understand what he was attempting to do, and he made haste too rapidly. The result was just what could have been expected. He was compelled to seek other fields.

A broader vision of the whole problem, a wider experience with humanity, and a strong determination to launch out into what was practically an untried sea in rural life work were the net returns from the first experience.

The field of the experiment will be of interest, as it is similar to thousands of other villages and trading territory in America.

The point was in northwest Oklahoma, and the village population was 214. The land of the outlying trading territory supported probably 600 more.

Seven average country schools lie within this territory, with the village school poorly organized but fairly well manned. There were four churches in the village: Catholic, with a membership consisting largely of Bohemians; Mennonites, the membership made up of Germans of Russian Polish extraction; a Christian, and the Congregational,—the latter being the church to which the writer was called. Its membership was made up of a number of denominations. The building was the combination of two small buildings—that had stood in the country—into one building. It was not a thing of beauty, truly.

Outside of these churches were small groups of Holderman Mennonites, Dunkards, Latter Day Saints, Cumberland Presbyterians, and United Brethren holding meetings at irregular intervals in the schoolhouses about the countryside.

The four churches had a combined membership equal to about one half the population of the community. The other half were non-professors, and a very few who called themselves infidels. There were many indifferent.

The church extending the call had a membership of 81, with about two women for each male member and a very few young people. They were for the most part people who had taken claims in the Cherokee strip when that country was opened for settlement eighteen years ago.

The Sunday school had 79 members, and was considered a good one.

A Y. P. S. C. E. was dead of old age, but no funeral services had been held. A very brief one was held. It was simply dismissed until the old folks found their places in the rear seats and at the weekly prayer meeting.

The Ladies' Society was a select few whose chief aim was to raise money to support the church, and they were past grand masters at the art.

There were a few country members, the body of the church coming from the village.

As is almost universal, there was much prejudice and considerable bitterness existing between the American churches over doctrinal questions, especially baptism, election, and holiness. This divided the community into factions that were usually co-extensive with the church borders, and the non-church members criticized the whole church group.

The building was a dilapidated box-like structure with no conveniences. The walls were poorly decorated and reminded one more of a pool hall than of a church, on the whole depressing in appearance, to say the least.

The young people, with the exception of a dozen, were going to the other church or to none, and except for a loyal few the community as a whole was not being reached by any of the religious organizations.

The prospect was not very alluring. To be really frank, the new preacher early determined to use this church as a stepping stone to some better place, and the sooner that something offered the better he would be pleased.

There was no choice of what to do first. Every department of the church presented the nucleus, however, for a fertile field of activity. It was a welcome to hard work, and lots of it, as every parish really is. [TO BE CONTINUED]

A Lesson from a Legend

By A. M. Gordon

THERE is a beautiful legend that long ago when Nature's great loom had ceased its spinning and the flowers blossomed, each one was assigned by the Creator its place to live and grow. Bands of buttercups trooped in yellow waves to the meadows, the silent lily's pallid cheek was pressed close to the heaving breast of the water. Everywhere bright-winged flowers took up their stations on the waiting earth—everywhere except on

the lonely hills. Then He who named their places asked softly, "Who will be content to dwell in these barren spots?" A shy, unheeded blossom answered, "Where'er thou sendest me I will abide." Then said the Creator: "Thy race shall be forever blessed, because thou art content with a lowly place." And still on the tiny, coral-tinted flower that blessing abides. Every spring many people eagerly search the hillsides for the fragrant blossoms of the humble little trailing arbutus.

We often see brave, unselfish lives lived amid the most discouraging environment. Such lives remind us of this legend of the mayflower. There is a fragrance and a beauty to these lives which sweetens and brightens the spot as the flower brightens the barren hillside. They are always useful, efficient lives too. As Saint Paul wrote to Timothy, "Godliness with contentment is great gain." Much of the inefficiency and consequent wastefulness of life comes from dissatisfaction with one's environment. A man thinks he could do better elsewhere, and spends his time in fretting and repining. He has yet to learn that it is the individual in the place, and not the place itself, that counts.

If we firmly believe that the place to which duty has assigned us is the right place for us, and if we earnestly strive to live brave, useful lives in that place, a far greater blessing will surely rest upon us than that which the beautiful legend says rests upon the mayflower.

From Darkness to Light

By Cora A. Matson Dolson

THE shadows of the valley I had known; Thick darkness compassed me, and no stars shone. Stumbling I walked—then to a cross I came, Where round the crosspiece played bright tongues of flame.

Then saw I by their light Hope standing by, And Faith with finger pointing toward the sky. The darkness rolled away; above a tomb Were Easter lilies bursting into bloom.

Where solitude had been, the earth-ways beat To sounds of toil and happy children's feet; Sleek herds and flocks upon the green hills fed. And my soul, touching life, grew comforted.

LAST summer a young mother of my acquaintance solved the fresh-air problem for her baby in the following way: She purchased an ordinary basket thirty by twenty-two by fifteen and stained it dark green. She then suspended it from the porch roof by means of hooks and four very strong ropes. With the aid of pad, pillows and blankets she made a very comfortable bed where the baby, who was too young to sit up or even roll over, slept the greater part of the day. On cold or windy days curtains made of duck for the porch were found to be a splendid protection.



The whole situation in all its comedy and tragedy was revealed to him

The Experience Bazaar

Editorial Note—Here is an open market for the exchange of experiences. Will you not bring your problems and leave them behind? Will you not give and gather the fruits of experience? To give freely and take gratefully is to live wisely.

DEAR FIRESIDE EDITOR: I will give my experience on "What is it to support a family?" although, not having been married quite five years, I have not had very much experience.

My husband pays the rent (as we are not yet able to own a home) and buys the fuel, and then gives the rest of his earnings to me, to spend just as wisely and economically as I can. There are just three of us. I buy the groceries and clothing, but when something for the house or anything exceptional is to be bought, I speak to my husband about it, and we talk it over and then do the best we can. In this way we get along happily together. We both try to be economical and saving, and make our money go just as far as possible. By so doing we hope some day to have a home of our own. I think if more husbands and wives would consult each other and plan how to spend and save their money, there would be fewer unhappy wives who say they have to slave for their husbands and have all the faults laid upon them. And there would be more happy families.

M. O. J., Missouri.

DEAR FIRESIDE EDITOR: After reading the articles on "What is it to support a family?" I have decided to give my experience.

When we were married six years ago we had a very small capital with which to begin our new life. We are renters, giving half the income from the farm to the landlord. We were compelled to give notes for the implements with which to farm.

Our work is an equal partnership, and when it is necessary to contract a debt we both work together and plan to meet it at the proper time. We have a common purse, and I am as free to take from it as is my husband, and there is never a complaint about the amount I use.

The income from our cows and chickens is used to meet the needs of our four small children and to keep the table expenses at all times within our income. All income from the farm is mine to use, just as much as it is my husband's. By granting each the same privileges of equality and freedom we have been able to meet our debts at the proper time, to live, and each year to lay by the "little sum" toward the "home of our own" which we hope to have in the near future; and the best part of it all has been the happiness which comes of living in perfect accord, and thus avoiding the "family jars" which make so many marriages failures. A HAPPY WIFE, Ohio.

DEAR FIRESIDE EDITOR: Mr. Herbert Quick's convincing editorial on the subject of cancer cures inspires me to write an appreciation. I am quite sure no paper can emphasize too strongly the lessons you are teaching. Many of us are particularly "scared" about the curing of cancers by means of surgery,—the only safe and sure way known,—and we are prone to wait until the eleventh hour, and try every quack in the country before we let a reliable surgeon examine us.

The reason I feel this so strongly is

that I have had three tumors removed myself, tumors that were not cancers but would have turned to cancers in time. Once the surgeon told me, at first examination, that I should have to have an operation. Three days later I was in the hospital, and fifteen days later was at home. He charged me fifty dollars, with the hospital fees extra of course, and a special nurse at regular rates; but when I got home, except for some inconvenience in dressing and combing my hair, I was well. I could be about the house, typewrite with one hand, go out driving, see my friends—in short, do everything a normal woman can do, except my regular work.

About the same time a friend of mine with a horror of operations had a cancer drawn out by a quack. It was a lingering, nerve-racking, painful, expensive process, with weeks of staying in an expensive private hospital; and in a short time another operation of the same sort was necessary. The delay had allowed the cancer to develop until it was incurable. After all this agony and expense an eminent surgeon was implored to save her life, but it was too late.

About the same time another friend of mine went to a quack faith doctor, a man who had no education whatever, and she was persuaded to believe that he could heal her. However, she recovered her senses in time to have the tumor cut out, and is alive and well to-day.

I don't know who starts the horrible stories that surgeons like to cut people to pieces just for the fun of doing it, but they are abroad and are doing great harm. When I was in the hospital there were charity patients who received the same care the rest of us did, so far as I could see, except that they were in wards instead of private rooms and had no special nurses. I have only the most pleasant recollections of the hospital, the surgeon, and the nurses; and they were quite as anxious to get me home as I was to get there. The charges were less than they would have been in a good hotel, and the meals and service were excellent. I am quite sure my surgeon cares more for his patients than the money they pay him. He was as kind to me as my own father could have been, and always remembers me, and prescribes for me free of charge if I go to him now for anything. Several years ago he removed a small growth from my eye without charging me anything for it. The talk about surgeons "grafting" is all nonsense, to my thinking. It is all right to charge wealthy patients as large a sum as they can pay, in order to do much charity work; and all wealthy persons who are not hopelessly stingy recognize the justice of this course.

When I get started on this subject I never know when to stop. Many people have called to see me, and have asked me to "feel" the lumps located in their bodies. I don't know why they do it, except perhaps because I look so well and am so perfectly certain surgery is the only cure for cancer. My persuasive powers are not as great as I wish they were, for I am not always able to give the quacks what they deserve. I think I should say

that I worked a number of years in the general delivery of the post-office and know hundreds of country people, and that may be the reason they apply to me. It is a great pleasure to be able to calm their fears and to persuade them to go to a reliable surgeon at once, and I have been able to do that often. Last summer a friend and his wife came to me for my opinion of a dangerous-looking lump on his neck that had been growing rapidly. In fear and trembling, and after consulting a "root and herb doctor" and trying what he had advised, they at last set off to my surgeon, but it was too late. The precious time when he might have done something had slipped away, and before the holidays that man was in his grave. Time and again I have seen this happen, but there are also happier cases to report. A young lady came to me with a suspicious lump in her breast five years ago, and at once had it removed after asking my advice. She has never had any return of the tumor, and is well and strong.

W. C. K., Ohio.

Lower Rates of Interest on the Way

[CONTINUED FROM PAGE 19]

assigned to it, and would probably be not more than one half of one per cent, the additional saving at this point being just that much more saving to the farmer. The highest administrative cost found in any of the European banks is thirty-five one-hundredths of one per cent, and the lowest fifteen one-hundredths. The Crédit Foncier of France, which does the largest business of this kind in the world, is permitted by law to charge up to six-tenths of one per cent for administration, but it is actually charging only thirty-five one-hundredths of one per cent.

Conservatism always demands to know whether a new system will actually work under American conditions. Chairman Moss told me an illuminating incident in this connection. A number of years ago Indiana adopted a law permitting townships to issue ten-year amortizing bonds to pay for building improved roads. For practical purposes the plan is exactly parallel to that of the proposed land banks.

Under it, just the other day, Sugar Ridge Township, Clay County, Indiana, sold \$7,500 of these road bonds. They are to draw four and one-half per cent, and under the amortization plan will be paid off in ten years. Banking houses came with bids from the large towns, every one of them offering a premium for these four and one-half per cent bonds. The best offer of all, however, was made by a little local bank, right in Sugar Ridge Township, which bought the bonds at a snug premium with local money. The operation of this extremely practical road law in Indiana has greatly reduced the interest rate on this class of loans, has made it easier to get money, and has been largely responsible for the fact that to-day Indiana can boast of being the third State in the Union in progressive betterment of its rural highway system.

The Garret—By Charlotte Bird

EVERY person needs some little time every day to be alone, that he may question himself and come face to face with his thoughts and acts. He needs solitude where he may meet his Maker and be taught and sustained. Now some houses are so small and so full that this privacy is next to impossible. But there is one place in nearly every house where one may be quiet and alone; that is the garret. Here the air is best and the outlook upon the landscape the finest.

Now, the garret should never be looked upon as a mere storage place, hard to reach, for all the household rubbish which the housewife does not yet feel quite equal to destroying. It should be provided with steps so that one may easily walk up and down. The old stuff should be all cleared away, burnt, if of no further use. The trunks and other useful articles should be shoved to one side, where their unsightliness need not be constantly thrust upon the eye. A special place might be provided for these.

Most garrets are provided with a floor and several windows, more or less small, and with unfinished walls and ceilings. Usually there are two or three compartments or suggestions of compartments. But this unfinished state should discourage no one. The place may still be converted into an inviting extra sitting- or bedroom if one really wishes it enough to exercise some ingenuity and taste.

Select the compartment on the south or sunny side of the house. The shingles and rafters should be stained some attractive dark brown or green color. The floor also should be stained with the same or a harmonizing color. If one is willing to spend a little money on the experiment, a certain kind of pasteboard can be bought and nailed to the joists which mark the divisions of the space. The four walls can be built up with this pasteboard. These can be papered, perhaps with odds and ends of paper left over from the rooms down-stairs, or new paper need not cost much. But of course the paper must be carefully matched and be put on smoothly, because no one can be refreshed by a room which gives the effect of a mere hodge-podge. By such walls the unsightly necessities also may be screened out of sight.

The windows should be washed till they shine, and then be neatly curtained. Bordered material is charming for curtains. Scrim, madras, or casement cloth may be selected. Or the curtains may be made of some dainty sheer white material, not necessarily expensive. It is not the expense of the material but the taste in applying it which produces a satisfying effect.

The floor having been attractively stained, it is time to consider the covering. Perhaps there is an old carpet about the house which the housewife has

not quite known how to use. This can be ripped up, carefully cleaned, and the best parts selected. These can be cut into the best lengths for short rugs, or they can be sewed and fitted into larger ones.

If it is desired, a few store boxes can be fastened together in such a way as to make a strong window seat. This can be padded and covered, and draped with some attractive material. If a bed is to be introduced it should be a small one. In this case have the same bordered material for the window curtains, the draping of the window seat, and the covering for the bed. For this material a tan or a soft green would be very attractive. But instead of any bed it would be better to have a cot or one of the newer sanitary couches. This would enable one to carry out the sitting-room effect. In daytime this couch could be covered like a sofa with the same material as that of the window curtains.

The lavatory accommodations, like the trunks, could all be screened behind one of the walls.

A table should be brought up-stairs, and a small bookcase and perhaps a magazine stand. A few comfortable chairs will complete the essential furnishing. A bolt upon the inside of the door might emphasize the purpose of privacy, which should not be considered a discourteous or unloving motive for having furnished this withdrawing room.



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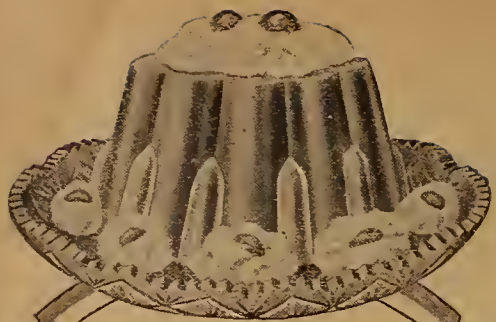
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Ready for a meal

A Country Easter Dinner
 By Elizabeth N. Gilbert

EASTER is to be observed, no matter if it is "between seasons," in the realm of good, old-fashioned country cooking. The following menu and recipes will solve the housewife's problems for that dinner, with very little material aside from what her own cellar and pantry will yield.

- Clear tomato soup
- Roast chicken with egg dressing and gravy
- Parsnips Mashed potatoes
- Escalloped corn Currant jelly
- Small pickles Hot buns
- Salad of apples, hickory nuts, and cabbage
- Cheese straws
- Ice-cream pudding
- Ladies' Delight cake
- Candy rabbits

The soup may be omitted, and the dinner served in three courses; or, if it is desired to make it still easier, serve the salad with the meat, and have a two-course dinner.

SOUP—For the soup, strain a quart of canned tomatoes; to the clear juice add water enough to weaken sufficiently. Then add one teaspoonful of salt, one tablespoonful of butter, one teaspoonful of beef extract, one-half teaspoonful of celery seed, and a little pepper. Serve in small cups, with croûtons. These are made by cutting dry bread into small strips and toasting in a hot oven.

ROAST CHICKEN—Dress a five-pound hen the day before Easter. Just before cooking rub the chicken with salt until it feels slippery. Boil four eggs; shell, and cut them into halves. Prepare two pints of fine crumbs, mixed with one tablespoonful of butter and one teaspoonful of salt. Put the chicken in the baking pan with a quart of boiling water. After it has cooked one hour remove from the oven. Mix the dressing rather soft with some of the chicken liquor, add the eggs, and fill the chicken. Return to the oven for two hours, until a delicious brown. The dressing "left out" may be baked just the last half hour.

PARSNIPS—Peel the parsnips thin. Do not core them, as much of the flavor is in the core. Cook twenty minutes in boiling water. Drain, core them, roll in flour, and fry in deep fat. Sprinkle with salt and a tiny bit of sugar, and serve hot.

MASHED POTATOES À LA SPRING—This is an old German dish, very appetizing. To each quart of mashed potatoes add one-half tablespoonful of butter and three tablespoonfuls of thick cream, also one teaspoonful of salt. Beat until light; add cream if necessary. Chop two young onions, green tops and all, and beat in just before serving.

ESCALLOPED CORN—Butter a two-quart baking dish; sprinkle a layer of cracker crumbs in the bottom. Add a layer of canned corn, a sprinkle of salt and pepper, and butter; more crumbs, more corn, until dish is three fourths full. Be sure to have crumbs last. Dot thickly with butter, and add rich milk to make juicy. Bake twenty-five minutes in hot oven; it will puff up and be brown when done.

HOT BUNS—When baking bread on Saturday reserve two cupfuls of dough when it is light enough to bake. To this add two cupfuls of lukewarm water, one

cupful of sugar, and two tablespoonfuls of lard. Mix smooth, add flour enough to make a soft dough. Let rise to double its bulk. Make into forty round buns; put far enough apart in well-greased pans. Let rise until very light, and bake in a hot oven. Just before dinner slip these into a covered pan, and reheat.

SALAD—Select a firm white head of cabbage; chop rather coarse. To each two cupfuls of cabbage add one cupful of chopped hickory-nut meats and one cupful of chopped tart apples. Have very cold salad dressing ready, mix and serve at once.

FARMER'S SALAD DRESSING—One cupful of good cider vinegar, one tablespoonful of butter, one teaspoonful of salt, two tablespoonfuls of sugar. Let it come to the boiling point. Beat one egg stiff; mix one tablespoonful of flour smooth in a little cream, add one level teaspoonful of ground mustard; beat this into the egg until smooth. Then add one-half cupful of milk, and stir all into the hot vinegar. Beat vigorously until smooth and thick. At serving time add one cupful of stiff whipped cream. This dressing is fine served hot on finely chopped cabbage.

CHEESE STRAWS—Make rich pie dough. Roll wafer thin, spread with soft cheese and butter. Spread another layer of crust on top, and cut into long, narrow pieces. Sprinkle with salt, and bake quickly.

ICE-CREAM PUDDING—This is especially suitable for Easter. One pint of milk brought to boiling point, one small envelope of minute gelatin dissolved in the hot milk. The well-beaten yolks of two eggs, three tablespoonfuls of sugar, one-fourth teaspoonful of vanilla. Stir until thick, then beat in the two whites (very stiff) and one tablespoonful of sugar. Pour into small cups. Serve very cold, with whipped cream.

LADIES' DELIGHT CAKE—One and one-third cupful of soft white sugar, one-half cupful of softened butter, one-half cupful of sweet milk, stiffly beaten whites of four eggs, one-half (level) teaspoonful of soda, one level teaspoonful of cream of tartar, two cupfuls of flour. Bake in two deep layer tins, and ice with a boiled icing. For the icing take two cupfuls of sugar, one-half cupful of water. Boil until it will spin a thread from spoon. Pour it over the stiffly beaten white of one egg and beat until it begins to stiffen. Spread rapidly on warm cake.

PINEAPPLE PUDDING—One large pineapple peeled and grated, an equal quantity of sugar and one-half cupful of butter. Rub sugar, butter and pineapple together. Then add three beaten eggs and a cupful of cream. Bake until it is a smooth, shaking custard. Serve cold.

ORANGE PUDDING—Sweet oranges sliced into a dish and covered with a boiled custard, makes a delicious dessert if heaped with whipped cream and chilled.

RABBITS—Make fondant, add a teaspoonful of cornstarch to each cupful of fondant. Flavor with essence of peppermint. Roll thin, cut with small rabbit cookie cutter, sprinkle with sugar, and add a tiny bit of nutmeg for eyes. A good end to a good dinner.

Do You Want One?
 The pictures in this year's Jell-O Book are all by Rose Cecil O'Neill, the famous artist and author, whose "Kewpies" (delightful little imps, whose frolics always bring good to somebody) have found a firmer place in the affections of children than even Palmer Cox's "Brownies" had a few years ago. Rose O'Neill's Jell-O children are almost as well known as the Kewpies are or the Jell-O girl herself is.

The pictures are delightful, but no more so than the recipes for making some of the most famous Jell-O desserts in the easy Jell-O way. A sample recipe is given here, so that you may see just what to expect in the beautiful new book.

Peach Delight.
 Dissolve one package of Peach or Orange Jell-O in one pint of boiling water, or one-half pint of boiling water and one-half pint juice from peaches. Pour a little of the Jell-O into the mould, lay in sliced or canned peaches, add a little more Jell-O, let it harden, then add another layer of peaches and more Jell-O until mould is full. Set away to harden. Serve with whipped cream.

Twelve million copies of the **JELL-O**

book are printed, and twelve million homes—about two-thirds of all in America—will each receive one of them.

If you have not already received a copy of the book, and will write and tell us so, one will be sent promptly, free of cost, to you.

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The Country Girl and Her Garden

By Jessie Field



I USED to hear people who didn't know any better say sometimes, "No wonder the air is sweet and pure in the country. The farmers keep all the bad air shut up in their houses." Sometimes, though, when the first wonderful burst of spring comes and the buds are swelling on the maples and the green grass is pushing up in the yard and by the waysides, we who live in the country are tempted to coin a new saying and remark with a sigh, "No wonder there is beauty and joy and freshness enough to fill the whole world out of doors, for the houses hold all the dirt and worry and work."

It may be too early to help with the house-cleaning, yet the good times of the winter are over. The charm of closer companionship with Father and the boys that we have enjoyed so much during the winter months is now ended, for they are rushing around getting ready for the spring work. Incidentally they get muddy shoes, and wet coats which must be hung to dry in the kitchen, and so add to the distastefulness of the house. And from the beautiful out-of-doors the girl hears the old, old call of the spring-time luring her heart to romance, adventure, and travel in far places.

Good Mother Nature knows how a girl feels, and she has made a way by which every country girl may answer the call. She says to you to go out and work in the soft, crumbly earth and make a garden. Plant seeds and see how it feels to be a partner with the sun and wind and rain and with the great Creator of all things. Mr. Joe Wing, that great alfalfa expert and good farmer, says that when he was a little boy his father let him plant a patch of potatoes, and when fall came and he found the hills full of fine potatoes he just got on his knees and thanked God for putting them there. That is one of the joys of gardening. You are really helping to create something. It has all the romance of adventure and the thrills of travel to far places. There is joy and health in doing it. Your home is happier because of the good things a garden will furnish to eat. Booker T. Washington says that a family has made a distinct upward step in civilization when they have a vegetable garden and fruit.

Then you can make money. Just now I have before me in Farmers' Bulletin 521, from the United States Department of Agriculture, the record of Miss Katie Gunter of Samaria, South Carolina, in the Girls' Tomato Club Work. It reads:

ONE-TENTH ACRE OF TOMATOES	
Cost of yield and canning.....	\$35.33
Canned products, 770 cans	
Net cost per can.....	.04
Cost of home canner.....	6.25
Sold fresh tomatoes.....	47.90
Net profit for season.....	78.37

At this rate an acre would produce a net profit of \$783.70. That would be enough to pay a good part of a girl's way through college.

A garden can be made to pay all right. Of course, it takes work and sense, but it takes this—and gumption too—to make any work succeed. Of course a girl can not care for a very large piece of ground without the work being too heavy for her physically. Perhaps a tenth of an acre is all a girl should attempt, and, in order to make money, it might be well to specialize on a few crops and build up a reputation for handling the best in your line. This will help in your marketing.

It would pay you to have a permanent bed of strawberries, rhubarb, or asparagus. But in this article I am going to tell you, especially, some of the things I have learned in my garden about the one-year crops. The land should be plowed deep and fertilized in the fall, because the loosening of the earth gives the frost a chance to kill the insects' eggs and allows the fertilizer to be diffused by the rain and the snow. But if this has not been done for the ground you are to use for your garden, just have it plowed deep and have the harrow run over it every few days until planting time. This done, draw carefully to scale a plan of your garden, with crops apportioned, and get your seeds. The rows

for radishes, onions, lettuce, beets, carrots, peas, beans, and early turnips may stand as close as eighteen inches, but jump to three feet for potatoes, cabbage, cauliflower, sweet potatoes, tomatoes, and cucumbers.

There are certain kinds of seed that are best. If you do not know about this, ask someone who does. This United States Bulletin says that for tomatoes to can the Acme, Beauty, and Stone are the best because of their shape, their firmness, and their bright red color. The market demands a red tomato. A friend of mine who knows all about growing potatoes advises me to use Northern-grown early Ohio seed potatoes, non-irrigated and free from disease. So whatever are the crops you decide to raise you should find out the best kind of seed. Directions as to planting and care always accompany seed. You will do well to follow these directions.

Perhaps you have already been getting some early plants started in the kitchen. You can use medium-sized old pans for this. Find unfrozen soil on the south side of the house. Mix this with one third sand, fill your pans and water them well. Set them in a warm place in the kitchen, plant your seeds, water lightly, and keep damp, but not soaked, until they are up. After that slow down with the water to make them sturdy. When the plants have four leaves transplant them into boxes, and as the days grow warmer keep them out on the porch all you can. Your celery will need to be transplanted several times, as it is not put into the garden before midsummer.

When the men are planting the corn you can plan to set out your plants. The important thing now is to have the seed-bed in splendid condition—mellow, but well firmed, so that the seeds may absorb as much moisture as possible. There should be a light dust mulch over the top to prevent evaporation. The tomato plants should be staked from the very first, for if not trained up it is almost impossible to get good results.

Late in June dig a deep trench and plant your celery plants six inches apart. Towards fall tie the tops together and fill the dirt in to bleach it. Before the killing frosts come lift the plants and bury them in the trench deep enough to be safe from freezing. It is lots of fun to grow celery. I know a country school in Ohio where they grow it on the school-ground very successfully. It is not hard to grow as some people imagine it is. I know any bright country girl could succeed with it.

Now as to marketing. Early in the season it usually pays best to sell your fresh vegetables or fruit. Later the canned product yields the greatest profit. Good canning outfits for use on the farm or in the school can be secured for from five to fifteen dollars. Every well-regulated country home should have a home canner of some kind. It is as useful as a cream separator or washing machine. Since there has been so much agitation about pure food there is a greater market for good, fresh vegetables, and people are willing to pay better prices for them. The best things are never on the bargain counter, so do not be afraid to put a good price on your products. Have confidence in yourself and offer only the best, and you will surely find a market.

So you can make money and be happy because you have had a garden. Autumn will find you healthier and browner and saner. It was by no mere chance that the first people in the world, the people who were perfectly good and happy, were in a garden. And I believe that just in the measure that we love growing things and are interested in our garden and catch its spirit shall we draw closer to the attainment of the deep, strong character that we should have. I never yet knew a bad person who could make things grow.

Do try a garden. You'll find it one of the greatest joys in your life. Try it this season.

Farmers' Bulletin No. 521 may be secured free by request from the United States Department of Agriculture, Washington, D. C. It has helpful information for country girls interested in gardening.

Unseen Forces Behind Your Telephone

THE telephone instrument is a common sight, but it affords no idea of the magnitude of the mechanical equipment by which it is made effective.

To give you some conception of the great number of persons and the enormous quantity of materials required to maintain an always-efficient service, various comparisons are here presented.

The cost of these materials unassembled is only 45% of the cost of constructing the telephone plant.



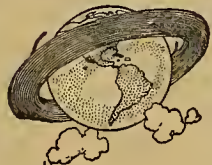
Poles

enough to build a stockade around California—12,480,000 of them, worth in the lumber yard about \$40,000,000.



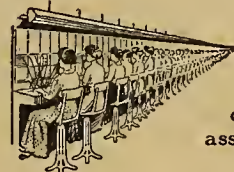
Telephones

enough to string around Lake Erie—8,000,000 of them, 5,000,000 Bell-owned, which, with equipment, cost at the factory \$45,000,000.



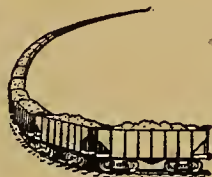
Wire

to coil around the earth 621 times—15,460,000 miles of it, worth about \$100,000,000, including 260,000 tons of copper, worth \$88,000,000.



Switchboards

in a line would extend thirty-six miles—55,000 of them, which cost, unassembled, \$90,000,000.



Lead and Tin

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sufficient to house a city of 150,000—more than a thousand buildings, which, unfurnished, and without land, cost \$44,000,000.



Conduits

to go five times through the earth from pole to pole—225,778,000 feet, worth in the warehouse \$9,000,000.



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The poles are set all over this country, and strung with wires and cables; the conduits are buried under the great cities; the telephones are installed in separate homes and offices; the switchboards housed, connected and supplemented with other machinery, and the whole Bell System kept in running order so that each subscriber may talk at any time, anywhere.



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Buggy and harness, saddle and bridle too



YOU or some other boy or girl will own Hustler and his buggy and outfit. The Farm and Fireside Pony Club is now open to all boys and girls. "Hustler," the beautiful Shetland Pony shown in the above picture, will soon be sent to some member of the Pony Club. You have just as good a chance to win "Hustler" and his saddle and bridle, nickel-plated harness, and handsome pony buggy as any child in America. The Pony Man of Farm and Fireside has no favorites. "Hustler" is a beautiful Shetland, with fluffy mane and tail, just as full of fun as a pony can be. "Hustler" is about forty inches high and weighs almost 350 pounds. He is the best playmate imaginable.

JOIN THE PONY CLUB TO-DAY

You should join the Farm and Fireside Pony Club right away while the membership is still open. Every single member is guaranteed a fine prize. So you simply can't lose once you join the club. Besides "Hustler," "Ginger" and "Little Joe," two other fine ponies, will be given away—also hundreds of valuable prizes and thousands of dollars in cash. Now is the time to join the club.

A FEW OF OUR MANY PONY WINNERS

Here are the names and addresses of only a few of the many boys and girls who have won ponies from Farm and Fireside. If you would like to know how easy it is to win a pony, just write to any one of these children. Farm and Fireside has been the National Farm Paper for thirty-five years, and has given away just dozens of Shetlands to boys and girls.

- Duke—Won by Lurline Smith, Santa Rita, N. M.
- Colonel—Won by John Cutler, Jr., Sharpville, Pa.
- Comrade—Won by Hugh Metzger, New Philadelphia, O.
- Daisy—Won by John Kielen, R. 4, Madison, Minn.
- Beauty—Won by Wilbur Corey, R. 9, Auburn, N. Y.
- Bick—Won by Daryl Porterfield, Emlenton, Pa.
- Jack—Won by Virginia Jamison, Iola, Kan.
- Fuzzy—Won by Allen Webber, New Carlisle, O.
- Wuzzy—Won by Marguerite Lawson, Hopkinsville, Ky.
- Teddy—Won by Viva McNutt, Vandergrift, Pa.
- Pete—Won by Lena Purchell, Halcottsville, N. Y.
- Captain—Won by Howard G. Laidlaw, Walton, N. Y.
- Jerry—Won by Alf Erickson, Stanhope, Ia.
- Spot—Won by Tom Clarke, Pennington, London, Ky.
- Ginger—Won by Robert Harrington, Am erst, Mass.
- Billy—Won by Herman Morton, Kernersville, N. C.
- Gipsy—Won by Leona Collins, Mason, O.
- Trixie—Won by Irma Musante, New London, Conn.



"HUSTLER," WITH HIS BUGGY AND HARNESS

SEND THE PONY MAN YOUR NAME AND ADDRESS

Just send your name and address to the Pony Man to-day. He will send you at once a complete description of "Hustler" and other ponies and a lot of other valuable information; he will tell you the easiest and best way to win. Be sure to write to-day. Cut out (your copy) the coupon below.

PONY MAN, FARM AND FIRESIDE, SPRINGFIELD, OHIO

Cut along this line

NAME.....

STREET OR R. F. D.....

CITY AND STATE.....

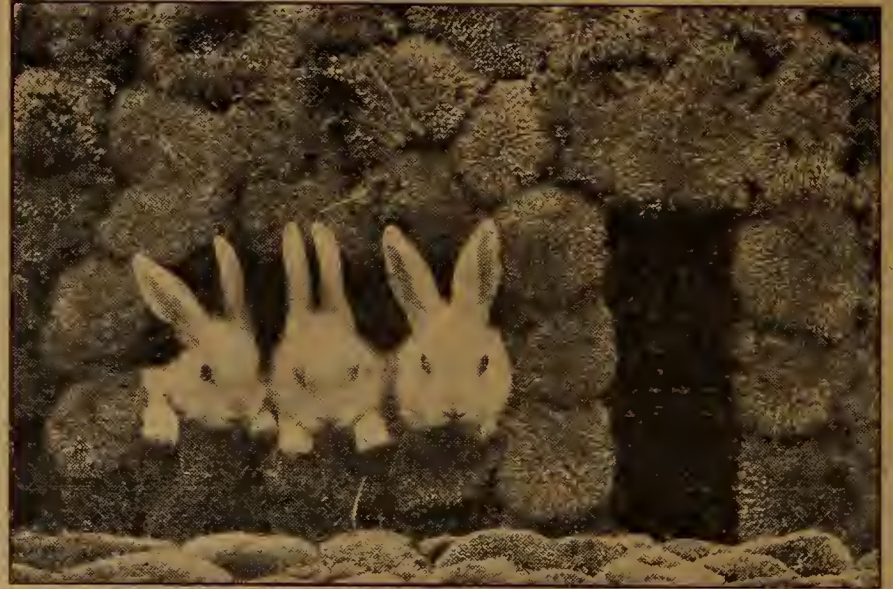
MR. PONY MAN:—
THIS IS MY NAME
AND ADDRESS.
PLEASE TELL ME
HOW I CAN WIN
HUSTLER AND JOIN
THE PONY CLUB.
PLEASE SAVE
ME A PLACE.

2

Prize of the Bunny Queen

By Harry Whittier Frees

Copyright, 1914, by Harry Whittier Frees



The moss house of Polly, Molly, and Dolly

THE Land of the Bunnies lies far, far away. Peeping up here and there from among the clover heads are the tiny moss houses of the bunny folks.

In one of these little moss houses lived Mammy Cottonball and her three little bunny children—Polly, Molly, and Dolly.

While Mammy Cottonball was very careful that her three bunny children should have the best of training, yet Polly and Molly, the two oldest ones, became lazier and more selfish as they grew older.

Whenever they were asked to do the least little thing they nearly always managed to get Dolly to do it instead.

One day the three little Cottonballs heard a wonderful piece of news.

The Bunny Queen was going to give a grand and beautiful Easter prize to the little bunny who painted the prettiest colored egg.

"I know I shall win it!" boasted Polly to her two sisters.

"You'll do nothing of the kind!" declared Molly, wrinkling up her nose. "For I shall win it myself."

Little Dolly was just as anxious to win the prize as her two older sisters, but she never said a word.

Some little time later, Polly, Molly, and Dolly came across old Judge Owl sitting on the lower branch of a tree.

"I shall ask him about the prize of the Bunny Queen," whispered Polly to her two sisters. "And maybe he can tell me how to win it."

"'Tis easily done," answered old Judge Owl in his most solemn manner. "All you have to do is to find the magic leaves. The one who paints an egg with the brew from the magic leaves will surely win the beautiful Easter prize."

"But where can I find them?" asked Polly, wishing all the time that her two sisters were not there to hear.

"Down by the edge of the spring," replied old Judge Owl. "And now run along," he finished, "for I have many other things to ponder over."

The next morning bright and early, before Molly and Dolly were awake, Polly started off by herself to gather the magic leaves.

As she hurried along she heard a tiny voice call:

"Wou't you please set me free?"

Polly caught sight of a beautiful butterfly caught in a spider's web.

"It will take but a moment!" pleaded the voice as Polly started away.

"I have no time to waste!" called back the selfish Polly.

When she arrived at the spring, just as old Judge Owl had told her, she found the plant with the magic leaves, some of them shining like gold and others like silver. She hastily plucked every one of them, not leaving a single one behind, and then started homeward by another path so as to avoid meeting either of her sisters.

But as soon as she turned her back a wonderful thing happened that she failed to see. The plant at once became covered with as many leaves as before.

Polly had hardly left the house that morning before Molly was awake, and, finding her sister gone, she hurriedly dressed herself and started away for the spring as fast as she could go.

Just as Polly had done, she came to the spot where the tiny voice had called to her, and as before the butterfly caught in the spider's web begged to be set free.

But just as Polly had done, Molly hurried on. And when she reached the spring she found as many leaves as Polly had gathered, and, just as selfishly, pulled off every one of them, not leaving the smallest one behind.

The last little Cottonball to get awake that morning was Dolly, who found both of her sisters gone. As soon as she had eaten her breakfast she too started away in search of the magic leaves. She soon came to the little prisoner of the web, and once again the butterfly pleaded for assistance. Kind-hearted little Dolly at once forgot all about the magic leaves and hastened to tear apart the maze of web that the captive might fly away.

As it sailed over the clover blossoms a tiny voice came to Dolly.

"When you go to gather the magic leaves pluck not the gold and silver ones, but those of the little green plant beside it."

Dolly soon reached the spring, and the gold and silver leaves of the magic plant shone brilliant in the sunshine. She was tempted to fill her basket with them, but remembering what the tiny voice had told her she picked instead the little green plant.

The next few days the three little Cottonballs were busy as bees.

When the eggs were finished poor Dolly felt so disappointed that she almost cried. Her egg was nothing but a dull green, while those of Polly and Molly seemed to shine with all the colors of the rainbow.

When Easter eve arrived and it was time for all the little bunnies to gather at the palace of the Bunny Queen, Dolly was undecided whether she should go or not. But finally she placed her egg in her little cart and started sadly away.

The little green egg seemed to grow brighter and prettier. When she reached the palace grounds she found ever and ever so many little bunnies there.

The Bunny Queen clapped her paws with joy when she saw Dolly's egg, and at once decided that she should have the prize.

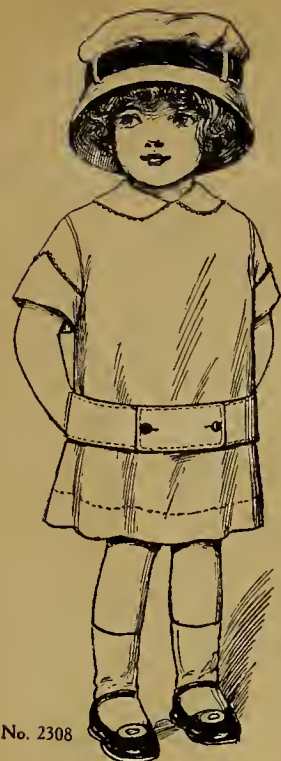
And what do you think it was?

Just the cutest and dearest little automobile ever made for a little bunny to run all by herself.



Dolly carried her green leaves carefully

F W



No. 2308



No. 2023
No. 1



No. 2308



No. 2022

No. 2022—Play Hat with Buttoned-on Crown
2, 4, and 6 year sizes. Material required, three fourths of a yard of twenty-seven-inch material. Price of this pattern, ten cents



No. 2023
No. 2



No. 2309

No. 2308—Play Dress with Bloomers and Hat

1 to 10 years. Quantity of material required for 6 years, four and five-eighths yards of twenty-seven-inch material, or three and five-eighths yards of thirty-two-inch material, with three fourths of a yard of thirty-six-inch material for the hat. Pattern, ten cents

No. 2023—Normandy Cap and Sunbonnet

1 to 4 years. Quantity of material required for No. 1, one and one-fourth yards of twenty-two-inch material, with one-half yard of insertion and one yard of narrow embroidery. Material required for No. 2, one yard of twenty-seven-inch material. A soft silk or sheer cotton material would be very attractive for design No. 1, while the sunbonnet may be developed in a flowered washable material, trimmed with narrow lace edging. The price of this set of two patterns is ten cents

No. 2506—Girl's One-Piece Dress: Kimono Sleeves

2 to 10 years. Material for 6 years, three yards of twenty-seven-inch, or two yards of thirty-six-inch material, three eighths of a yard of contrasting material for collar and cuffs, and two yards of velvet ribbon for sash. A soft shade of green linen or chambray makes a most effective dress for the little girl when trimmed with white and having a black velvet ribbon sash tied in a soft, knotted effect. Price of pattern is ten cents

Children's Clothes Both Comfortable and Practical For the Very Hot Summer Days

Designs by Grace Margaret Gould

No. 2309—Belted Rompers and Shade Hat

1 to 6 years. Material required for 2 years, two and one-eighth yards of twenty-seven-inch material, or one and five-eighths yards of thirty-six-inch material, three fourths of a yard of twenty-seven-inch material for the hat. Both the crown and brim of this hat unbutton. The price of this pattern is ten cents

No. 2505—Child's Yoke Dress with Bloomers

1 to 8 years. Material for 4 years, four and three-eighths yards of twenty-seven-inch, or two and three-fourths yards of thirty-six-inch, with three eighths of a yard of contrasting material for collar and cuffs. This is a very serviceable and good-looking dress for the little girl. It may be developed in tan linen, with the collar and cuffs of red or white linen and the belt patent leather or suede. The price of this pattern is ten cents

No. 2214—Belted Box Coat: Double-Breasted

2 to 12 years. Quantity of material required for 6 years, four and one-half yards of twenty-seven-inch material, or two and five-eighths yards of forty-four-inch material, with one yard of contrasting material for collar and cuffs. The little girl's summer wardrobe is not complete without a long coat, and the one illustrated would prove most practical made of cotton corduroy, pique, or serge. Price of pattern is ten cents



No. 2205



No. 2176



No. 2508



No. 2176



No. 2214



No. 2205



No. 2508



No. 2309



No. 2308

No. 2205—Girl's Low-Neck One-Piece Dress

2 to 8 years. Quantity of material required for 6 years, four and one-fourth yards of twenty-two-inch material, or two and one-eighth yards of thirty-six-inch material, with one yard of embroidery or heavy lace for the belt. The price of this pattern is ten cents

No. 2176—Tucked Party Dress: Short Sleeves

4 to 12 years. Quantity of material required for 8 years, two and five-eighths yards of thirty-six-inch material, with four yards of insertion and one and three-eighths yards of narrow lace edging for the neck and sleeves. The price of this dress pattern is ten cents

No. 2508—Girl's Large-Armhole Dress with Pockets

4 to 12 years. Material required for 8 years, four yards of twenty-seven-inch material, or two and three-eighths yards of forty-five-inch material, with three fourths of a yard of contrasting material for the collar, cuffs, belt, and pockets. Price of pattern, ten cents



No. 2506



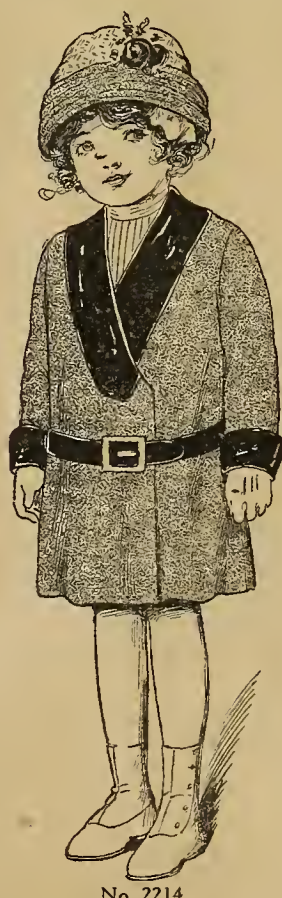
No. 2506



No. 2505



No. 2505



No. 2214

THE problem of how to dress the children comfortably in hot weather confronts every mother each new season. For this reason this page of summer clothes for children was planned. All of the designs here shown are both comfortable and practical, and can be most easily made.

The girl who is graduating from school or college this spring will find an attractive display of graduation dresses in the next issue of FARM AND FIRESIDE, April 25th. In the May 9th issue there will be a practical summer dress to fill many needs.

Pattern Coupon

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, 1554 California Street, Denver, Colorado

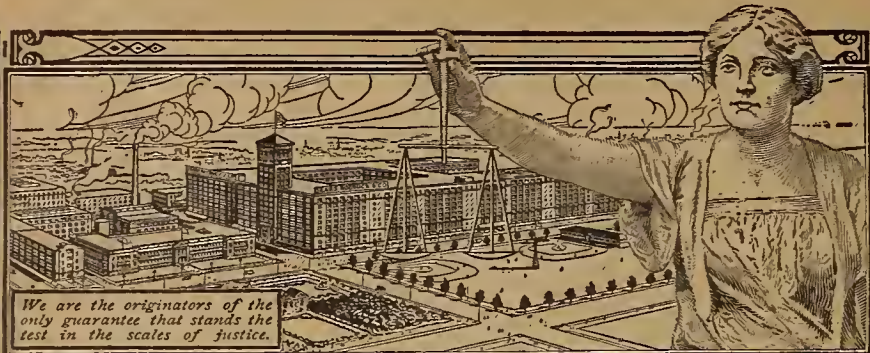
Enclosed please find....., for which please send me the following patterns:

No..... Size..... No..... Size.....

No..... Size..... No..... Size.....

Name.....

Address.....



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The steady growth of our harness store—now the largest in the country—is due only to the exceptionally *high quality* we offer, at prices asked elsewhere for *ordinary* grades.

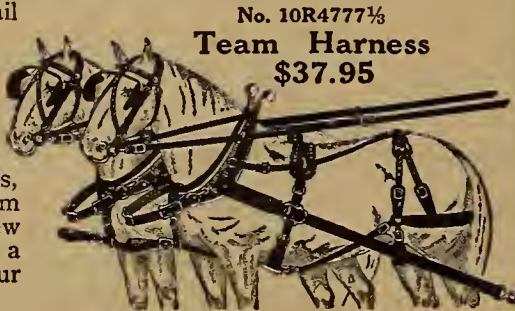
We want you to know all about our harness store—the reasons for its success—and the values we are now enabled to offer. Turn to the harness pages of our big General Catalog—or, if you prefer, write us a postal card and we will mail our new book of harness, saddlery, blankets, fly nets, dusters, robes, trimmings, whips. This book also contains our complete line of buggies, implements, cream separators, gasoline engines, farm tools and other farm helps. If you want this new book free, simply write on a postal card "Send me your Harness Book No. 72F68"

IN THE face of an advancing leather market we still use the *genuine bark tanned* leather which has made *Williams Quality* mean the best in harness for the least money.

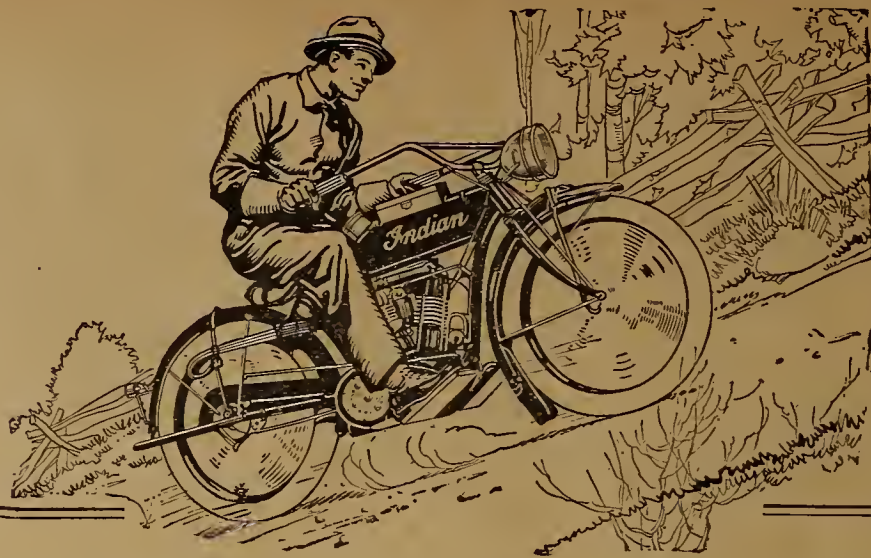
Our fair and square methods of manufacturing and selling create and hold in the minds of our customers the strictest confidence. Hundreds of horse owners who use harness daily will have none other than the celebrated *Williams Quality*.

Our guarantee proves our confidence in our merchandise, guards our customers against disappointment and protects them against loss.

Turn to the harness pages of our big General Catalog, or write for the special book mentioned at the left.



Sears, Roebuck and Co., Chicago



All Roads are Level Roads to the

Indian Motorcycle

"Rushing" a hill is an unknown experience to the Indian rider. "A twist of the wrist" silently gives the command to the motor for more power. And the power is there. It responds instantly. The rider feels that peculiar "bite"—a thrilling, assuring sensation of the answering motor!—and then the speed deftly picks up—picks up—picks up—without a moment's hesitation. The steepest grade offers no trouble to the Indian-mounted man.

Rough roads, too, mean nothing to the Indian tourist. With his machine fitted with footboards and that incomparable, inimitable comfort feature, the Cradle Spring

Frame, shocks and jars are dispelled. Indian riding is smooth riding whatever the condition of the highway.

With stupendous power—with perfected comfort devices—all roads are level roads to the Indian

Write for the 1914 Catalog

HENDEE MFG. CO., 828 State St., Springfield, Mass.
Chicago Dallas Kansas City Minneapolis Denver San Francisco Atlanta

A Prize-Winning Rose Plant THE NEW WHITE DOROTHY

And Five Other Exquisite, Hardy, Ever-Blooming Roses, Including the NEW "EXCELSA"



GIVEN

With a Trial Subscription to
The Housewife

For Twenty-Five Cents

WOULDN'T you like to have six of the prettiest one-year-old Hardy Ever-Blooming Rose Plants as a present? Roses that are guaranteed to grow and bloom this year? Roses that will surprise and delight you with their beauty and fragrance, that need practically no care or attention, that will thrive in any climate and will do well planted in open ground in almost any kind of soil? We offer just such a collection of desirable plants in order to introduce *The Housewife* to a large circle of new readers.

These Are The Six Roses We Give You

PRIZE-WINNING WHITE DOROTHY (New)—A pure white sport of well-known Dorothy Perkins, of same habit of growth and freedom of flowering; a splendid companion for the pink variety, as it flowers at the same time. A most valuable addition to this class. Awarded gold medal National Rose Society and Award of Merit, Temple Show, England.

F. R. PATZER (1909)—A distinct, free-growing variety with large handsome flowers, which are produced very freely on stout, stiff stems of perfect form and highly tea-scented. The color is creamy-buff, the back of the petals being a delicate warm pink; as the petals reflex the color becomes light orange-pink, forming a most charming combination.

MAMAN COCHET—An excellent pink Rose, with large flowers, on long, straight stems; color deep rosy-pink; the inner side of petals silvery-rose. Equally valuable for pot culture or outdoor planting.

The subscription price of *THE HOUSEWIFE* (now in its 31st year) is regularly 50 cents a year. The aim of *THE HOUSEWIFE* is to furnish the woman who has the interests of her home at heart with absorbing, fascinating reading for her leisure hours, and to advise and instruct her on all household problems. It has many departments devoted to Mother's Hints and Helps, Care of Children, Fashions, Needlework, Cookery, Hints in Economy, etc., etc. A six-month Trial Subscription costs only 25 cents. On receipt of this amount we will enter your name to receive *The Housewife* for the balance of the year and send you without further expense six one-year-old, pot-grown, hardy, ever-blooming, guaranteed Rose Plants. The number of copies of *The Housewife* you receive depends on how promptly you send us your order. If you send it at once it will include the current or March number, also the big June Baby Number, and will continue up to and including December 1914.

Remember for 25 cents we send you *The Housewife* for the balance of 1914 and the six hardy ever-blooming Roses described above. This is a limited offer so send your order at once to

THE HOUSEWIFE, 30 IRVING PLACE, NEW YORK.

RHEA REID—Considered by many experts to be the finest red rose in existence; has no rival. Rhea Reid is an offspring of American Beauty, which fact alone would place it right in the front rank along with its hitherto unrivaled parent. Its superiority over American Beauty is due to the following great essentials: As fragrant as La-France, as continuous as The Bride, and a much darker and richer red than the American Beauty.

LADY HILLINGDON—A beautiful Tea Rose that has created a sensation. The blooms are an exquisite shape and color a deep apricot-yellow, shading to orange. Deliciously fragrant.

EXCELSA (New Fiery Red Rambler Rose)—A splendid, new Climbing Rose, remarkable in many ways but particularly in the brilliant fiery-red, or intense crimson-scarlet, of the flowers. The flowers are very double, they are larger than any of the Rambler Roses and borne in trusses of thirty to forty on each; the body of the flower is brilliant in color but towards the edges of the petals they light up with a wonderful scarlet-crimson. It is very vigorous in growth.



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Perfect Protection for All Buildings— in All Climates—Under All Conditions

The hottest weather can not cause J-M Asbestos Roofing to dry out or melt. The coldest weather can not crack it. Gases, chemical fumes or salt air can not injure it. And it gives perfect protection against fire.

In a word, being *mineral through and through*, it is practically indestructible. There isn't a particle of perishable material in

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It is composed of Asbestos and Trinidad Lake Asphalt. Asbestos is a rock, and therefore everlasting. And Trinidad Lake Asphalt has withstood the terrific duties of street paving for over forty years.

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Comes in rolls and flat sheets, easy to lay. Also furnished in built-up form. J-M Roofing Cleats, packed in each roll, make absolutely water-tight laps, and give the entire roof an unbroken, handsome white surface. Sold direct if your dealer can't supply you. Write today for sample of the curious Asbestos Rock and Book No. 3060.

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U.S. Department of Agriculture

FARM AND FIRESIDE

EVERY OTHER WEEK

THE NATIONAL FARM PAPER

SATURDAY, APRIL 25, 1914

5 CENTS A COPY



Scarecrows That Really Scare—See Page 12

**LOOK FORWARD!
THESE GOOD THINGS
ARE COMING!**

A City of Farmers

"Impossible," you say. Perhaps, and yet that is just what some of the people of a mild climate are trying to establish, and they claim they are succeeding. They are taking much that is good from the cities, leaving all that is disagreeable behind, and linking up those good things with the life on the farm and the independence which all of us love and desire. They are farming all of the time, and they are doing the work themselves. They are not wealthy; they are just common folk the same as the most of us, and what they have accomplished they have done because of the study they have given the subject, and the labor they have put into it. You will read their story with interest.

Sheep for the Farm

That seems to be the universal cry from almost every section of the United States. And with that idea comes the statement: "We used to keep sheep, but we cannot do it any more. There are too many dogs." In other words, between profit and loss in sheep husbandry stands one thing—the dog. And for that reason FARM AND FIRESIDE is taking up the issue, giving the evidence of farmers on the subject, hiding nothing, with the hope that the people of the land, even though they may be dog lovers, will prevail upon their legislators to place on the statute books the laws that are needed for the betterment of the conditions on farms, very few of which should not keep sheep. Read what Mr. Quick says on this great theme.

Something for the Boys

That is true with every issue of the paper, but in the next issue there will be some new ideas that may be put into effect by boys who have ingenuity—and where is the lad who does not have that gift when he is put to the test? Every boy will read this page with interest, this page which tells how to make—but then we know you will recognize the page when you see it, and so we will leave you guessing until the next number of FARM AND FIRESIDE reaches you.

The Scarecrows

What do you think of the scarecrows in this issue? These are but a part of the total number received. With the next issue we will give others, just as good as these, too, only they are intended for a little different purpose. Our subscribers have certainly shown their ingenuity in this contest, but then they are doing that in all of the contest work. There will be a contest every now and then as our readers suggest the themes upon which they would like to hear the experiences of others. We follow what our readers demand along these lines. FARM AND FIRESIDE is published to serve the subscriber.

The Child at Home

"A wonderful piece of work, and so true to the lives of children and their mothers. Every mother ought to read these articles by Mrs. Keyes." That is simply one comment of many like it that have been sent to the editors. This column here is being written by an associate of Mrs. Keyes in editorial work, and so what he might say would be partial to her writings, for he knows she is giving to the readers these letters with her whole heart back of them. She believes and lives what she talks about. It pleases the editors to see that the readers are appreciating that fact. The next article by Mrs. Keyes will appear in the next number of FARM AND FIRESIDE.

Rural Problems of the Bible

Yes, there were many, and it is surprising how they correspond to present-day conditions. And there were certain laws which were laid down for the people to follow. If those laws were followed to-day, farming would be a more profitable business. And those same laws, some of them, are very much like the principles put forth by many of our best farmers and farm-life teachers. These laws and problems will be pointed out in the next issue by a farmer.

Picture-Contest Winners in Next Issue

We had hoped to be able to announce in this issue the best titles for the cover of the Engineering Supplement sent to subscribers with the March 28th issue. But the large number of exceptionally good titles received has made the process of picking out the best ten exceedingly difficult and slow. The final decision will be rendered in the May 9th issue. To allay the anxiety of those who await the outcome of the contest the artist has requested the announcement that the automobile did not catch the rabbit.

WITH THE EDITOR



THE way to co-operate is to co-operate." Sometimes I get a little tired of all this talk of what the farmers are doing in Germany, Denmark, and Ireland. I want to know something about successful American co-operation. That is why we gave you the account of the farm-loan system of the building and loan associations which began making farm loans in Defiance County, Ohio, and now have some \$15,000,000 loaned to farmers in that vicinity. There is an old and successful farmers' club at Mount Juliet, Tennessee, called the "Mount Juliet Lamb and Wool Club." The following letter from Mr. G. V. Goodall, its secretary, tells more in few words than one usually reads, and proves that American farmers can co-operate when they learn how.

We have found by twenty-three years' experience that it pays to sell our lambs in a club, first because we realize considerable more money from them. We also sell our wool the same way, and realize more for it than otherwise. We try to deal fairly with the buyers, and as proof that we do we often sell to the same buyer. We advertise for sealed bids on so many pounds of wool or so many head of lambs. Another advantage gained by our plan of selling is that we set our own time for selling, and sell when it suits us.

Another advantage is that the club is an educator for the members. They observe what it takes to make a first-class lamb and how much better it is to have the right kind to sell, and to have first grade wool instead of third grade. Our members have learned much by association and comparison of notes—more than they could have done without co-operation. We have all learned how to take better care of our flocks, and have found that they pay as well for their keep as any other live stock, counting the cost of keeping.

We have not adopted any plan yet for getting rid of worthless dogs. The legislature passed a dog law in the interest of sheep-raising, but it has not proved much of a success. About the best plan would be a little strychnine used at intervals when too many dogs were roaming over premises, if this were not unlawful. It is necessary to look after the sheep closely.

Now, twenty-three years is a long time. I think everybody must realize that after nearly a quarter of a century of meetings and talking together these Tennessee shepherds know more about growing good wool and good lambs and getting good prices for them than they would otherwise.

Was it hard to organize? Did it take a Philadelphia lawyer to draw up their papers? Not at all. The "Code of By-Laws" is so simple and so short that I can give it in these columns in full. Here it is:

SECTION 1. This organization shall be known as the Mount Juliet Lamb and Wool Club.

SEC. 2. Any person engaged in raising sheep may become a member of this Club by making application to the same, either in person or in writing, at any meeting of the Club, provided the applicant receives a majority of the votes of the members present, and subscribes to these By-Laws.

SEC. 3. Any member who sells his wool or lambs otherwise than through the Club, except for breeding purposes, shall forfeit his membership.

SEC. 4. The officers of this Club shall be a President and Secretary, who shall be elected annually at the annual spring meeting of the Club.

SEC. 5. It shall be the duty of the President to preside at the meetings of the Club, appoint committees to transact the business for the Club, and to notify the Secretary to call meetings of the Club whenever he deems it necessary.

SEC. 6. It shall be the duty of the Secretary to keep a record of all the proceedings of the Club, to issue calls for meetings when ordered by the President, to record the names of members in a book kept for the purpose, and to keep a record of the sales of lambs and wool made by the Club. This record must be in the form of a payroll, showing the number, weight, and price of lambs, the weight, class, and price of wool delivered by each member, and the net amount of money to which he is entitled. He shall be *ex officio* a member of the Committee on Sales of Lambs and Wool, and shall receive for his services \$2 for each meeting of the Club, the days of delivery of Lambs and Wool being counted as meetings.

SEC. 7. It shall be the duty of every member to attend the annual spring meeting of the Club, which shall meet the fourth Saturday in March, at 1

o'clock P. M., and report in person or by proxy the approximate amount of Wool and probable number of Lambs he will have for the first delivery, and on failure to do so it shall be optional with the Executive Committee whether they receive his Lambs and Wool or not.

SEC. 8. At the annual spring meeting it shall be the duty of the President to appoint two discreet members to act with the Secretary as a Committee to sell the Lambs. The sale shall be made by advertising for and receiving sealed bids till such time as the Club may direct, at which time the Committee will open the bids and award the Lambs to the best bidder.

The Committee shall be at the scales on the day of delivery, and if any member offers lambs under the weight, or not in the condition agreed upon in the sale, it shall be the duty of the Committee to reject such lambs.

The Committee shall hire such help as may be necessary to handle the lambs and to assist the purchaser to load them on the cars. The members of this Committee shall receive \$1.50 for their services on day of delivery.

SEC. 9. It shall be the duty of the President, at the annual spring meeting, to appoint two discreet members to act with the Secretary to sell the wool belonging to the Club at such time and in such manner as the Club may, from time to time, direct.

SEC. 10. All expenses of sales, advertising, etc., shall be assessed by the Committee pro rata, and deducted from the proceeds of each member's lambs or wool before the pay-roll is made out.

SEC. 11. These By-Laws may be amended by two thirds of the members present at any annual spring meeting, or at a meeting called by the President for that purpose, provided the call for such meeting be posted in three public places at least ten days prior to such meeting.

Here is an organization which may be copied wherever a few farmers can be found who have the ability to act together. It doesn't make much difference what they sell—garden truck, milk, cream, butter, hams, bacon, sausages, apple butter, canned goods, apples, peaches, pears, grain, cotton, hay, eggs, poultry, cheese, almost anything.

The thing required is the co-operating spirit. Probably a better form of organization than this can be found, but the spirit is the thing.

"The way to co-operate is to co-operate."

Herbert Quick

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FARM AND FIRESIDE



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THE DOGS THAT DO THE DAMAGE

This is the second of a series of articles by Herbert Quick, Editor.

IF ANYONE needed to be convinced that the greatest menace to the sheep industry is the dog business, I take it that every reader of FARM AND FIRESIDE is now convinced. There are some people who prefer the dog business to the sheep business.

I have a letter from a Georgia friend who says: "It is nothing uncommon for you to stir things up. I notice your article concerning dogs. You are not in favor of us having a free country. You big bugs ought to have something to spend your time and money on besides stirring up some hardship for the little fellow that is not able to pay what is necessary, but if you were here you would be in a bad fix without a dog of some kind, if for nothing else than that the scent of one keeps varmints, snakes, and such like away from children and chickens." There is a good deal more of the same sort in his letter.

As a matter of fact, what I would like to do is to get rid of all the dogs which are good for nothing except to leave their scent around the place, and protect the dogs that are really good for something else. I believe that our Georgia reader and others who have written in the same tone would still be able to keep their faithful and valuable dogs under any system which I would favor.

We can do nothing intelligently to get rid of the evil without studying it. I think, therefore, it is worth while considering the question as to what kind of dogs do the most damage. Let us see what the people who have had the most experience think about this.

Julia M. Wade, secretary-treasurer of the American Shropshire Registry Association, after reading reports from Shropshire breeders all over the country, says that where the kind of dogs that are most troublesome are mentioned, in nearly all cases it is the cur, but sometimes the collie or other shepherd dog.

Mr. H. N. Bartlett of Berkshire County, Massachusetts, who seems to have imbibed the extraordinary notion that we are advocating the extermination of dogs, says: "I never knew of one dog alone killing sheep; they usually go in pairs a long distance from home. Keep your dog at home and the sheep will not suffer." Mr. Bartlett does not name any particular kind of dog as most destructive.

Mr. Daniel Bryan, a Cotswold breeder of Jay County, Indiana, has known of several dogs in the act of killing sheep. One was a common mongrel, and the other a hound "and a good coon dog." But he is inclined to think "the untrained and spoiled Scotch collie is the worst enemy of sheep, although the cur is his rival." Mr. Bryan does not think that the little dogs, such as ratters or toy dogs, do any harm of this sort.

Mr. A. J. Legg of West Virginia also acquits the very small breeds of dogs of any crime. Most of the sheep-killing in his vicinity in the past ten years has been done by foxhounds, half-blood Scotch collies, and mongrels. Mr. John Irion, of Gallipolis, Ohio, thinks that the half-starved mongrel does the damage, and



has no complaint of the small breeds. In this view Prof. E. J. Iddings, animal husbandman of the University of Idaho, agrees with him. He thinks that the larger mongrels do most of the damage. In the opinion of Mr. George Schaap of Marion County, Oregon, "the grade shepherd and the bird dog are bad sheep killers," and he speaks from experience. Mr. C. F. Bettell of the Fillmore Farms, Bennington County, Vermont, has never known terriers or the little toy dogs to annoy sheep at all, and in his neighborhood he charges the whole trouble to the mongrel dog and curs, which, he says, "are the curse of our whole neighborhood."

Wm. M. Bingham's Sons, Hampshire breeders of Adams County, Pennsylvania, have never known a pure dog of any breed to kill sheep. "It is invariably the mongrel dog," he says, "that attacks them. We believe the greatest reason for this is the intelligence of the pure-bred dog, added to the fact that the pure-bred is generally well fed and cared for." Mr. H. L. Wardwell of the Pinehurst Stock Farms in New York does not think "that as a rule small breeds of dogs bother sheep." "Irish terriers," says he, "and mongrel dogs in which there is a mixture of sheep dog and collie, and bull dogs are in my opinion the worst."

Mr. R. B. Rushing joins with Mr. Legg in the condemnation of the foxhound. "After he has run several hours," says Mr. Rushing, "if there is anything he loves to eat it is sheep. We have very few pure-bred dogs in my county; they are mostly hound and mixtures of hound and shepherd. Some of our worst sheep-killing dogs are a cross between a foxhound and the little fice. These crosses are fine sheep-killing dogs."

Mr. John Pickering Ross writes: "Nearly all well-bred specimens of the smaller breeds, terriers and spaniels of every variety, and even the bull dogs, bull terriers, Boston terriers, and the fierce Airedales, may be exempted from consideration. At least, I personally have never known of a dog of these breeds harming sheep, and I have found the experiences of other men generally the same."

Mr. L. H. Ross, a Shropshire breeder of Marion County, Ohio, tells of a neighbor's loss of sixty sheep in one morning through the depre-

deations of a hound and a large mongrel. Mr. Edgar L. Vincent believes that nine out of every ten dogs in this country are simply curs, and that it is the neglected and ungoverned cur which kills most of the sheep. Mr. D. H. Sloan of Ashland County, Ohio, refutes Mr. Ross's testimonial about the bull dog. He says: "I have had sheep badly worried by a fine, big, pet bull dog that came from town. I killed him in the act. I also killed a collie shepherd in the act of worrying sheep, and I have had a great deal of trouble with large mongrel dogs, but none with small dogs."

Mr. C. E. Cleveland, a Shropshire breeder of Multnomah County, Oregon, where dogs cause more sheep trouble than all other causes combined, thinks that one is about as bad as another, except that the larger the dog the larger the damage. He has known of damage done by bird dogs and shepherd dogs.

Mr. Cleveland is one of the sheep breeders who finds that the smaller dogs, such as fox terriers, are not as harmless as others think. He says: "Some of the smaller dogs, such as fox terriers, are the worst, as they never let up the chase of a sheep or lamb until it lies down in a fence corner; the dogs then tear the ears and head to pieces." Mr. Lee R. Scott, Washington County, Pennsylvania, who has kept sheep for

thirty years, says "the part-blood shepherd or colle is bad, and also starved hounds." He agrees with Mr. Cleveland as to the small dog. "We usually find a large dog and a smaller one of the terrier type together," says he.

Mr. G. G. Sumner of Bradford County, Pennsylvania, an old sheepman, has not known of the killing of sheep by small dogs, but says that "they will chase anything that will run, and that all pure-breds, grades, and mongrels kill sheep." He can see but little difference in breeds, except that the pure-bred is likely to be better looked after than the scrub. This seems to us the correct view.

Mr. Frank Kleinheinz, the noted sheep husbandman of the University of Wisconsin, has not known the smaller dogs to do any damage, "except once in a while in cases where we have heard that one of these little chaps was in company with one or two large mougrels when the mischief of the sheep-killing was carried on."

Messrs. R. and W. Postle, breeders of Cheviots and Shropshires, of Franklin County, Ohio, say: "Ninety per cent of the dogs that bother us are mongrel dogs,

although we have had sheep killed by mastiffs, shepherd and bird dogs, terriers and foxhounds. There are usually two—a little dog to run and bark and a larger one to bite and kill. They make a peculiar bark, that once heard will not be forgotten. It is a short, quick bark."

Mr. W. E. McFarland of Monroe County, Missouri, reports that in his locality the town dogs have done more mischief than any other—bird dogs as a general rule, usually accompanied by a small dog, like a rat dog, although sometimes two bird dogs will go together. Mr. John Rinebold, a Shropshire breeder of Seneca County, Ohio, can see very little difference among breeds of dogs, but adds: "A large dog and a small dog make a bad combination for sheep-killing." Mr. Orrin Frase of Summit County, Ohio, has killed dogs by the score in the act of worrying sheep, all colors and all sizes. "The dog that is poorly fed," he writes, "and not cared for, and that has to rustle for a living, makes the most trouble. The little fellows of course can't kill a sheep, but they are bad on account of their being more active and restless, and just as soon as they get in company with a larger dog

the sheep-killing business begins in real earnest." Mr. A. C. Harlow of Lamboille County, Vermont, an old sheep breeder, is of the opinion that farm dogs very seldom kill sheep. "The village dog," says he, "like the village boy when he gets out in the country, wants to tackle everything he sees. The Scotch collie or hound seldom chases sheep unless he gets in with other dogs. Sporting dogs, like the setter and the pointer, and also the bull dog, will almost always attack sheep unless taught otherwise when a puppy, and the pugs and that class of small dogs will chase sheep if they can get them running."

This I believe is a collection of more experience on this subject than I have ever seen put together, and I think it is safe to say that all classes and all breeds of dogs are dangerous to sheep when they have been spoiled and corrupted, or if left untaught and ungoverned. While farm dogs are no better in this respect than other dogs, the vast number of worthless dogs, even though they may be of pure breed, which are allowed to range freely from our towns and villages, constitute by far the greatest danger to the sheep industry in the United States.

Blackhead Disease Cannot Be Cured

But It Can Be Kept from Ruining the Turkeys. It's a Question of "Know How"

By Dr. Philip B. Hadley

GIVING up turkey-raising was a disappointing and humiliating experience to thousands of farmers and farmers' wives in the New England, Eastern, and Midwestern States. The old-time flocks, numbering scores of strutting Toms and plump hens as the holidays approached, were a source of satisfaction, pride, and profit.

The fight against the insidious blackhead disease has been long and stubbornly waged, but one by one the



Stupor and dejection indicate blackhead

former turkey-raising experts have lost courage and retired from the field. Turkey-raising has lost ground.

As this industry languished in the older sections of the country, the turkey and "the star of empire" wandered westward together, until now the great Panhandle and contiguous region of the Southwest, and certain parts of the Central South, furnish the great bulk of the holiday turkey supply. Flocks of two thousand to ten thousand turkeys being driven to central slaughtering houses are not uncommon sights in the turkey-raising areas mentioned when the holiday season approaches.

Seven Poults in Ten Die of Blackhead

But there is now an encouraging ray of hope for the old-time turkey raisers, resulting from continued experiments carried on by Dr. Philip B. Hadley at the Rhode Island Experiment Station. Information recently furnished FARM AND FIRESIDE by Doctor Hadley indicates that instead of raising only 5 per cent of the young turkeys, which is now the rule, a new system of feeding makes possible the successful rearing of half the poults hatched. His letter follows.—EDITOR.

Every malady that kills off the young stock is not necessarily blackhead. I am confident, however, that blackhead is responsible for a least 70 per cent of the mortality among young turkeys. It can always be recognized by the appearance of the liver or ceca (blind pouches of the intestine) or both. The surface of the liver is spotted with gray or yellowish abscesses, varying in size and number, and extending deep into the liver tissue. The ceca in blackhead are more often affected than the liver. They become heavy and inflamed. The walls become thickened, and in extreme cases a hard yellowish core fills the inside, obliterating the canal. It is not always possible to diagnose the disease by symptoms shown by the living birds. Yet, when the birds refuse food, become emaciated, show a general stupor, and allow the wings to droop, then the chances are in favor of blackhead.

As for the treatment for this disease it is safe to say that when once the disease has gained a foothold in the body of the bird, treatment is out of the question. It would be much better for the poultryman to spend time considering methods of prevention than to put his money into alleged "cures" for blackhead.

At one time it was believed that the only way to prevent the appearance of blackhead in

turkeys was to keep the birds and the parasites as far apart as possible. Later investigation has, however, demonstrated that this procedure is, for all practical purposes, an impossibility. The parasites of blackhead, of which we now know two different species, are about as sure to find their way into the alimentary canal of the young turkeys, unless we except the newly settled sections, as the germs of diphtheria, tuberculosis, and pneumonia are sure to find their way into the nose or throat or mouth of many healthy human individuals. In fact, the parasites of blackhead have become so widely disseminated in the more thickly populated States that to escape them is almost impossible. To avoid the beginning of the disease other means must be employed. Something must be done to prevent the development of the parasites after they have entered the alimentary tract of the birds. Here they must be kept from laying waste the tissues.

Sour Milk Prevents Growth of Parasites

To prevent the parasites from working harm the Rhode Island Experiment Station is now recommending a special feeding method which is based upon many years' experience in the field, and involves two main features:

First comes the liberal feeding of soured milk. This is given to the birds in large amounts, beginning at about the tenth day after hatching and continuing through the growing season—the longer the better, since the danger from blackhead is not passed until the birds are found upon the Thanksgiving table. The milk is soured from twenty-four to sixty hours, until thoroughly clabbered. It is then fed whole, the curd and whey together. Attempts made to feed the curd and whey separately have not given successful results. The amounts to be fed to birds of different ages are indicated in the schedule presented on page 15.

A word should be said here regarding the method used in souring the milk. In all the experimental work at the Rhode Island Station carried on thus far, use has been made of a species of lactic-acid bacteria which produce much more acid than is obtained from the domestic lactic-acid bacteria, which seldom produce more than 1.25 per cent acid. *Bacterium Bulgaricum*, a species found by Metchnikoff in the sour-milk drinks of the Bulgarian peasants, and assumed by him to be largely responsible for the longevity of these people, may produce as much as 3 per cent acid. Cultures of this organism can be obtained from any of the large manufacturing houses handling biological products, and can sometimes be obtained in drug stores. The milk to be used in feeding is inoculated with this culture, and maintained at a temperature of about 105° until thoroughly clabbered. Whether milk soured in this way is actually better for the birds than milk soured naturally cannot be stated at this time. It seems probable, however, that in the case of blackhead, at least, the higher degree of acidity in itself has some definite value, aside from any influence of the bacteria located in the intestinal tract. That the living bacteria are also of importance, however, can scarcely be doubted.

The second feature of the method of modified feeding recommended in the Rhode Island turkey-feeding schedule is the reduction of grain and mash feeding to a bare minimum. Turkey raisers have usually followed the maxim: "Feed the birds only as much

as they will clean up at one time." A better maxim is: Find out how much the birds will clean up at one time, and thenceforth feed about one half of that amount. Turkeys can be depended upon to eat several times as much as they require for maximum growth. It is this unused surplus, clogging up the intestinal canal, that starts the chain of circumstances ending in spotted livers and dis-

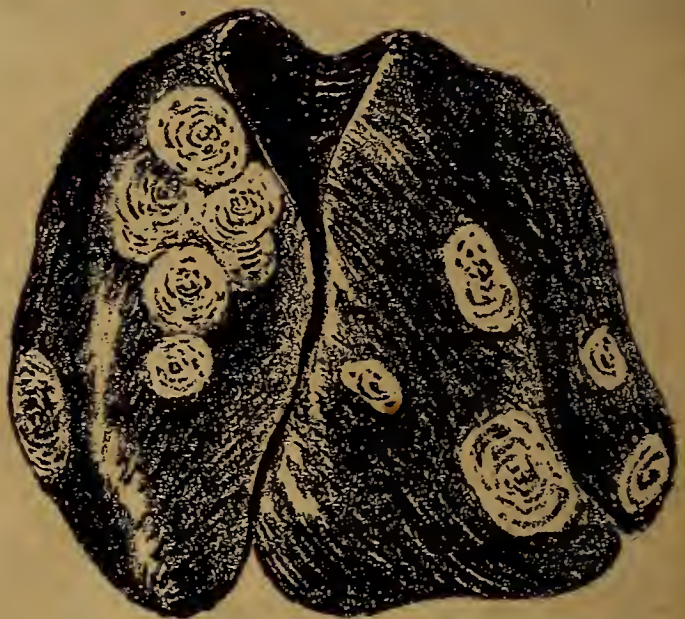
torted ceca. The proper amounts of grain and mash and other elements of the ration for poults of different ages are shown in the table on page 15.

In addition to the above, several drugs, calculated to have a germicidal action on the parasites in the intestinal tract, have been used. Most of these have given no clear evidence of efficacy. The only one that seems to have been of value is Formidine, administered as will be indicated later. Whether this is necessary in addition to the milk treatment cannot now be stated.

For the first 48 hours after hatching no food is given to the young poults. At the beginning of the third day chopped eggs (including shell) are given at the rate of 4 grams (28 grams equal one ounce) per bird per day. This amount is gradually increased to the end of the first week, then decreased to the end of the second week, when egg-feeding is discontinued. Other feeds are added gradually. For instance, on the fourth day green food (chickweed lettuce, Swiss chard, sprouted oats, oat tops, etc.) is given, and continued in ever-increasing amounts; on the fifth day rolled oats are added, to be discontinued at the end of the third week. Beginning on the ninth day a mash is given, consisting of the following:

Corn meal	6 parts
Wheat bran	4 "
Middlings	2 "
Granulated milk	2 "
Linseed meal	1 "

Sour-milk feeding should start at least by the tenth day, at the rate of about 10 grams per bird, and should



Yellowish or gray abscesses extend deep into the liver

be gradually increased as the birds become older and develop a taste for it. After the sixteenth week the young turkeys may be given as much sour milk as they will consume.

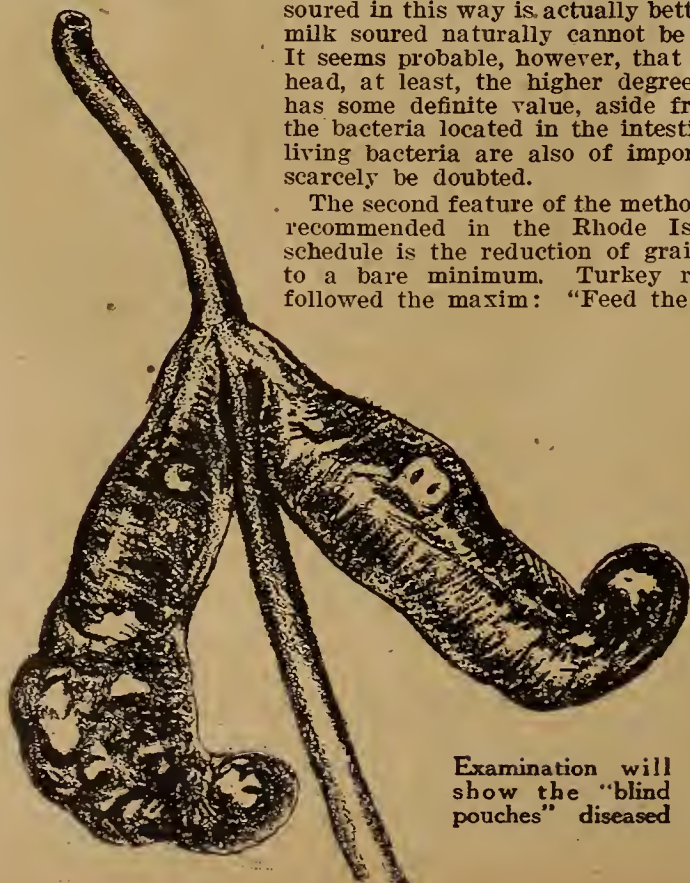
The mixed-grain ration also begins with the third week, and continues until the eleventh week, when it is replaced by equal parts of corn and wheat, beginning each at the rate of about 50 grams per bird per week.

A Wide Range is Unnecessary

The method of feeding outlined above is devised primarily for turkeys raised in pens and yards or on very limited range. The method of feeding as presented above is the result of long experience, and seems better suited to the conditions mentioned than any other methods that have been tried. But it is not impossible that, as we gain further knowledge of the action of different constituents of the rations, and of different acid-containing foods on the development of the parasites of blackhead in the intestinal tract of the birds, the schedule as now presented will undergo important modifications.

In conclusion it may be pointed out that the long experience of the Experiment Station shows that the turkeys can be raised in confinement (in yards and pens) as successfully as on free range, provided they can be kept free from blackhead. This opens perhaps a new and important phase of the turkey-raising industry.

I might add regarding the percentage of turkeys that can be raised by the help of the treatment suggested above that a year ago [CONTINUED ON PAGE 15]



Examination will show the "blind pouches" diseased

A Weed That May Be Made a Crop

The Plain Story of What Sweet Clover Is and What It Has Done for Me

By W. B. Quarton

TWELVE years ago we made our first trial with alfalfa in north central Iowa. At that time there was no alfalfa grown in that locality and it became necessary to learn how to grow it. In learning we made many failures. This was the cause of our turning our attention to sweet clover as a forage plant. At that time sweet clover grew along the highways, and every person was doing all he could to exterminate it. It was regarded as a weed and a pest.

We knew that if sweet clover could be utilized on the farm and made profitable it would grow in this locality without difficulty. In driving our cattle along the highways they seemed to eat the sweet clover with a relish, and in the fall some of the first year's growth of sweet clover along the highway was cut with a scythe and put into cocks to cure, and was fed that winter to some of the milch cows and the young stock. They ate the hay with much relish.

Having thus determined that cattle would eat sweet clover as a forage plant and as hay, and knowing that it would without question grow in the locality, the next year we seeded some five acres with a nurse crop of oats, and secured a fine stand. The same fall it was mown for hay, yielding about one and one-half tons per acre. That hay was fed to dairy cows during the month of December. During the previous months we had been feeding alfalfa. From this trial it is our

20th of June according to the latitude. This second year's crop should be cut before any of the seed shoots start, and long before any blossoms appear. It should be cut with a twine binder, and the bundles should be made as small as possible. The binder should be raised so as to leave a stubble of eight or ten inches, because if the clover is cut at this time of year and growth, with the mower close to the ground, it will kill many of the plants and the stand will be greatly weakened, if not entirely destroyed.

To Make a Success of Harvesting

The bundles thus cut and bound should be set up in shocks, "two and two," to cure, and when cured may be put into a stack or mow as ordinary grain, and fed out at any time. The clover when cut high with a binder will throw out new shoots and a new growth, and can be either cut for hay a second time that year, or a fairly good seed crop can be secured. If neither hay nor seed is desired it may be pastured until late fall. Of course, if a heavy seed crop is desired more seed will result if one does not cut a hay crop the second year.

One necessary precaution when seeking seed is that the clover must be cut just as the top seeds are turning brown and when the lower seeds are still green, because it has a tendency to shatter off very badly if the seed is permitted to become too ripe. Cutting it green will not injure the seed much, because the seed will ripen after the plants are cut. The seed may be threshed with any threshing machine that has a clover-huller attachment, but a small amount of seed can be flailed out on the barn floor.

A permanent stand and pasture of sweet clover may be successfully maintained in the following man-

is one of the highly valuable plants. A comparison between sweet clover and alfalfa will give a very good idea of the value of sweet clover. Alfalfa excels sweet clover in three particulars: it is a perennial, will yield more tons to the acre, one year with another, and is a little more palatable. Sweet clover excels alfalfa in the following particulars: it will grow on any kind of soil except that which is subject to constant overflow; it is a biennial, and works into the ordinary crop rotation better; it has a higher percentage of digestible protein than alfalfa; it will not bloat stock either as pasture or hay; it will grow in any climate from Canada to Mexico, and will not winter-kill; in the Northern latitudes, at least, it produces a greater root system, and hence is a greater fertilizer.

The bacteria for alfalfa and sweet clover are practically identical. Two of the most necessary elements of soils for the successful production of farm crops are humus and nitrogen, and these two are the ones most easily exhausted. Sweet clover is a prolific producer of both at a low cost. It gets its nitrogen from the air, and the root system furnishes a wonderful amount of humus when the plant has run its race of two years.

On ground that has been two years in sweet clover we have been able to raise eighty-two bushels of corn per acre, while the same kind of land, treated in the same way for a number of years previously, except having no sweet clover on it, produced sixty-five bushels of corn to the acre.

You cannot pasture alfalfa because of bloat, but sweet clover does not bother in this respect. You can turn the stock into a sweet-clover pasture, of the second year's growth, from fifteen to twenty days earlier than you can begin to use any other pasture in the Northern latitudes. It will pasture more stock to the acre than any plant I know of.

The Stock Will Relish the Sweet Clover

As to its food value enough is said when we say that the best of results have been attained by feeding sweet clover to fattening cattle and milch cows.

It has been claimed by some that stock will not eat sweet clover. The facts are that cattle must acquire a taste for it, just as cattle from the range must acquire a taste for corn. We have seen a herd of cattle brought from the Western range into Iowa, and when corn fodder was placed before them they would eat the stalks and blades and leave the ears. This was simply because they did not know what the ear was, how good it was; and they were not accustomed to it. The range horse is the same way with our oats and corn. So it is with sweet clover: if the stock have never eaten it they must become accustomed to it. The best way to get them accustomed to it is to turn them upon the growing sweet clover in the early spring when it is the first green bite they will get. There will be no trouble after that.

Most of the tillable land on our own farm has at some time or other been seeded to sweet clover. The small portion that has not, plainly tells the story in its failure to produce as abundant crops as that portion where sweet clover has been growing. We are growing both alfalfa and sweet clover, and we find



The cut for the road was made through solid clay, but sweet clover grows in abundance on the banks

opinion that the cows produced as well, if not better, on the sweet-clover hay than they did on the alfalfa hay.

One of the great difficulties that a beginner with sweet clover has is not knowing how to handle it. It must always be remembered that sweet clover is a biennial, a two-year plant; that it does not seed the first year, but does seed the second year, and that at the end of the second year the root dies. During the first year's growth it stores up plant food in the root for the following year; the root grows large, meaty, and deep, and in the spring of the second year it comes up early and grows vigorously. It is during this second year's growth that the plant ordinarily gets away from the beginner, and he does not know what to do with it. For this reason many persons report it as a failure, when if they had known the nature of the plant, how to handle it, and how to use it, such failure would not have been reported.

Sweet clover may be seeded with a nurse crop of early oats or barley, just as red clover is ordinarily seeded. However, you should not sow more than a bushel of barley or a bushel and a half of well-cleaned oats to the acre. Too thick a stand of the nurse crop would have a tendency to smother the young plants.

The How, When, and Why of Sweet Clover

When the nurse crop is ripe cut it with a binder, and the binder should be raised high so as not to cut any more of the sweet clover than necessary. Then the same fall the clover, with a good stand, should yield from a ton to a ton and a half per acre of very fine hay. The hay should be mowed, and put up to cure, just as you would the second cutting of red clover in the fall. It should be remembered that at this time the sweet clover can be cut close to the ground without injury to the plant. Our experience has been, also, that sweet clover may be seeded any month in the year, especially in the warmer latitudes, and on land that is so worn out that a nurse crop cannot be grown with success, and on lands that are washed into gullies. The clover may be sown in the fall or early spring without a nurse crop, and without any cultivation, just so the seed is on the ground. If possible, work the top of the ground enough so it will take the seed. Usually it is not necessary to plow or disk the ground, but the main point is to get the ground in condition just so the seed will be covered. Sweet clover and alfalfa both like and grow better upon a firm and solid subsoil with a light mulch on top. Twenty pounds of hulled seed or thirty pounds of unhulled seed should be sown to the acre.

The first year's crop for hay should be harvested by cutting with an ordinary mower, in the fall of the first year's growth. The second year's crop, when to be used for hay, should be cut between the 1st and the



Second year's growth—good ten bushels of seed to the acre

ner: Take, for example, a forty-acre field seeded to sweet clover in the spring of 1913. The whole forty acres may be mown the same fall, or it may be pastured until late in the fall after the nurse crop is taken off. Either the same fall or the spring of 1914 the forty-acre field should be cut in two by a fence, with a gate between. One twenty-acre tract may be pastured and the other twenty-acre tract permitted to go to seed. Enough seed on the twenty-acre tract that is cut for seed will shatter off in the cutting and handling to reseed the land, and as soon as the seed crop is taken off open the gate between the two tracts.

Making Sweet Clover Permanent

If cattle are permitted to graze on the remaining vegetation the tramping of the cattle will deposit enough seed in the ground to make a good stand on the twenty acres that were cut for seed. The other twenty acres that have been pastured, if not pastured too severely, will produce enough seed to reseed itself in the same manner. The next season pasture the tract that was cut for seed and permit the other twenty acres to go to seed. By thus interchanging each field from year to year a permanent pasture can be maintained.

No plant is of any value to the practical farmer unless it serves a purpose on the farm. Sweet clover



Alfalfa in this field. Sweet clover was its forerunner. In the distance across the road is the sweet clover in shocks

that where sweet clover has once been seeded we get our best stands of alfalfa. It is also our experience that after sweet clover or alfalfa has been once grown on land either crop may be seeded thereafter with greater ease and much less seed per acre. This is because the needed bacteria are in the soil. It must always be remembered that the latitude and the character of the soil in which any plant is sown has much to do with its success.

But they do not have all to do with the crop. They are simply points that the farmer must watch and study when he is preparing for results with this or any other crop. Sweet clover should not be left to get along by itself; it needs proper care and will respond to it.

If you have never tried it, do so in a small way until you see what your conditions will do for you; and especially if you have never had alfalfa on the place, sow some sweet clover, and perhaps that will lead to success with alfalfa. It is worth a trial.

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

Ask Farm and Fireside

Farm and Fireside is in a position to answer questions for subscribers. In fact, you purchase the privilege of asking Farm and Fireside when you subscribe. State your question clearly and send your letter to "Ask Farm and Fireside" Department, Farm and Fireside, Springfield, Ohio. Your question will be answered by personal letter if you give your name and address

All other communications intended for the attention of the editors should be addressed, Editorial Department, Farm and Fireside, Springfield, O.

HERBERT QUICK - - - - - Editor

April 25, 1914

Brooks County, Georgia

BROOKS COUNTY, GEORGIA, exports bacon. Where can another county in the United States be found which does the same, unless it possesses a packing house? At the town of Quitman twenty-two wagon loads of cured bacon were sold by the farmers in one day. What other county in the United States can show any considerable number of farmers who bring in wagon loads of cured bacon?

Besides providing for the home larders, this county last year shipped some live hogs, and sold 150,000 pounds of cured bacon at an average price of fourteen cents a pound. A great many pig clubs have been organized, and the production of bacon as a cash crop on the farm is making rapid progress.

This is in the South. To be sure, any Iowa county can probably make the Brooks County figures look small so far as hog production is concerned, but when one thinks of the millions of acres in the South capable of producing cheap pork the figures are startling. Again, hosts of Northern pork producers sell live hogs at eight cents and buy bacon at thirty.

There is something worth studying in Brooks County, Georgia.

How to Swim

GIRLS in the University of Illinois are reported as practicing swimming in their clothes. Boys should follow the same plan. Until everybody can be assured of time to remove the clothing before falling into the water, most of our swimming practice will be a partial failure. Accidents usually happen to people in their clothes.

Farmers and Antitrust Laws

OF COURSE it is impossible for farmers so to be organized as to monopolize their products, restrain trade to the prejudice of the public, or boost the prices of their products so as to increase the cost of living. The main trouble is to secure such concerted action as to effect the economies which are necessary for their own prosperity, and the proper service to the city population in the matter of food and clothing.

In Europe, where the governments labor diligently to induce the farmers to do what the antitrust laws of this country forbid, the chief trouble has been, not to prevent the farmers from restraining trade and boosting prices, but to keep co-operative organizations from "overlapping" and wasting their products in duplication of service.

In those countries where almost all of the farmers have learned to co-operate in marketing, buying, and to some extent in producing, there has never been any price-fixing monopoly of markets by such organizations.

All students of the subject agree that the farmers of this country are weak in organization, and that they should be encouraged to organize. All agree that they have no natural monopoly of anything, and that they cannot build up an artificial monopoly. All agree that the thing they need to do most is exactly the things that the Sherman Law and the state anti-trust laws forbid. All agree that they must do these things or continue to sink in the economic scale until they become poverty-stricken peasants.

The administration of President Wilson has been characterized by intelligence. It is now engaged in the work of strengthening the anti-trust laws for the purpose of restoring competition in industrial lines. But the laws are now too strong for those of us who are weak. If nothing is done to remove from the agricultural life of the land the blight of the antitrust laws, state and national, the administration will not have done a good or an intelligent piece of work.

Agricultural co-operation should be fostered and encouraged by governments, state and national. The heavy hand of the courts must be taken from the struggling co-operators. This administration is looked to for the plan by which this may be done. Agricultural organization should be in the hands of commissions which can base their actions on economic facts and conditions, and whose decisions shall not be reviewable by courts.

The Rural Credit Bill

WHEN Senator Fletcher of Florida, joint author with Representative Moss of Indiana of the Fletcher-Moss Bill for a national farm-land mortgage system, first appeared as the advocate of a better system of land credit, it was at the Nashville session of the Southern Commercial Congress which declared for a mortgage system "in the hands of farmers, operated by farmers for farmers." Mr. David Lubin, who has given his life to the work for better farm conditions, was there and spoke from the same platform for the same thing. Since that time we have had much investigation and study, and the bill for this better system, "S. 4246," is pressed for passage. But Mr. Lubin disapproves of the bill. In a letter to Senator Fletcher Mr. Lubin asserts that the Fletcher-Moss Bill is "in substance a plan for mortgage banks by bankers instead of being for co-operative mortgage associations 'operated by farmers for farmers.'" Mr. Lubin insists that the permissive co-operation provided for in the bill will not be operative, and that the law if passed "would tend to so standardize the farm-mortgage business as to lend itself readily to an understanding between the proposed banks for the general control of terms and interest rates to the exclusion of a voice in the matter by the farmers." "In short," he asserts, "it seems to me that the bill would be apt to create an artificial barrier between the farmers and the lending public."

Mr. Lubin describes exactly the conditions which we all seek to avoid. We desire a perfectly free money market for the farmers. Mr. Lubin's motives are known to be high and unselfish. He is the founder of the International Institute of Agriculture, and the representative in it of the United States. He insists in his letter to Senator Fletcher that the German Landschaft plan would give the farmers a credit system operated "by farmers for farmers," and calls attention to the fact that it gives the German farmers the cheapest mortgage money in the world. "And is not the Landschaft system applicable to the United States?" asks Mr. Lubin. "Can it not be adapted to the needs of the American farmer? What valid arguments have been brought forward to show that it cannot? None that I know of."

This is a new field in which we all may well move with great caution; and it would not seem the part of cautious statesmanship if Congress proceeds to enact the unmodified Fletcher-Moss Bill with the words of warning of so great a man as David Lubin ringing in our ears.

Bogus Farm Help

ACCORDING to press dispatches, the unemployed classes sent by Governor Glynn's labor bureau to the farmers of New York State are not taking kindly to farm work. On the other hand, the farmers are not overpleased with the unemployed. Seventy unemployed men were sent to Fonda, and of these only twenty were willing to accept work from the farmers at farm-hand wages. The other fifty preferred to remain unemployed.

Those who went to work were for the most part so ignorant of farm work that their services were of practically no value. The farmers offered twenty dollars a month to men who had had no farm experience, and twenty-five to those who were not absolute greenhorns. Any farmer knows that there is a good deal of question as to their being worth these wages. The men demanded forty-five dollars a month, and a tailor who had never seen a cow or a live fowl demanded fifty dollars a month, and asked for half of this in advance.

Before condemning these men it may be as well to think of their history and their real interests. This tailor may be better off in a year if he sticks for what he thinks he should receive, and gets a tailoring job in which he can earn it among surroundings with which he is familiar.

Farm hands in large numbers cannot be made by transferring the submerged tenth of the cities to the farms. The attempt to do this is quite as foolish as to transplant unemployed farm hands to the cabs of locomotive engines and the street cars of the cities.

The road back to the land is one of easy stages in which city people must get themselves gradually habituated to the hardships of the farm, its slow financial returns, and its demand for skill. Those who at the same time can realize its enjoyments, its opportunities, and its final rewards will stay on the land. Those who cannot will return.

In refusing to work on farms, many of these unemployed people are wiser than those who seek suddenly to make farmers of them.

Using the Parcel Post

THE farmers are not making the best use possible of the parcel post. That is a recognized fact. They are getting enormous numbers of packages from the cities, but they are not selling by mail. Probably they will do more of this as time goes by. They are not prone to jump into new things very rapidly. Many of them have not as yet thought of making use of the new system of marketing. Some, however, are advertising in city papers, and no doubt are building up connections which will be good for them and also for the city people. Here is a sample ad which we clip from "The Public":

PECANS	10 lbs. and over.....15c
	2 lbs. to 10 lbs.....17c
Ordered with eggs, any quantity 15c	
E G G S	Delivered in Chicago, 33c; Points East of Chicago and West to Denver, 34c; West of Denver, 43c; in Missouri, 31c. Orders must be for six dozen or over
	You Can Trust
R. C. MARR, Glasgow, Mo.	

This advertiser takes no chances as to the honesty or solvency of his customers. He does not send the goods until he gets the money. Any farmer who has the produce might do the same thing. But only one sort of farmer can make a success of it—the farmer who is honest.

Selling goods by mail has its basis in honesty. Mr. Marr's pecans must be good, sound pecans; his eggs must be fresh, clean eggs or he will lose all the money spent in advertising. Advertising is not a means of making sales, but of making friends; not of getting business, but of building business. The farmer who can make and hold friends, and who can build business on every bit of business got, can afford to try out the matter of selling by parcel post.

When Madeline Made Up Her Mind



Drawn Expressly for Montgomery Ward & Company by Orson Lowell

The low prices quoted in Montgomery Ward and Company's Catalogue, convinced her that even small savings and earnings are sufficient to make and suitably maintain a home.

The Big Bargains and Big Values dispelled her doubts and prompted her decision—just as they have for *four decades* prompted the decisions and then *materialized* the fondest dreams of *thousands* of Madelines.

Dealing with Montgomery Ward & Co. makes money *worth* more—it increases the purchasing power of *every penny*—for every article listed in Ward's immense thousand-page catalogue is offered at profit-sharing prices.

Every buy shows a big saving; staples as well as slow sellers are supplied at remarkably reasonable prices. Life's necessities as well as luxuries are furnished at figures that make more purchases possible.

But to fully comprehend the "*bigness*" of Ward Bargains, the superior quality secured as well as the savings realized

must be considered—Ward's Big Book is as famous for the excellence of its merchandise as for its small profits and money-saving prices.

Send for Montgomery Ward & Company's latest and greatest catalogue. Learn the Ward way of shopping—the method of merchandising that makes Mail buying as convenient and satisfactory as personal-purchasing. Let the Big Ward Book lighten the burden of home-building and lessen the strain and struggle of "money-making" by lowering living costs.

Send now. Use the coupon opposite.

MONTGOMERY WARD & CO.

New York Chicago Kansas City Fort Worth Portland

Montgomery Ward & Company, Dept. MM 28
 Send me free a copy of your new Catalogue. All I agree to
 do is to look it over.
 Name.....
 Street.....
 Town.....
 State.....
 R.F.D.....



Sooner or Later

drugging, even in its milder forms, clouds and mars the fairest complexion.

Coffee drinking isn't considered drugging by most people, but physicians know that the average cup of coffee contains from 2 to 3 grains each of the drugs "caffeine" and "tannin," that affect stomach, liver and kidneys, disturb circulation and work havoc with natural nerves and a healthy skin.

Every woman who values a clear complexion, soon finds that a change from coffee to

POSTUM

makes rapidly for personal comfort and wholesome beauty.

Postum is a pure-food drink, made of prime wheat and a small percent of molasses. It tastes much like high-grade Java, but is absolutely free from caffeine, tannin, or any other drug or harmful ingredient.

Postum comes in two forms:

Regular Postum—well boiled, yields a delightful flavour. 15c and 25c packages.

Instant Postum—a soluble powder. A teaspoonful stirred in a cup of hot water dissolves instantly. A delicious beverage. 30c and 50c tins. The cost per cup of both kinds is about the same.

"There's a Reason" for POSTUM

—sold by Grocers everywhere.

WHEN Timothy Jimson hez a good crop, he's a' administration man, but when crops is bad, he's agin' the gov'ment. I say principles is one thing, an' pocketbook another. Both of 'em's in right when you smoke VELVET.

Velvet Joe



VELVET, The Smoothest Smoking Tobacco, is Kentucky Burley de Luxe with an aged-in-the-wood smoothness. Full weight 2 oz. tins, 10c. Coupons of value with VELVET.

Farm Wit and Wisdom

Condensed and Modified From Various Sources

WHY is alfalfa or sweet clover good for the soil? Here is a fact that will show one reason. The roots of alfalfa run down into the earth much deeper than grains and grasses, sometimes twenty to thirty feet, depending on the conditions. After an old alfalfa field is plowed up the first crop grown on it is apt to suffer from drought if the climate has been niggardly of rainfall. This is owing to the fact that the alfalfa with its immense root system has used up the moisture and almost literally wrung the soil dry. It has brought up soil water from great depths. And soil water always has mineral plant food in it. This has been brought up too, and helped to make crops of alfalfa. Some of it will be found in the big roots left in the soil, making the field richer than it would have been with a shallow-rooted crop.

DON'T you wish now that you had selected your seed potatoes last fall and stored them in crates? The best thing to do now is to pick out good, smooth, firm, sound potatoes of good shape for planting. Give them the formalin treatment for scab before cutting. Then spread them out in a light place so they will "green up" nicely before planting. Prepare the land properly, and select the seed at harvest time next fall for next year.

WHERE the soil in the field of winter wheat is cracked or heaved by the frost it may pay to do something to remedy the condition. Cracked soil loses moisture rapidly. Where the soil is fine loam or sandy, rolling it in the spring has been found in some localities to add four to five bushels to the acre in yield. Where the soil is so firm that the roller will not fill the cracks harrowing is recommended. These suggestions are of especial value in the Midwest, but are valuable everywhere.

IRRIGATION is sometimes made difficult by too much rain. The flood waters collect in the irrigating ditches and do much damage. A Western inventor has devised a plan for avoiding this. He installs a little machine which, when the water gets too high in the ditch, operates a floodgate, and spills the flood on the wayside, where it runs off in the natural channels.

A SECRET long cherished in the War Department—according to a Cincinnati paper—is that the bee is useful as a carrier of messages. He will go back to the hive when liberated. The messages may be printed on the insect's wings! All that is necessary is for the commander of an army to choose a battleground with a bee farm a few miles in his rear, carry a printing press which will handle bees instead of paper, and stay there all through the battle. No wonder this "secret" was so long "cherished!"

THE New York Skin and Cancer Hospital has issued a bulletin telling people how to co-operate in preventing many deaths from cancer. "In case of cancer," says the bulletin, "the patient can help greatly in its recovery. Persons suffering from lumps, mysterious pains, and sores should immediately consult competent medical advice. These symptoms are generally, though not always, nature's warning of cancer." Many cases which reach the hospital are already beyond medical relief. Often a simple operation would have effected a cure in the beginning. The new use of radium in such cases only makes this advice more important.

THERE is a species of larkspur growing in the forests of the mountain regions which is very poisonous to cattle. The Forest Service uses what are called "drift fences" to "drift" stock away from ranges which are to be protected, and also for the making of counting stock easier. A drift fence in the Fishlake Forest in Utah, which is five miles long, was used to keep cattle out of a larkspur-infested region. Horses will not eat this plant, and while cattle were kept on one side of the fence, horses grazed on the other side. During June, before the fence was built, sixty cattle died of larkspur poisoning. It is estimated that the fence, costing \$740, saved cattle worth \$2,500 in July and August.

EZRA TUTTLE is a Long Island farmer. He followed to market a bushel of beans which brought him 30 cents a bushel, and found that the consumer paid \$4.80 for them. The Long Island farmers have decided to maintain a bureau of markets for the purpose of getting some, at least, of this difference between \$4.80 and 30 cents. Ezra Tuttle is at the head of the movement.

THERE were about 395,000 more horses in the United States on the 1st of January than three years ago, worth on the average \$1.45 a head less; 63,000 more mules,

worth 46 cents less; 240,000 more milk cows, worth \$8.92 a head more; 175,000 less other cattle, worth \$4.77 more; 1,763,000 less sheep, worth ten cents more; and 2,245,000 fewer hogs, worth 54 cents more. The crying need of the census is an enumeration of the dogs and cats. A census of the dogs and cats of Europe shows eight million cats in England and only half a million in Germany, while England has four million dogs and Germany only a million. The Germans are more economical and progressive than the English.

How can a volcano in Alaska or Japan affect the corn crop in the Mississippi Valley? "It can't" would have been the answers our teachers of twenty years ago would have given. But there is another answer ready for acceptance now. Professor Humphreys of the Smithsonian Institution has studied volcanic eruptions as shown in records as far back as 1750, and finds that the enormous amount of dust thrown into the air by great eruptions cuts off the sun's heat and causes abnormally cool weather. So the corn may be frosted next fall because of the eruption in Japan in January.

AND now Texas is sitting up and taking notice of the fact that she can make cheap and good pork. G. H. Alford in the Houston "Bulletin" states it as a fact that while Texas sends millions of dollars to other States for pork she could produce all she needs at a cost around three cents a pound. That is the cost given by Dan T. Gray for the making of Alabama pork under the best conditions. All over the South the best conditions call for growing the hogs on forage—Bermuda grass, oats, rye, rape, vetch, bur clover, red, white, or crimson clover, peanuts, chufas, sweet potatoes, artichokes, velvet beans, cowpeas, and other special crops. Forage most of the year is the secret.

THE prairie dog would be a profitable food animal, says Doctor Fisher of the U. S. D. A., if people only appreciated its merits as meat. Why not? Squirrels, woodchucks, and muskrats are rodents of proved value as food. The prairie dog is



Used to be when a young feller took to wearin' a white shirt and store clothes, we all thought he was plannin' to drop farming and go to the city. Now 'tain't a sign of nothin' but the parcel post

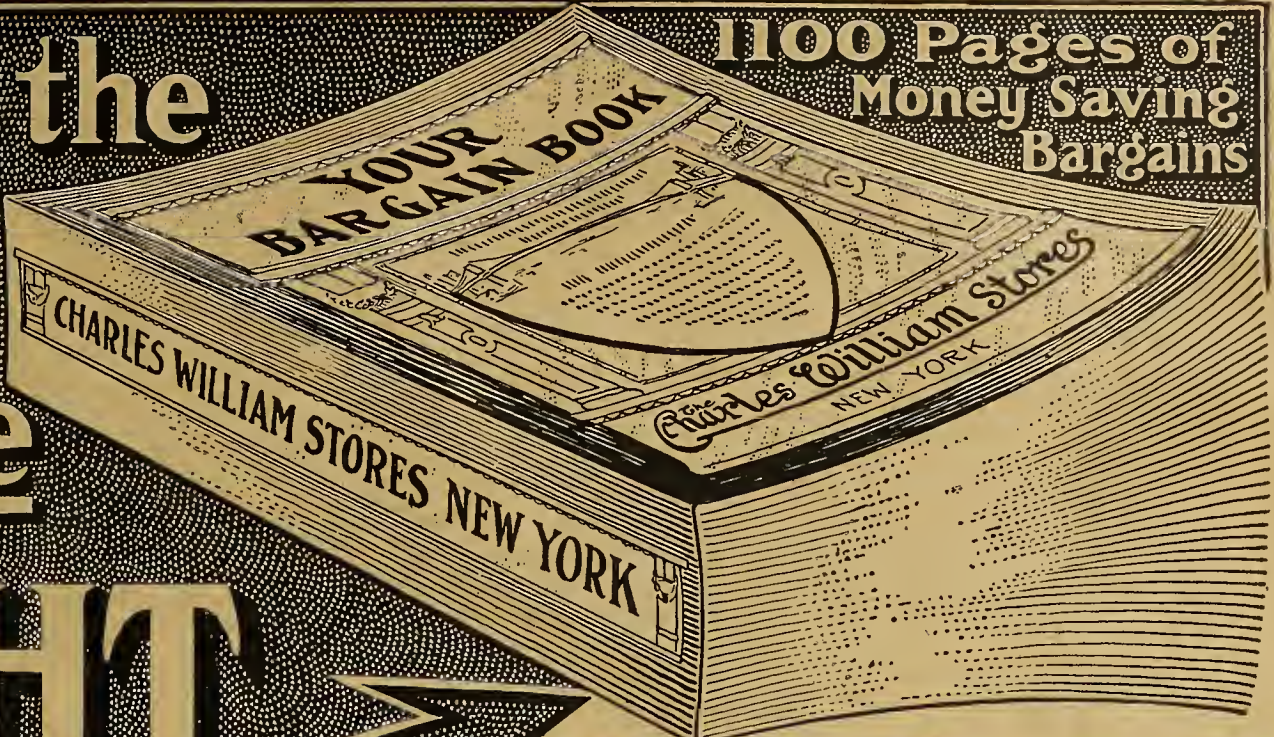
a rodent which eats nothing but the most wholesome food. It's all a matter of the way one feels about the matter. The Japanese are a very cleanly people, and dog meat brings a much better price in the Japanese markets than pork; and the French markets dispose of thousands of carcasses of horse meat every year. And everybody knows that the French are the food artists of the world.

WE ALL know that milk fever can usually be cured by the air treatment. Have you a milking tube on hand if there were a case in your cow stable? An ordinary bicycle pump will furnish the rest of the outfit needed.

A LAW is proposed in Maryland for the state production of lime for agricultural uses, and its sale to farmers at cost. Maryland has plenty of limestone, but the proposal is to make the lime from oyster shells, which are a by-product of the oyster industry, and can be obtained at low cost in enormous numbers. This source of lime is available to all the Atlantic and Gulf States, not only in the oyster shells derived from present-day oystering, but from the prehistoric shell mounds so common on the Gulf coast. No State east of the Mississippi can do a better work for agriculture than to assume as a public duty the task of furnishing cheap lime.

CHOOSE a good female pig or two from that litter farrowed by a sow that always brings a nice nestful of little porkers. Keep them for brood sows. A good male from such a litter will also work toward herd improvement. Mate him with other good sows of no relation to him.

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5c Per Double Roll and Up
Brand new stock, latest New York designs, from 5c a double roll up. At our prices you can paper a room 10 x 12 x 9 for as low as **49c**
Big Sample Book Sent Free. Gives large assortment of handsome patterns to choose from. Tells how to measure rooms. Shows samples as cut from stock.



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The greatest of all modern separators—easiest to run—easiest to keep sweet and clean—lifetime guarantee. You can get all the cream with the Maynard, Jr., and have it any thickness you want by regulating cream screw. This separator is built for hard service and is fully guaranteed in every way. If not satisfactory your money back. We allow **60 Days' Free Trial.** Our great catalog fully describes this and four larger sizes of Maynard Separators.
No. 34A2—200 lbs. capacity per hour. Freight paid price **\$23.50**

Evercote House Paint

63c A GAL. AND UP FOR BARN PAINT—FREIGHT PAID. Sold in six standard shades. Unexcelled for barns, structural iron grain elevators, etc. Will not peel, blister or rub off. You can paint a big barn, 2 coats, for only \$15.



98c a Gallon House Paint and Up Freight Prepaid
Guaranteed. Every gallon will cover 250 sq. ft. of surface if properly applied. You can paint a house of average size for only \$9.70—2 coats. We guarantee the materials and that our paints will give satisfaction. Free Paint Book and Color Cards, showing 180 samples.



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Automatic Lift with Full Set of Attachments
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Freight Paid Guaranteed 20 years. Has ball-bearings, stand, belt-retaining guard and automatic bobbin winder. The wood work is oak, golden finish. We allow 30 days' trial on this or any machine you select from our catalog. Our prices save you one-half, and we pay the freight. Write for our Catalog. No. 14A629. Sewing Machine—Freight paid east of Rockies only. **\$15.60**



Parlor Rocker

Freight Paid **\$5.85**
Made of selected Birch, with highly polished mahogany finish. Genuine hair-filled loose cushion, covered with mercerized, plain, green velour. Tied with mercerized cord, with tassele. Heavy seat frame. Legs bolted on. Width 24 1/4 in., depth 20 in., back 20 1/2 in. high above seat.
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Girl's Dress

39c Postpaid. Made of fine linene in popular Bulgarian blouse style and trimmed with striped percale. Wide belt, kilted skirt. Colors: Tan with red trimming or Copenhagen blue with navy trimming. Sizes 6 to 14 years. State age and color.
No. 24A800
Prepaid Price 39c



Acme Junior 16c

26 inch Hog Fence No. 28A10. Most satisfactory fence for both level and uneven surfaces made. Has bottom bar of wire woven in and stayed 6 inches apart. Absolutely prevents hogs from going under. Can also be used as a combination Stock Fence by running one or more wire above it. We pay the freight on 20 rods or over.



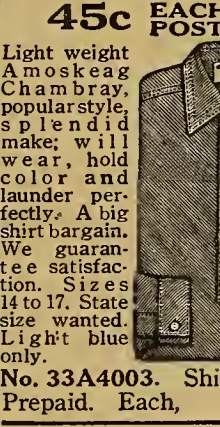
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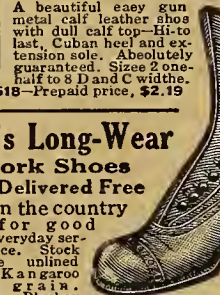
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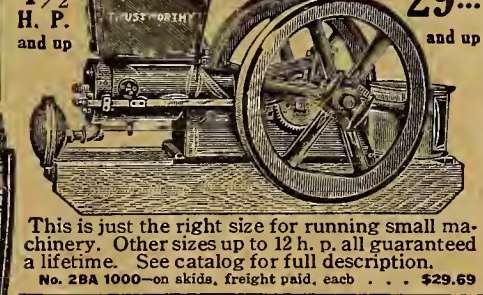
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The Market Place

Rise in Wool Expected

By John P. Ross

THE month of March this year maintained its reputation for violent changes as much in the sheep market as in the weather. Though rather dull for the first three weeks, a lively demand for sheep of all sorts and sizes sprang up during the fourth, and prices rose till they became the highest since last April. In face of the fact that 101,971 sheep and lambs came to Chicago during that week—and big receipts were common to nearly all the markets—top sheep ran up to \$6.85; bulk, \$5.75 to \$6.40; top lambs to \$8.50; bulk, \$7.75 to \$8.25. This was largely due to the improvement in Eastern demand. Pittsburgh and Buffalo both paid \$8.75 for good fat lambs.

Still it is hardly safe to conclude that prices will go much higher just now, or even that they will continue quite as high; for though reports from Iowa, Colorado, and most of the Western States are to the effect that the bulk of their sheep and lambs have been marketed. Texas has a lot of fat sheep to send in, and lambing has been good almost everywhere. Lamb and mutton prices are as near to those of cattle and hogs as desirable, and they should not go much higher just now.

Wool is growing more popular as a sheepman's asset. Practically all of the old clip is in the hands of the manufacturers, and the world-wide demand would seem to indicate that it will not be good policy to hurry the new clip to market. Expert opinion everywhere looks for a rise in prices.

Recent weather has favored the growth of the young grass, but it is likely to be washy; the sheep, therefore, and especially the ewes with lambs, should at first be let out on the pastures only for a few hours each day, or a dangerous amount of scouring may ensue. A little good hay and a light ration of grain, with a little linseed meal thrown in, will act as a preventive, and will pay both for this reason and as a great help in the growth of the lambs.

Tone of Hog Market Improves

By L. K. Brown

A GENERAL improvement is noted in the hog markets. Although there has been but little advance in price, a firmer tone has developed. This is caused partly by seeding and planting time; growers are too busy in the fields to haul hogs to town. Moreover, the heavy hogs are pretty well cleaned up and fall pigs are hardly ready for market, causing a small decline in the supply for the killers to buy.

The quality of the offerings has remained good, and the average weight heavy. With the appearance of warmer weather a change can be expected with the heavy hogs becoming poorer in quality and getting fewer in numbers. The light hogs of late summer and fall farrow will then sell at top quotations. Already there is a desire to purchase the prime 200-pound stuff before the heavy packing grades are bought. This is working the price range out to a wider spread.

Strong Demand for Breeding Sows

Considerable business in prime light hogs is apt to be transacted above the \$9 value, but it is doubtful if the packing grades reach that figure for any length of time unless the supply proves to be shorter than expectations.

Judging from demand for sows there seems to be a general desire to increase hog-breeding operations. The demand for the stock from pure-bred herds of all breeds has been the strongest in years, and many county organizations in the Northwest are making purchases in car lots. This may mean an increase in the 1914 crop over the 1913, but it is doubtful, as too many females died or were sold last fall.

Provisions have been slow sellers, and have not responded to live-hog price movements. Packers seem quite contented with this condition, and look upon their stocks of meats with no alarm, as they expect to be able to move them presently at a good advance over the price at which they were celled last winter.

Stick to Diversified Farming

By W. S. A. Smith

THERE is nothing in sight in the cattle situation to warrant elation on the part of the feeder. We have now passed through a marvelous winter in the Middle West. Although it has been conducive to excellent gains in cattle, it has had a bad effect on the market. At the end of March we commenced our spring work. The weather was mild and fresh eggs were selling as low as 18 to 20 cents per dozen. Is it any wonder that with small receipts of cattle the market is dull and the beef market in a bad rut?

As I have often pointed out, there is a

great object lesson in the difference between making beef as a speculation, by figuring on a rising market, and making beef as a side line, the main object being fertility. The former class is likely to lose heavily this year, and the latter can stand a loss and still be ahead.

Still we have the prospect that with an early spring there will be work in a few weeks for the army of the unemployed, and this alone cuts a large figure in the demand for beef.

Go in for Production, Not Speculation

Andrew Carnegie says, "Put all your eggs in one basket and then watch the basket." This may be true of the farm as a whole, but we cannot afford to run to one kind of farming to the exclusion of all others. None of us know whether live stock or grain will pay best next fall, and it would be the height of folly just because corn is worth 60 cents a bushel to put the whole farm in corn. It is also a mistake to strain your credit buying stockers and feeders at the present prices for fear your grass in early spring will go to waste. The climatic conditions are never certain, and with a new political party in power the business of the country is bound to be affected. Whether for good or bad as regards the farmer I do not know, but it would seem a pretty wise thing to confine yourself to real production rather than speculation. The more money you judiciously put into your own farm the more you will get out of it.

Worth Thinking About

THE average farmer in the United States, according to government figures, tills a farm of 138 acres and has an average investment of \$6,443. Of this investment his buildings represent \$994; his implements and machinery, \$199. There is an average mortgage on this average farm of \$1,715, bearing an average interest of six per cent. His gross income is \$980.55, and out of this he pays an average expense account of \$340.15. His interest on the mortgage averages \$102.50, so that his income after all charges are deducted is \$537.50. On this he must live, educate his family, and have fun—average fun.

The strain of alfalfa known as South Dakota No. 12 has purple flowers interspersed with white and yellow ones, and while its history is unknown it is probably a good deal the same as that of the Grimm alfalfa. It has been grown in the dry, cold climate of northwestern South Dakota for a long time, and is the commonest hardy alfalfa in that State. It seldom winter-kills. South Dakota seems to be forging ahead of many other States in the growing of alfalfa. At least, if the difficulties concerned are considered this is true.

A SCHOOL survey of five counties in Colorado tells the same story with which we are familiar wherever the rural schools are investigated—"inefficiency, lack of community pride, and waste occasioned by the small school-district units." Moreover, the richest communities seem to have the poorest schools, while the struggling dry-land regions have some of the best rural schools in the State. Sometimes a struggle is a good thing for a community.

THE United States Government agents have killed 400,000 prairie dogs in the national forests of Colorado and Utah. The work cost \$12,000, and saves enough pasturage to support 15,500 sheep or 1,800 cattle. This is at the rate of over six dollars a head, and making a range for cattle at that price is cheap in view of the fact that the rodents won't have to be killed again. The poison used is strychnine mixed with a starch mucilage, and so applied to oats that the kernels are finely coated. It kills ground squirrels and other rodents also.

THE soapweed, or bear grass, of the semi-arid West is now cut and marketed for its fiber, and some by-products made from it. The Obar (New Mexico) "Progress" editor states that a load of it which was unfit for shipping and dumped near his office is greedily eaten by cattle, the heating of the mass in the pile having softened the spines. Just what the feeding value of it may be is not known, but the New Mexico editor may be right in his prediction that it may sometime be cultivated in the Southwest as a farm crop. Others in that region tell of cases of cows' eating the soapweed after it had fermented in piles. Looks as if it might make silage.

DOCTOR BARKER of Harvey, Iowa, writes us his views on the dog question. He thinks that if the dogs instead of the sheep were belled it would help solve the problem. His proposal is to require a bell to be put on every dog. If we are permitted to select dogs and the bells we favor this. There is a bell at Moscow, Russia, that weighs about fifteen tons. A bell like this should be put on four out of every five dogs in America. The way to put it on is to elevate the bell to a height of about ten feet over the dog and let it drop.

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Live Stock and Dairy

Care of the In-foal Mare

By J. P. Ross

BEFORE going into the breeding of heavy draft colts it is necessary to determine at what time the farmer can best dispense with the services of his mares. The period of gestation varies between 326 and 390 days, but usually the birth may be looked for between the 330th and 360th.

The supply of fodder and the arrangement of his yards and buildings will have much to do with deciding whether he will have the foaling take place soon after the heaviest of the winter work is over, while how well he is provided with pastures will determine whether spring foaling will suit him best. As a rule the latter period is the better for both mare and foal, is more economical in food and labor, and is more likely to keep the mare in good condition for the fall and winter work. Even if she is again pregnant her usefulness as a worker will not be interfered with, for it may be taken for granted that she may be kept to any labor to which she is accustomed to within a month of foaling, and to light work until milk is found in the teats, when it is safer and more humane to allow her to cease from work. If the foal is dropped in April or May—the latter is preferable—her time will be for the most part spent on pasture with her foal. Some dry ration will be necessary to insure a sufficient supply of milk. Care is needed to have the mare in the best condition to pass safely through this time of trial, though mares generally have less trouble in this respect than other domestic animals, and are less liable to need help. If, however, after giving nature a fair chance, it becomes evident that something is going wrong, if no one on the place has had practical experience, it is best to call in a veterinarian or some neighbor who knows what to do and how to do it, for to help a mare in this extremity requires strength, nerve, and knowledge. A good mare is too valuable to allow a false economy or too much self-confidence to endanger her or her foal.

How is She Fed and Cared For?

Having the mare in proper condition at this time depends greatly on how she has been fed and cared for during pregnancy. The amount of labor to which she may be subjected has already been mentioned. As to her lodging: for the last three months of her time she should have a well-ventilated, well-lighted, and well-littered loose box to avoid damage or annoyance from other horses. It should, if possible, open into a yard or small paddock, for after foaling she and her young one will remain together till spring work demands her services, and both of them must have exercise. Of course this refers to winter foaling.

If the event is to take place in the spring, when the other horses are out at grass, it is safest to keep her separate in a paddock with a shelter hovel, as neither she nor her colt should be subjected to cold and heavy rains. Light showers won't hurt them.

The question as to the proper feeding of brood mares has been treated very voluminously, but it is only possible here to give the conclusions arrived at by much experimenting and some practical experience. Hay, oats, bran, and linseed meal constitute the most desirable parts of their bill of fare. Corn is too fattening, but if oats cannot be had it may be given. It is best crushed and mixed with chopped hay slightly moistened to insure more perfect mastication and to prevent clogging in the bowels. In fact, all grain feeds are best given in this way, as some horses are greedy and apt to bolt their food. Barley, peas, and rye are often used as horse feed, but oats are the best for pregnant mares, as the coarseness of the husk insures better digestion, but since horses like variety in their food, barley or peas will provide it. Rye is objectionable for pregnant animals of all kinds.

Use the Very Best Hay

Since hay forms so large a part in the equine bill of fare, some thought about it is specially desirable. Almost any kind of hay may be used so long as it is the brightest and best available, and as far as possible well cured and free from dust. Meadow, prairie, clover, timothy, and alfalfa are all admissible, but the three first are the favorites for breeding mares. All horses seem to enjoy alfalfa, and are apt to eat it too voraciously, and so bring on kidney troubles; and timothy is sometimes objectionable on account of its hard stems. Over-feeding with hay is a common mistake, a certain fixed amount should be determined on, proportioned to the other feed, and adhered to. On account of the great bulk of a feed of hay which will satisfy a horse, and the longer time it takes to digest than its feeding equivalent in grain, many horse-men prefer to make it the last meal of the day for horses at hard work.

A great amount of experimenting has

been done in order to arrive at some definite ideas as to what amount of food is sufficient to keep heavy draft horses in the best condition. By these experiments, combined with the results of practical experience, the conclusion has been arrived at that 1 pound of grain and 1 1/4 pounds of hay per day to each 100 pounds' weight of the horse is sufficient to keep him in good condition while at moderate work. Of course this must not be regarded as a hard and fast rule to be strictly observed, for horses vary much in their digestive and assimilating powers, but it comes near enough to form a very useful guide, and is not intended to do away with the necessity for careful observation and the use of common sense on the part of the caretaker in the feeding of each individual horse. Special attention to peculiarities in this regard is desirable in the case of brood mares, as so much of their well-being depends on their condition at the time of foaling. Plenty of pure water, a little salt, and good but gentle grooming to get rid of superfluous hair and to keep the pores open are as good for the brood mare as for all animals, man included.

Dad's Cows

By Chas. B. Driscoll

"O'BILLY, go and call the cattle home, and drive the cattle home," my father said to me. My father's words were loud and full of foam, and "Hurry up!" quoth he.

The Texas cows were feeding on the sand, and grazing on the sand, and gazing at the sand, as happy as could be; but when they lapped me loping o'er the land—they blowed, and left me quite at sea.

Oh, why did Father say he'd pull my kinky hair, my reddish, sun-baked hair, my long and unkempt hair; why did he say to me, "If you don't want your panties whaled for fair, just get them cows, d'ye see?"

I chased those cattle through the brush and weeds, the cruel, thorny weeds, the cruel, dusty weeds. We called them milch cows, too! Six cows—ten quarts—not quite sufficed our needs; no wonder I felt blue!

Those were the days before the Babcock test, before the T. B. test, before most any test had seen the light of day, and my poor daddy did his level best in crude, misguided way.

What my dad didn't know about a farm, and cattle on a farm, and money on a farm, if bound a tome would be. And still the nighthawks hear the wild alarm, and hear Dad calling me.

Why is This Thus?

AND what is the reason of this thyness? The Emporia (Kansas) "Gazette" repeats Artemus Ward's well-known question as related to the spread between bacon and hogs. It is pointed out that bacon now sells to the consumer for thirty-five cents a pound; while hogs bring seven or eight cents. Probably the "Gazette" quotes the local price in Kansas, which is lower, of course, than at the stockyards; but the farmer's hogs are not at the stockyards, but on the local market. The "Gazette" quotes a strong price on bacon—perhaps the local price, also. At this writing good bacon can be bought by those who care to shop for it for twenty-five cents. The difference between bacon and hogs, therefore, is not less than sixteen cents a pound, and as ordinarily bought it is at least twenty cents. Fifteen years ago, according to the "Gazette," the difference between hogs and bacon was only seven or eight cents—that is, when hogs were worth four cents bacon was sold for eleven. "Why is this thyness?" asks the "Gazette." It certainly ought not to cost two and a half times as much to make bacon as it used to cost. We are assured that meat-packing has been reduced to a more complete science than ever before. Why does bacon made under such conditions cost three times the price of hogs? The "Gazette" suggests that the fact that Edward Morris the packer has died leaving a fortune of \$20,000,000 may have something to do with it. Perhaps. And perhaps the number of men making a living out of the retailing of bacon may account for some of it. Anyhow, it shows that the high cost of living on bacon can be charged up to somebody else than the farmer. Bacon would sell now for fifteen cents if retailed as close to the price of hogs as it was fifteen years or so ago.

Most hogs die violent deaths. Of those dying of disease nine out of ten in the corn belt pass away of cholera. Therefore, if your hogs are dying and you don't know the cause, there are nine chances out of ten that it is cholera. If your neighbor's hogs are dying of anything but the butcher's knife it is a nine-to-one probability that they have cholera, and that your premises are in danger of infection. You won't make any mistake if you telephone for an expert with vaccine in either case.



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BECAUSE WITH YOUR INCREASED milk flow your greater waste of cream, without a good cream separator, must run into more money than you can afford to lose.

2nd If you have a very old DeLaval or an inferior separator whether new or old—

BECAUSE THE LOSSES OF THE POOR separator from incomplete skimming, and the tainted product of the hard-to-clean and unsanitary separator mean most when your volume of milk is the greatest.

BECAUSE AN IMPROVED DE LAVAL Cream Separator is so much simpler and more easily handled and cared for than any other, and you can't afford to waste time these busy days fussing with an inferior or half worn-out machine.

BECAUSE OF THE AMPLE AND "more than advertised" capacity of the De Laval, you can separate more quickly and save time, when time means most to you.

BECAUSE THE DE LAVAL SEPARATOR of to-day is just as superior to other separators as other separators are to gravity setting.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

The De Laval Separator Co., 165 Broadway, New York
29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

A Farmer's Horse

when idle is a loss. It's keeping him busy that pays.

With a shoe off or a sore foot he's crippled.

"Capewell" nails have a lot to do with keeping hoofs in prime condition and the horse "on the job."

They hold shoes where others fail. Fifty percent stronger than other brands.

Always tell your shoer to use "Capewell" nails—it pays.

THE CAPEWELL HORSE NAIL CO.
HARTFORD, CONN.

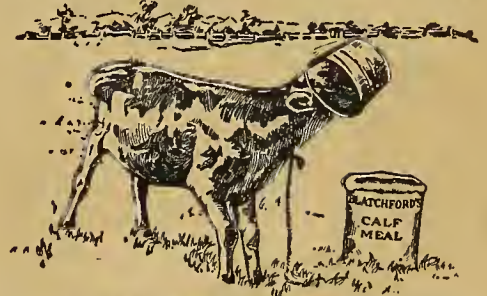
Largest Makers of Horse Nails in the World

The check mark on the head identifies "The Capewell." Best nail at a fair price—not cheapest regardless of quality.



"Licks the Bucket Clean" Blatchford's Calf Meal

As good as New Milk at half the Cost.

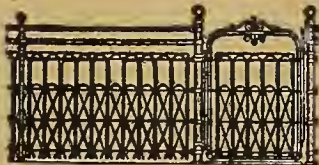


100 pounds makes 100 gallons of Perfect Milk Substitute.

Send for pamphlet, "How to Raise Calves Cheaply and Successfully Without Milk."

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BLATCHFORD'S CALF MEAL FACTORY
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And why not, when the famous "toastie" flavor begins operations!

There's a deal of skill required in cooking and toasting these thin bits of corn so that every one of the millions of crinkly flakes has the delicious Toasties taste that invites one to call for more.

Post Toasties come in sealed packages—fresh, crisp and appetizing—

Ready to eat with cream or good milk, and a sprinkling of sugar if you like.

Post Toasties

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69 varieties. Also Small Fruits, Trees, etc. Best rooted stock. Genuine, cheap, 2 sample vines—10c. Descriptive price list free. Lewis Koesch, Box H, Fredonia, N. Y.

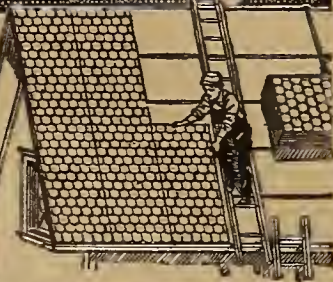
LOOK! READ and save money. We have a big stock of Apple, Peach, Pear, Cherry and Plum trees, at 3c and up. Shade trees, Berry plants, Roses, Shrubs, etc. Seed Corn, Potatoes, and Oats. Formerly at Moscow, but have better facilities now to serve our patrons. Send for Catalogue **ERNST NURSERIES, Eaton, O., Box No. 15**

Handle 4 1/2 ft. **A 12 Year Old Boy or Girl** can do more and better work with this **HANDY CULTIVATOR AND WEEDER** than three men with common hoes. Price \$1.00 express prepaid. **AGENTS WANTED. ULRICH MFG. CO. 7 River Street Rock Falls, Ill.**

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You can lay an Edwards Steel Shingle Roof ten times as easy and ten times as quick as wood shingles. Shingles come in big sheets, 100 in a cluster. Lay them right over old roof or sheathing if you like. No painting, no extras to buy. Everything furnished.

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408-458 Lock St. Cincinnati, Ohio

The Headwork Shop

Thirteen Successful Scarecrows for the Field and Garden

Clock and Washboiler Do It

A SCARECROW that I never saw duplicated, and one that I used successfully for many years, consisted of a strong post with a shelf eighteen inches from the top. On this shelf I put an old eight-day clock. Inverted over this and protecting it from storms, as well as accentuating the sound of both ticking and striking, was an old tin washboiler.

To the handles of the boiler I attached long red and white cloth streamers which fluttered in the breeze. But whether the wind blew or not, there was always the sound of the clock. It required attention only once a week and could be heard all over the farm. As a timekeeper it has long since outgrown its usefulness, but the birds have never failed to recognize it as a warning against trespassers.

JAMES H. KNOWLTON.

Looks Like a Hunter



HERE is a scarecrow that I have used two years, and I have never been bothered with crows or hawks in all that time. Take an old tin bucket

and make holes for eyes and mouth so it will resemble a man's head. Then make a skeleton framework of old boards as illustrated. Make a wooden gun, and to the barrel attach two small mirrors. Then make a small wooden windmill which is to go on the other hand. Drive stakes in the ground on which to nail this scarecrow and dress him up to look like a man.

The mirrors shine like a gun barrel and the windmill makes a noise. The scarecrow looks like a hunter, and has kept the crows away from my watermelon patch. They do not seem to have discovered yet that it is only a dummy.

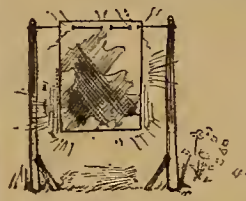
RUDOLPH BALLOUN.

Faithful After Death

MY ONLY real successful scarecrow for protecting my melon patch was tried after I had tried many other things and had given them up. I happened one day to find the whitened skull of a mule that had died some years before. Out of mere curiosity I put it on a pole and stuck it in the middle of my acre melon patch. The crows never bothered the melon patch again; in fact, I have never seen a crow in sight of that field.

BOB ALLEN.

It Glitters and Squeaks



THIS scarecrow is very easy to make. Take a large piece of bright tin and punch holes near the end about an inch from the narrow end. Run a stiff wire through

all these holes, and support the wire between two strong stakes. Set it in the field so that the prevailing winds will strike the flat side of the tin. When the wind blows, this scarecrow will glitter and squeak, and you will never see a crow in the field. This scarecrow has never failed me.

GEORGE MORSE.

Conceal the Image

FOR many years we have used different scarecrows and kept changing them because we have found that as the crows become used to a certain kind of scarecrow they cease to be afraid of him. So the best way of scaring crows is to give them something new that is hard for them to understand well.

The scarecrow that has been most successfully used during the last two years has saved so much of my corn that I have been able to build a silo. I built the image of a man, and to hide the face, which a crow looks for first, I used a large slouch hat. Its feet were encased in a pair of old rubber boots. Now, instead of standing this scarecrow up in the center of the field, which contained four acres, I placed the obliging chap in a crouching position behind the one large stone the field contained. I put an old muzzle-loading shotgun against his shoulder, the barrel resting on the stone, and he

looked like the real thing. Not one hill of corn was pulled up all that season.

That was two years ago, and it has done equally good service since. For fields not having large stones I cut down a few bushes to partly hide the man and his ever-ready gun. **ERNEST A. DAVIS.**

My Tin-Can Scarecrow

TAKE a pole fifteen feet long and nail a stick across the top. Now get half a dozen bright tin cans, cut out the ends, and flatten the sides a little so they will catch the wind. Tie them to the crosspiece with strings three feet long. Set the pole in the field where the birds are most troublesome.



For crows and hawks this is a sure scare, as the cans flash in the sunlight and make a clatter even in a light wind. The sketch explains the construction.

MRS. H. E. BEHYMER.

Dead Crows Pull No Corn

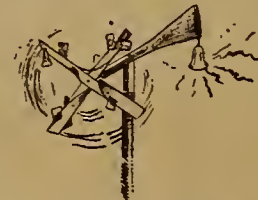
MY MOST successful scarecrow is based on the principle that a dead crow will not pull corn. I had a field that the crows pulled up twice. I planted it again, and when it was coming up nicely I took twenty eggs and, with a large needle, broke a small hole in one end. I dropped in a small amount of strychnine and stopped up the hole with some dough. Taking the eggs to the cornfield I scattered them around where the crows had eaten up the corn so many times.

In about an hour I heard a terrible commotion in the field. I hastened over and found a dozen crows on the ground dead. A few were flapping around, and about a hundred were circling about in the air. Such caw-cawing I never heard before nor since. I quickly killed all the crows on the ground that were still alive. Then I tied each crow to a long pole which I stuck in the ground so the dead crows stayed in the breeze. Inside of half an hour not a crow was in sight. They have never bothered my corn since, and always fly around that field.

T. J. HUTSELL.

Windmill Works Best

THE most successful scarecrow we have ever used is a windmill. Crows or hawks will not come near it. The drawing shows how a small one-foot mill is made, but it can be any size.



Take a straight-grained stick one inch square and a foot long. Make an inch mortise, one-half inch deep, in the center of it. Hold stick, mortise up, in the left hand and whittle down the right-hand edge from mortise to end of stick. Change ends and repeat. Then turn stick over and whittle that side the same. Make another fan just like it. When the two are mortised together they will make a four-bladed fan one foot across. Fasten together with small nails. Bore a small hole through center of mortise; put nail through for axle; drive this into end of rudder, which should be about eighteen inches long, fan-shaped at the other end; put another nail through center of rudder where the mill will balance, and the job is done. Hang a small bell to end of rudder. Paint the rudder two or three bright colors and tack bits of bright tin to the fans. Then set the windmill on a pole in your field and see the crows fly around and caw. **CLAYTON W. STAFFORD.**

Crows Avoid Smoke

WHEN I was a boy Father planted a large field of corn, in the center of which was the stump of an old tree that had been broken off by storms years before. We had tried many different kinds of scarecrows to keep birds from pulling the corn, and as an experiment Father set fire to the old stump. It did not burn fast, but smoldered for some days. Not a spear of corn was pulled in that field.

I use the same method now by taking an old post and driving it about the middle of the field. Then I pile old straw and chips or sawdust around the post and set fire to it. Probably the crows associate the smoke from the post with the smoke of gunpowder, but whatever the explanation it is most successful.

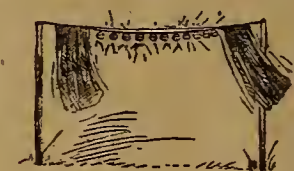
LEON WAGNER.

Mirrors Back to Back

TAKE two mirrors, the larger the better, and fasten them together back to back. Attach a cord and suspend them from a pole. When the glass swings, the sun's rays are reflected all over the field, and even though the field is a very large one the oldest and boldest crow will depart in haste should one of the flashes of light fall on him.

S. S. TWILLEY.

Jingle-Bell Scarecrow



TAKE two poles, ten feet high, and place them in the ground twelve feet apart. Then stretch a wire across the top of

the poles and tie a string of bells in the middle of the wire. On each side of the bells tie a burlap sack. The slightest breeze makes the sack flap, and this shakes the wire, making the bells ring.

F. L. SWEET.

Make Some Rag Crows

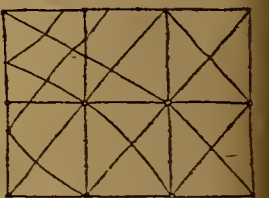
KNOWING that birds are afraid of the dead of their kind, I thought I could perhaps deceive crows by making some rag crows. It takes time to go hunting, and you are not always sure of shooting a crow. I made my rag crows from black material which was stuffed as you would stuff a rag doll. Make the wings of thick cloth and attach to the body. I tied these rag crows to poles and placed them in the cornfield. I made chicken hawks the same way, except for the color of the material, which was chosen to represent hawks as nearly as possible.

One piece of corn near a woodlot had been the favorite feasting ground of the crows the year before, so in that field I placed several of my rag crows. The next day the crows came and flew over the field, making a terrible scolding noise. Then back to the woods they went. Not a crow settled in the field all summer. It is not much work to make these rag birds, and they will last several years.

G. CLAYTON DAGGETT.

Looks Like a Net

LAST year we had a promising watermelon patch. When the first melons were about ten inches long we went to the patch and found thirty of them had been pecked full of holes by crows. We removed the damaged melons and put up the following reliable scarecrow, which should have been put up when the melons first began to form



We took twelve stakes five feet long and put one at each corner of the patch. The remaining stakes were arranged in rows as shown in sketch. In the size of patch that we had the stakes were fifty feet apart. We also stuck smaller sticks, four or five feet long, every fifteen feet. They are represented by the black dots.

Then, commencing at one corner, we fastened binder twine to the stakes and carried it diagonally across the garden until the net-like appearance was complete. Every six feet on the string we tied strips of white cloth one-half inch wide and eight inches long. Not another crow visited the patch.

MRS. MOULTON ABERNATHY.

A Great Scarecrow Reunion

NEVER has such a large scarecrow reunion been held as that which followed the announcement of **FARM AND FIRESIDE'S** Scarecrow Contest. Over three hundred contributions, describing over fifty different kinds of scarecrows, were received. The selection has been difficult. In cases where the same idea was described by different contributors, preference was given to the scarecrow most easily made and most clearly described.

This page is the first installment of the scarecrows. The second installment, devoted to "Successful Scarecrows for the Orchard and Poultry Yard," will be published in the next issue. Prizes for the contributions on this page have been awarded as follows:

First prize of \$3 to "Clock and Washboiler Do It," by James H. Knowlton.

Second prize of \$2 to "Looks Like a Hunter," by Rudolph Balloun.

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Address:

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Garden and Orchard

Raspberry Pruning Points

FOR the raspberry, with many growers, "to prune or not to prune," that is the question. Raspberries and blackberries, including dewberries, can be grown on unpruned as well as on pruned bushes. But the results are usually far more satisfactory if proper pruning is done, and at the right time, and the bushes be kept in control and the patch in cleanliness. Blackberry and blackcap bushes are pruned much in the same way. The young canes, in early summer, are to be nipped back low, at eighteen inches to two feet high, so that they will branch out strongly and make self-supporting bushes. The old wood, of course, must be cut out in the fall. Many of our friends who grow these fruits in the garden no doubt have neglected this summer and fall pruning. Now repair the damage at once and as best as you can. Remove the old wood, and cut back the tips a little, and more freely where winter-killed. Pruning shears or a pruning hook, or both, may be used to advantage.

For the Market I Like Red Raspberries

Get the plantation clean anyway. For the home garden I want all sorts of fruits, some black raspberries included; for market I find the red raspberries more profitable and generally more satisfactory. No summer pruning will be found necessary. Let the young canes grow up undisturbed. But in spring the fruiting canes may be lightly headed back, especially if the canes stand in a thick row and are supported by a trellis. If the plants are in stools more severe cutting back may be given, or the stools be tied to a stake. In our strong soils it is a hard task to keep the sprouts from running all over the ground, and especially from forming a thick, matted row. Try to keep the rows narrow by thorough cultivation or hoeing. Then set stakes or posts at suitable intervals, and nail or wire poles or strips of wood on each side so as to hold and support the tops of the canes between them. It is some work but it pays. The home gardener, especially, can well afford to take considerable pains to do this well, for it makes the patch look very attractive, and it brings the fruit. Under favorable conditions—that is, if the plants are vigorous and in good health—it is within easy possibility to raise from 60 and up to 100 and more bushels of red raspberries per acre. Such a crop, in my own locality, would be worth from \$300 to upwards of \$500 per acre. In small garden patches we often do even much better, in proportion.

Fighting Raspberry Diseases

The one thing that has been troubling our raspberry business more than any other is the disease known as anthracnose or cane blight. It is now found that spraying the dormant wood (before the buds begin to swell in spring) with a strong solution of copperas (iron sulphate or green vitriol), say a pound to the gallon of water, does the trick. I have often made this same application on dormant grapevines, and secured better results in preventing some of the grape diseases than with later sprayings of Bordeaux mixture, without this first application of copperas. It is well in either case, however, to follow the latter up with about two spray applications of Bordeaux, a few weeks apart, and before the berries are developed. Anthracnose has done us a lot of damage here before we learned how to handle it.

Greediness for Grapes

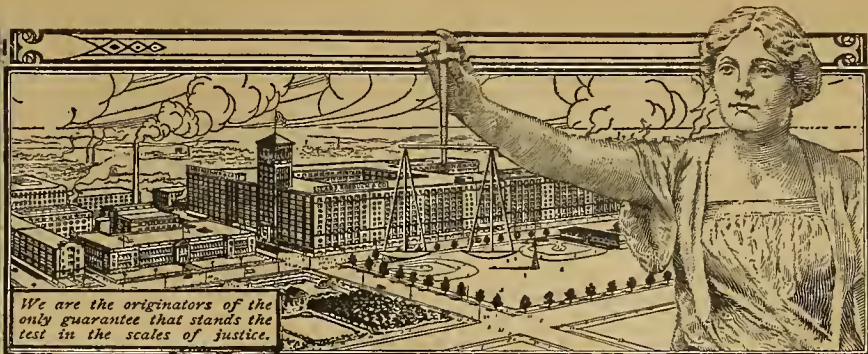
Grapes are easily grown. The vines will bear fruit no matter how you use or misuse them, or whether you prune much or little. The tendency, however, is to set too much fruit, and for the grower to leave too much wood for fear of reducing the chances of a crop more than necessary. And when the vine is overloaded so that anyone might see and know that it cannot possibly bring all this fruit to perfection and maturity, we often still hesitate to remove a good lot of it before it has sapped much of the vine's vitality. Muster up courage and cut out the surplus. A fair amount of good grapes on a vine is better than an overload. Immature and sour grapes in the fall are perhaps good for jelly-making, but good for nothing else. Cut the vines closely. Relieve the excessive setting. Greediness don't pay.

T. GR.

Keep the Bugs Away

By Mrs. Grace W. Bumgardner

EVERY ten rows of cucumbers sow one row of radish seed. Then the bugs will let the cucumbers alone. I have tried the scheme time and again. I also drop one radish seed here and there in the cucumber rows. I plant my rows closer than do most farmers. If anyone puts the cucumber rows five or six feet apart I would suggest one seed here and there all through the patch.



We are the originators of the only guarantee that stands the test in the scales of justice.

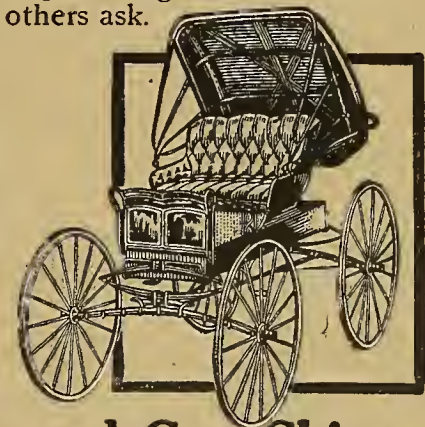
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Then if ever repairs are needed, wherever you are, you will always find a dealer with a complete stock near at hand. Remember that long delays at harvest time are costly. Better not to experiment. Look for one of the same names, or the name "International," on twine. All brands made in sisal, standard, extra manila, manila, and pure manila. Post yourself on the machine you need. Get catalogues from the local dealer, or write us.

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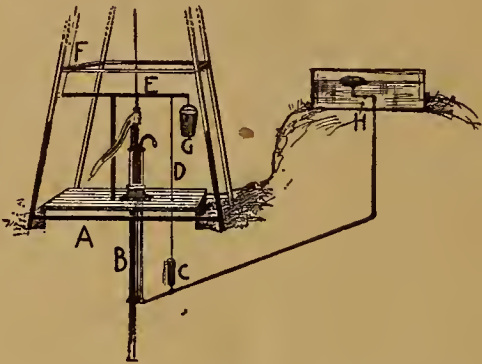
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Farm Notes

Good Windmill Regulator

By W. C. Howdle

THE following device is useful for keeping a stock tank automatically filled with water at all times. The pump is of the force-pump style and water is pumped from the well up to the tank. First, take an old pump cylinder, reverse the leather bucket, and close the bucket valve. Also remove the foot valve. When the tank is full the float in the tank closes the valve and the water is then forced into the cylinder C, forcing rod D up. This pulls down on the wire F, throwing the mill out of gear. When the water lowers in the tank the weight G forces down the rod D, which releases the mill and the tank is filled up again.



This device, while seemingly complex, has worked very satisfactorily, and the cost of making it was only a trifle compared with the saving of time and the securing of water for the stock at all times. The complete description of the sketch is as follows:

A, well; B, pump; C, pump cylinder for regulator, size 2x12 inches or larger; D, stiff rod from cylinder; E, lever; F, pull-out wire; G, bucket for weights (sand will do). This weight varies according to height of tank above pump, for it must overcome weight of water in pipe to tank. H, float and valve to prevent water from being pumped into tank when it is full.

Bees Like Sweet Clover

By Earl F. Townsend

LAST May I shipped thirty-three colonies of bees by express from Lapeer to Wyandotte, Michigan, where I spent the greater part of the summer. These colonies were the "left-overs" and were in a very weak condition. I found two colonies so weak that I united them. That left me thirty-two to start the season with. As I was employed about six hours each day at other work, I had to work them as best I could. They were in old, poorly constructed hives in which some of the frames were decayed. In others the bees had evidently been allowed to start housekeeping with no foundation starters, so that the combs were very crooked.

In sizing up the conditions at this time I decided that if the bees would give me a surplus of one thousand pounds of honey I would be satisfied. This they had done, when I began to notice quite a good deal of white sweet clover along the roadsides and in vacant lots near the bees. I prepared for another flow of honey from this source,

and I certainly got it. I found the sweet clover to be a slow, steady yielder for a month or more, coming as the other clovers, white Dutch and alsike, were about through yielding. The honey is very fine quality.

While these thirty-two poor colonies were gathering 2,500 pounds of sweet clover honey, our home apiary was doing practically nothing, as the white Dutch and alsike were through yielding and there was no sweet clover to speak of.

However, I have been talking sweet clover to my farmer acquaintances hereabouts, and several of them within reach of our home bees have about decided to try a field of it. I am putting in five acres of it for hay, as I find that horses and cattle eat it freely after becoming accustomed to it.

Another point: In our home apiary I had about twenty colonies of thoroughbred Italian stock in good ten-frame Langstroth hives, as against eighty colonies of mostly hybrid or black bees in old decaying hives. The ability to open into the good hives and examine all frames at any time to find out the condition of the bees and supply their needs, also the very great advantage of having thoroughbred Italians, as against the poorer bees, made the following difference in favor of the thoroughbred stock and good hives. The good bees produced honey selling for about \$9.60 per hive, while the poor ones produced but \$6.

SUNSHINE, light and ventilation are essentials to successful dairying.

SIM YARDSLEY can't see how disease got such a start among his cows. Sim always looks 'em over careful once or twice a year.

Useful Nail Box

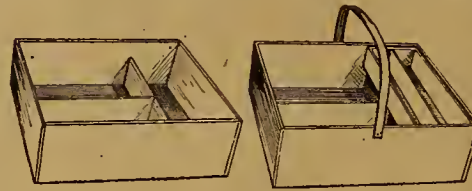
By W. B. Kerr

A CONVENIENT box for holding nails may be made from one of those small boxes in which grocers receive yeast. They are usually about 8x12 inches, and a little over 5 inches deep.

First put a partition, three inches high, across the width of the box, 3 1/2 inches from one end. Then divide the larger space lengthwise with another partition of the same height. This will make three compartments, each 3 1/2 x 7 inches and 3 inches deep.

Now two more compartments may be added by putting in a sliding till. First tack some little strips along each side of the box on the inside at just the same height as the partitions. These are to support the till.

Make the till 6 3/4 inches long, 5 inches wide, and 2 inches high, outside measurements, and divide it lengthwise with a partition. It will fit in nicely across the width



of the box, and can be slid easily from one end to the other to allow getting the nails in the lower compartments. Five different sizes of nails can be kept separate from each other in this box and all be conveniently reached.

A section of wood or metal hoop or a piece of stiff leather will make an excellent handle for carrying it about.

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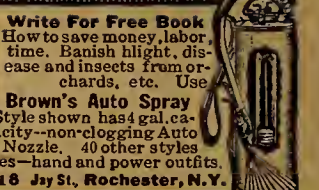
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Station 27 Columbus, Ohio



Poultry-Raising

Fresh-Air Pullet House

By W. C. Smith.

COMFORTABLE summer quarters for the growing pullets is one of the fundamentals to success in raising profitable poultry, be it on a back lot or on the farm. The farm however has the advantage of plenty of room where houses may be moved about.

One of the best houses we have ever tried on the farm for summer use, both from a standpoint of economy of construction and general satisfaction, was an 8x10 one built of 2x4's covered with one-inch wire netting with a covering of burlap over that. There are no floors in the houses, but they are weatherboarded up around the bottom to a distance of two feet. Two feet of the entire front is left open to furnish fresh air. The roof is sheathed with half-inch material and covered with prepared roofing.

Pine is used in the framework. One 2x4 is at each corner, and one in the middle of the back and each end, two set in the front where the door is swung. That is all the studding used. Three rafters and the necessary plates at the top and bottom of the walls complete the amount of frame material used. This makes a substantial and at the same time a light house that can be slipped on a sled and moved from place to place.

The advantage of having the walls weatherboarded up a few feet is not so much in the protection that it affords as in the strength it gives the entire structure. It likewise furnishes a place where the lower edge of the burlap may be fastened so that it will not become loose.

Better Feed, Better Chicks

OF COURSE a chick, like a child, must be "well born" to be a promising venture; but the best-born chick stands a poor show unless its first few weeks of life are exactly calculated to make the most of its inheritance of good blood. Comfort is the first requirement for best chick development. Without comfort, right feeding cannot make amends for discomfort. But given comfortable, sanitary brooding and housing, a chance to exercise, sunlight, and shade in hot weather, then only right feeding and watering are required to develop in the chick all that its endowment of breeding can make of it.

It has been found that in addition to feeding a well-balanced ration there must be variety and palatability to make and keep the chicks vigorous and to insure the best possible development. In chicken-feeding experiments carried out by the Cornell Poultry Department, seven methods of feeding were used. Several of these rations seemed to give about equal results for the first three or four weeks, after that the ration affording the most variety and still keeping the proper balance of nutrients produced the most vigorous, well-developed chicks. Naturally enough, the ration that thus produced the best and largest chicks at a given age was the most economical for producing gains.

The ration for the chicks at different ages, and method of feeding, follows:

For the first month or two this ration has given excellent results until culls and cockerels may be separated for fattening. Close personal attention is necessary until the chicks are able to take care of themselves whatever the ration used. After two months old the chicks can better take care of themselves. Unless it is desired to hasten the maturity, the moist mash can be discontinued after the chicks are six weeks old, particularly if they are on range; but an occasional feeding of moist mash is a stimulant to the chicks' appetites. Whenever available, sour skim milk will help to keep the chicks in good health and if regularly fed in generous quantity, less beef scrap will be necessary.

WHEN I hear a man runnin' down the amusements of the town promiscuous I figger that he's due to have one or more of his children run away from home. When I see a farmer tryin' to make the country as interestin' as the city I calculate he's always likely to have some of the children handy to depend on when he gets old.

Two Years of Cross-Breeding

By Mrs. Leon Virgil

ON JANUARY 1, 1912, the flock numbered 25 pullets, 12 fowls, 1 cockerel, a pure-bred Plymouth Rock. The hens were Rhode Island Red, Rock, Leghorn, and Brahma breeds.

Chickens were hatched from eggs from the above mating, with a good percentage of fertility and chicks of strong vitality, there being no loss of chicks during the season.

Broilers were sold at the age of nine weeks, and a flock of vigorous pullets began laying at 6½ months of age.

On January 1, 1913, the flock numbered 34 hens and one cockerel, a pure-bred Rhode Island Red. Chicks from this mating showed a 20 per cent increase of fertility, with loss of one chick, which overate when first fed.

The broilers did not mature as quickly, but brought better selling prices. The pullets began laying in September, two months earlier than in 1912, the first pullet beginning her work at 4½ months of age, and from September 8th to December 1st had laid 51 eggs. She is still at work, and has showed no signs of being "broody." The pullets of the flock at this date, early February, 1914, number 29 and all are laying stock, as are the most of the 11 fowls.

The chickens are hen-hatched, raised in brooder coops, with cheese-box covers, and necessary heat provided by a jug of hot water. Constant care as to cleanliness of coops, freedom from lice, plenty of fresh water, grit, charcoal, green food, as well as frequent change of yards, means success.

At this season of the year, when the mercury often drops to 20° below zero, all food is warmed, plenty of fresh warm water provided, and dry litter for scratching. Leaves are stored for this purpose, and road dust saved in season for the winter "dust bath." Sifted coal ashes are used freely.

A comparison of the two years is given below:

	Jan. 1, 1912	Jan. 1, 1913
Number in flock....	37	34
Eggs produced.....	2,227	4,707
Value of eggs.....	\$47.40	\$100.09
Value of fowls sold..	22.57	21.91
Value of broilers sold	10.24	10.45
Total income.....	80.21	132.45
Cost of feed, etc.....	56.29	53.77
Net profit.....	23.92	78.68

FEED MIXTURE

Mixture No. 1—
8 lb rolled oats
8 lb bread crumbs or cracker waste
2 lb sifted beef scrap (best grade)
1 lb bone meal

Mixture No. 2—
3 lb wheat (cracked)
2 lb cracked corn (fine)
1 lb pinhead oatmeal

Mixture No. 3—
3 lb wheat bran
3 lb corn meal
3 lb wheat middlings
3 lb beef scrap (best grade)
1 lb bone meal

Mixture No. 4—
3 lb wheat (whole)
2 lb cracked corn
1 lb hulled corn

Mixture No. 5—
3 lb wheat
3 lb cracked corn

WHEN, HOW AND HOW MUCH TO FEED

First to fifth days—
Mixture No. 1 moistened with sour, skimmed, uncooked milk, fed five times a day; mixture No. 2 in shallow tray containing a little of No. 3 (dry) always before chicks. Shredded green food and fine grit and charcoal scattered over the food.

Five days to two weeks—
No. 2 in light litter twice a day; No. 3 moistened with sour skimmed milk, fed three times a day; No. 3 (dry) always available.

Two or four weeks—
Same as No. 2, except that the moist mash is given twice a day.

Four to six weeks—
Reduce meals of moist mash to one a day; mixture No. 4 in litter twice a day; dry mash always available.

Six weeks to maturity—
No. 3 and No. 5 bopper-fed. One meal a day of moist mash if it is desired to hasten development.

ADDITIONAL DIRECTIONS

1. Provide fine grit, charcoal, shell, and bone from the start.
2. Give grass range or plenty of green food.
3. Have fresh clean water always available.
4. Feed only sweet, wholesome foods.
5. Avoid damp and soiled litter.
6. Disinfect brooders and coops frequently.
7. Test all beef scrap before feeding.
8. Keep chickens active by allowing them to become hungry once daily.
9. Feed moist mash sparingly.
10. Keep dry mash always before the chicks.

The Farm Hand Wants a Home

LABOR exchanges for the purpose of furnishing farm help are becoming popular. Wisconsin has had one for some time. It works fairly well. Governor Glynn of New York is urging such a state labor agency for his State. These exchanges can organize and handle the casual labor and do us some good. But for permanent farm help, owners of farms must provide houses so that the man with a family may be sure of a home, a garden, perhaps a cow, and some poultry.

Two tons of cascara bark have just been sold from the Siuslaw national forest, Oregon, at one cent a pound.

Blackhead Disease Cannot Be Cured

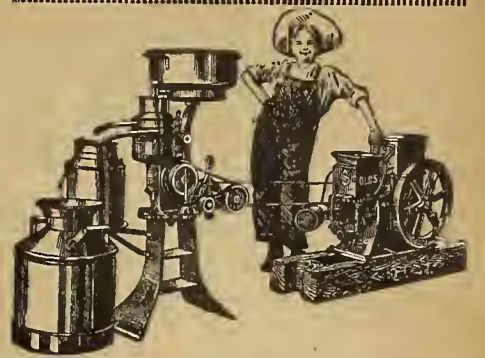
[CONTINUED FROM PAGE 4]

we were able to raise something over 25 per cent of our birds, and this makes allowance for many deaths due to other causes than blackhead. In our experimental work we attempt to get a perspective on our results by observing the increase or diminution of mortalities caused by blackhead alone. In all of our experimental work so far, this mortality has been reduced by 40 to 60 per cent as a result of our new methods of feeding. I believe it is a conservative estimate to say that at least 50 per cent of turkeys hatched under favorable conditions can be raised by this method.

RHODE ISLAND TURKEY-FEEDING SCHEDULE, 1912

Days	Egg (grams)	Green food (grams)	Oats (grams)	Mash (grams)	Milk	Mixed grain (grams)	Corn (grams)	Wheat (grams)	Formidine (grains)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

For practical use 1 ounce may be considered as equivalent to 28 grams. One quart of milk may be considered equal to 1,000 grams.



Fits Any Load

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is the ideal farm power plant. Convenient sizes for every use from 1½ to 65 horsepower, mounted on skids, trucks or permanent bases.

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Tells why chicks die

J. C. Reefer, the poultry expert of 1602 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should write Mr. Reefer for one of these valuable FREE books.

LITTLE GEM HATCHERIES

AND BROODERS cost only 40c. each. Over 225,000 now in use. This lady hatched and raised 1,712 chicks in them last year. Send Stamp for Catalog. F. GRUNDY, Poultry Expert, Morrisonville, Illinois.

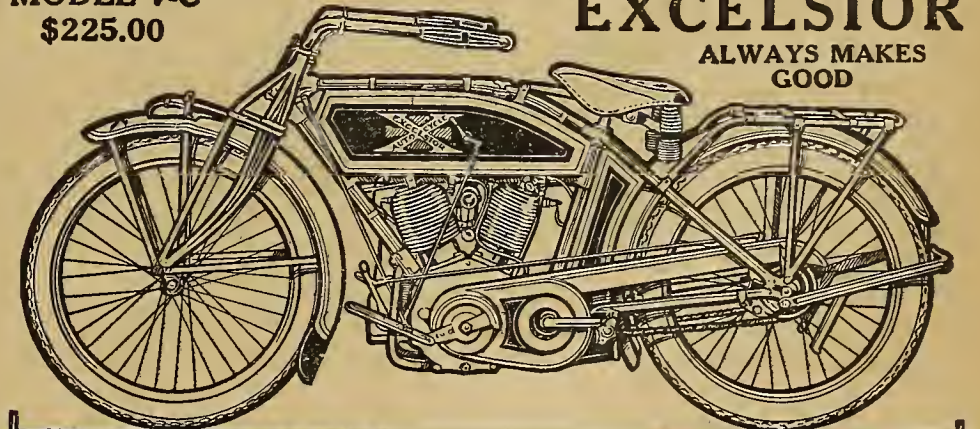
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60-p. catalogue free. 60 varieties, chickens, ducks, geese, turkeys, guineas and Bell Hares. Stock for sale, lowest prices. H. A. Souder, Box 50, Sellersville, Pa.

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1 mile 36 seconds flat
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10 miles... 6-18
50 miles... 33-55 1-5
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Seven models for 1914, ranging in price from \$190 to \$260. The standard model is 7-C. 7-10 H. P., chain drive twin at \$225. The same machine with Excelsior two-speed, \$260.

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Found in Change to Right Food.

After one suffers for months from acid dyspepsia, sour stomach, and then finds the remedy is in getting the right kind of food, it is something to speak about.

A N. Y. lady and her young son had such an experience and she wants others to know how to get relief. She writes: "For about fifteen months my little boy and myself had suffered with sour stomach. We were unable to retain much of anything we ate.

"After suffering in this way for so long I decided to consult a specialist in stomach diseases. Instead of prescribing drugs, he put us both on Grape-Nuts and we began to improve immediately.

"It was the key to a new life. I found we had been eating too much heavy food which we could not digest. In a few weeks after commencing Grape-Nuts, I was able to do my house work. I wake in the morning with a clear head and feel rested and have no sour stomach. My boy sleeps well and wakes with a laugh.

"We have regained our lost weight and continue to eat Grape-Nuts for both the morning and evening meals. We are well and happy and owe it to 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.

This May be a Chance For You

Every month I mail checks of from \$10 to \$100 to men and women representing THE AMERICAN MAGAZINE, WOMAN'S HOME COMPANION and FARM AND FIRESIDE. Maybe we are not adequately represented in your section. If you are looking for a pleasant occupation that pays big, mail me to-day a postal asking for information.

Chief of Subscription Staff
The American Magazine
381 Fourth Avenue, New York City

AGENTS—A Winner



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Farm Notes

Booze and Business

By James A. King

BOOZE and business will not mix. Many men have tried to make a permanent combination of the two, and failed. Some day, soon or late, the man trying to handle both will be without one or the other. Generally it is Business that leaves a man, and Booze that stays with him. A man has no business giving permanent employment to a man that gets drunk, especially employment that involves the safety of life, or property of any value. There is no logic or reason in the acts of a drunken man; you cannot depend on him two seconds in succession.

About forty miles from me is a great nursery. Some five or six years ago their barn burned with twenty-eight horses in it. The night watchman was drunk and asleep in his room in the barn. He alone was saved by the heroic firemen when they arrived. Not a hair of a horse or a strap of a harness was saved. The barn with all its contents, except the drunken night watchman, was lost in flames and in smoke.

The 15th of last November the barn was burned again. Someone returning home about midnight noticed the nursery barn on fire a quarter of a mile away. They turned in the alarm, and the local fire company rushed there with their equipment. And again they found the same old watchman drunk in his room in the barn; so drunk he had not heard the struggles of four horses as they broke loose from their stalls opposite his room. The firemen saved the watchman; everything else was lost, not a hair or a halter was saved. This time thirty horses were burned; four broke loose but never left the barn; the other twenty-six died with scarcely a struggle, evidently overcome by the smoke before the fire reached them.

Booze and Business will not mix. A man who gets drunk should never be given responsibility which involves the life and safety of human beings or dumb animals. It is almost criminal to give him such responsibility.

A Pound of Seed Bees

By Oscar Kazmeier

BY BUYING bees in pound packages one is able to get a start in beekeeping at the least cost, and the system is economical for those who have lost considerably during winter or in early spring.

The middle of last April I ordered three one-pound packages of bees, each pound to be supplied with a laying queen. The price per pound for bees was \$1.50, and the queens \$1.25 each. These came from Fitzpatrick, Alabama. They arrived on my Wisconsin place on the 18th of April in good condition. On arrival each pound was put on four drawn-out Hoffman frames, in double-walled hives. An extracted super was put on top.

They were fed daily on a syrup composed of equal parts of sugar and water. They immediately started brood-rearing, but one of the queens turned out to be a drone layer. The other two packages increased.

These two pounds were increased to five rousing colonies, and besides over 100 pounds of honey were extracted.

The expressage on these three packages was \$1.20. This brought the total up to \$9.40, or \$1.89 per colony.

The cages were six by seven and eight inches high. They arrived as one package, being arranged one on top of another, two inches of space between each. Each was enclosed with netting, except two sides where a board was used.



The three cages as received

I am sure it would not have been possible to get the above results if I had used single-walled hives, because the atmospheric changes would have been felt too keenly.

The Crow

By Earl H. Emmons

THE crow is an ebonized chunk of wall-eyed tar, with a voice like filing saws. A crow can bring up a sixty-acre field of corn faster and with more accuracy than the best brand of corn weather ever turned out at the Washington bureau, but the methods are entirely different and the crow's system is somewhat discouraging to the planter.

When the farmer becomes annoyed by the crow he gathers up some old clothes and broomsticks, which he takes to the cornfield and forms into a horrible object calculated to make the crow drop dead from fright, and the next day when he goes out to gather up the dead birds he finds the crow has built a comfortable nest on top of the scarecrow, has moved in his family and personal effects, consisting of a couple bushels of the farmer's seed corn, and is doing real well.

Then the farmer is sad and discouraged, and he goes back to the house, gets his double-barreled shotgun loaded with nails and scrap iron, takes the place of the scarecrow and tries to look the part, and fools everybody except the crow. He doesn't see a crow for a week, but fifteen minutes after the farmer leaves the spot the crow gives a husking bee down in the field, and two more acres of corn must be replanted.

Outside the musical laugh of the crow, which is pitched at the same tone as a calf choking to death, he is not of much benefit on the farm, and even this seems a poor asset because, instead of promoting mirth, his merry ha-ha usually makes his listeners mad, but he makes such a scarcity in the corn crop that the prices usually go up a notch or two after he gets his margin, which is some excuse for his living; and, also, some people who do not know the crow very well use him for food, but generally they are filled with a lot of astonishment and gloom and unexpectedness soon thereafter, and when it is all over the family doctor buys another automobile.

Sometimes people catch the crow in his young and unsophisticated state and try to show him the error of his ways and bring him up differently, but the crow is a thankless, ungrateful sort of person and repays his owners' kindness by carrying away all the spectacles, rings, watches, and other valuable trinkets around the house, and he lays them away up in top of a high tree for future reference and then he goes off some place and starts life anew.

Among crows are crowbars, crocuses, croquet, crow-baits, and crochet.

To Grow Large Melons Quickly

By Frank R. Arnold

AS IT takes from three and one half to four months after seed planting to produce ripe melons, it is well to start the plants in a hotbed where they come up in four or five days. As soon as the first leaves appear above the cotyledons transplant into 4-inch pots and keep them under shaded glass for a few days. When the plants have four or five leaves, cut the main stalk above the second leaf above the cotyledons. Four or five days after this the plants will be ready to transplant to their permanent positions. For this dig holes 16 inches in diameter, fill with fresh or partly rotted manure, and make a heap of earth to cover each. Then set out a plant in each hill having them about five feet apart. Be careful to have the plants well watered sometime before transplanting, and keep a ball of earth about the roots of each plant.

After cutting the main stalk, two branches will grow out, one on each side. When these have grown sufficiently pinch each back to four or five leaves. If sprouts start at the base of the cotyledons cut them off. Four or five branches will then grow out on each arm and should be pinched back above the third leaf, and should be kept separate so that they may not grow all mixed up together. These branches will generally bear only staminate or male blossoms, but each of them, after being pinched, will put forth branches which will bear both staminate and pistillate flowers, and on which fruit will be produced. At the moment of flowering these branches are pinched back to two leaves if they have no flowers, otherwise to one leaf above the first female flower. In order to have all pinched or cut ends heal up well, the cutting should be done in dry weather.

When the fruit is set and has reached the size of a walnut, select the two or three finest and cut off the others, choosing for preservation those at the base of a branch and as near as possible to the main stalk. These which are left, having all the plant food, grow larger and come sooner to maturity. When they are about three quarters grown let two others start to develop so that they may ripen after the first have matured and been taken off. Useless branches, dry leaves, and newly set melons should be removed every few days. When the fruit begins to ripen put it on a shingle or tile to keep it away from dampness.

This careful, watchful method is very different from that of unpruned plants which we usually see, but it has the advantage of producing larger fruit and ripening it more quickly, a very vital matter when the season is short or one wishes to be ready for an early market. If the season is long enough to warrant later out-of-door planting of seeds, the plants may be arranged so as to give a succession of bearings, but each may be counted on to produce at least five of better size, quality, and quickness of growth than under the old hit-or-miss method. The old method may produce more fruit, but even when the season is long the pruning method with a succession of plants is best for size and quality.

Red Lanterns

By James A. King

DID you ever see a danger signal, a red lantern, hung on a country road at night? I never did, and the most of my life has been spent in the country. I'm not blind either, and I have been out a good many nights, in some cases until the sun was up. More than once I have owed my life to the instinct and good sense of a horse. And for this one reason, even if there were no other, I have a great fondness for a good horse.

What chance has a man riding, driving, or even walking, along a country road on a dark night if a culvert or a bridge is out, or some stuff is piled right at the side of the track, and no lantern is hung to it? If his horse does not see or sense it in time, there is a good chance that he will land in a long box, six feet under ground. And yet, all over this Middle West as I know it, it is the exception rather than the rule when the proper official, or anyone else, tags these danger spots with a red lantern at night.

A danger-signal lantern should not give a strong light; there is nothing that will so blind one as a bright light in the middle of the road. The wick should be turned comparatively low. The globe should be a deep, dark red, so one could look it square in the eye at close range without the light hurting his eyes. If a red globe cannot be had, then a red cloth of moderate thickness should be wrapped around the framework of the lantern so the heat of the globe will not burn it, and yet so that all the light will have to shine through this cloth. The lantern should be placed as far to the side of the road as possible, and still properly show the source of the danger. The dull, weak light that can be seen only a few rods, and set to one side of the road, will not glare at one so as to blind him as he approaches it. At the same time it answers every purpose and requirement of a danger signal.

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32 x 3 1/2	18.10	36 x 4 1/2	37.10
33 x 4	25.25	37 x 5	44.45
34 x 4	26.05	38 x 5 1/2	57.30

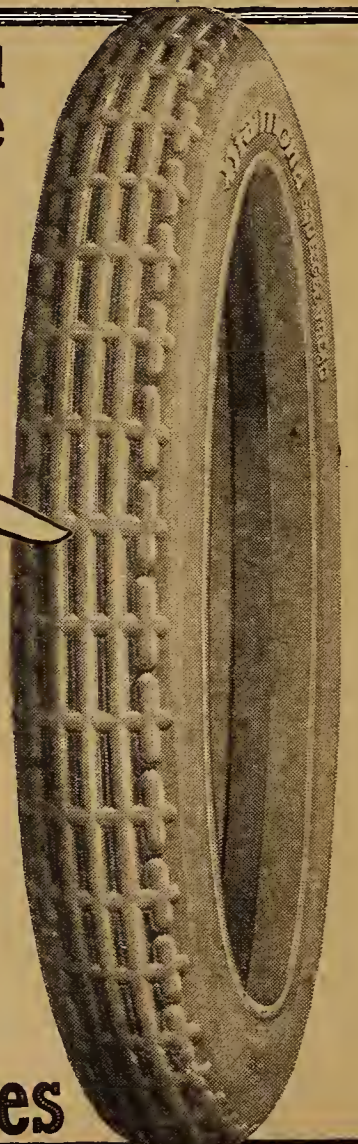
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Crops and Soils

Fertilizer Misunderstandings

By A. J. Legg

THE fertilizer question is not well understood by even the best of our farmers and scientists, and there are a few points in the fertilizer question that are badly misunderstood by the average man of us. It is the belief of many farmers that it is necessary to use the highest-priced fertilizers in order to get a fertilizer that will last in the soil. They think that a cheap fertilizer lasts only for the present year, while the higher-priced fertilizers will show on the crops for several years. If we wish to know the reason for the high price of the fertilizers we find that the nitrogen in its composition and the mixing of the ingredients are the two great causes of the high prices. Every pound of nitrogen that goes into a fertilizer adds from 15 to 20 cents to its cost, while a pound of phosphoric acid or of potash costs only about five cents. If we turn to the scientific view of it we find that the nitrogen is the most easily wasted, and that if it is not taken up by the crop as soon as available it is leached away or else goes off into the air as a gas, and that both phosphoric acid and potash form combinations in the soil and are held more permanently. So it is not the most costly elements of the fertilizer that have the staying qualities.

The cheapest fertilizers, in my experience, are the superphosphates, and the phosphoric acid is a leading element in all fertilizers. The experiment stations have found that the superphosphates have exercised a beneficial influence upon crops grown in the soil for five years after their application. It is asserted upon good authority that some Maryland farmers have succeeded in so building up their soils with superphosphate alone, and a judicious rotation of crops, that the wheat crop has increased from 15 to 40 bushels per acre. When we consider these facts it does not seem that the belief that the phosphates are used for the present alone is justified, nor that there is any great advantage in using the high-priced complete fertilizers instead of the high-grade cheap fertilizers. I say high-grade cheap fertilizers, since there may be high-grade cheap fertilizers as well as high-grade complete fertilizers, and there are also low-grade fertilizers of either class as well.

Soy Beans Plus Corn

By Charles B. Wing

MR. G. L. ROGERS of St. Lawrence County, New York, writes: "I read with interest your soy-bean article in the January 31st issue. This article is the first record of good practical experience with soy beans that I have read."

"Through C. S. Phelps, farm bureau manager for St. Lawrence County, I have become interested in the soy bean."

"What I wish to do is to plant the beans with the corn for ensilage, as recommended by Mr. Phelps. Do you think this practical? Also what variety of seed would be best for this Northern section?"

"You speak in your article of sowing inoculated soil with the seed. How do you get this soil?"

"I am trying to get the best methods of getting the most from the soil without robbing it. Knowing that the nitrogen-gathering plants are best, I am trying to get them, but alfalfa does not grow successfully in this section, and we have to have something else."

Mr. Wing replies: There are several points involved in this matter, and using a little common sense will show anybody how the matter would work out.

Soy beans, in order to make a really good crop, if grown by themselves, should be planted about one seed to the inch. If the crop had fully started there would not be more than one plant to 1½ or 2 inches, because with any crop that we plant all seeds do not produce strong living plants which will grow to maturity. With one strong soy-bean plant every 2 inches growing in drills 28 inches apart, and doing just reasonably well, a yield of 8 or 10 tons of ensilage per acre is entirely practical. This is about what one ordinarily gets with corn for ensilage. Now if you were sowing the beans direct with the corn you would hardly want the corn plants closer than 6 or 8 inches apart for ensilage, and if the beans were mixed, say half and half with the corn, the drop would then be decidedly scattering, say one plant to every 4 or 5 inches. If mixed more than half beans to half corn we would fear that too heavy a per cent. would come beans, not only lowering the yield per acre but making a poorer quality for ensilage. As a matter of fact, it seems necessary to use at least double the amount of corn to that of beans in order to make the silage keep properly and to be properly relished by live stock. Furthermore, sowing the beans in with the corn would crowd the former a good deal more than it would be crowded if seeded in

a field to itself. That is, the corn both by its roots and top would, in our opinion, injure the beans a good deal more than they would injure themselves.

There is just one thing gained by sowing the two plants together, and that is the ease of harvesting and mixing as they go into the ensilage cutter. I will admit that when the two plants are grown separately it does make a little extra work to get them properly mixed together in a silo, while this method would probably give quite satisfactory mixing. I really think that this gain is more than offset by what we consider, the disadvantage of crowding the beans with the corn plants, and of a possible lowering of yield or of getting improper proportions when sowing the plants together. I am free to admit, however, that a good many men write in that they have done this and mixed the two plants to their own satisfaction, getting, I presume, the yield that they desired and the whole thing working out so as to suit them.

To clinch the matter, however, someone ought to try both ways on the same ground and see which way he liked best.

As to proper variety, the Mongol or Mikado Bean, both being large, will feed out just about as fast as the seed corn would, and both of them would be satisfactory as far as habit of growth and time of ripening is concerned. In my opinion a better bean for the purpose should be the Sable, but the seed is only about half the size of the Mongol, and I think it would be difficult to handle it and the corn together in the planter box. Another excellent variety would be the Auburn. Its seed is still larger than the Mongol, and it might require being planted with quite a large-grained variety of corn in order to work satisfactorily in the planter box.

As to soil for inoculation there are usually those in any community who are prepared to furnish it at reasonable prices.



What gets me, is how you lay your eggs without breaking them.

Book Reviews

THE CORN CROPS: "A DISCUSSION OF MAIZE, KAFIRS, AND SORGHUMS AS GROWN IN THE UNITED STATES AND CANADA," by E. G. Montgomery. This book takes up the scientific viewpoint to a greater extent than have its predecessors which have covered the subject. Professor Montgomery, its author, has had experience with the crops East as well as West. 347 pages. Well illustrated. Macmillan Company, New York City. \$1.60.

MANURES AND FERTILIZERS, by Dr. Homer J. Wheeler, now agricultural chemical expert of the American Agricultural Chemical Company. Doctor Wheeler believes in fertilizers for most farms. He tells why in this book. It is a fairly practical and a very complete treatise. Macmillan Company, New York City. \$1.60.

BOTANY FOR SECONDARY SCHOOLS, by L. H. Bailey. Doctor Bailey aims to make the commonplace interesting, and he does so. This book is intended particularly for schools lacking general textbook facilities. 465 pages. Well illustrated. Macmillan Company, New York City. \$1.25.

MY BOY AND I, by Christine Terhune Herrick, is a book written by an intellectual and masterful mother who attains wisdom through keenness of imagination and an unfinching sense of justice, rather than through instinctive sympathy with childhood. For this very reason the book has a unique value, and the fine companionship of mother and son is its highest recommendation. The specific problems it presents are those of the well-to-do city boy, but the underlying principles are universal. 278 pages. Dana Estes & Company, Boston, Massachusetts. \$1 net.

STARVING AMERICA, by Alfred W. McCann. A book whose thesis is the starvation of our people through the elimination from manufactured foods of those mineral ingredients necessary to life. It is a work to be solemnly considered by all home workers, but it should be borne in mind that the writer speaks with the over-emphasis of the prophet full of his message, and fails to look to the right or the left for those remedial agencies which tend to correct the abuses of pure theory. 270 pages. The George H. Doran Co., New York City. \$1.50 net.

THE THREE BEARS OF PORCUPINE RIDGE, by Jean M. Thompson, is a collection of short animal stories. Miss Thompson's method is to lead us out along the trail and into the hidden lair. Here is a book for all children and grown-ups who love the animal as he really is, and who do not desire his false and undignified transformation into a creature of half-human temperament, dressed up to make a sentimental address to society. 320 pages. The W. A. Wilde Company, Boston. \$1.50 net.



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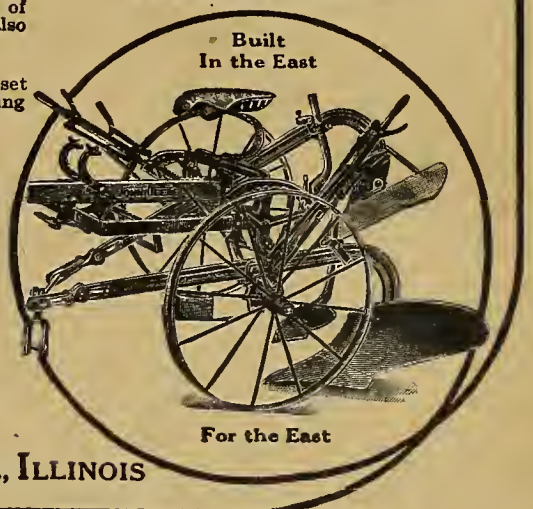
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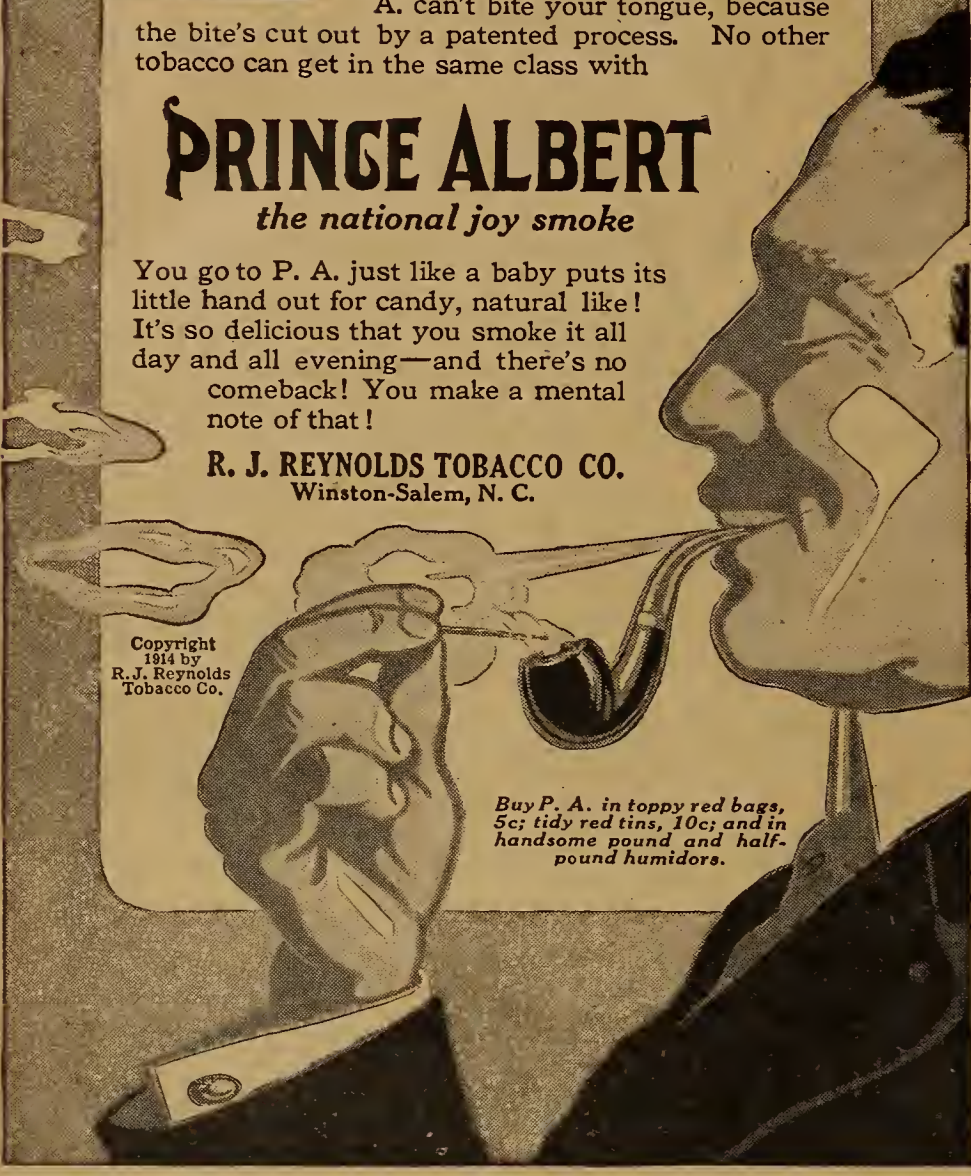
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Farm Notes

Homesteading in 1913

By I. O. Arney

THE accompanying photographs give an excellent idea of our Minnesota country. They were taken on my homestead in August. There are similar cut-over sections all through our country. You may judge from the pictures something about the kind of work we are obliged to do here in order to get a field.

Here, also, is shown the most economical team for a man who has only a few acres cleared. These ox teams are a common sight around here.

It goes without saying that stump pullers are also common, though many of my neighbors use dynamite, and some use a block and tackle where the stumps are not too large. Jack-pine stumps are better to



Cut-over sections of the country present great possibilities

stand from three to five years before pulling, as the smaller roots are then rotted and the stumps will come out comparatively clean.

Our soil is a mixture of sand and clay, an especially good soil for potatoes and all other vegetables, but nearly all kinds of grain and grasses are successfully raised.

Dairy farming seems to pay the best, as I believe it does everywhere. As our soil is light it needs plenty of fertilizing; a very good reason why we should keep cattle.

Farmers in this country are grading up their stock now as they never have before, and in a few years I think we will be able to point with pride to some nice herds of cattle. Dairy cattle are the kind we want, not beef cattle.

Hogs and sheep seem to pay well, and those who keep the latter speak very well of their assistance in clearing this jack-pine brush land.

Corn may be raised successfully, and every year sees an increase in the acreage of fodder corn.

It is not an easy task to make homes in a country that has been noted for its lumbering, but we are slowly but surely forging ahead.

Why, we even see automobiles nowadays, but flying machines have not reached us



A team we could not be without

yet. However, we are adopting progressive ideas and there is no telling where they may land us.

Our school district has made arrangements for buying a Babcock milk tester, the parents to provide milk scales and furnish the samples of milk and the children to do the testing at school. We are also to have an organ in the schoolhouse, and already have a barn, and a wood and well house combined, on the school grounds. That isn't so bad for a "backwoods" school, is it?

The Road That Jack Built

By Ramsey Benson

FIRST, the speeding that was sped. Then the fine for the speeding that was sped.

Then the road which the fine for speeding was spent to better.

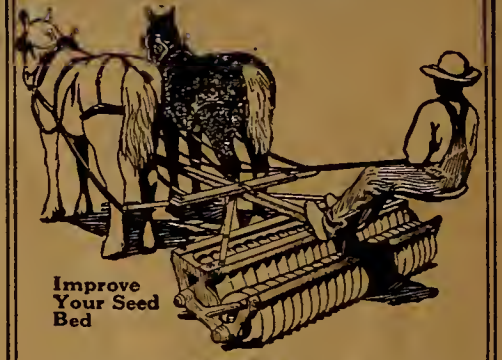
Then the accelerated speeding which the bettered road tempted some speeder to indulge in.

Then a bigger fine for the accelerated speeding which the bettered road tempted some speeder to indulge in.

Then the road after they got through bettering it still further with the bigger fine for the accelerated speeding which the bettered road tempted some speeder to indulge in.

And so forth and so on. Aren't our roads getting to be peaches? And we, are we not a great and foxy people?

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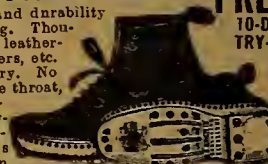
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The Farmers' Lobby



A

FTER many years of indecision, Uncle Sam has awakened to a realization of his responsibility for the birds. It is high time. The whole expenses of the National Government could be met by the sum annually destroyed by insects and vermin, and a very great part of that waste, we are now assured, will one day be saved to us by the birds. Let us help that day to come.

If there is an interstate proposition anywhere before us it is the migratory bird. A State's laws have about as much chance to give effective protection to migratory birds as a federal court's injunction would have to sidetrack a comet. Even as to birds that cover no wide range in their migrations state laws and regulations have proved so woefully inefficient that the state authorities themselves are now conceding their failure and indicating the most laudable desire to co-operate with the National Government. Some of the constitutional sharps, indeed, were able to detect a frightful conspiracy against our liberties in the proposal to give the National Government jurisdiction over migratory birds. It's funny how these guardians of the Constitution can always prove that nothing the country needs can possibly be done because of the Constitution! You would be led to suspect that the Constitution was made first and the country afterward turned out to work for it. One distinguished statesman of the state-rights school solemnly declared when the federal bird measure (the Weeks-McLean Bill) was before Congress that it was "the most revolutionary, the most far-reaching legislation, in its possible and probable effects on our system of government, that has been presented to Congress during the sixteen years that I have been a member of this body." Think of such extravagance as that! Yet the same dire predictions of ruin to the nation have been voiced in arguments against federal meat inspection, federal quarantine, pure-food laws, national regulation of carriers, and every other assumption by the National Government of authority to do things that manifestly could be done by no other authority. At least we are come nowadays to the place where nobody takes these black-browed prophecies seriously.

As a matter of fact, the Government of the United States cannot possibly give proper protection to bird life, even if every person in this country would absolutely obey the uttermost regulation. That would not accomplish the purpose because many of the most important tribes of birds make the United States merely a way station in their annual pilgrimages. Think of the Arctic tern, for instance—one of the most interesting and least known birds in the world. Some of the authorities seriously suspect that these birds actually make annual migrations from the Arctic to the Antarctic regions! There used to be a notion among all the ornithological authorities that migratory birds never crossed the equator. It was supposed that they lost their power to orientate if they tried to pass from one hemisphere to the other. Indeed, not a few people still believe this. It was long insisted that no homing pigeon had ever succeeded in making his trip home if it involved crossing the equator and covering any considerable distance. This notion now appears to have been utterly exploded. The simple expedient of trying the thing, instead of merely talking about it, proved that homing birds will cross the equator. Quite lately, birds taken to Argentina from Pennsylvania actually returned to their home.

We Don't Know It All Yet

Though the migrations of birds have been studied with great interest for many generations it is really remarkable how little men have been able to learn about the fascinating subject. We charge it all up to "instinct" and try to imagine that a word which we can't even decently define, but which we use to cover a lot of things we don't understand, is an excuse for our ignorance. The truth is that when we refer any such phenomenon to "instinct," and assume that that explains it, we are admitting that the thing is beyond our ken. The birds, of course, are experts on atmospheric phenomena. The birds of the Arctic, for instance, if it be true that they make flights from end to end of the world, are able to do it because they know that at the proper point above the earth's surface they will find whatever temperature they want. The bird that lays her eggs only in the snow, and hatches them in that nest, is fond of a cool climate; but she can travel from pole to pole without getting overheated, if only she knows the proper elevations and can remain in the air long enough.

It is just about ten years since the serious effort to establish effective federal authority over the birds was inaugurated. In 1904 George Shiras, 3d, a Congressman from Pennsylvania, introduced what seems to have been the first bill on the subject. Mr. Shiras was merely ahead of his times. Some people laughed at the notion of Congress "trying to control the flights of the migratory birds; others—there are still too many of this class in the country—had the general notion that birds are nuisances anyhow, and that no especial harm would flow from their destruction. In truth, the



are not passed until there is public opinion demanding them. That public opinion commonly has to be organized by somebody who has a selfish interest. The proposition itself may be thoroughly good and patriotic, but the fact remains that self-interest will usually be found inspiring the big task of educating public opinion.

That was true in this instance. The American Game Protective and Propagation Association early got behind the movement for this legislation. That organization, as its name suggests, is primarily designed to appeal to sportsmen who want game saved from destruction and given a chance to multiply. People with the dope about how the birds destroy insects and vermin might have gone on preaching bird protection for generations, and have failed utterly to get Congress excited. But when the boys with the guns and the zeal in behalf of sport were enlisted they made things happen. It proved a most fortunate combination of elements. The sportsmen had a good case on their own account. They strengthened it by taking up the plea for bird protection on general grounds; they enlisted their friends with both classes of arguments; and they won.

The Weeks-McLean Bill is so called in recognition of the two Senators, Mr. Weeks of Massachusetts and Mr. McLean of Connecticut, who took the legislative lead for it. Mr. Weeks introduced bills on the subject in 1908, 1909, and 1911; and at the beginning of 1912 the Senate Committee of Forest Reservation and Game Protection was finally induced to order hearings on the general subject. The game wardens and other interested officials of the States were enlisted, and their explanation of the absolute necessity for federal authority and uniformity of the laws covering the widest possible territory proved most helpful in overcoming the state-rights argument against national interference. When the hearings came on, only four of the forty-eight States were without representation, and the favorable report was secured. The measure passed, and was signed by President Taft shortly before he went out of office. He has himself listed it among the most important legislative achievements of his administration, and there is little doubt that before many years it will be generally recognized as such.

The bill is very simple. Its first section reads:

All wild geese, wild swans, brant, wild ducks, snipe, plover, woodcock, rail, wild pigeons, and all other migratory game and insectivorous birds which in their northern and southern migrations pass through or do not remain the entire year within the borders of any State or Territory, shall hereafter be deemed to be within the custody and protection of the government of the United States, and shall not be destroyed or taken contrary to regulations hereinafter provided for.

That's the business end of the law. The rest of it provides that the Secretary of Agriculture shall prescribe closed seasons for all the kinds of birds, having regard to the zones of temperature, breeding habits, and times and lines of migrations. Penalties are named for shooting birds during the closed seasons.

Under this authority the Secretary recently promulgated his regulations. They divide migratory birds into two classes—game and insectivorous. The migratory game birds are again divided into four classes—water fowl, rails, woodcock, and shore birds. A general regulation absolutely prohibits shooting any migratory bird on the Mississippi River between Memphis and Minneapolis, or on the Missouri between Bismarck, North Dakota, and Nebraska City, Nebraska. It is proposed to make these great streams perpetual refuges for the birds, experience having shown that the "instinct" of the feathered travelers very soon teaches them in what regions they may expect to be safe. There has been deep-bass growling by the sportsmen along these two rivers, who think it an awful outrage to bar them; but the authorities seem to have a good ground for their action, and are standing pat.

Study What Has Been Done

Every effort has been made, in preparing the regulations and fixing the closed seasons, to insure the fullest co-operation between the federal and state authorities. State laws and regulations have been given all possible consideration, but in many cases the federal authority has had to interfere quite decidedly with state arrangements. The country is to be divided into thirteen districts, each under a chief inspector, under whom will be such force of deputies as he may require. It is promised that anything like willful violations of the law are going to be dealt with very rigorously. The pot hunter who goes out filling his bag, confident that the inspector will not learn of it, will get the limit as often as it can be handed to him, because the authorities propose to make it perfectly plain right from the start that there is to be no nonsense about this law. It's going to be taken seriously. Folks who don't want to pay \$100 fine, or get ninety days in jail, or perhaps incur both penalties, will do well to obey the law. Everybody who possesses a gun should secure from the U. S. D. A. the published statements of these rulings. Play safe!

Birds That Work for the Farmer

By Judson C. Welliver

birds do more work for the farmer, at a lower wage, than any other part of his live-stock equipment. What it would mean to have a birdless country was most pointedly suggested to me by the story that a West Indian gentleman told me about one of the islands of the Caribbean region, with which he was familiar. Many years ago, he said, the mongoose, from the East Indies, was introduced into this island by people who believed it would rid the place of snakes. They had heard that the little animal—you remember Kipling's story of the mongoose Rikki-tikki-tavi, of course—was the mortal enemy of certain snakes in the Far East; why not in the western Indies as well?

Good in Theory But It Didn't Work Out

So the mongooses or mongeese, according to the plural you prefer, were brought along. But the results proved that it was a sad mistake. The mongoose multiplied and thrived; but he proved to prefer birds' eggs, as a diet, to reptiles. In time he well-nigh destroyed the island's entire bird population. The reptiles and all manner of insectivora multiplied at such a rate that the island, one of the very richest in natural elements in all the world, has become a peculiarly



Pot hunters will be obliged to take this measure seriously

undesirable place of residence; its development has been retarded, and the Government has been compelled to adopt rigorous measures to restore bird life and suppress the mongoose.

Our new federal bird law looks to saving this country from anything like such a calamity. Like a good many other excellent laws, it was secured under false pretenses; but they were altogether justified. Laws

Windows That Ventilate

How We Readjusted Our House and Made It a Better Place to Live In

By Mary B. Bryan

WE HAD lived through many Julys and Augusts in the old house, and had come to dread them. Outside, the breezes blew across the tree-shaded yard, but inside was either the dead coolness of closed rooms or the stifling heat of sun-baked walls. Always we were going to make the house over. The roofs were to be raised, a hall cut through the center, a second piazza built.

On one of those surprisingly hot days that come to us each May as a prophecy of what the coming weeks hold, it occurred to me that we were growing old while waiting for those extensive alterations, and that meanwhile July and August were as young and overheating as ever. Across the way I saw a window, open as it was wont to be through the summer. The lower half was raised far enough to rest upon an extension screen slipped into the casement. The wide frame of the screen left only about twelve inches of open space, and that was of course in the lower sash. Above were nearly three feet of window glass on which heat the hot sun. For the first time this spectacle, to be duplicated in my own house as well as in nearly every other in the village, set me thinking, and I walked slowly about my home, regarding the windows for the first time, not as solid fixtures, but as coverings for air spaces. Then I went for a carpenter.

We began in the attic, where were two pretty but unliveably hot rooms, and two storage spaces. We built two skylights designed to stand open save in storms, and fitted them with screens. These changed the atmosphere at once, and by keeping the attic door open we sent a draft up through the house in the sultriest day. In the attic rooms we turned the windows into French sashes, opening like doors or into sliding casements, as the space allowed, so that in either case the whole window space was open. The screens were screwed on outside, and not taken off till autumn.

Indeed, in the matter of screens all those patent, adjustable kinds held in by the weight of the window were discarded, for none of them allow even the ordinary sash to open its full width, and are at best practical for but the lower half of the window, while, especially in

WHAT shall we do to make the summer profitable? Everyone asks that question at this time of the year. On this page are some concrete suggestions. Of course we could not cover all of the points you might be interested in. The keynote of what we have to say here, is "the home." Everyone appreciates the value of the home. Why not always strive to make it better?

the up-stairs bedrooms, the opening of the upper part of the window gives far better ventilation.

In each bedroom we turned one window, that which would give the best draft, into a French casement, like those in the attic, and arranged the others to open from both top and bottom. Downstairs there were lights, as they were called in old days, over the front and back doors. These became transoms, screened and always open. In the dining-room we cut one window to the floor, and put in glass doors opening on the piazza. This changed the whole room, giving a sense of space that made our meals all more restful.

But the kitchen was my triumph. Every window in the place was made to open its entire length and width, though that at the sink puzzled us for a while. French casements swing inward, and had done very well elsewhere, but over the sink, with its convenient rows of hooks, there was no place to swing windows on. So we made an English casement, opening outward, with rods to close it, and a screen on the inside, sliding up far enough to allow the pushing in and out of the rods. Everywhere downstairs, money growing short, I tacked black mosquito netting neatly over the outside of the casings, having screens made only for the sink window, and screen doors for the dining-room and the pantry.

THE pantry, however, deserves a paragraph to itself. The ice box was there, and one little window, as usual half full of glass and an eighth full of screen frame. There was no keeping that pantry cool, and a larger storage place had been the center of all my dreams in our plans to remodel the house. Now I had an inspiration. We cut the window to the floor and put in a glass door swinging

against the empty wall. The ice would no longer leave a wet trail across the kitchen floor. But what were we to do at night? We had left the window open, but to leave a door open seemed another matter. Here the carpenter came to the rescue. He made a screen door with slender iron rods running up through the center so that all the air there was came in, and yet the burglar who should enter without long filing would be a very thin specimen indeed. Then we set a bolt on the kitchen side of the pantry door and rejoiced. No longer did our milk sour overnight and our ice vanish in a day.

IN THE cellar were plenty of lights, set high against the ceiling. We opened every one, holding the frames by hooks to the ceiling. When we had tacked netting over these spaces our work was done. It had been a more difficult task in our house than it would be in many, because part of this house is very old, with small-paned windows, and we wanted to change the appearance of the place as little as possible. But where this is not the case the choosing of the windows that will give the best ventilation is a simple matter. Remember that there should be a current of air up through the house and from end to end, and from side to side, so that whichever way the breeze comes you may be able to take advantage of it.

The thermometer jumped into the nineties with the coming of July that year, and stayed there relentlessly. But our breezes never failed us, and the lessening of burning glass in our windows made in itself a difference in the temperature of the rooms. August, with its heavy dampness, followed, but no longer did our doors and windows stick fast, nor our precious hooks mold in the case, nor our pictures spot on the walls. I hardly think we shall make the old

house over now, save to add that second piazza. We always liked its quaintness, and now that it is comfortable there is no reason for changing what has been loved for three generations.

A Treasure in Your Attic

By Mrs. A. V. R. Morris

IN YOUR attic or barn loft is there not a disreputable sofa with a long, narrow seat, a straight back and curved ends? Its frame is not hopelessly marred, although it may seem to be, for the wood is probably maple or mahogany, and underneath innumerable coatings of varnish—possibly paint—the markings of the tree remain and a sandpaper scraping will reveal them. In restoring this heirloom do not use either varnish or paint, but after the wood has been thoroughly cleaned rub it with beeswax and finally polish its surface with sweet oil. In the years that have passed since Grandmother's mother owned this sofa, its wooden frame has gained a richer, deeper red brown tone, but, of course, its upholstery is worthless and must be replaced. That task is comparatively easy if you make accurate measurements of the back and the seat, fit them with thin mattresses of excelsior or cotton wadding, and cover them with the remains of a pair of chintz or damask curtains.

When she was married Grandmother's mother had a store of coverlids, and probably some of these have been preserved. Most of all she prized her counterpanes of woven white cotton, quaintly bordered and fringed with Canton blue. They are precisely what you need for portières. In fact, they are the one thing for a dining-room having blue wall paper and white woodwork, and are worth hunting for through the attic trunks. How about that dining table? Do you like the one you're using? It is possible that Grandmother's mother left behind her the material for a better one in the shabby old table that's been in the kitchen or the pantry for more years than you can remember. It has four slender grooved legs and a narrow top with let-down leaves at both sides, and it has been painted bright yellow, but it is of hard wood and, like the sofa, is worth restoring.

Dainty and Inexpensive Curtains—By C. B. Whitehouse

WITH the approach of spring and the next house-cleaning season, the thought of new curtains will come to most housewives. Every woman has an instinctive love of dainty window curtains, and when the more expensive curtains are out of the question—and elaborate curtains would perhaps be out of place—even the cheapest of materials may be transformed into pretty as well as serviceable curtains.

Scrim, cheesecloth or surgeon's gauze, dimity, lawn, either plain white or with dainty printed figures, cotton pongee, and even unbleached muslin in its own original artistic coloring of yellow will make attractive curtains.

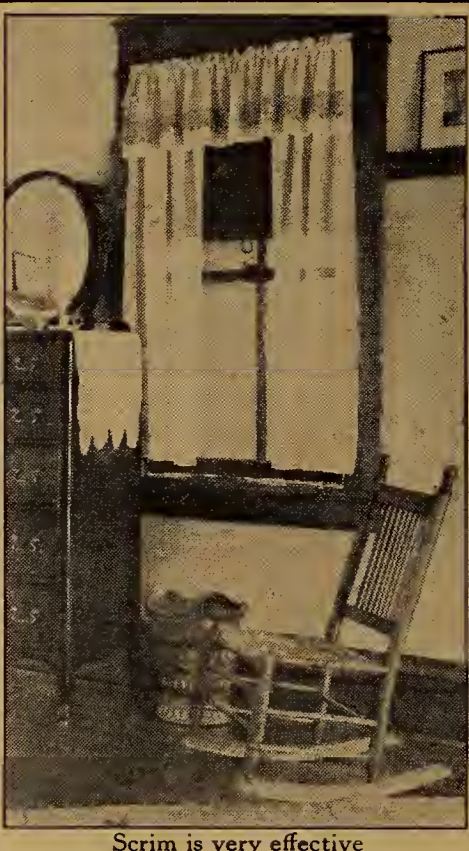
Scrim and the unbleached muslin will make the most serviceable curtains from point of wear. Stenciled borders are beautiful on either the scrim or muslin, and the work is not difficult after the first trial.

Hemstitching the hems would be best undertaken on the scrim or cheesecloth, as it is a comparatively easy task to draw out the necessary threads on those materials.

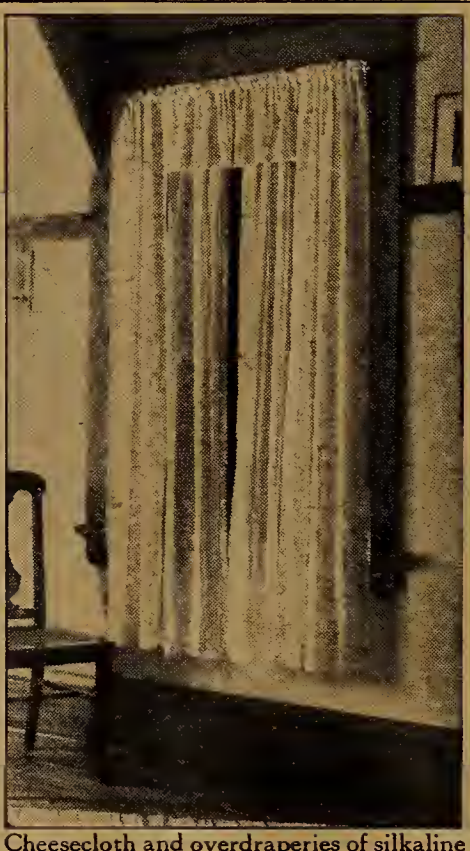
With hemstitched hems, or with plain hems and a border of one of the many pretty and serviceable laces, in imitation of Cluny, Valenciennes, or crochet laces, such curtains are dainty and far more artistic than most expensive materials.



Curtains of unbleached muslin



Scrim is very effective



Cheesecloth and overdraperies of silkalene

The illustration in the center shows curtains of scrim, neatly hemmed and steuccled with a narrow conventional border. These sash-length curtains required 2 3/4 yards of 40-inch scrim of a grade costing 20 cents per yard; total cost, 55 cents.

The amount of material used in the stenciling is so small that it would be hard to arrive at the actual cost of it.

The illustration to the right is of straight-hanging curtains of cheesecloth against the glass, trimmed with a narrow lace edge, and overdraperies of silkalene in a dainty pattern of pink rosebuds on a white ground.

Yard-wide cheesecloth cut through the center will make the white curtains. The table of

One of the best things about them will be the ease with which they may be laundered, for they are as easily ironed as a towel; thus one is saved the laborious work of putting them on to lace-curtain stretchers.

A distinct advantage in having curtains which may be ironed instead of dried on stretchers is that they may be freshened at any time without involving the use of stretchers in the house during a season when drying cannot be done out of doors.

The illustration to the left shows neat bedroom curtains of unbleached muslin trimmed with narrow lace. The muslin,

forty inches wide, is the ten-cents-a-yard variety, a deep cream in color, of course, and trimmed with lace at five cents a yard.

One width of the muslin, cut down the center and neatly hemmed with a narrow hem, is sufficient for the curtains, and one yard of the muslin is more than sufficient for the valance. This brings the cost of the curtains to seventy cents for a window:

3 yards of muslin, at 10 cents.....\$0.30
8 yards of lace, at 5 cents..... .40
Cost per window.....\$0.70

cost is encouraging to economical housewives. Indeed, it has never been so easy as it is now to find artistic tones and textures in cheap fabrics.

2 yards cheesecloth, at 10 cents.....\$0.20
6 yards lace edge, at 5 cents..... .30
5 yards silkalene, at 15 cents..... .75

Cost per window.....\$1.25

Who does not find these curtains lovelier and more graceful than elaborate draperies? Simplicity, lack of pretense, harmony with surroundings and the kind of life lived in the home, should be the guiding principles in decoration.

HIS MOST THRILLING MOMENT

By May Moore Jackson

Illustrated by John Rae

In Two Parts—Part Two

Synopsis of Part I

A GRAY-HAIRED man is telling a friend what was his most thrilling moment. He was the delicate child of a big, stern father who could scarcely conceal disappointment in his son's smallness and childishness. Matters were made worse by his failure to vindicate himself at school of the theft of two pennies—because he was ashamed to empty his pockets and reveal a tin soldier with which he played when unobserved.

"THERE'S a high hill just back of the town,—you can see it like enough from your office windows,—with bare, jagged sides, and at the top a sinister, half-dead sycamore keeps guard over an old well. Because of this well and the abandoned quarry back of it we children had been forbidden to play there. McQuisten's Hill is to this day a bugaboo with which to scare unruly youth, though I had the well filled up many years ago.

"Naturally, after the trouble about Susan Blimmer's pennies, things went more ill with me than ever, and there came a day when the fire of resentment under



"A Lion!"
breathed Toosie.

my little Sunday jacket had burned in to the danger line, and on that day I *dared* certain of my mates to play truant from school and follow me to the top of the forbidden hill.

"Up we climbed, taking the most perilous way, where foothold and handhold were often precarious, where a slip might have meant death, I in the lead, waving my cap in a very delirium of reckless wickedness.

"We gained the top and paused for breath, only to have the marrow frozen in our bones by a shuddering moan from the direction of the old well. I was the first to look down. It was but little past noon, and the sun, directly overhead, sent a shaft of light down the dark hole. There was no water in the well, only stones and green moss at the bottom, and so I looked straight into a pair of pleading, pitiful brown eyes, but by the time the others dared to peep the poor head had dropped weakly and only a tawny back was visible.

"**A LION!**" breathed Toosie, whose eyes were round and wild, 'ethscaped from the thircus!' and all but me accepted this for gospel truth.

"We must rescue him," firmly declared the brother officer and valued friend of a great general.

"But how?" questioned Gordie Taylor in an awed voice.

"Politheman," suggested Toosie.

"Follow me!" I commanded boldly. We went down the hill as we had come up, and by Heaven's mercy reached the bottom in safety, and as fast as legs could carry us made straight for the village fire house! Chief MacMurray, a uniformed hero to every boy and girl in the county, was engaged in the peaceful occupation of a game of checkers with his mate.

"If you please, sir," I spoke up glibly, all my old timidity fallen from me like a cloak, 'there's a lion in the bottom of the old well on McQuisten's Hill and we want that you should help us get it out.'

"Ethscaped from the thircus!" supplemented Toosie, still round-eyed and wild of looks.

"In the light of older years I know that Hugh MacMurray loved children dearly, that he had a wonderful understanding of them, that his days were monotonous in a small village where fires were few and very far between, and that a bit of excitement, legitimate or otherwise, must have been welcome, I say I know all this, now, but that day I could only love him for his start of fear and for his hoarse and trembling voice.

"Neely," he cried, looking sternly at me from under

his beetling brows, 'what sort of tale is this to bring a man on a peacefu' day like this. A lion! Hoot, lad, ye've been whisperin' wi' the wee folk that live under the dock leaves.'

"But it's true!" I said solemnly.

"Ethscaped—' but I silenced Toosie with a scowling look.

"Jimmie, you'll know I'm not like to forget that day as long as ever I live when I tell you that at a sign from the chief the big bell over our heads clanged one wild peal, the horses sprang into place, and their harness dropped upon them, and the driver, his blue coat only half on him, struggling into the sleeves of it anyhow, sprang on the hub of the wheel and on up to his place in a breathless second of time, while the chief, with one sweep of his mighty arm, swung us to the wagon bed and bade us hold tight, jammed his helmet down on his gray head, took a running jump for his seat, and landed on it like a cat, and with a roar and a clatter we were off, racing to save a life—only think of it!—with half the town at our heels.

"Arrived at the top of the hill by means of a sober and gently ascending road,—a ladder-wagon could hardly be expected to climb a precipice,—we stood waiting in the last taut pitch of excitement, while the old chief peered anxiously into the well.

"The beast is alive," he announced soberly, 'toss us that coil of rope, Bill, and now, my men,—he swept us all a searching glance from under his fierce, old eyebrows,—'the well is very narrow, no full-grown man could get into it, is there a boy here who is not afraid to—'

"Oh, if you please, sir, let me go down," I implored.

"Well said, Neely!" he cried heartily. 'Ye're a fine lad, and your father's own son after all.' He flung a loop of rope about my body just under the arms and made it fast with a sailor's knot.

"**A**LL ready, William, pay out the rope as I need it, heave ho!"

"The very last thing I saw as I was lowered into the pit was Toosie's eyes round and amazed to the point of popping right out of her head.

"Take a loop of the rope round the beast's body just back of its forelegs, son, when you reach the bottom, and gi' us the signal whenever ye're ready, and we'll haul ye up together," called the chief cheerily.

"Of course I had known that it was no lion I should find; I had known when I saw its eyes that it was just a poor dog, and gentle, from its pleading looks, and so it was, just a half-grown collie puppy that sank against my breast with a long sigh. For one blessed moment I permitted myself the joy of holding it close in my arms, of feeling its soft body against my own, of loving it with all my hungry heart, then I looked up at the tiny circle of light far above my head and called boldly, 'Haul away, sir!'

"Aye, aye, my hearty, haul away it is," hailed the chief lustily, and in a jiffy I was on top of ground, with the pleasant sunlight shining down upon me, smiling faces all about, and ringing cheers sounding in my ears."

"Was that the thrilling moment, Uncle Niel? It truly might well have been."

"No, no, Jimmie, though I'll not deny that it's a fine thing and a proud thing for a man to hear the plaudits of his fellowmen; but I felt neither fine nor proud as, carrying my helpless burden, I ran as fast as ever I could to the shelter of our barn, where I made a bed for Jean—I had already named her Jean, which was my mother's name—of clean straw.

"I couldn't find my mother in the house, but seized a pan of milk on which the yellow cream stood thick. The poor dog was too weak to stand, but I tipped the pan so she could reach the milk by lifting her head ever so little, and she drank greedily; although, hungry as she was, if I but touched her ever so lightly she stopped her feeding to lick my hand. You see it was just born in her—the noble quality of gratitude; and all her long life she showed it in a marked degree, gratitude, and devoted love and service, in return for the affection we bestowed upon her.

"For a long time I sat there in the straw with Jean, feeling the apples of success turn to bitter ashes on my lips, for I had not only disobeyed my dear father but had that day broken the rigid law of a school and had both spoken and acted a lie!

"What would be the punishment for fearful crimes like these? Well, they would send me away, that much was certain; where, I did not know, to a foreign country perhaps. Yes, it was more than likely it would be a foreign country, and very far away, for beyond a doubt my father would never be able to endure the sight of my face after this, and my mother—an overwhelming desire to see my mother, just to look at her as long as it would be permitted me, drove me to the house, where I seized a book and watched my mother furtively over the top of it as she went about quietly preparing the evening meal.

"My father came home, but after one scowling glance at me he took his evening paper and went into another room where he sat down by the open window.

"After a while my mother came to the door. She bent down and kissed me—she so rarely did that. 'Neely, go and tell your father supper is ready.'

"The moment had come.

"I turned down a page in my book as carefully as though I meant to read there again, and went with lagging feet into the next room. As I stood beside my father's chair the top of my head was not much higher than his elbow—he had never seemed so big. I touched his arm.

"**I**F YOU please, sir, I'm a coward, a liar, and a baby. I carry a tin soldier in my pocket that I play with when there is no one by to see. I played truant from school and disobeyed you and went to the top of McQuisten's Hill. There was a dog in the well. I knew it was a dog all the time, but the others thought it was a lion, and I let them think I thought so, too. The chief said I was very brave, but I wasn't. I'm sorry, and she's in the barn under old Dock's manger, Jean is—I named her Jean. And if you please, sir, after I'm gone away—she's just a baby, no home, nor—nor—folks—I'd be glad if you'd let her stay here.'

"Having made this fearfully bold speech in breathless haste, words tumbling over each other so that the heinous tale of my wrong-doing might all come out before my courage failed, I stopped and listened to my heart that was thundering fit to burst my little breast. I could not see how my father took it all, because my shamed eyes were glued to the toes of my clay-stained boots, but, the Lord be praised, I could feel, and did, his arm slip round my shoulders and grip me with a man's grip.

"My son!" he said, and crushed my face against his cheek."

"That would be the moment," said Jimmie softly, with that beautiful comprehension that makes him dear to me.

Sidewalks

By Anna B. Taft

ALL of us know the disadvantage of walking along the outside edges of a sometimes muddy and an oftentimes dusty road, which is the only sidewalk provided in many a small country community. To wait for a real sidewalk to be built by taxation is, permitting a will-o'-the-wisp hope to delude one for many years.

A very simple and possible way to get this inexpensive and needed comfort is to get the people of the community together and build a good sidewalk. A stranger in a town in western Pennsylvania inquired of a farmer who was giving him a lift how it happened that the sidewalks extended for so long a distance outside the village, and the farmer replied: "Oh, the people got together, had a frolic, and built them."

A little community in Kansas has just recently finished a two weeks' sidewalk campaign, promoted through the leadership of a large-hearted citizen, a wide-awake man, who liked to see things go. There had never been a sidewalk in the village, the gravel had to be hauled two miles, but two hundred rods of sidewalk was built at this time.

The contributions of work totaled sixty days and was contributed by thirty-five different men. Eight days of work was the contribution of some men who had no teams. This sidewalk "bee" was carried on for five



"My Son!"

days. The ever-useful women of the community contributed as their share cheer and inspiration in the way of a good dinner on the last day of the "bee." This proved a fitting celebration of the completed work.

The advance of interest was noticeable. The first day there were nine teams; the second, eleven; the third, nine; the fourth, fourteen; and on the fifth and last day seventeen teams appeared, and the dinner was served to fifty-five hungry and altruistic workmen. It was a splendid test of unselfish co-operation.

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Thoughts for the Sunday Hours



A tent was purchased and placed on the campus to accommodate the boys

The Community Builder

By the Rev. Harry R. McKeen

Chapter II

THE Sunday school was the first department to which attention was given. Personal workers were interested and the superintendent got "on the job" seven days in the week instead of one day. There were already loyal and able teachers. A systematic canvass of the community was made. The country people were visited and made to understand that the church was there and that they should use it. The school grew apace. The graded lessons were gradually installed, and two teachers provided for every class. New equipment, including charts, blackboards, and helps, was purchased, graded lessons introduced, and classes organized for some special work outside the class study.

The enrollment of the school finally reached 350. The church would not accommodate the classes, and a tent, purchased and paid for by the boys themselves, was placed on the church campus to accommodate the boys of the intermediate department. They had great times here under the direction of a woman teacher who understood boys. This is the vital place in the real church. The young man to-day is to be the church pillar to-morrow, or else he will stay outside the church and the institution be

weakened thereby. The cradle-roll department was added and thirty-seven names enrolled. The church became the gathering place of the rural people every Sunday.

The second department to which attention was given was the Young People's Society. This particular society was in the hands of the old people. These old folks were the finest ever, but were out of their place on the front seat in a young people's meeting. They held office, dictated the kind of sociables and amusements, disbursed the funds, gave the same talk at every meeting, and were always on the job, "keepin' things goin'," as they expressed it, and deprecating the fact that this was a "forward and wicked generation" and that "young folks was different from what they used to be," etc.

The preacher understood the situation at once. The young folks would not go on in the old way, and the old folks would not have a change. The result had been only natural. The young went, took a back seat at first, and then found more congenial companions up-town at the confectionery on Sunday evenings until church time; and it wasn't long until they forgot when church time came, even forgetting when ordinary bedtime came.

The confectionery prospered, but the young people gained nothing, and the church suffered a distinctive loss because of the lack of understanding on the part of the heads of the church.

Thus the aforementioned funeral. One or two good brethren have never fully forgiven the preacher for thus summarily taking away the "blessed privilege they had of testifying before the young people" and telling them "about the sins of the world." It is splendid to see the old people interested in the young people's work. They should

attend but sit well back, and speak out when spoken to and come when called, like good folks. They should encourage and inspire but keep in the background.

This elimination of the old people led to a mistake in the work when the society was reorganized. The young married folks and older young people did not affiliate with the reorganized society, and those in charge were misunderstood. The result was not at all satisfactory. The leaders got into a rut. The programs were not carefully prepared. The whole thing assumed a "cut and dried" attitude. Each meeting was like every other. The verses were read mumbly, and articles that should have been committed or thought about and discussed offhand were read hastily and unthinkingly. Another funeral was necessary.

That preacher made a discovery about this time. And that is, that not only are most of our communities overchurched, as far as numbers of churches are concerned, but that most churches are over-organized. Absolutely organized to death.

They are in the same condition that tug boat was whose captain put on the siren whistle of an ocean liner. It took so much steam to blow the whistle that there was no power left to pull the load. This is true of a vast majority of churches.

The idea suggested itself of having fewer organizations in the church, but having those that did exist more efficient.

The church as a great university suggested itself. Its business was to build character. To teach men and women in such a way that they would get more out of life by putting more into life; that religion should deal with and influence the business, social, and intellectual life of the people of a community.

The church the university. The pastor the president of this great institution. The prudential committee the advisers of the president and the heads of the several departments. The trustees and clerk for finance. The Sunday school, Y. P. S., women's work, and men's organization heads to be deans of the several departments and members of the official or church board. The whole institution to be so manned and organized that each will harmoniously co-operate with all the others.

When the idea unfolded itself to the preacher he proceeded to attempt to work it out.

The Young People's work was a good place to begin.

Another thing came to him with force. The young people of that community had not been taught in the fundamentals of Christianity. Their fathers and mothers had been too busy building barns, houses, schoolhouses, breaking prairie sod, plowing, sowing, reaping, fighting droughts, prairie fires, grasshoppers, and green bugs to put in much time laying either religious or moral foundations for their boys and girls.

These young people had heard the preachers when they came once a month, or oftener, as the case might be. They had gone to Sunday school, but too many teachers were uninteresting because of lack of training or preparation. So it was found necessary to lay some fundamental religious foundations.

"Why not do this through the Sunday school?" came the thought. What was the Sunday school for if not to educate the youth in Church and Bible history? Was not its function to teach?

So a course of study was selected that embraced preparations for Christianity, a history of the rise of the Hebrew people, Christian life and conduct, a story of the great men and women of the chivalric and modern days, a life of Christ, with special emphasis on His life of service and a year's study of the modern church.

This course was started under the leadership of an earnest, broad-minded physician who put his very soul into the

work. The class met at the Sunday-school hour and studied these lessons instead of the regular international lesson. They are now in their third year, and the plan has proved a success.

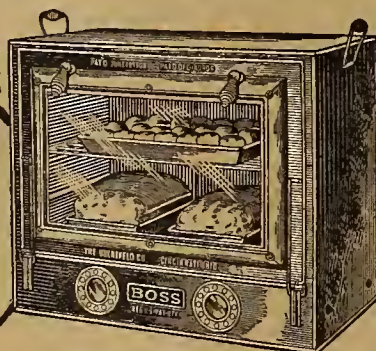
Instruction is of little value, however, unless it be put into action. The preacher wanted these young people to do things as well as learn things, and they were willing to be used.

[TO BE CONTINUED]

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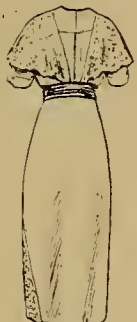


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What's more—your whole family needs it.

Think of Your Family

They, too, want to get out of their former small and narrow path. They, too, want to go hither and thither—seeing, learning, playing, working, enjoying, broadening and accomplishing.

For life can be just what you make it—dull, forlorn and narrow or just chuck full of everlasting fun and enjoyment.

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SATURDAY, MAY 9, 1914

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Top o' the World. Sheep Industry in the Rockies

The picture above was taken at South Canyon, Colorado, on the western slope of the Continental Divide, traversed by mountainous ranges and watered by the Grand River of Colorado with its numerous smaller tributaries. It shows the sheep being driven down from their winter range, which is about eight miles to the west of this point. ¶The feeding season lasts from December 1st until the 1st of the following March. By this time the heavy winter snows have melted sufficiently to allow the sheep to begin grazing, when all feeding stops for the season. ¶About the 20th of April the sheep are driven down from their spring feeding grounds on the foothills along the river, to be sheared at the shearing corral, where power machines are operated, shearing as high as 250 sheep per day to each machine.

LOOK FOR
THESE GOOD THINGS
SOON TO COME!

The Farmers' Lobby

"When FARM AND FIRESIDE comes," says a subscriber in a letter to the Editor, "I first turn to the page where you make your editorial comment and then I turn to the Lobby. I read every word on these two pages before I read anything else in the paper. The Farmers' Lobby is one of the most valuable parts of the paper. It links us up so closely to our national capital. Mr. Welliver must be truly a wonderful man." These words of enthusiastic praise came to the editors just when the Lobby for this May 9th issue was expected. And then the Lobby came. We read it through and said to ourselves: "Well, we believe there are thousands of readers who think just the same. This particular Lobby has behind it a wonderful breadth of experience. We know our readers see it." And then we went busily to the task of getting the type set for the page. There is a satisfaction in presenting to readers everywhere the facts as given by Mr. Welliver in *The Farmers' Lobby*.

Bees! Bees! Bees! Bees!

Farm papers often throw cold water on beekeeping. But wait until you read the splendid success several Iowa people have made. It sounds too good to be true; but it's true. We'll print it in the next issue.

The Isolated Renter

Have you ever been one? Many of us have been just there, and we will appreciate what is said about him. He is to be judged by what he attempts to do, and what he does will be determined by his real purpose. But many of the things he would like to do are kept from him by the very fact of his isolation. How is he to overcome those conditions? It may be a fight on the part of himself and his family, but then it will be worth the making. The viewpoint of a man of wide experience will be given May 23d.

Eggs and the Fountain of Youth

Mr. and Mrs. Skeptic, you'll enjoy being convinced in this thing. You can have May and June eggs next winter that you can set before company without a quail, and you won't have to scramble them (the eggs) either. Most folks are suspicious of yearling eggs, but we're going to show you that it's all in knowing how to keep them young and innocent. And you don't need cold-storage barons, nor even politicians, to tell you how to do it. Do it yourself. Housewives can tell good eggs from stale eggs because the latter will neither poach nor whip well. But we're going to show you by actual photographs that eggs kept as directed by FARM AND FIRESIDE will easily pass this test. The editors have personally tested this method. Father Time is so alarmed about it that he is trying to buy the method and keep it secret. But don't worry: it's all ready for publication and will be in your next copy of FARM AND FIRESIDE.

The Community Builder

The Rev. Mr. McKeen will continue his account of the reorganization of his little church in northwestern Oklahoma to meet the needs of the community. The best part of this story is that Mr. McKeen inspired the people to do their own reorganization, and to perceive their own moral issues, instead of doing it for them. The young people built and financed a playground; the Ladies' Aid Society learned what "Gospel measure" should mean.

A Feminist Story

The first number of a two-part story called "Dolly Second" will excite the reader's curiosity. Why was Dolly so eager to buy racing mares?

More Testimony About the Support of a Family

From West Virginia come two more letters upon the question, "What is It to Support a Family?" These are written by husbands. One of them has been married twice and finds that what solved the question successfully in his first marriage brought disaster in his second. He wants advice from other friends in the Experience Bazaar.

What to Do

All of us get in a position sometimes where we are not sure what is best to do. Then we appreciate a friend. That is the position FARM AND FIRESIDE bears to each subscriber. You are in the family and your questions will be answered to the best of the ability of the editors if you care to write in at any time.

WITH THE EDITOR



THE approval of our regular readers is what FARM AND FIRESIDE seeks to deserve. They know better what they want than anyone else. And yet, the views of an intelligent outsider are always of value. It sometimes does a family a great deal of good to have a stranger come into the family circle for a while. Little tricks of manner into which we thoughtlessly fall suddenly spring into question in our own minds when the stranger within our gates looks upon them. We begin to suspect that they may not be quite the best manners.

Sometimes the little sister or brother whose fine qualities we have overlooked, just because we are so accustomed to them, shines out as a jewel in contrast with those of some other little boy or girl who may be a very nice child for all its faults. The appreciative view of an outsider may show to a family too much kept to itself, that it has been building up a beautiful family life unseen of the world.

I once knew a little boy who lived in a remote place where he seemed to have no chance at all. He was a great reader, but had little to read. Everything within his reach, however, he had pored over until he knew it. He lived in a little world of his own, in an atmosphere of thought or romance, and of dreams, of which nobody except perhaps his mother had any idea, and of which he was himself a little ashamed. If anyone thought him an exceptional child it was probably because he was "queer." He was not very industrious in the matter of the odd "chores" about the place, though he did them well when he once attacked them; but he would dawdle about with a book, or whittle away at some machine which he was "trying to invent," and the parts of which he carefully hid on laying them down, and darkness came upon him often with cows un milked and hogs unslopped, and there was trouble for him. He was quite likely to go to bed late on account of some story which he was reading, or some other interest outside the family work, and this made it hard to get him up in the morning. Altogether he was not gaining in the respect of the family, all of whom loved him, when a visitor from a distant city came to the farm and showed everyone concerned what was in the boy. She gave him the right sort of books, and helped him to find himself. She also helped the other members of the family to find him. He became the strongest individuality in the family.

A Letter That I Received

Perhaps what he thinks of the old paper may be of interest to the immediate members of our immense family circle:

I am a traveling man, and within a day or so past I one evening, in the reading room of the hotel where I was stopping, picked up a copy of FARM AND FIRESIDE, of date Saturday, February 14, 1914, and, sir, I spent two hours of enjoyment reading FARM AND FIRESIDE.

I was raised as a boy and to young manhood on a farm, but that is some thirty years ago. So you can know that I might read and understand FARM AND FIRESIDE better than some of our traveling men, city-bred.

Your publication is deserving of a splendid circulation amongst our rural friends, for it is sure full of genuine merit. What caused me to pick up FARM AND FIRESIDE that evening was the title of an article, "A Hoary Fraud," and it was a splendid article. If the daily press of these United States would copy that article, each publication once, there would be nothing left for the Government to stop. Of all the mean swindling by swindlers this class is the lowest and most cowardly. They take money out of the pockets of the poor and very ignorant. Most poor people who are not well are willing to try almost anything, with hope for a cure; hence this harvest of dollars for a fake cure is derived from a class that can ill afford to be swindled. I have often wondered why our Government at Washington has not framed laws to justly punish such people.

Without governmental assistance this vile practice could be stopped if our publishers would not receive their paid advertisements, for they would soon have to go out of business; and, by the way, I believe that any publisher who accepts such advertising is as guilty as the unprincipled faker who pays him the money for such advertisement, knowing it to be a fraud on its face.

A publication gotten up like FARM AND FIRESIDE must have an immense circulation, and you will have done worlds of good to your many readers, and others who are not readers.—F. M. B.

I don't know when I have received a letter which did me more good. The editorial referred to by Mr. "F. M. B." is one in which we expressed some indignation at a certain sort of patent-medicine fraud which the Government has as yet found no means of stopping. After all, intelligence on the part of the people themselves is the only thing which can protect them. If we were all to remember that there are no such things as medical secrets we should soon stop buying these medicines.

Always Get Good Medical Advice

Whatever one doctor knows all doctors may know by simply studying the matter. Patent medicines are claimed to be "well-tried physicians' prescriptions" which are dealt out by druggists—and in some places by grocers—instead of by physicians. In most cases this is not true. Many patent medicines are merely alcoholic drinks disguised as medicines. Many a good prohibitionist is taking whisky every day in a patent medicine. He thinks the drug—"the physician's prescription"—is doing him good, when as a matter of fact he feels the stimulation of the liquor. So far as its effect on his system is concerned he would do no worse if he went into a saloon and took two or three drinks a day; but he doesn't know what he is doing. So its effect on his behavior may not be quite as bad. But I am glad that through the agency of the farm press, and some of the daily papers and magazines, this sort of dope-vending is becoming harder all the time.

It is, however, a great national danger. It preys on ignorance; and, as the extent of the "dry" territory grows greater, it may become a greater menace. Not only alcohol, but cocaine, heroin, morphine, and other habit-forming drugs are sold under the guise of medicines, which are binding thousands in chains worse than chattel slavery.

Robert L. Smith

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HOW THE DOGS RUIN THE FLOCKS

By Herbert Quick, Editor

Illustrated by Jay Hambidge

IT SEEMS probable that very few legislators and comparatively few owners of worthless dogs are aware of the peculiar way in which the worrying of dogs affects a flock of sheep. If the damage were confined merely to the killing and eating of a sheep or two, the dog evil would be bad enough, it is true, but very small compared to its actual magnitude.

All sheep owners know, and all other people should be informed, that the damage which is paid for when dead sheep are appraised and a county warrant issued for their value under the law is a very small part, as a rule, of the injury suffered by the flock master.

Mr. J. C. Courter, one of the most skillful shepherds in the United States, of the Rose Vista Farm, Amelia County, Virginia, gives us a very vivid picture of this, drawn from his own experience. Says he: "The one instance in which I witnessed sheep-worrying by dogs was evidence conclusive of the ruin to a flock that even a good, thorough dog scare will be. Let us imagine for one moment that there is a flock of ewes grazing out yonder in the field. They are good ewes, heavy in lamb. Their bulging sides are proof of the forward condition of their maternity, and they are a pleasant sight to look upon. Imagine also that they have been worried by curs some time previously, as have thousands of flocks everywhere, and that, as they graze, one of them looks up and sees in the near distance a strange dog running toward them. The sentinel stamps her feet once or twice and is off, running for the other side of the field at top speed. The others follow. The dog may be merely hunting, or running with some wagon that is passing, but no matter. Due to the terrible fright of the former dog scare the nervous sheep are thrown into a paroxysm of fear. Death follows them in the form of that dog. They know not the courage of standing and fighting, so they rush madly on. Finally they come to the fence, and the leaders, like as not, burst against it before they realize its presence. The others draw up wild-eyed and panting. Their heavy bellies are heaving and their breath comes in sobs. Then one, more terrified than the others, remembers the gate at the far corner of the pasture, and away she breaks, going in what lumbering run she is capable of in her condition, with all the others in similar plight behind. One or two may fall before they reach the gate. Those that reach home are scarcely able to stand when they get there for the terror and strain of their running. That night the farmer comes to see them. He thinks of the lambing soon promised, but when he gets there what havoc he sees. Here on the grass lies a newborn lamb. The exhausted mother stands by its dead body still wild with fear. At every new sound others start. Off to one side another new mother stands with her cold, still-born, half-grown young near. Others show unmistakable signs of lambing soon, although they are not due for several weeks yet. In one afternoon the flock has been ruined. Some ewes will die. Some may raise live lambs, but it will be doubtful. The flock never again will be of real value. They are nearly a dead loss. Those that live can be fattened for the shambles, but where they were pure-breds not a fraction of their value can be gotten as mutton. And



The fence! "The leaders burst against it before they realize its presence"

so it goes most always with the flock that has once been worried by dogs. I have seen it many times. When once worried those that escape seldom recover their former composure, and had better be fattened and sold unless certain arrangements will keep dogs away later, even if they are only passing dogs of a traveler. One such an experience would put the ordinary farmer out of the notion of keeping sheep, no matter how much he makes when the dogs let him alone. He can stand sickness and the wool tariff, and all, except the ravaging, worthless, sheep-worrying dog."

I wish every legislator in the United States could read this word picture; but would he, especially when under the influence of the dog worshippers who infest the lobbies of their state houses, believe in the truth of the picture? Let us then bring in other witnesses. Mr. W. E. McFarland of Monroe County, Missouri, says: "Where dogs make a raid on a flock and kill or cripple quite a number, it takes the ones who are not caught a long time to get over the scare. Sometimes it causes them to lose their lambs."

"When sheep are chased by dogs a few times," says Mr. John Rieubold of Seneca County, Ohio, "the flock is practically ruined." "Nearly all sheep that are bitten to any extent die, while the others do not do much good for a month or so afterward. If the ewes are heavy with lamb there will be a good many dead lambs dropped"—this is the testimony of Messrs. R. and W. Postle of Franklin County, Ohio.

Perhaps the highest authority in the United States is Mr. Frank Klein-

heinz of Wisconsin, who says: "The injury resulting to flocks that have been chased and cornered by dogs is such that a flock once badly scared will no longer thrive and do well on a farm. I know of many flock owners who have had to sell their sheep after they had been badly scared, because they found that the sheep lost their thriftiness after such a scare." "Once," says Mr. G. G. Sumner of Bradford County, Pennsylvania, "I bought a flock that had recently been badly chased, and some killed and injured. We lost nearly

all the crop of lambs at lambing time. I have known several flocks to be nearly ruined."

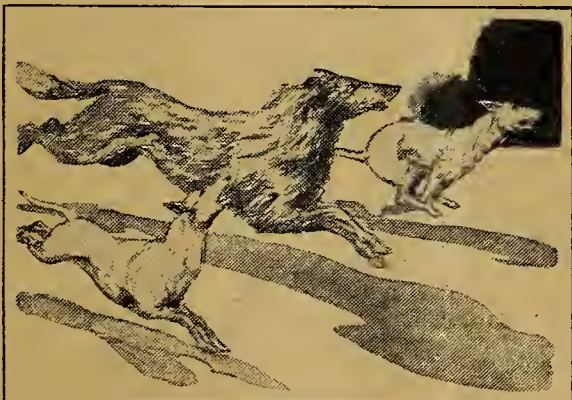
"One cannot tell the damage done to a flock of sheep by dogs," says Mr. Lee R. Scott of Washington County, Pennsylvania, "as the effects of scaring last for years." Mr. C. E. Cleveland of Multnomah County, Oregon, states that "being chased by dogs makes the sheep wild and restless and cuts down their flesh rapidly. A sheep that has been worried by dogs," he adds, "will not eat, but will stand in the pasture ready to run at the sight or sound of a worthless cur dog."

Mr. D. H. Sloan of Ashland County, Ohio, states that the sheep that have been badly worried or chased by dogs become nervous, are always in terror of dogs, and "do no good for some time." Mr. Edgar L. Vincent, quoting the well-known sheep breeder, Mr. Otis Fuller, says: "Mr. Fuller has often told me that after a flock of sheep had been chased by dogs it was practically spoiled. Those that were left seldom do well and the farmer had better let his sheep go and begin again with young sheep that did not know what it was to be harassed in this way. Most sheepmen know the fatal nature of a dog's bite to a sheep." "A sheep will never get well," says Mr. H. L. Ross of Marion County, Ohio, "that has been bitten by a dog. It is a great damage to a flock to have been chased. They will not take

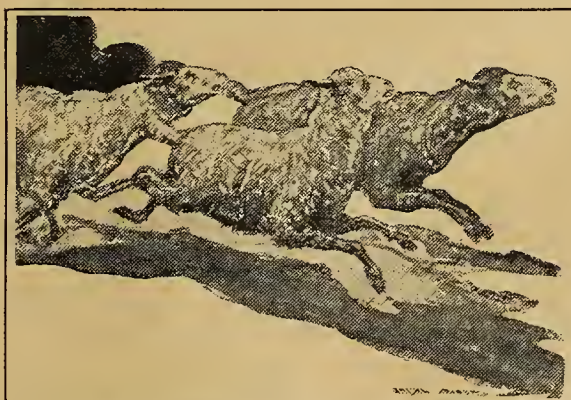
on flesh for a period of from thirty to sixty days." Mr. John Pickering Ross writes us of an experience of his own in which three or four dogs killed the English sheep dog who was defending the flock, and then ravaged the flock of sheep itself. "Four of the ewes," says Mr. Ross, "were devoured and four more had to be put out of their misery, and several others had been badly mauled. In the end we raised but 35 instead of the 125 I had reasonably expected." A member of the sheep-breeding firm of W. M. Bingham's Sons, of Adams County, Pennsylvania, writes: "It is not often that dogs kill many sheep in a flock. By far the greatest loss is in fright to the flock. The frightened sheep never do any good afterward; they live in constant fear of another attack by dogs, and their usefulness is over."

Under date of October 13, 1913, Mr. C. M. Brettell of Bennington County, Vermont, writes us that one flock was entirely destroyed in his neighborhood that fall, and that the surviving sheep in another flock were at that time doing no good on account of being

so badly frightened, even though they were not touched by the dogs. "They seem so nervous," he writes, "that they will not go out to feed for fear of dogs getting among them again." Speaking of his losses by dogs, Mr. George Schaap of Marion County, Oregon, says: "As to the damage they did in addition to kill-



"The collie and his gang"



"The sentinel stamps her feet and is off"

ing three ewes, about half of my ewes lost their lambs owing to overexertion and fright. My sheep are all registered Shropshires." Prof. E. J. Iddings of the University of Idaho agrees with these sheep owners. "A very slight injury to a sheep by a dog," says he, "and a little worry, will as a rule be fatal." Daniel Bryan of Jay County, Indiana, had dogs in his flock of sheep on three different occasions in the fall of 1912, at which time he managed to kill two of the dogs and stopped the depredations. "In all," says he, "the

dogs killed outright two sheep and maimed four others. The sheep maimed were breeding ewes, and they recovered from their wounds; but not one of the ewes that were crippled raised a lamb, but either lost the lamb before time to be dropped, or refused to own the lamb at lambing time." Mr. Bryan is the only one of our correspondents who has ever had any sheep recover when actually bitten.

A subscriber, "J. P. B." of Easthampton, Massachusetts, protests very strongly against our indictment of the dog. He says: "So surely as there is an overruling power, just so surely will we be required to give an account of the treatment of the humbler creatures of the earth. Mr. Hasbrook, or any objector to dogs, evidently has not considered the subject from its various points of view." It is probably safe to say that J. P. B. has not given it such consideration as he recommends. The sheep is peculiarly sensitive and capable of suffering the most intense agony. Considered from the standpoint of cruelty to animals, has any dog owner the right to keep an instrument, either animal, vegetable, or mineral, which has the power and the propensity to inflict such agony upon helpless animals as the sheep must feel, when not even the pangs of hunger can induce it to go forth to graze? I commend this view of the case to humane people everywhere, and hope that after reading this article they will consider the sufferings of the sheep.

The dog has for so many centuries been the com-

panion of man that he possesses more intelligence than any other animal, perhaps. This intelligence is an evolution. It adjusts him to relations with human society. And knowledge is power. The dog has the power of making himself agreeable to human beings, serving them, flattering them, defending them; and with this power, in more or less right directions, he has the power to become the greatest criminal in all the animal world.

"Bob, Son of Battle" is the story of two dogs, and one of the best stories in the language. The one dog is faithful to death, and the other—an English sheep dog—is a murderer of almost fiendish cunning. The dog has learned that if he commits crimes on his home farm or near it he incurs peril. Therefore the sheep-killing dog may be a friend of his master's sheep, care for them, and safeguard them. In most cases he will go so far from home to indulge in his favorite vice that he will not be recognized. The writer of this remembers a beautiful collie which ravaged the barnyards of an Iowa neighborhood for years. He was unknown in that country. Perhaps he lived a respectable life ten miles or so away. There were few sheep here, and they did not last long. Then the collie and his gang—for he had a company of from three to half a dozen curs of which he was the leader—began on hogs and calves. Members of the pack were shot, but the ravages went on until finally a lucky shot laid the yellow bandit low. Then the

scourge was at an end. I have often wondered where the family lived whose pet and companion disappeared when our pest was destroyed. This constitutes one of the great difficulties of the problem—the dog's cunning enables him to maintain a reputation for harmlessness, and renders his owner perfectly certain that his dog is innocent and the killing of him a crime.

In conclusion let me give you the words of Mr. W. G. Crenshaw, Jr., of Orange County, Virginia: "If public sentiment could be aroused to enable us to raise sheep it would be of great benefit, both to producer and consumer. Personally, I do not expect to try again, as I am sixty-four years old, and I despair of a change in Virginia in my time. It is difficult to put down in dollars the loss by dogs. In the past fifteen years I have had three separate flocks of from 50 to 200. In each case we ran along very well for two or three years, then the dogs got in, killed a few sheep, and so upset them that further breeding was out of the question, and we had to send the poor ewes to the butcher. When all went well we averaged for lambs and wool full \$5 to \$6 per head annually, and the cost of grazing the ewes was trifling. I dare say their manure was fully equal to the cost of their keep. No other stock gives so satisfactory a return, but we are debarred from the business by dogs."

EDITOR'S NOTE: This is the third of a series of articles pointing to the evil worked by dogs among sheep.



Rural Problems and Laws of the Bible

By William A. Lippincott

Illustrated by Frederick Bower

THE problems which confronted the people of the Old Testament, and the questions involved in the then current legislation, have just as modern a ring as has the tremendous preponderance of country-folks who were listed among the great.

One of the problems which they had solved, and which we have not, was that of co-operation among farmers. Another was the question of concentration in the ownership of land with its attendant evil, the absentee landlord. The laws of the Bible deal with titles, modes of inheritance, land tenures, the removal of landmarks, live-stock regulations, sanitation and hygiene, the conservation of soil fertility, pure breeding, and even the question of immigrant farmers.

So far as can be learned there were no isolated farmhouses where single families lived alone. As a general thing a number of more or less related families united in forming a rural village. These were not cities in any sense, nor even small towns, but little hamlets set in the midst of the fields and hills. The country districts were dotted with these tiny villages, and we find constant reference to them throughout both the Old and the New Testaments. In the land laws of Leviticus (25: 31) it says: "The villages that have no wall round about them shall be reckoned with the fields of the country." To city people like the citizens of Jerusalem these villages were considered as a part of the open country, as is indicated in the Song of Solomon (7: 11), where it says: "Let us go forth into the field; let us lodge in the villages."

Every morning the men went out to the fields to work and at night they came back to the village for shelter. Thus in Judges (19: 16) it says: "And, behold, there came an old man from his work out of the field at even." The village in question was Gibeah, which lay a few miles north of Jerusalem and was the home of Saul, who became king of Israel. About Saul we read: "Then came the messengers to Gibeah of Saul, and, behold, Saul came following the oxen out of the field." (I Sam. 11: 4, 5.) David looked after his father's sheep in the hills of Judah, but the family headquarters were at the little village of Bethlehem. And it was from this same rural village that Jesus came in later years. In the same way most of the leading characters of the Old Testament times grew up in these rural villages.

Co-operation Against an Enemy

The reason for this gathering into villages was that the farmers were under the necessity of co-operating against the attacks of enemies from the desert and the surrounding countries. They co-operated just as the sturdy pioneers of our own early colonial days co-operated in the use of the stockade, because they had to. And the trend of the times seems to be that the farmers of to-day are co-operating more and more for the same reason, because they find they have to. It's a case of self-preservation now as much as it was in Bible or early colonial times. The enemy is not the same save in the characteristic of being a common enemy. Then the necessity was military; now it is economic and social, but it is just as real.

We are to-day hearing very much and doing comparatively little concerning the conservation of natural resources in general and soil fertility in particular. I suppose the majority of farmers consider this as a very modern question and perhaps more or less of a temporary scare. And yet if you will turn to Exodus

23: 10, 11 you will find one of the ordinances of the primitive code of laws commanding that "Six years thou shalt sow thy land and shalt gather in its increase. The seventh thou shalt let the land rest and be fallow." The lawgiver of that ancient day knew nothing of nitrogen cycle, of humus, nitrifying bacteria, of available and unavailable plant food or the theory of green manuring. But the practical advantage of a fallow period, one of the cardinal principles of dry-farming practice to-day, was so thoroughly recognized that an ordinance was actually placed on the statute books, directing that the land lie fallow one year in seven.

It was at a time when the laws of God and the State, which were then considered to be the same, were being broken that Isaiah (5: 8-10) in a burst of burning eloquence cried out: "Woe unto them that join house to house, that lay field to field, till there be no room, and ye be made to dwell alone in the midst of the land!"

"In mine ears saith the Lord of Hosts, Of a truth many houses shall be desolate, even great and fair, without inhabitant.

"For ten acres of vineyard shall yield one bath, and a homer of seed shall yield by an ephah."

It Was Sanctified Common Sense

Such a prophecy can be classed only as sanctified common sense. When the concentration of land ownership is the rule and land-grabbing is a passion, the live stock will be crowded off the range and there will be little attention paid to a program of soil conservation. The only possible result can be that even the vineyards shall be reduced in bearing and the increase over the seed sown will be so small as to make it hardly worth while to farm. The progress is negative, and straight toward the abandoned farm.

Such laws would be demoralizing under our present economic and social conditions. It was probably possible then only because of the theory of land ownership in vogue as shown in Leviticus 25: 23: "The land shall not be sold in perpetuity, for the land is mine, and ye are resident aliens and settlers with me." All laws were religious. God owned the land, therefore He had a right to legislate for its conservation and permanent usefulness. It is only a question of time, however, until there will be laws upon our statute books definitely regulating the care of farm land in certain particulars with regard to the conservation of the soil's fertility.

Perhaps the most striking similarity between ancient practice in Bible lands and modern need is to be found in the land laws of the Old Testament. As already suggested, they

faced the problem of the concentration of the ownership of the land and its attendant evils of absentee landlords and a dependent peasant class.

Micah (2: 1, 2), who was always on the side of the man who found himself at a social or economic disadvantage, cried: "Woe to them that devise iniquity, and work evil upon their beds! When the morning is light they practice it because it is in the power of their hand. And they covet fields and seize them; and houses, and take them away." "They practice it

because it is in the power of their hand" may refer to the fact that the prophets made no distinction between seizing land, as Ahab did in the case of Naboth's vineyard, and foreclosing a mortgage. In their view all concentration of land was wrong because it alienated from the soil the sturdy independent farming class of the day. The prophets preached against it. The lawgivers formulated statutes against it, and at least one prophet, Elijah, took the rôle which we now designate under term "invisible government" and started a political revolution, and overthrew the ruler in power because he seized a pleasing tract of land.

The effort to keep the title of the land in the hands of the farming people is strongly brought out in the laws concerning the year of jubilee, the redemption of hereditary land, and the conveyance of real property. It was legally impossible to sell farm land. The only

conveyance of real property to be found (Lev. 25: 15, 16) shows very clearly that what was sold was the crops and not the land. What was termed selling was in reality only leasing. It was a temporary arrangement. Here is the law: "According to the number of years after the jubilee thou shalt buy land from thy neighbor, and according to the number of crops until the next jubilee shall he sell it to thee. If the number of the years be great, thou shalt increase its price; but if the number of the years be small thou shalt reduce its price, for it is the number of crops that he selleth to thee."

The year of the jubilee, which was the fiftieth, or the one following the seventh sabbatical year, was one when there was a great home-coming. People were not only invited but were required by law to return to their own farming community, and at this time all land was released to its original owner. Thus in Leviticus 25: 13, 28, 31 we find that "In the year of the jubilee ye shall return each to his possessions. At the jubilee a poor man's land shall be released and he shall return to his possession. Houses in villages which have no wall around them shall be reckoned as belonging to the fields of the country; the right of redemption shall be released in the year of jubilee."

Sow, then rest



Sow, then rest

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The Sect that Protested Against Oriental Civilization

The most characteristic thing about the Rechabites (II Kings 10: 15, 16) was their avoidance of private property in land. They would do nothing which implied ownership in the soil. They planted no seed because the sowing of seed would make it necessary to possess fields. They seemed to reason that the private holding of land was wrong. So the Rechabites lived in tents, and followed a semi-nomadic life in the open country, away from contact with city life.

Immigration and the laws dealing with aliens are just now claiming a large share of our attention. The question was of much importance in Old Testament.

Prevention of disease was probably at the basis of such regulations as (Deut. 14: 21): "Ye shall not eat anything that dieth a natural death." To-day we have an elaborate system of government inspection to protect us from this very thing. And so throughout the long list of unclean things. While in some cases ceremonial uncleanness is carried to an extreme, which is difficult to understand from so great a distance, nevertheless the prevention of the spread of disease was the underlying principle. There are a host of farmers' laws that are full of suggestive interest because of their relation and their similarity to the life of to-day.



They dwelt in tents



Saul came



The clubhouse and auditorium offers a place for community gatherings. Average farm life depends upon the schoolhouse and the church



The climate and the work of the people do not demand large houses, and so the initial expense of starting a farm is not great

A City of Farmers

These Californians Claim They Have Found Independence on an Acre

By Charles A. Byers

THE question "Can a tiller of the soil make a living from an acre of ground?" has been widely debated. Without attempting to consider any of the various answers to the question that may have heretofore been advanced, let the statement that the thing is being done by several hundred persons in southern California suffice. And in many cases these miniature farmers are even making a comfortable living from a fraction of an acre.

There are two colonies of such farmers in southern California—one at San Ysidro, near San Diego, and the other at Monte Vista, near Los Angeles. The former was founded in 1908, and the latter in the early spring of the past year. They were organized under the direction of William E. Smythe, founder of the National Irrigation Congress, and have been termed the "Little Landers." The colony near San Diego has been in existence long enough to satisfactorily demonstrate the feasibility of the idea, and the one near Los Angeles has experienced a very successful first harvest season.

The idea is briefly explained by Mr. Smythe as follows: "Instead of wasteful cultivation of big areas, we are to have scientific and intensive cultivation of small plots of ground; instead of going into the wilderness and shutting ourselves off from all the advantages which civilization has massed in centers of population, we are going to live quite close to the big town; instead of living far from our neighbors, we are going to live in the midst of neighbors and make the most of them in every way; instead of looking up the cheapest land, we are going to take the very choicest land in the choicest place we can find, and make a little of it accomplish as much in the way of real comfort and satisfaction as we could possibly expect from a big farm under different conditions."

These "farms" of the Little Landers consist of quarter-acre, half-acre, and acre lots laid out like town lots. They are grouped around a civic center with clubhouse and auditorium, school, stores, hotel, and so forth. The colonies are incorporated under the co-operative law of California, and the purchase of land in the colony carries with it all privileges of membership except that each buyer is required to subscribe for a share of stock in the co-operative store, paying at least \$10 down, the balance of the \$100 share accumulated from profits and rebates, if desired. The government of the colonies is virtually that of the New England "town meeting," plus the initiative, referendum, and recall of California. The board of directors, of which the official head is the president, directs all public affairs, including marketing, land sales, and the social life. There are streets, electric lights, gas, a sewerage system, water works, telephones, and, in fact, practically all of the other conveniences and improvements to be had in the city. It is expected that when a community reaches a population of 500 it will be incorporated as a city of the sixth class and entrust its administration to a board of trustees. The schools are managed by a local board elected in the usual way.

It is thus seen that a colony of these Little Landers is virtually a small city of miniature farmers. Co-operation plays an important part in the organization, but nevertheless each individual stands on

his own feet, progressing according to his own skill, energy, and thrift. Each farm is merely a garden plot subjected to intensive and scientific cultivation. Sometimes a lot will be planted exclusively to some one vegetable or to marketable flowers, but in most cases a variety of garden truck is grown. As an illustration, the tiller of a half-acre lot at Monte Vista during the past season tells me that he planted potatoes, sweet corn, peas, three kinds of beans, cucumbers, melons, squash (several varieties), tomatoes, sweet potatoes, beets, carrots, onions, lettuce, and kale. Rotation of crops is carefully planned, and in this way the productiveness of the soil is utilized to the greatest degree.

Many of the farmers devote considerable attention to raising chickens and eggs for the market, and the milk, cream, and butter produced by the colonies are supplied by the Toggenburg or Nubian goats.

The success of a colony of this kind depends mainly upon systematic marketing. A system of co-operative buying and selling that seems highly efficient is in vogue, without which the enterprise would no doubt be a failure. It is in the first place quite essential that the colony be reasonably close to some large city, to supply a market for its products. Co-operative marketing as employed by the Little Landers consists in entirely eliminating the middleman both in buying and selling. A wagon owned by the colony calls at each farm to collect vegetables, fruit, flowers, eggs, poultry, butter, or whatever the farmer may have for sale, and delivers the produce daily direct to the colony's own co-operative market, or to the family trade in the city. This bringing of the producer and consumer together nets to the producer much more

than he could get through the commission system, and gives to the consumer products that are of superior freshness and quality. A co-operative store is maintained in the colony's civic center, and through it the colonists receive their supplies at wholesale prices.

The idea of the Little Landers is, "so much land as one individual or family can use to the highest advantage without hiring help." In most instances the aim has been to produce as much of the family's food necessities as is possible from a farm of this size, selling the surplus through the medium of the co-operative market and buying the other necessities of life through the co-operative store. Monetary transactions are therefore made a minimum imperative. The man who realizes the best cash income, however, is he who specializes,—perhaps in poultry, perhaps in vegetables or small fruits produced at the season when they are scarcest and therefore dearest, or perhaps in flowers for the market. The fact that different plans are employed makes it difficult to give actual figures on the annual incomes of these farmers, but if credited with what is saved in expenditures for rent and food it is claimed that no Little Lander has an annual income of less than \$700 or \$800. Dr. Henry Smith Williams, one of the highest authorities on the subject, declares that only one male adult in ten in the United States has an annual income in excess of \$800, and that the average income is a little less than \$600. It would therefore seem that the Little Lander is about one man in the ten.

The cost of becoming a paid-up inhabitant of one of these colonies varies according to the size of plot, its distance from the civic center, and the amount expended for improvements. The quarter-acre lots cost approximately from \$250 to \$300, the half-acre lots from \$500 to \$550, and the acre lots from \$400 to \$1,000, which includes an interest in all public improvements. The houses of the colonists likewise vary in cost, and in some cases are built by the colonist himself. The average cost of the houses built by hired workmen is probably about \$400.

The center of the social life of the settlements is the clubhouse and auditorium, with its fireplace, library, periodicals, piano, organ, and other facilities for recreation and entertainment.

With very, very few exceptions these "farmers" have no other income than that derived from their small allotments. Some are farmers from the East. Others were day laborers in manufacturing establishments. Some had been employed on small salaries in various city positions. Nearly all of them went on to their farm with no more than a few hundred dollars. Of course, as one of the Little Landers said, "California offers exceptional opportunities for the Little Lander. One of these is being able to work out of doors practically all the year around. We require very little house room, and beginning there with the elimination of a large house and the customary wasteful effort in caring for it we have a start on efficiency."

And so it is that these farmers, organized into a practical city, are satisfied with most of their conditions, and are working to make those right which are not now so. And they think they have an organization such as will get them results along the lines in which they want to work.



The modest farm and home of the "Little Lander" is just what he wants—it satisfies his instinct for the independence of the out-of-doors

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

HERBERT QUICK - - - - - Editor

May 9, 1914

Postal Circulating Libraries

A MOVEMENT has been launched in Canada to furnish every person in the nation one book a week at an expense of two cents.

The Post-Office Department is to be the universal librarian.

Books are to be delivered by the postmasters and letter carriers. There are to be no reading-rooms, nor great collections of books housed in expensive buildings. It will be a cheap, self-sustaining system with such a complete plan of exchanges that anyone can get any standard book anywhere without much delay.

Such a system in the United States would give every family and every rural school as good library facilities as are now possessed by the people of the cities.

It would open the literary, artistic and scientific treasures of the world to the people now starving for good reading.

Says the Chicago "Tribune":

"The person who from childhood has been accustomed to go to the public library and to draw books free can have no conception of what it means to be craving for reading. This precisely is the condition, according to the United States Bureau of Education, of millions of children on the farms throughout the country."

The writer knows this to be true, for he has himself been one of those millions of book-hungry children.

Such a system of postal circulating libraries could furnish phonograph records, lantern slides, and moving-picture films as well as books.

Under proper control it would be the greatest of all influences for studious habits, good taste, national efficiency, and good citizenship.

It is estimated that the system for Canada would cost a dollar per capita of the people. That would mean for the United States a quarter of the cost of the Panama Canal, or about the expense of five battleships.

And who is so bold as to say that the canal or the battleships can give the people a tithe of the benefits which would flow from such postal circulating libraries?

Cream Makes Good Swill, but—

CAN you see the hole in the skimmer? The Nebraska Experiment Station has proved that fifteen per cent of the cream runs through it. Anyhow that amount of butterfat is left in the milk after the good wife does her best with the skimmer. Cream makes good swill, but it really contains little which cannot be supplied to the swine in corn—and a pound of butterfat in the cream check is worth a hundredweight in the trough. The moral is: Buy a separator. A good separator removes practically all the cream from the milk.

The Wheat Trouble

DOCTOR CUTTER of West Falmouth, Massachusetts, sends us a sample of very poor wheat, with the statement that it is the best he can buy in the local markets. "Why don't you rouse your constituents," says he, "to kill the wheat trust? Farmers should sell their wheat to the people who have to buy this poor wheat in Massachusetts."

Rousing people is hard work. The trouble with wheat shipments from the farm to the

consumer lies in the fact that railway rates and regulations are so designed as to make it impossible to ship through or past any of the terminal markets. If these things would permit, Doctor Cutter could write to a wheat grower anywhere and buy wheat of him for direct shipment. If FARM AND FIRESIDE could have "roused" anybody to kill this abuse it would have done it long ago. Certainly we have called attention to it often enough. But there is reason to be encouraged. We shall probably have federal grain inspection soon, and when the grain situation is once honestly studied there can be no doubt that the regulations which call for the handling of practically all our grain at favored points will be changed. Our Massachusetts reader has a moral right to buy his wheat where it is grown. He also has the legal right. But the business right is denied him except after the wheat has been unloaded, graded, mixed, and in the case of the sample he sends us one would think adulterated, by the grain barons. And the same thing holds true of all the other grains.

The Cost of Tuberculosis

THE Governor of Illinois has issued a proclamation against the dairy cows of New York, Pennsylvania, Virginia, West Virginia, Kentucky, Tennessee, Ohio, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, Arkansas, Oklahoma, North Dakota, South Dakota, Montana, and Texas. No cows from any of these States will be admitted to Illinois unless they are certified to be free from tuberculosis.

The sweep of this quarantine is so immense that it amounts to a general requirement for the tuberculin test as well as physical examination of all cows imported into Illinois for dairy purposes. There is a probability that this will soon be the universal rule for interstate shipment of dairy cows. It is of immense importance to dairymen and breeders. We have never joined in the protest against the tuberculin-testing of herds. For we have foreseen the time when a tested herd would be a big asset to its owner. That time has now arrived.

Our Interest in City Prosperity

THE beef trade has been dull for some time. Prices are high, but demand strangely low. In the language of the trade, "beef does not distribute readily." The same may be said of many other farm products. The reason is to be found in the fact that times are hard with the workingmen. Our customers in the cities are economizing. People out of work may not be starving in order to make their demands for our products very much less than the normal. No man has a greater interest in the prosperity of the cities than the farmer. No man is more concerned that the industrial revival, which is surely coming, be speedy in its approach. Well-employed workingmen make well-sold beef.

Pests Slip In

THE Department of Agriculture does some of its best work in protecting us against pests. Many of them, like the gipsy moth, the chestnut blight, the scale insects, the boll weevil, the alfalfa weevil, and others, have slipped in in spite of vigilance, and, like the English sparrow, have found in a new field freedom from their old enemies and an opportunity of doing in some cases tenfold the damage of which they were capable in their native lands. Recently some Arizona cotton growers imported cotton seed from Egypt which was found infested with the pink boll worm, the greatest pest in the Egyptian fields. The seed was confiscated, as it should have been. To have introduced the pink boll worm might have ruined the cotton industry of America. It is quite possible that in this one act the Department did more for the financial benefit of the country than its activities have cost us in all the history of the country.

Dual-Purpose Breeding

IT MAY be impossible to breed a race of cows which will be both good milkers and good beef animals. Both beef and dairy specialists say it is. Others say it is not only possible, but that the British milking Shorthorns already constitute such a breed.

That it is possible to breed simultaneously for two qualities is indicated by the work of Dr. Alexander Graham Bell in sheep. He has for twenty-five years been breeding for an increased number of teats. He now has a flock of ewes none of which has less than six milk-giving teats, and some of them have eight. At the same time, and with the same sheep, he has bred for the habit of producing twins, and has established a family of sheep with an extraordinary tendency to produce twins—and milk to rear them. This is breeding for two qualities at once.

Once an English Shorthorn breeder in a group of Scotchmen who were engaged in the beef-breed specialty was assured by one of them that to breed for milk and beef at the same time is to undertake the impossible. "No, not the impossible," he replied; "it only takes a smarter breeder. But we Englishmen do it!"

THOUSANDS of cattle were pastured on winter wheat in Texas this year. This is said to be a new wrinkle in Texas; but winter pasture on wheat is not a new thing in the South and Southwest. Pasture in a mild climate is a legitimate part of the returns from winter wheat. It is reported that practice is extending because it is profitable.

Does the Corn Bring Disease?

THERE is foot-and-mouth disease in Argentina. We are importing corn from Argentina. Foot-and-mouth disease is a fearful cattle plague, and may be carried in this corn. Its introduction into this country would be a calamity the seriousness of which cannot be overestimated. We are in favor of the importation of corn as corn. It will do our corn producers no harm, and is likely to be a good thing for all feeders, even in the corn belt, especially when the crop is short; and in the South and East, where stock cattle can be produced cheaply and corn cannot be profitably grown, it may help the farmers to finish their cattle. In fact, an important feeding industry may be built up in these localities if we can depend on corn from Argentina when our own crop is selling too high for the feeders. But the importation of corn is one thing, and the bringing in of disease quite another. This would seem to be the time for getting out the bottle containing the ounce of prevention.

About Sand-Hill Plums

THE sand-hill plum growing wild in Oklahoma and the Southwest is a dry-land tree which in its favorite habitat seldom reaches a height of over four feet. Pasturing the country has killed most of them; but they were good bearers of a rather soft fruit, and no season is ever dry enough to kill them. One would think that this plum ought to tempt some plant breeder to hybridize it on other plums in order that we may get a good dry-land plum of superior quality. Has this been tried? And if not, why not? We appeal to the experimentalists.

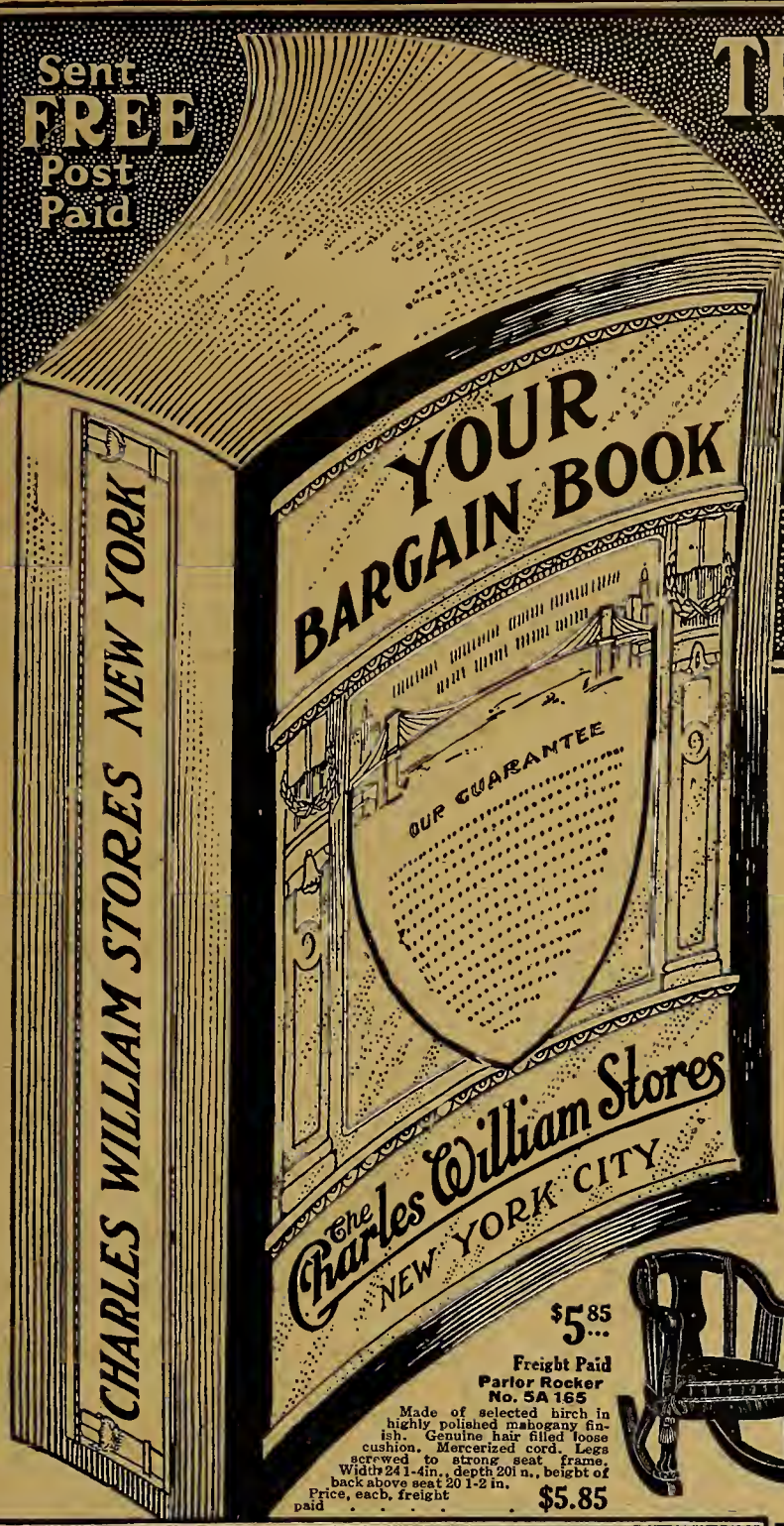
The Land Needs It

FRENCH inventors have succeeded in making from straw an artificial wood which can be sawn and otherwise worked like natural wood. Paper may be made of cornstalks. We may look forward to the day when it will be possible to sell every sliver of vegetable fiber from the farm; and then we can buy manure in the market at ruinous prices, or see our soils become barren. The straw belongs to the land.

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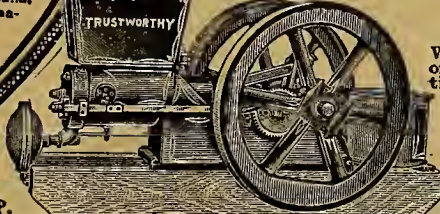


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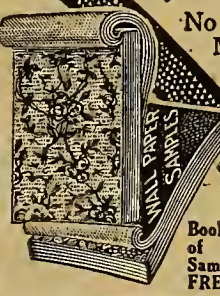
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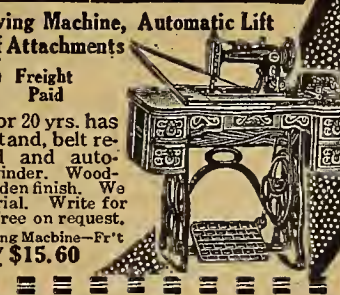
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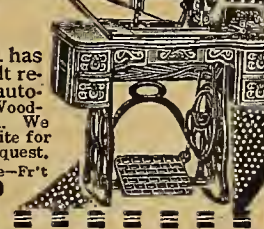
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fill a bowl and add cream or milk.

Then, with some fruit, a cup of Instant Postum, and a poached egg or two if you like, you have a simple breakfast that is wholesome and satisfying.

Toasties are bits of corn carefully cooked, delicately seasoned, and toasted to an appetizing "brown" without being touched by hand. They look good, taste good, and

"The Memory Lingers"

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Live Stock and Dairy

Lambs Need Variety

By John P. Ross

LET the lambs have precedence over the sheep. Try to divide the pastures so as to give them as frequent changes as possible. Lambs, like children, like a variety of food. Offer them a change and see how eagerly they will run to sample it.

Cabbage, mangels, turnips, or beets, chopped, and sprinkled with a little molasses, will act as a whet to their appetites and promote digestion. We humans tire of perpetual buckwheat cakes, charlotte russe, and quail on toast. Even so do the lambs tire of a constant sameness of food. Variety is the spice of life. You are the caterer. See that your lambs get it, also fresh water and salt.

You will be repaid when you get the salesman's check for them.

THE Biological Survey and the Forest Service have been co-operating in the extermination of ground squirrels on national forests in California. The annual loss of range feed and grain crops from ground squirrels is enormous.

WHEN going away for the day and you will not be so situated that you can secure dinner, do you eat a double dose at breakfast? Then why pursue such a course with the pigs, who know no better than to gorge themselves if you give them the opportunity?

THE stockmen of Price County, Wisconsin, are rather proud of the success they have won in the fight against tuberculosis. A representative of the university and the U. S. D. A. during a period of eight months tested 250 head of cattle in Price County, and found not a single tubercular animal. This is real success, and it may well be worked for everywhere.

PROFESSOR HANSEN of South Dakota has imported some fat-tailed sheep from Siberia, and it is intended that breeding experiments shall be made in crossing them with the common sheep. They are large, have broad, fat tails, fat rumps, are great rustlers, and extremely hardy. Some other breeds of small fat-tailed sheep have already been imported into America, but none of this sort.

THERE are several bands of the Persian fat-tailed sheep on the national forests of southern Utah. The large fat tail sometimes weighs as much as forty pounds, and, like the bump on the camel, is a reserve supply of nourishment when food is lacking.

ALL domestic animals degenerate if not carefully bred. There are 32,000 reindeer in Alaska, which represent the increase from some thousand or so imported many years ago; but not being reindeer breeders the Alaskan Eskimos have allowed the stock to degenerate. The blood of the larger and more vigorous wild caribou may be used to breed the reindeer up. There are accommodations for millions of reindeer in Alaska, and as the meat and bides are both valuable these mossy tundras may yet be the source of wealth to stockmen.

A WEEKLY NEWS LETTER of the U. S. D. A. points with evident surprise at the fact that the South is forging ahead in the production of cattle. The letter cites the prizes awarded to the herd of Lespedeza farm in Tennessee at the last International Stock Show in Chicago. The Department hardly gives itself credit enough for the work it has done in eradicating the cattle tick from these Southern farms. This winning farm three years ago was infested with the tick, but is now free. The possibilities of the South in stock production are not yet even imagined.

THE German Government has discontinued the arrangements by which cities and towns were enabled to import meats from Russia. These cities and towns bought the meat and resold it to the citizens, lowering the price of beef and pork as much as from two to ten cents a pound. The thing which will make the American citizen sit up and take notice is the fact that, even temporarily, the German cities saw to it that their people had as cheap food as could be got. Sometimes one is inclined to suspect that there are progressive peoples besides US.

THERE is a lesson for every man who owns a pasture, in the experience of the Forest Service, in bringing back to the forest ranges the forage plants which were killed off in the days of free range. The grass comes back when it is so grazed that at some time during the season it has a chance to enjoy a few weeks of free growth. Where the range has been badly overgrazed it is protected from all pasturing the first season until the pasture plants have seeded, and then lightly grazed, and so for the following years until the forage plants are thoroughly re-established. By these methods the old ranges are brought back, and are again, many of them, furnishing mutton, beef, and wool for the world.

ONE man may suffer from drought, and another across the road get off with no loss. An insurance policy against drought costs something in planning and foresight, but not much else. A silo is a good drought-insurance policy, but the man who has none need not be at the weather's mercy. He may plant sweet corn, sorghum, or rape to be used in time of short pastures. If he has a field of alfalfa or sweet clover it will be quite as good if mowed day by day so as to be always fresh. In the cultivated fields the mulch of dry earth must be maintained by frequent cultivations of say about four inches in depth. "Frequent" means whenever the top soil becomes even the least bit crusted. Given these precautions, and the drought which brings great damages must needs be a bad one.

To Prevent Navel Disease

A FEW sensible rules to prevent navel disease in colts: Keep the mare for a while, before foaling, in a clean box stall which has been disinfected. Change the bedding frequently, and disinfect both the bedding and the skin of the mare likely to come in contact with the foal. Use a two-per-cent solution of carbolic acid for these disinfections. Lay the newcomer on clean bedding—the litter is apt to be infected with the germs of the disease. Disinfect the umbilical cord of the foal immediately with the carbolic-acid solution mentioned above, and tie it an inch and a half from the navel with a disinfected string. Snip off the cord with sharp scissors half an inch below the tie, and disinfect the cut-off end. Do not tie the cord until it has ceased pulsating. Wash the stump of the cord daily with a disinfectant, and paint it with iodine. It will dry up like parchment in a few days, and then may be cut off, and the navel should be again disinfected. If the colt gets the disease call a veterinarian.

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\$24 Buys the New Butterfly Jr. No. 1. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 qts. per hour. Made also in four larger sizes up to 1-2 shown in picture. Earns its own cost and more by what leaves in cream. Postal brings Free catalog folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

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STANDARD REMEDY FOR HEAVE, COUGH, DISTEMPERS AND INDIGESTION. Cures Heaves by correcting the cause—Indigestion. Prevents Colic, Staggers, etc. Best Conditioner and Worm Expeller. Used by Veterinarians for 30 years. The first or second \$1.00 can cures heaves. The third can is guaranteed to cure or money refunded. \$1.00 per can at dealers' or sent direct prepaid. Booklet free. THE NEWTON REMEDY COMPANY, Toledo, Ohio.

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	10x24 ..	92.23
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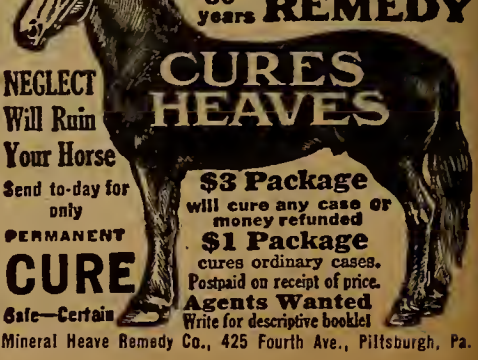
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as superior to other separators as other separators are to gravity creaming

WHY STOP HALF WAY IN BUYING A CREAM SEPARATOR?

THE ABOVE HEADING SUMS UP the cream separator case, as it concerns every prospective buyer of a separator and every user of an inferior separator, in as few words as it could well be put.

OTHER SEPARATORS SKIM cleaner than is possible on the average with gravity creaming, and De Laval Cream Separators skim as much closer still than other separators, particularly under the harder conditions of cool milk, running heavy cream or separating the milk of stripper cows.

OTHER SEPARATORS PRODUCE A cream superior to gravity creaming, and De Laval cream is smoother, less frothy and so much better than the cream of other separators that De Laval made butter always scores highest in every important contest.

OTHER SEPARATORS SAVE TIME and labor over gravity setting or creaming of milk, and De Laval Separators by reason of their easier turning, greater capacity, easier cleaning and easier handling save a great deal of time and labor over other separators.

OTHER SEPARATORS SAVE THEIR cost every year, as a rule, over gravity creaming, and De Laval Separators save their cost every year over other separators and last from ten to

twenty years, or on an average five times as long as other separators.

DE LAVAL SEPARATORS COST A little more than other separators, but very little, and they soon save that small difference and go on saving it every few months, as other separators would go on wasting it, for all the years they last.

WHY THEN BUT HALF SOLVE the problem of best results and greatest economy in dairying by the purchase of an inferior separator or go on dairying with this important problem but half solved if you are already using an inferior separator that you might so easily replace with a De Laval?

THE SEASON OF GREATEST PRODUCTION is now at hand when all these differences count for most with every user who should have a separator and is trying to get along without one. No other dairy question is of anywhere near as great dollars-and-cents importance.

WHY NOT SOLVE IT NOW IN THE only sure and safe way possible? If you haven't a separator, buy a De Laval. If you have a poor separator, replace it with a De Laval. If it is not convenient to pay cash you may buy a De Laval on such liberal terms that it will actually save and pay for itself.

Every De Laval local agent is glad of the opportunity to prove every claim here made. It will cost you nothing and may save you much to give him the opportunity. If you don't know the nearest De Laval agent simply address the nearest main office, as below.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER
29 E. Madison St., Chicago

Practical Poultry-Raising Ideas



THIS bunch of 1,442 chicks was hatched March 14, 1913. They were placed around a brooder stove in a room 12 by 24 feet. For three days they were fed on a cooked food moistened with hot water. After this a granulated chick food was fed in the litter. Boiled eggs and lean meat, well cooked, were also fed, with lettuce and alfalfa for green food. After the second week a dry mash was before them all the time. They had the run of two yards 16 by 64 feet, but no other range. Photo taken May 4th.—LEVI FRENCH

Ducks Are Not Chickens

By Mrs. W. H. Myers

IN FARM AND FIRESIDE some months ago, I noticed an article on "The Other Side of Duck-Raising" which told some of the reasons why duck-raising is sometimes unprofitable. The writer of that article evidently went on the theory that ducks can be raised by the same methods that chickens are raised, whereas the truth is that ducks must be treated as ducks. I will briefly give my experience as an amateur in raising Indian Runner ducks of the English penciled variety.

I started out with three ducks and one drake, paying six dollars for the four. This was in October, 1912; the ducks had been hatched in May. They began laying the week after I got them, and laid quite regularly, but I kept no record until January 1, 1913. From that date to July 1st, they laid 372 eggs, and kept right on except for two weeks in August, when they were broody. On September 22d my first pullet began laying at the age of 4½ months.

In November I added nine ducks to my flock, the same year's hatch, and I now have 44 laying ducks. During the summer and fall of 1913 I sold \$61.50 worth of young ducks, for which I received 25 cents a pound, live weight, from a hotel. I sold them when from eight to ten weeks old. One lot of six weighed 21 pounds, and another 24½ pounds, thus bringing me \$11.38 per dozen. They averaged 3½ pounds each at nine weeks old.

Experiences of My Neighbors

My success interested some of my neighbors. I sold one neighbor ten-week-old ducks, and by following instructions he raised all of them to maturity. I let another neighbor have eggs from which he hatched 8 nice ducklings. He fed them with his chickens, and all the ducklings died. Another neighbor hatched 7 ducks from 11 eggs. He partly followed my directions for feeding, and raised four of the seven. I had 192 hatched, and lost only 14 in all. Most of these were killed accidentally or by rats. The others died from getting wet.

I find ducks easier to raise than chickens. They are not so susceptible to disease nor are they infested with vermin. They are easy to drive, and I guide them simply by a wave of the hand. They are easily caught if driven into a small enclosure a few at a time. When I call mine they come whether hungry or not. They eat three times a day and lie down to rest between meals.

The house for the original four was a coffee box turned on its side, and with a piece of old tin roofing for the top. We now have three small duck houses. One is 6x10 feet; another, 5x8, and the third, 3x8. The first one is high enough for a person to work in, but the others have low roofs. I use straw or pine needles for bedding, which is changed every three days.

The ducks are not fed in their houses. I feed and water them out in the open, and if they throw water no harm is done.

Eggs are Hatched Under Hens

I put 12 to 14 eggs under a hen for hatching. The nests are small packing boxes with the bottom removed so the nest is made directly on the ground. The eggs are sprinkled every other day, and rather more liberally on the 25th and 26th days, when the shells begin to chip. The ducks come out on the 28th day.

As soon as hatched they are removed from the nest and kept in a basket in the bottom of which is an old woolen blanket. Ducklings must not be covered up like chicks. A box with holes bored near the floor for ventilation is also good to keep little ducks in. When they are a few days old I use a clean newspaper for the bottom.

It is easily removed and burned when soiled. Keeping them clean is important.

When thirty-six hours old my ducks get their first feed. This is stale baker's bread soaked in sweet milk, with sharp clean sand sprinkled over the bread. I give them five feeds a day for the first week. When they are eight days old I begin feeding a mash made of the following ingredients: Six parts wheat bran, one part alfalfa meal, one part meat meal, one part corn meal, one part sharp sand.

This mash is fed four times a day for two more weeks, after which three times a day is sufficient. I feed it on a board or piece of tin, and give all they will clean up.

Watering is one of the most important matters. To keep little ducks from getting wet I put a round bottle in a pint cup and let the ducklings learn to drink near the surface of the water between the cup and the bottle. As they grow older I give them a two-quart pail with a brick in the center. When full grown, or nearly so, any open vessel large enough to allow complete immersion of the head will do, but never let ducks have free access to water until they are fully feathered.

The Cost of Duck Feed

Meat meal is a necessity for feather-growing and egg production. I should not try to raise ducks without it. They must have free access to crushed oyster shell at all times. I have found the cost of feed to be one half a cent a day per duck.

My ducks lay large white-shelled eggs which sell readily on the market at an advance of three cents per dozen over hen eggs. Two duck eggs equal three hen eggs for cooking. I am now getting a peck-basketful of eggs twice a week.

GET the chicks to roosting on low broad perches when six weeks to two months old. The crowding and piling up of the chicks in the corners lowers their vitality and stunts growth.

The Pencil Farmer

I FIGURED out how I could make
A pile of yellow gold
If but to farming I would take,
And so I straightway sold
My house and lot in Hackensack
And hied me to the plow.
(I'd figured out that I could stack
A million—anyhow.)

I'd figured out that so much land
Would grow me so much hay;
So many hens (it figured grand!)
So many eggs would lay;
So many cows would give to me
So many quarts of milk.
(Before I bought the farm, you see,
'Twas running fine as silk.)

The anthrax got my Jersey cows;
The dry spell got my flax;
The cholera my fancy sows,
The constable my shacks.
The early frost my fruit trees slew;
With pip my hens were wan.
(It seems there was a thing or two
I had not figured on.)

Who's got a city job for me?
I'll do most anything,
Although, I'd state, my specialty
Is fancy figuring.
And while I leave to Jones and Smith
The cornfield's prize to nab,
I'm still a dandy farmer with
The pencil and the tab.

The High Price of Hen Fruit

"**H**EAT expands and cold contracts,"
Asserts Prof. Beggs;
Yet see the way that storage acts
Upon the price of eggs.



There It Is!

Chemical analysis of an ordinary cup of coffee shows that it contains about 2½ grains of the drug caffeine.

By actual test the U. S. Government demonstrated that 5 grains of caffeine (the amount in 2 cups of coffee) were sufficient to kill a rabbit.

Of course, human beings are stronger than rabbits, but there are few people who can drink coffee regularly without sooner or later feeling the effects of caffeine poisoning, commonly shown in headache, indigestion, biliousness, sleeplessness, heart agitation and other ills.

Thousands of people, tired of coffee troubles, have found relief by changing to

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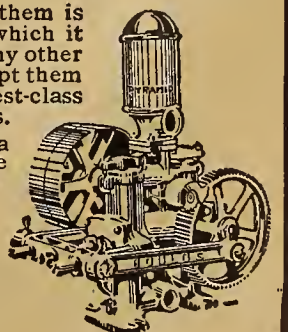
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At one stroke the gasoline car was refined, simplified, tamed, brought easily within the limitations of a woman's guiding hand.

The Delco System has greatly broadened the scope and usefulness of the gasoline car.

It has made it so easy to operate—

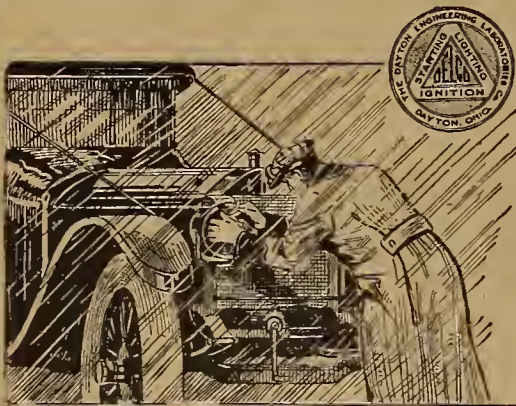
so safe and dependable that thousands of women and other thousands of men who have heretofore felt the automobile too complicated and heavy for them to manage, are now enjoying the delights of driving with perfect ease and freedom.

The first electrically cranked car appeared two years ago. It was equipped with the Delco System.

Today one hundred thousand Delco equipped cars are giving dependable, efficient service to their owners.

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When YOU buy a car be sure that it is DELCO —equipped—

The Market Place

Don't Expect Bigger Prices

By L. K. Brown

IT SEEMS that the hog market has about reached its high point for the present. Supply conditions rather favor a further advance, but the provisions market is not as healthy as it should be. Hogs have been pretty well cleaned up and spring field work is in full swing, so that the receipts have dwindled until they have become the smallest in months. This, however, has not advanced prices. A general bearish sentiment pervades the provisions market. The industrial depression has brought on a conservative attitude, and buyers cautiously buy but enough stocks for a short time—they are afraid to purchase a season's supply. The salt-pork demand from the Southern negroes has been late in appearing. This general demand condition has held the live-hog market below the \$9 mark. Packers have been indifferent buyers, and, speculators have been small purchasers, so there has been but a small outlet for the supply.

The market, because of this, has gone to a fresh-meat basis, and demand from this source is the controlling factor. With this change the light hog has become the market favorite and the packing grades have declined in price. This has widened the range of prices.

Little if any improvement in the market can be looked for unless consumption of the winter's stocks of pork increases.

Don't Speculate

By W. S. A. Smith

NOW is the time to try and carry out the good resolutions made during the winter: to see that you have good seed and a good seed bed. There is nothing more sickening two weeks after you have sowed small grain than to find half a stand and to have to cultivate a half stand of corn during the season when every step you take shows you how many hundreds of dollars you have lost just for lack of a few hours' testing seed.

This is generally the time you make your good resolutions, but now is the time to carry them out. Don't ruin your pastures by pasturing too early or too heavy. There is little nourishment in the first of the grass, and it plays havoc with the pasture to have the first shoots and tufts of grass eaten off at the crown.

Whatever shape your hog lot is in it will add greatly to its feeding value to give it a disking and add some Essex rape. The seed is cheap, and will in six weeks furnish a large amount of feed.

There is a feeling that good cattle will bring a good price, but the warmed-up cattle have not been getting a very warm reception lately from the packers. The difference between the good and one-half fat cattle will widen. There is really no great inducement to buy these high-priced stockers and feeders.

I notice the importation of good eggs at New York is increasing. In fact, we are up against a change in many of our farm conditions, and it would seem advisable to reduce our speculation to the minimum for the next six months.

Mutton a Staple Product

By J. P. Ross

IT APPEARED reasonable to expect that the heavy run of sheep from Texas, which commenced early in April, and the continued arrival of Colorado lambs would seriously depress prices, yet no material effect has been produced. The following extract from the "Farmers' and Drivers' Journal" of the second week in April gives a good sample of what these fluctuations amount to:

	Sheep		Lambs	
	Top	Bulk	Top	Bulk
This week.....	\$7.20	\$6.00@6.75	\$8.50	\$7.00@8.40
Week ago.....	6.70	5.85@6.50	8.25	7.00@8.10
Four weeks ago	6.25	5.40@6.00	7.85	7.35@7.75

And no material change from these figures has occurred recently.

Favorable reports as to wool caused a good deal of early shearing, but this was checked by the packers' making a distinction of about one dollar in favor of the unshorn; but since the weather has become warmer the woolly fellows are less popular.

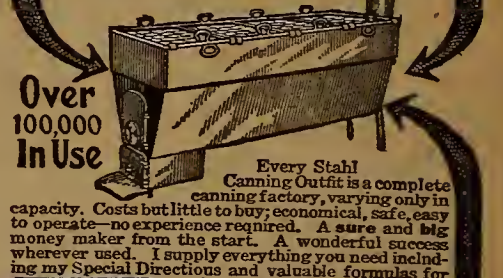
The so-called hothouse-lamb production has been less than usual this season, though one would suppose that 13 to 15 cents per pound would prove a great temptation to try that branch of the business, especially now that parcel post offers such grand facilities for disposing of that product.

Mutton, lamb, and wool are getting to be as staple as flour or sugar, and we want to become used to the fact and to act accordingly, both as to their production and their marketing.

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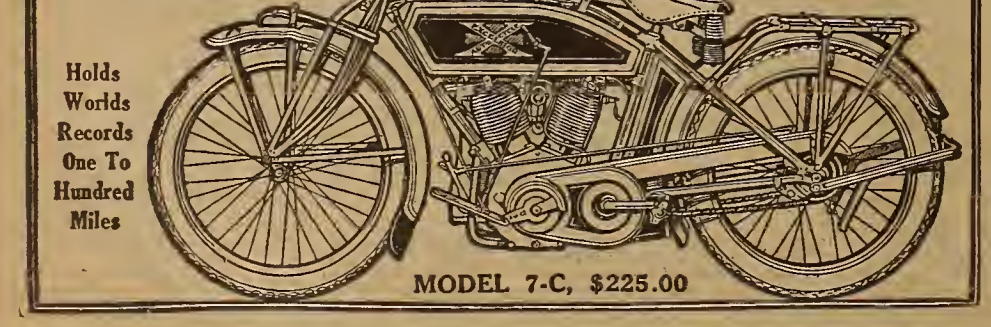
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GARDENING

By T. GREINER

War with Insects and Diseases in the Garden

THE gardener has many enemies to fight. It is often a continuous warfare during a good share of spring and summer. The commercial producer who makes a business or specialty of vegetable growing is usually equipped with modern sprayers which are the machine guns in this fight, and with proper and effective ammunition will generally win the fight. The home grower and chance producer quite frequently lacks not only the most efficient equipment but also the special knowledge what to use and how to use it with best effects against insects and plant diseases. Small home gardeners often employ only the crudest means and devices for the control of garden pests, and therefore are always at a disadvantage. For spraying a few potato, cucumber, melon, squash, or similar vines for beetles, currant bushes or cabbages for worms, etc., the small hand sprayer which one can secure at seed and hardware stores for less than one dollar may answer the purpose, but when you have to go over even as little as an eighth or quarter acre the inadequacy of such implement will soon become apparent. People having a garden of about that extent, therefore more frequently make use of



Spray on suspicion

cheap dusting devices for covering the endangered foliage with a light film of Paris green or arsenate of lead powder. This, if properly done, will surely be effective in killing the leaf eaters, as similar dusting with buhach or other good and fresh insect powder will control cabbage worms, and dusting with hellebore will kill the currant worm. Paris green applied in dust form has also a slight tendency to protect the coated leaf from blight attacks. The small hand sprayer, or these dust applications, will help the owner of a very small garden out of his difficulties with insects, but for the garden of somewhat greater pretensions, say of a quarter acre area, I would not want to be without either a good knapsack or a good compressed-air sprayer, and it should be one with copper tank and brass pump. Some of the liquids we use for spraying quickly corrode all iron fittings. Such a sprayer will cost \$10 or more, but the expense can hardly be avoided if we wish to secure best results in the garden, and comparative freedom from insect and disease injuries. It is of sufficient capacity to make things easy for us in a good-sized home garden, or in a potato patch up to an acre or so in extent, or in a cucumber or melon patch of several acres. People who grow potatoes on a larger scale will not be satisfied with a sprayer of this kind, but will prefer to use nothing less than a barrow sprayer, and more likely a barrel or tank mounted on a two-wheel cart, spraying three to five rows at a time. Commercial melon or cucumber growers occasionally use even a big power sprayer, spraying through six or more nozzles inserted into a long piece of pipe connected with hose



The power sprayer may be the cheapest in the end

to the sprayer, and being carried through the field by two men. (See illustration.)

So the scale and range of our operations settles the question what kind of machine we must spray with. Next comes the question, what material or materials to use on our plants. In fighting insects we do our spraying on facts. When we see the first beetles on our potato or melon plants, the first worms on our currants or cabbages, we know that without interference there will be more beetles or worms by and by. We should interfere promptly, however. The best general insect killer now available is arsenate of lead, which comes both in paste and in powder form, and is equally sure and effective in either, except for sucking insects like plant lice (green fly) or the large, black, bad-smelling squash bug. Arsenate of lead is good for all leaf eaters, while tobacco extracts, whale-oil soap, or kerosene emulsions must be depended on for the control of plant lice and other sucking insects.

Thorough Spraying Covers Entire Plant

When spraying for the control of plant diseases, we spray wholly on suspicion. We must spray the foliage while yet in health, suspicious that the germs of fungous enemies are lying in ambush to pounce upon the plants. Our aim is to cover the entire healthy foliage.

The best spray material, and almost the only one, now available for use in the prevention of plant diseases in the garden is Bordeaux mixture, easily made by thoroughly dissolving a pound of bluestone (copper sulphate) in ten gallons of water, then slaking one and one-fourth pounds of best stone lime, and dissolving this in ten gallons of water, and finally, and under constant stirring, pouring the two mixtures together into a third vessel. This makes a bluish liquid which, when properly strained and used at once, will work through the finest nozzles without clogging or other difficulties. Arsenate of lead, at the rate of a pound of the paste, or a little less of the powdered, may be added to the twenty gallons of Bordeaux, and the mixture will then be good for the control of leaf-eating insects as well as fungous diseases. Be sure to have the arsenate well liquified by the addition of water or a little Bordeaux, and by thorough shaking or stirring before it is added to the other mixture.

For the pernicious scale on currants, small fruit trees, or such ornamentals as Japanese flowering quince, *Prunus Pissardi*, etc., I have sometimes preferred to use miscible oils or lime-sulphur solutions; and these mixtures are best secured from regular manufacturers. The home gardener who wants to use such materials can buy a gallon can of scale-icide, or concentrated lime-sulphur, and use the dilutions as needed. I have at times also used a commercial form of Bordeaux mixture and arsenate combination, such as "pyrox," which seems to me a convenient ready-made combination mixture for small home gardeners.

My final advice is: Get your spraying outfits and spray materials ready at once. Then watch your plants. When your potatoes are a few inches high, load the knapsack or compressed-air sprayer with the Bordeaux-arsenate combination or pyrox solution and give them a thorough spraying. The material sticks well to the foliage, even through a good rain. In a few weeks, as the plants grow larger and show unprotected new areas, repeat the application, and later on once or twice more, even if all your spraying is merely "on suspicion." As soon as your cucumbers and melon, squash, and pumpkin vines are showing above ground, go over the patch or patches with the sprayer. Be not sparing with the liquid. Spare the spray and you will let the "bugs" spoil the plants. Spray thoroughly, and "bugs" and blights will have little terrors for you. Spray tomatoes if bugs are bad. Always spray eggplants. Spray them often and with particular thoroughness. They are very susceptible to the attacks of potato beetles and of blight. In spraying for disease do not wait for facts to remind you of the need of spraying. Spray on suspicion, and spray anyway.

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Farm Notes

The New Currency Bill and the Farmer

By Senator Robt. L. Owen



UNDER the American banking system, where we have had twenty-five thousand independent banks, each holding its own resources, the banks have been compelled to rely severally upon their own cash resources, and to keep their commercial bills as liquid as possible, of short maturities, easily convertible into cash. For this reason the bankers have not been able, consistent with such a policy, to extend sufficiently or at low enough interest rates the class of accommodations to farmers which the farmers chiefly need—such as loans for fertilizers which would be used in the spring and could not be paid for until the crop was gathered in the fall; such as for farm machinery, and such as for the building of silos, or for improvements on the farm which would increase its productive power, although such loans could be wisely made, and would be safe as far as security of payment is concerned.

But under the new banking and currency system, which will provide an open large discount market for commercial bills, which the banks have not heretofore enjoyed except in a hazardous, uncertain fashion, there will be open also for the banks a much larger percentage of investment loans of the character above described.

The farm-mortgage provision in the currency bill, allowing mortgages to be made on five-year terms, ought to open up a farm-mortgage market which will furnish the farmers a considerable amount of money for permanent farm improvements, as well as the investment in silos, in farm machinery, or in fertilizers, etc.

The new banking system will, moreover, add a very considerable amount of fluid capital now tied up in unworkable reserves, a substantial portion of which should be available for the farmers of the country.

The value of the present currency bill is quite apart from the proposed plan now under consideration by the administration for establishing an agricultural credit system which should make available cheap money on long-time payments for the farmers of the nation.

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The frame is of angle iron construction, securely bolted and braced. Seat is placed so the weight of the driver balances tongue, taking neck weight off the horses. Rear gang is removable.

Gangs are flexible, that is the rear gang works independently of the front gang. They thoroughly pulverize uneven ground.

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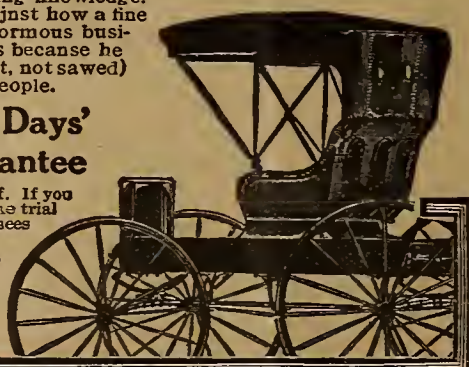
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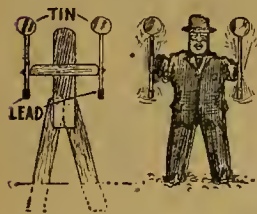
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The Headwork Shop

Successful Scarecrows for the Orchard and Poultry Yard

My Drum-Major Scarecrow



W E WERE once located near a large tamarack swamp that was the nesting place of crows and chicken hawks. The hawks made away with our young poultry at a rapid rate until I devised the following scarecrow: I first made a framework of boards, over which I could place a suit of old clothes minus the arms. The board that was used as a framework for the shoulders projected through the arm-holes of the coat 4 inches on each end.

To each shoulder I fastened an arm made as follows: I took a piece of inch-square pine 28 inches long. I rounded the stick and shaved one end down to make it light, and to the light end I fastened a disk of bright tin 7 inches in diameter. On the other end of the stick I slipped and nailed a piece of lead pipe 5 inches long. This left one end of the stick very heavy and the other end light.

I tested the stick to see where it would balance; then I drilled a hole just enough nearer the light end of the stick so that the light end would stay up and the heavy end would swing down like the pendulum of a clock. Through the hole in the stick I put a ten-penny nail, then on the nail I slipped an iron washer. I drove the nail into the projecting shoulder, leaving the stick free to play back and forth. Then I made a duplicate of the arm just described and nailed it to the other shoulder. The lightest breeze set the arms vibrating back and forth. I then clothed the figure to make it look like a man. Those tin hands swinging wildly in the air gave the figure a very formidable appearance.

BERNARD F. DALZELL.

Martins Drive Away Crows

I T DOES seem ridiculous to see Farmer Brown or his dear wife in effigy posing as a scarecrow. Most everyone knows that an inanimate object or mechanical device used as a scarecrow sooner or later proves to be unsuccessful.

Our most successful scarecrow is a thriving colony (forty pairs) of purple martins comfortably housed in two miniature residences on our lawn. Any marauding bird is detected by them long before we are aware of its presence. An unmistakable alarm is sounded, and every martin in the immediate vicinity participates in the chase, which is always successful. No pilferer dares continue his mission when such a positive and timely alarm is given.

The domestic fowls understand this alarm instinctively, and as it is always given in good time, even if the thief should hazard an attack, they have plenty of time to seek cover, or for Mr. Man to get his trusty rifle.

O. A. RENAHAN.

Dead Crow on Sentinel Duty



L A S T summer a bunch of seven crows became especially troublesome to my chickens. I knew that a dead crow made a good scarecrow, but also knew how hard it is to get a shot at one. But I took down the old shotgun and went along a thick row of trees until on the other side of the hedge I saw my seven crows. The leader was an old rogue who strutted proudly as though no evil could be laid to him. But I nevertheless drew the bead on him, pulled the trigger, and one less crow was among the living. But this was not to be the end of Mr. Crow.

A short stout string was tied to the tip of each wing and a long string was fastened diagonally from the top of a pole to the poultry-yard fence. The crow was tied to this string with its wings outstretched. The next morning the "gang" came around, saw their dead comrade, and uttered words in crow talk that would not look well in print. The scarecrow dried beautifully, and did sentinel work all summer. And that was the last time the crows came near our poultry.

QUIN HARLAN.

Bottles Saved the Berries

T H E most successful scarecrow we have used to keep birds away from berries and fruit, also hawks from chickens, are glass bottles. We use all kinds and sizes, but colored bottles seem to be the best.

A Kicking-Cow Contest

W H A T is your best method for milking a kicking cow, for curing a cow of kicking, or for keeping her from developing the habit?

The next contest will be devoted to answering these questions. Tell in not over two hundred words just how you manage the kicking-cow problem. Your method must be humane, effective, and reasonably simple. This contest will close May 20th. Prizes of five and three dollars will be awarded for the first and second best contributions, and one dollar each will be paid for all others published. Address the Contest Editor, Farm and Fireside, Springfield, Ohio.

Slip the large-mouthed bottles over poles and put them in the ground vertically. To use narrow-necked bottles, tie a stout cord around the neck and fasten them to poles set slanting into the ground. Cut a small groove around the pole to keep the string from slipping down. To protect tree fruit, tie the bottles to the limbs of trees. Put them on the limbs that move most with the wind. The sun glistens on the bottles and the flashes of light scare the marauders.

Before we tried this method we could scarcely get a ripe raspberry no matter how carefully we watched the bushes. But since putting up the bottles we have gathered full crops.

MRS. LYNN D. HUSTON.

Guineas Keep Hawks Away

F R O M experience we have learned that the most simple and effectual means of keeping hawks away is to raise guineas. If fed with the chickens they become very gentle and will run with them. And their endless chatter is sufficient to frighten away that hated bird of prey, the hawk.

MRS. CYNTHIA E. FLANERY.

Too Sharp for the Hawks

I F I R S T took a 16-foot pole and made a notch in the top, in which I fitted an old scythe blade which I had whetted very sharp, and oiled well to keep from rusting. The scythe was set slightly slanting and with the sharp side up. I put the pole with the scythe on top, in an open space about a hundred yards from my chicken yard. The sketch shows the scythe and the top part of the pole. The hawks that light on this perch to wait for their prey cut their feet in lighting on it and also in flying from it.

The slanting blade makes them slide down. When the hawks learn that their feet become sore from resting on this perch they never return.

J. E. SINNOCK.

Fluttering Papers Alarm Birds

I C A N N O T resist telling you of my most successful scarecrow. We have a row of Early Richmond cherry trees along the garden fence, and as soon as the cherries begin to ripen the trees are alive with birds. We love to have the songsters around our house, but do not like to have them take the cherries.

I simply took an armful of newspapers and went out to the trees. I gathered the newspapers together at one end and with string tied several to each tree. The rustling and fluttering of the newspapers in the wind frightened the birds away, and we had plenty of cherry pie last winter.

MRS. MABEL JONES.

Tin-Clapper Scarecrow

L A S T summer the hawks got my chickens in spite of everything I could do. I kept shooting at them, and tried every other thing imaginable, but in vain. One day I noticed a bright piece of tin, which set me thinking. I cut a pole 12 feet long, and at the top nailed an arm of 1x2-inch material, 12 inches long, so that it made a right angle with the pole. Then I cut my bright tin so as to get a rectangle 6 inches wide by 18 inches long. I punched a hole in the center of one of the long sides an inch from the edge and put a wire through it.

I put a small swivel taken from an old fishline on the end of the wire so the

tin could revolve. I then wired the swivel to the end of the horizontal arm and set the pole in the ground where the chickens were in the habit of running.

If the tin is bent a little on the vertical edges it catches the wind better and turns faster, sometimes banging on the arm. It is revolving and flashing all day long, and at night the noise it makes scares away marauders. Since I have been using this scarecrow the hawks always give my place a wide berth.

SAM ZIEGLER.

Feathered Potatoes Frighten Birds

T H E robins and other birds were destroying our cherries. I secured a long pole and tied it to the top of one of the trees so that it extended two feet above it. I then fastened a lath two feet long to the top of the pole and took two potatoes, which I stuck full of large feathers. After tying a cord to each potato I fastened the other end of each cord to the crosspiece. Though a peculiar-looking object, this scarecrow gave excellent results, for the birds stayed away.

WALTER A. WOLF.

Scares Wolves and Rabbits Too

I A M sixty years old and have made and devised numerous scarecrows, but the most successful one I ever made was in Roosevelt County, New Mexico, where wolves and jack rabbits were destructive to gardens and especially to melons.

Punch holes in the bottoms of old tin cans (pint or quart size) and string them on long pieces of smooth wire. String the wire on posts four feet high and have the entire patch surrounded. You can use barbed wire, but in that case you will have to fasten the cans with short wires, because it is hard to string cans over the barbs. The cans should be about ten feet apart and arranged in pairs so that two will be close enough to strike together when the wind blows. Remove all labels so the cans will be bright and shine in the sunlight. This device also protects poultry from wolves and other night prowlers of the four-legged variety.

P. H. STREET.

Old Alarm Clocks Saved \$50

F I V E years ago the hawks took possession of my poultry yard. Being a breeder of high-class pure-bred stock I was frantic. It seemed that they enjoyed my shooting at them, as they often came twice daily and carried off two chicks each time.

I had boarded school-teachers for several years, and they had left behind a number of cheap alarm clocks which were worn out. I brought out three of these, removed the works to make them light, and hung them from short cross-pieces on poles 20 feet long. The clocks suspended from the end of the horizontal arm swung in the wind. As they were nickel-plated and had glass faces, they could be seen glistening in the sun half a mile away. Not another hawk came near the place. This simple plan saved me more than \$50.

MRS. S. M. DYER.

Artificial Snakes as Scarecrows

A F O R M of scarecrow originated last year by a Connecticut gardener is in striking contrast to the old variety that with every breeze waves a maudlin greeting to the passer-by. To save his strawberries from the devastation of ravenous birds this gardener cut into 3-foot lengths a garden hose and scattered the pieces through his bed of berry plants.

As a result the birds left his berries severely alone, and he has a theory that it was because the birds thought the hose to be snakes. To an unprejudiced mind it seems equally probable that they avoided the berry patch because the pieces of hose were an unaccustomed sight in that place, and hence something to be wary of. But after all, why they were afraid is of little importance compared with the fact that the experiment was a decided success, and that the berries were not harmed by the birds.

PENELOPE KAY.

The Winners This Time

First prize has been awarded to "My Drum-Major Scarecrow," by Bernard F. Dalzell. Second prize to "Martins Drive Away Crows," by O. A. Renahan.

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Crops and Soils

Getting Started with Alfalfa

By C. R. Weidle

ALFALFA is grown but little in northwestern Pennsylvania. The general opinion among farmers is that it cannot be successfully grown here. My experience the past two seasons with seeding alfalfa would demonstrate this opinion; but my experience of 1911 greatly contradicts it.

It is plainly evident to me that alfalfa is more difficult to grow than red clover. Having tried several methods in seeding alfalfa I feel as though my experience might be valuable to other farmers who have not yet tackled the growing of this all-important legume crop, which when successfully grown furnishes several tons of hay per acre each season equal to wheat bran.

After giving the subject of seeding alfalfa considerable careful study, I successfully seeded my first field of alfalfa in 1911.

This is How I Proceeded

A small field of 1½ acres was chosen. The soil is a gravel loam and naturally dry soil. The field had been manured and was planted to corn the year before. The following winter another light coat of manure was applied. In June the manure and corn stubble were plowed down about seven inches deep.

Hydrated lime was applied at the rate of two tons per acre. The ground was well fitted with a spring-tooth harrow, then harrowed about once a week to get a firm seed bed and to hold moisture. Before seeding, 400 pounds of acid phosphate and 150 pounds of muriate of potash were applied per acre. For inoculating, 400 pounds of inoculated soil per acre was used. This was sifted, then applied with a lime sower, and harrowed into the soil immediately to prevent the sunlight killing the bacteria.

About 20 pounds of high-grade alfalfa seed per acre was sown on the field July 25th. A weeder was used to cover the seed lightly. In a short while the first green alfalfa field was to be seen in the neighborhood. The rapid growth this alfalfa made was a surprise to many who saw it. By the latter part of October a thick even mat of alfalfa from 12 to 18 inches high covered the entire piece. This was left standing for winter protection.

The next season about three tons of choice cured hay per acre was cut from the piece in three cuttings. This land was naturally thin; had been in pasture, and finally got to growing a crop of goldenrod before breaking for corn the year previous to seeding to alfalfa. A great contrast between growing a crop of goldenrod and a successful crop of alfalfa on about the poorest piece of land on the farm! This successful seeding of alfalfa was accomplished by midsummer seeding without a nurse crop.

Spring Seeding a Failure

The past two seasons I tried seeding alfalfa on a six-acre field of quite fertile land, using a light seeding of barley as a nurse crop. Both seedings of alfalfa were a failure. My object in trying spring seeding with a nurse crop was in growing a crop of some kind on this fertile piece of land the first season.

The first season one bushel of common barley was sown per acre for nurse crop, and liquid cultures used for inoculating the alfalfa seed. The second season three pecks of beardless barley were sown per acre for nurse crop, and inoculated alfalfa soil taken from my successful field of alfalfa used for inoculating the field. Both crops of barley were good, but the alfalfa seedings very unsatisfactory.

I had this field plowed late last fall. As early this spring as the ground can be fitted I plan to sow oats and Canada field peas. This crop is to be cut for hay possibly during the latter part of June, and the land thoroughly disked and fitted without plowing for seeding to alfalfa without a nurse crop about July 25th, using a liberal top dressing of fertilizer.

In a way this method will be a turning-back to midsummer seeding, yet possibly I may be able to grow a good crop of oat and pea hay the first season. The land was heavily limed for the alfalfa, and by inoculating the peas and using about 300 pounds of a 2-8-3 fertilizer per acre on the oats and peas I shall expect a good crop of rich hay.

Lye for Radish Worms

By Mrs. A. McIntosh

I FOUND it impossible to raise radishes here on account of the worms, so I took one tablespoonful of concentrated lye to one gallon of water, well dissolved, and soaked the ground. I used an old tin pail, perforated, as a sprinkler. I let the ground soak twenty-four hours, then prepared and sowed the seed. My radishes were fine, large, crisp, and juicy. No more worms!

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Crops for the Ten-Acre Garden

By W. B. Davis

CLIMATE, soil, and the demands of the market dictate to us what we must grow and how much of each to grow. But if you are not skilled in understanding the orders from these sources, perhaps you will allow me to act as your interpreter. I speak from my own experience in marketing truck crops in a city of 40,000 in central Wisconsin. I have found that the way a garden is laid out has much to do with the labor of handling it.

It is very important that some means be provided to water plants during a dry summer, and many times an outfit will pay for itself in one season. It is also just as important to have the land plowed in such a manner that it will drain well. No heds, unless the land has an extra good natural drainage, should be more than eighteen feet wide, and in most cases it is better if they are from twelve to fourteen feet in width. When the land lies very flat a system of ditching should be carried on to get the water off in the quickest possible time. The furrows should be deep and clean. If a good outlet for the surplus water can be secured, tile draining keeps the soil sweet and in fine condition all the time.

For watering purposes a good well, water tank, windmill, gasoline engine, galvanized piping, and some good hose will be found to give excellent satisfaction if properly installed and used.

I like to have more than one kind of soil, preferring some of it to be a rather heavy clay, and the balance black loam with some sand in it.

It is well to have a roadway running through the place front to back; and if there should be clay soil on the upper half, another road through the other way will be very convenient.

With a good market almost all-kinds of vegetables can be raised with profit. The first crop to be sown on the clay soil will be peas, both early and late. An acre of peas is none too much. Just before picking the last ones for market, the soil may be worked up with a cultivator; or, if the vines are too thick, a sharp hoe can be used and some other crop planted. Several vegetables can be planted as a second crop. Those which we commonly use are sweet corn, cucumbers, beets, mangels, cauliflower, and late cabbage.

Clay Soil for Berries

Most of the berries are raised upon the clay soil. About three fourths of an acre of strawberries and the same amount of red raspberries are planted, while we give about one-fourth acre to gooseberries and currants. Berries of all kinds seem to respond best on the heavier soil than on the lighter.

Tomatoes also do well upon the heavier soil, so we plan for about half an acre of them. A short row of Hubbard squash and pie pumpkins and a few beans take the rest of the land, with the exception of about three-fourths acre, which is kept seeded to alfalfa. This makes an ideal feed for the horses and a good fertilizer when turned under. Three good crops may be cut each season in central Wisconsin.

Most of the black soil is used for several different crops during the summer. The first sowing and planting here is spinach and set onions. The demand for spinach is increasing each year, and it is one of the most profitable of the early crops. A good-sized piece of land is used, which is afterward planted to celery. The same treatment is given the heds on which we plant the onion sets. These too are marketed very early. Such a plan works well.

We find that a large asparagus bed—about three-fourths acre—when properly cared for, is a valuable addition.

Hotbeds and cold-frames have an important place with the gardener. Two hundred sashes will furnish plenty of work for two or three men during the spring months. Sashes of two sizes are usually used, some being 3x6 feet and others 3 feet 4 inches by 6 feet. The former are preferable, however, as the panes of glass are larger and there is one less bar through the sash. All the light possible is needed. These heds, with the extra space for driving around them, will take nearly one acre.

Varieties of the Common Vegetables

An acre or more of land is given to onions, both for bunching and ripening. The main crop which is sown is the Yellow Danvers, while a lot of the white ones can be used for bunching. A good plan is to sow every other row of part of the piece to some early white sort. These will be pulled early for market and the land used for planting celery, beets, radishes, or other vegetables, as the season will permit. The Perennial Egyptian or Winter Onion should also be given space.

One-half acre of cucumbers will give thousands of slicers and pickles in a good season. The White Spine and the Chicago Pickle are two good varieties to plant.

Celery probably takes more land than any one vegetable which we raise, but it is all grown as a second crop.

One must study the market to know how much of the other common vegetables to plant. There is good sale for early beets, carrots, radishes, and onions. Head lettuce is also in good demand early. Raised under sash in cold-frames or set in the open ground in rows or between the new setting of strawberries, it gives very satisfactory results.

The early cabbage and cauliflower is raised on the black soil, and also a limited amount of some of the vegetables which we grow on the heavier clay. We usually plan for a small hed of strawberries, some peas, beans, and late cabbage.

A small plat should be used for sowing radishes, spinach, and lettuce all summer, as these vegetables oftentimes are in good demand during the hot weather, when they are hard to grow successfully. When setting a new bed of asparagus it is an excellent plan to set a lettuce plant (either head or leaf) between each asparagus plant. The shade that the asparagus affords is enough to protect the lettuce from the sun during the hot weather.

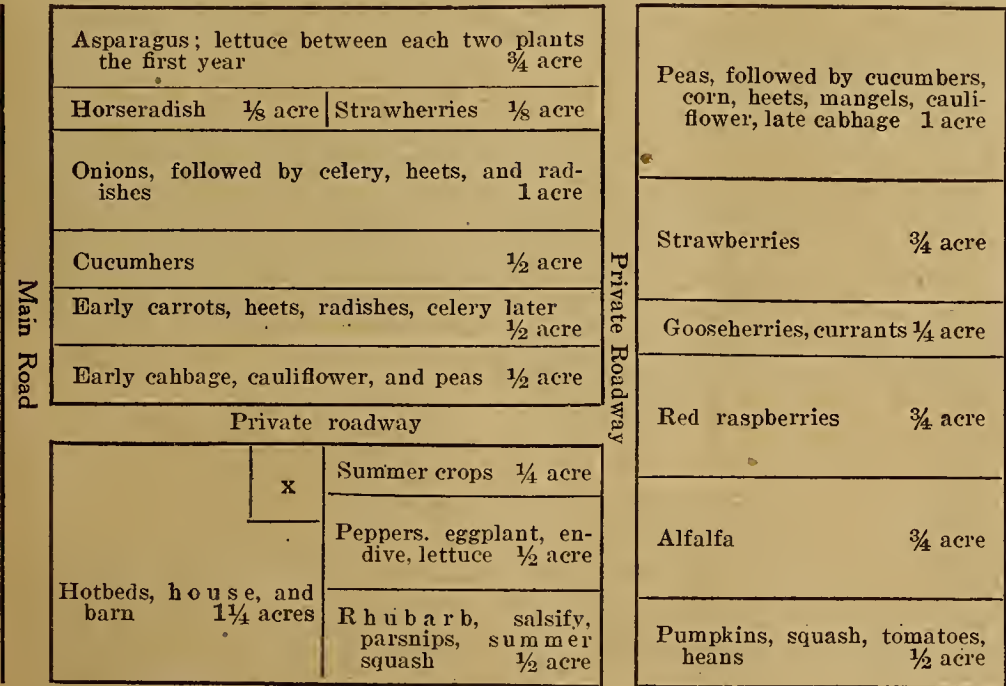
Parsnips, salsify, and summer squash are given about one eighth of an acre. A good-sized piece of rhubarb will yield a fair return for the small amount of labor necessary to grow it.

Horseradish, a Cash Crop for Winter

About one-eighth acre planted to horseradish will give enough roots to supply the market with grated horseradish throughout the winter. There is always a good opportunity for working up a trade in this branch of gardening, and it gives money in the wintertime which the average market gardener does not have coming in. The winter doesn't seem half so long when there is a profit all the time.

A number of other vegetables and herbs not mentioned above will also pay very well, although the demand may not be very great. Endive, mint, kohlrabi, Lima beans, Brussels sprouts, parsley, and turnips all have a limited sale in any market.

This diagram represents my idea of the best arrangement for a ten-acre garden.



x Windmill, tank, etc.

Plan for ten acres the first year. It is necessary that rotation of crops be practiced so the plan is changed each year. Save the soil in that way

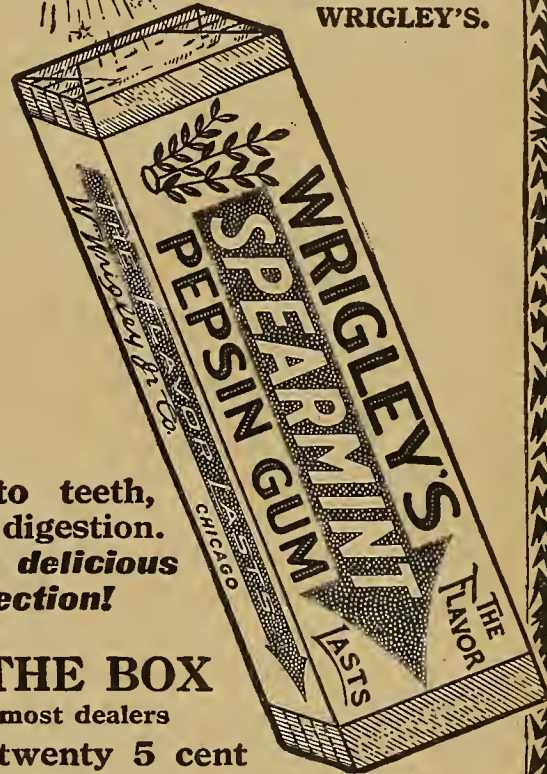
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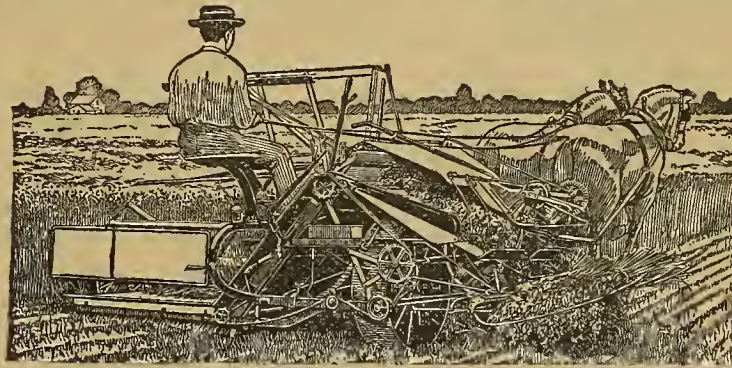
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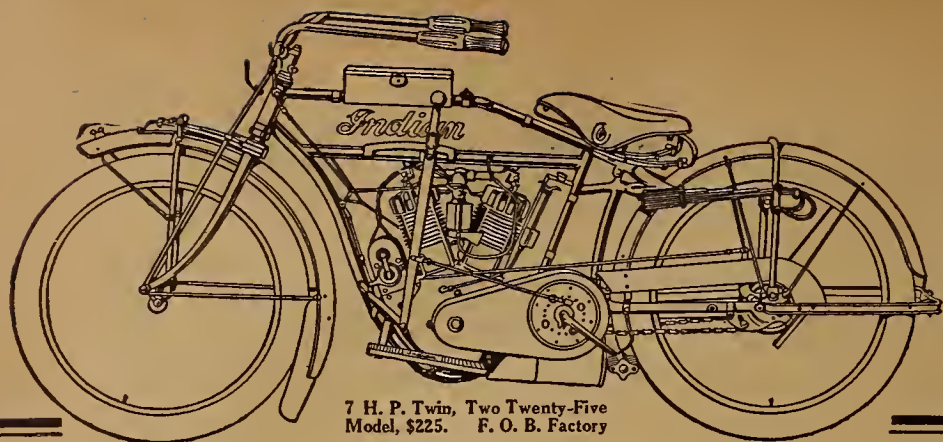


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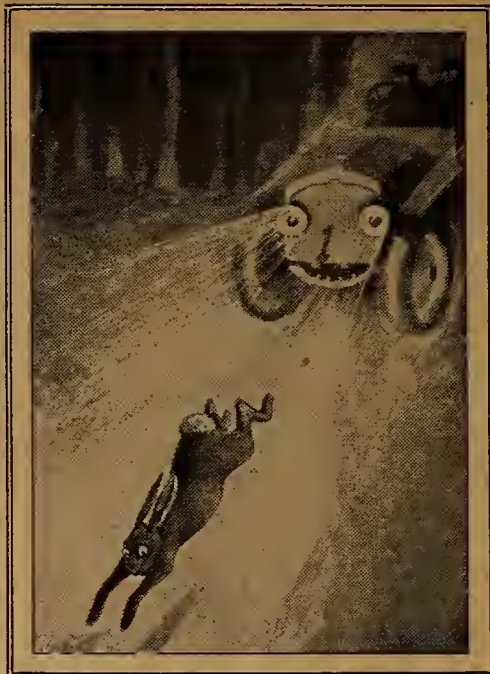
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forced frame loop and increased power are but a few of the betterments described in detail in the new Indian catalog. They are features that command the careful consideration of every prospective motorcycle buyer.

A copy of the 1914 illustrated Catalog will be sent upon request.

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Prize-Winning Titles



THE picture on the cover of the Engineering Supplement of March 28th brought out a fine lot of titles, something over forty thousand altogether. Nearly a thousand guessed "A Hare's Breadth Escape," which was also the artist's title. While a large number were duplicates, or nearly so, very many titles were exceedingly original and imaginative.

References of "Teddy" in the jungle were popular, also Harry Thaw's escape from Matteawan. The trusts and the people, prohibition after liquor, and the United States against Mexico were also popular themes. The Bible and Shakespeare were drawn on liberally for titles, many of them excellent. Here are the judges' awards:

1st prize, \$5.00, to Marion Symmes of New Jersey:

"No Tortoise This Time"

2d prize, \$3.00, to Mrs. J. A. Sullivan of California:

"The old order changeth, yielding place to new."—Tennyson

3d prize, \$1.00, to C. M. Post of Kansas: The Rabbit: "My Kingdom for a Puncture"

4th prize, \$1.00, to Elizabeth Sanner of Nebraska:

"Why One March Hare Went Mad"

5th prize, \$1.00, to Adelaide D. Thayer of Michigan:

"Man was given dominion."—Bible

6th prize, \$1.00, to H. L. Crockett of New York:

"How My Farmer Friend Has Changed!"

7th prize, \$1.00, to Mrs. A. W. Haring of Pennsylvania:

"The human race afraid of nothing rushes on through every crime."—Horace

8th prize, \$1.00, to Gussie Roys of New York:

"And there went out another horse that was red, and power was given to him that sat thereon to take peace from the earth."—Bible

9th prize, \$1.00, to Ethel Weller of Ohio:

"Backward, turn backward, O Tires in your fight"

10th prize, \$1.00, to Emma C. Fisk of New York:

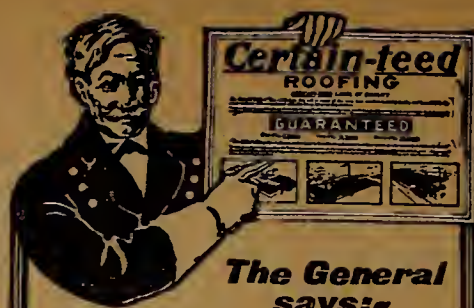
"And the land shall be filled with engines, And the work that infests the day Shall leap and bound like the rabbit And as quickly clear away."

The following titles are given honorable mention:

Harem Scarem; Hare's Breadth Escape; Almost a Bunny Hug; The Auto Has "Turned Turtle;" "Thy fate is the common fate of all;" A Postdiluvian Electrosaurus; A Flurry in Cotton; The Auto Enlightens the Race; New Steps in Dancing, but Not the "Hesitation;" "But live who can, or die who may, Still forward, forward on the way;" 1:02 A. M. (Two After One in the Morning); A Good-Road Movement; "Jack be nimble, Jack be quick."

Give "Old Sol" a Chance

WHEN planting the garden remember that the heat- and sun-loving plants should have a location where the unobstructed sunlight can have the right of way. A high-growing plant should not shade the low-growing one that requires sunlight. Plants like corn, pole beans, tomatoes, etc., should be rowed north and south, so that the sun can reach the soil and base of the plants at midday when the sunshine is most effective.



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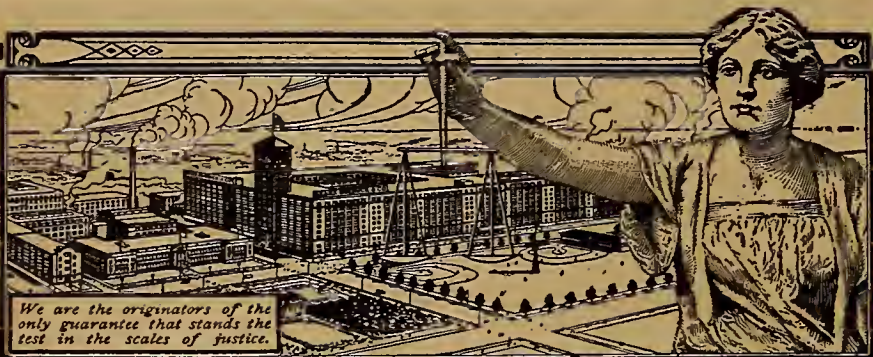
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The Farmers' Lobby



WHAT is the best basis for credit? Is it the faith of a great government, or of the commercial transactions of a great community, or of the big corporate bodies that handle a large share of that commerce, or of the land on which the people live?

That question was asked the other day by a gentleman who thinks the financial program now before Congress is not broad enough to meet the greatest needs of the people, especially the farming people, of this country. He answered his question somewhat in this wise:

None of these things is the best basis of credit. The Government may be overturned as the Southern Confederacy, one of the most powerful military states of its time, was overturned; or it may repudiate its obligations as a number of American States have done. Similarly, the commercial transactions may be gravely affected by panic; great corporations may fail. The land at least remains in its place, but even its value depends almost entirely on the people who live on it.

Therefore the best credit is that of the whole body of the people. Individual credit is about the most precarious in the world, but the credit of the whole body of people is the best. It is the people as a whole, in all the operations of their business life, that at last stand for all credits. The land has value only as it is inhabited and used. All the land in North America was practically worthless until people came to live on it. The people gave it value; and the real value of credits based on land lies in the fact that the people must use that land, and thereby pledge their faith to maintaining that credit.

That seems reasonable enough, and it constitutes the basis of an increasing volume of criticism now being aimed against the financial program of the national administration. Congress has passed the Federal Reserve Bank Act, which looks to improving the facilities for mobilizing and dealing in the credits of the commercial community. It is likely to pass at the present session legislation establishing some system of land-mortgage banks, designed to consolidate and improve the credit of real estate and to lower the rates of interest that must be paid in order to get money on land as security. There is indeed some inquiry whether the particular system proposed would have this desired effect, but without doubt it is the honest purpose of the men who are drafting the various measures to produce that effect.

The Real Need Is Not Met

But who is doing anything for the mere people—the people who are not in commerce, whose activities do not produce “commercial paper” based on the faith of commercial transactions, the people who do not own land to be pledged as security for mortgages?

That is the question that is beginning to be pressed upon the attention of students of the big scheme of bettering the whole national financial system. Some of the critics go so far as to urge that if we invent better facilities for the use of the people who own land, and of those who turn out commercial paper, without doing a corresponding service for the millions who are not fortunate enough to be in either of these classes, we will in fact have increased the attractiveness of the business offered by these favored classes, and thereby tended to injure the class that is left without any specially adapted facilities for making its credit effective and workable.

In short, it is pointed out that no legislation is being pressed, in the present program, which looks to adapting to American conditions the systems of co-operative rural credit that are in successful operation in France, Germany, Italy, Austria, and other countries. This omission is the occasion for strenuous protest in which David Lubin, American commissioner to the International Institute of Agriculture, is taking a leading part.

Mr. Lubin Speaks with Authority

Mr. Lubin's studies and work for the American farmer and the American consumer have been discussed at different times in the Lobby. He was one of the leaders in developing the co-operative marketing system that places California on the agricultural map, and that has been now pretty widely extended throughout this country. He alone is entitled to the credit for the great, big idea of the International Institute of Agriculture. He spent years and a good deal of money before he got the right people interested in it, and only his indomitable faith in his great idea enabled him to succeed. He managed at last to secure audience of the king of Italy, whom he impressed so much that the king got behind the scheme, issued his personal invitations to threescore of nations to send delegates to a great conference, paid much of the expenses, and brought about the establishment of the very institution that Lubin had conceived.

Mr. Lubin, long before his dream of the International Institute was realized, had been a student of the rural co-operative credit systems of Europe. He has carried on a campaign of education with the view to get his own country to adapt this general plan to the needs of America. To this end he has co-operated with the commission that went to Europe in 1912, with the committees of the American Bankers' Association, and in fact with whoever would indicate some interest in his plans. At the present stage of legislative consideration of the subject Mr. Lubin confesses that he is very much disappointed. Having been asked to present his criticisms of the land-mortgage bank measure now pending in Congress and being pressed as an administration measure, Mr. Lubin wrote a very

Why the Mortgage-Bank Measure Would Fail

By Judson C. Welliver

earnest letter to Senator Fletcher, pointing out that the mortgage-bank measure simply isn't the thing that all the noise has been made about, at all! He doesn't think it is a very satisfactory measure, even for the purpose of improving the land-loan situation; but, whether good or bad, it isn't a “co-operative rural-credit” measure, and Mr. Lubin doesn't think it ought to be presented to the country as anything of the kind.

In his letter to Senator Fletcher Mr. Lubin points out that it has been promised repeatedly that the systems of co-operative rural credits were to be examined and applied here; yet, he says, “on examining this bill I find it to be, in substance, a plan for mortgage banks by bankers, instead of being for co-operative mortgage associations ‘operated for farmers by farmers.’” Continuing, Mr. Lubin says:

“True, the text of the bill makes mention of a co-operative phase, but this phase . . . would, substantially, be rendered inoperative. Thus the bill, which was intended to provide for a rural co-operative credit system ‘by and for American farmers,’ provides instead for a system of mortgage banks. If the bill passes, I believe it would tend to standardize the farm-mortgage business so as to lend itself readily to an understanding between the proposed banks for the general control of terms and interest rates to the exclusion of a voice in the matter by the farmers. In short, it seems to me that the bill would be likely to create an artificial barrier between the farmer and

“If there were no farmers' co-operative rural-credit systems in Europe,” adds Mr. Lubin, “or if it were impossible to adapt these systems to American needs, would it not have been sufficient for the commissions to have so reported, and thus terminated their inquiry? But why terminate it by drawing up a bill for a system of land-mortgage banks?”

It is not practicable, in Mr. Lubin's opinion, under present conditions, to consolidate the whole national business of loaning on land mortgages, in the control of a system of national banks. He denies that farm mortgages constitute the best available security, because of the great diversity in the laws of the States in relation to land titles, encumbrances, and the like. If mortgages on land were to be converted into bonds that would sell everywhere and thus secure lower interest rates, the lands affecting titles and transfers would have to be unified, and the system of appraising land values would have to be of a character that would everywhere inspire confidence that the valuations were just. In Germany, under the Landschaft system, these conditions have been met; and because they have been met the Landschaft

bonds, based on the security of land mortgages, can be sold by the farmers direct, in an open market, at an interest rate as low or lower than that commanded by German imperial bonds. But, Mr. Lubin protests, this Landschaft system is not the model on which the pending legislation in Congress is framed. The Landschaft is based on an association of borrowers; the pending legislation turns this upside down, and provides a corporation of lenders. Germany organizes its borrowers to fight for the credit they need; the proposed United States measure would organize the lenders, and enable them to exact their conditions from the borrowers. The German system can be put into effect without organizing banks, and without the farmers being required to engage in banking.

The Plan Mr. Lubin Favors

The organization of the German system, to which Mr. Lubin is devoted, is easy enough of explanation; but it is so unlike anything we have in the United States that it is difficult for us to appreciate what it would mean if transplanted here.

There are twenty-four states in the empire, Prussia being the largest. Prussia is composed of twelve provinces. Each province of Prussia, and each of the minor states, is required by law to have a Chamber of Agriculture; and each Chamber of Agriculture sends its due proportion of delegates, according to its size and importance, to the official Landwirtschaftsrat, the Council of Agriculture for the empire. This council has some curious powers and responsibilities. For instance, it is an official advisory board to which are referred matters affecting agricultural life and business, for advice and criticism; it has the power to initiate agricultural legislative proceedings on matters concerning the empire. At present this body consists of 74 members, 25 for Prussia and the other 49 distributed among the minor states. These represent the agricultural associations throughout the country. These associations are primarily local, neighborhood affairs; the locals in each province are federated into a central association to which they send delegates; the central provincial associations are in turn associated in central state associations; and these state associations, finally, send up their delegates to the highest body, the national council.

The Plan Suggested for the United States

Can this plan be adapted to the United States? Mr. Lubin, who has studied it so deeply that he is doubtless the foremost American authority on it, and who especially has considered the problem of adapting it to American conditions, insists that it can be transplanted here. Through it agricultural interests would secure a powerful engine to represent them in both state and national affairs of all kinds, exactly as is done in Germany. Mr. Lubin, by way of suggesting a basis for the organization in this country, proposes that the township be used as the basis for the local associations; these being federated into county societies; these in turn into state organizations; and these, finally, into a national council. This he would have neither official nor unofficial. He thinks if it be made an official body it would be too stiff and formal; if entirely unofficial, it would not command any authority at all. He would make it rather semi-official, as in Germany, the general council meeting at stated times in Washington, to consider all matters involved in the betterment of agricultural conditions. Backed by the hundreds of thousands of members all over the country, he believes it would accomplish vast benefits for the rural community. The general secretary of this council in Germany pointed out to Mr. Lubin how the thing worked there, insisted that it would work just as well in another country, and added that without this organization it would be impossible to accomplish anything practical for Germany's agriculture.

Mr. Lubin wants a system of co-operative agricultural credit that will go hand in hand with this plan of general organization of the agricultural community. A number of state granges, farmers' unions, and agricultural societies have initiated measures to examine carefully every legislative proposal and to institute the effort for such an organization as Mr. Lubin wants. Especially is there insistence that, a loaf of co-operative rural credit having been promised, the farming community must not now be given a stone.



Farmer: "Seems to me I've seen that fellow before"

the lending public.” From which it will be noted that Mr. Lubin not only thinks the plan of providing a system of co-operative agricultural credit has been thrown down, but he thinks a bad system of mortgage banks is being provided instead, practically by false pretenses. If he is justified in this view the situation is a most unfortunate one, one which should arouse the American people.

Mr. Lubin confesses that he can't understand how the various investigating bodies managed to miss the farmers' co-operative rural-credit systems while they were traveling around Europe ostensibly for the very purpose of finding and learning about those systems.

The Knight of the Inner Circle

By Jean Mahan Plank

Illustrated by Wilson Dexter

YOU'LL think it queer for me to get romantic all of a sudden—old maid of thirty-three as I am, and homely enough with my tow-colored hair parted plain and crinkling down the sides of my face. And if it wasn't that you've never seen me until lately, you'd know that I've always looked just so. But maybe being romantic wasn't as sudden as you think.

So, as we've sat all these years, of evenings, in the old California house, with the winter rains dashing from the gutters, or when, in summer nights, we've rocked in the old wooden porch chairs on the long stoop, while the mocking birds made up their sleepy quarrels, and the tree frogs croaked, and the roses and jasmine revealed their presence by something that always reminds me of love that is shy yet can't be hid, no one would ever have suspicioned that I was indulging a fatal weakness. Of course it hasn't been fatal, but those two words always seem to belong together.

We—oh, who are *we*? Why, only Peter and I, now. You see, Peter's folks raised me. They took me when I was an infant, soon after they came to California and started the greenhouse you can see over on the other corner. No, I don't know just where they found me. And Peter, he's always been just Peter; silent and kind, and always *there*.

He sort of had to be there, for just as he was getting ready for college Father died, and there were the three younger boys all to be educated, and Mother was right helpless about business. So of course Peter just stayed at home and worked the greenhouse.

Two years ago, after the boys were all married and settled, Mother died. Peter seemed to grow more and more silent from that on, and when the greenhouse was closed for the night he would always come home and go to his bookcases—he has a lot of them in the living-room—and take out one book after another and sort of finger them lovingly.

Our next-door neighbor, Mrs. Bradley, asked me after Mother's funeral whether I was going right on living here. And I stared at her. Where should I go?

"Well," she said, sort of resigned, "of course you aren't young, and you aren't—"

Now she stopped, but I knew as well as could be what she was going to say. I have those lights, as I call them, often. She was going to say: "You aren't pretty."

"Well, I didn't mind, for I never was one to be vain. But if I had been young and pretty, where would I be better off than in the old house where I was raised? Besides, there's Peter. I had to keep the house tidy for him, and I knew just what to cook that he'd like without ever asking him.

So for two years we've gone right on in the same old way: he working silently and faithfully in the greenhouse, and I singing around all day at my housework; then when night came, him fingering and reading his books, and me indulging my fatal weakness. Yes, I'm coming to that.

Now, I've always had—and no one ever suspicioned it—an *inner life*. I never had a beau. Only once when we were playing games, with the lights out, Sam Hardy was sitting next me, and he kissed me.

I struggled and fought, and got away from him just as they brought in the lamp. He was mad and called me "Charity Girl!"

I said: "If you call me that ugly name I'll tell Peter of you."

He only laughed with a sneer, and said: "Who's afraid of Pete?"

But I noticed for a long time—we were all in school then—that he kept away at recess hours from where Peter was.

Sam worked at his father's soda fountain, and for years I used to go a block around that corner to avoid seeing him. He got to be a doctor when he grew up; but somehow I never have been able to abide him, and I guess he doesn't like me any too well, for when we've happened to get into close quarters he's always looked at me with a bit of that sneer on his face. He drinks some too.

Well, after that I steered pretty clear of boys. I never saw one that would begin to fit into the character of my knight—*there*, it's out! It is a knight! I've always called him the "Knight of the Inner Circle" because of course he's never existed anywhere but in my inner life, and circle sort of suggests Arthur's Round Table, you know. We read that in school and I always did love it.

I gave my knight several titles. One was "Protector of the Helpless." Of course I made him very tender and brave, and always ready for self-sacrifice. Then another title was "Lover of the High and Good." I wanted my knight to keep his mind on noble things, even when he was having to leave me and dash about making rescues and fighting giants.

There was another title too. I've always called him by that title just after I said my prayers at night, and then it sort of seemed as if he kissed me as I was dropping off to sleep. And the kiss was not at all like

the kisses Sam Hardy gave me that time. What? Oh, the third title? "Defender of the Fair."

I suppose this all sounds silly, and as if it wasn't common sense. But there's several different kinds of common sense, I think. At least, I read something like that in one of Peter's books last night while I was waiting for the kettle to boil. One of the kinds is the sense that is common to folks that are doing every-day things; and another kind is the sense that is common to folks that have that inner life. And I find from Peter's books that lots of them have it—men with several initials after their names, too.

A week ago, if you had told me it wasn't common sense I might have felt that you were right, and I might, from shame, have spent a whole evening at my crochet work without allowing myself to even think of my Knight of the Inner Circle. But, land! a week ago I wouldn't have been telling you all this, even if you are one that sort of draws people out. Now just wait!

Last Thursday, about five o'clock in the afternoon, I ran out to the trees at the back of the house. There was a glorious sunset that I could see from under the apricot trees. Just as the rose was fading, suddenly one of my lights told me that Peter was coming by the front way. I ran in and looked with surprise at the clock, because it was early for him. But I was sure he was coming, so I hurried to the front to unlock the screen door.

As I went into the living-room I heard hoarse, harsh voices, an ugly laugh, and just as I got near the front lattice I saw two men under the orange trees; and one man's arm flew out as he struck another man to the ground. The one that fell grasped at the tree branch, so he didn't fall very hard, and the lovely white blossoms dropped over the two men in a shower.

I was so startled that I couldn't think what was what until the one that had struck started toward the house along the graveled path. Then I saw that it was Peter. But a Peter I had never seen before. He

nag with questions. So I just ran out to turn the gas down under the stewed figs and to start the coffee percolator. And then we had supper.

It was a couple of hours later, when Peter had settled himself to reading some new books that had come that afternoon, and I was trying to get my mind off that strange occurrence under the orange trees, that I heard a tapping at the back door. I went out, lighting a candle as I went, and saw through the glass that it was Mrs. Bradley.

Her eyes were all glowing, and I knew she was full of something to tell. I set the candle on a shelf, and we sat down on the two kitchen chairs.

"Rose," she half whispered as she leaned toward me, "did you know what the quarrel was about this afternoon?"

"No—" said I sort of slow, for I didn't want to talk of what concerned Peter. She's pretty much of a gossip, is Mrs. Bradley, though a good soul and neighbor. "I don't think it was exactly a quarrel," says I.

"But it *was*," she said eagerly, "and I was behind the group of poinsettias in my yard and heard most of it. Doc Hardy said something about *you*."

"About me!"

"Yes; it was right ugly too, but law—I think he'd been drinking. And Peter answered him sort o' quick, and when he answered back, Peter just up and knocked him down. It—it was something about your—your birth, Rose; and about your staying here."

"Staying here," I said kind of impatient, "in my own—" I began, then remembered that I'd better not say much. I thanked Mrs. Bradley as if she'd done me a great favor, and I talked as light as I could, and by and by she went.

I put out the candle and started back to the living-room, but my feet seemed to be made of lead. I could not understand. Sitting down in my usual chair near the grate I picked up my crochet work and tried to think things out. How puzzling things had become!

The new Peter that I had seen, with the flash of anger in his eyes, puzzled me. I looked shyly over to where he sat.

He was reading, intent upon the book, and for an instant I forgot myself, watching him. His face had fallen into lines about the mouth and forehead like the pictures of the great men in his books. He looked—why, yes,—he looked like *Emerson*.

I dropped my work. And Peter had struck down that horrid Sam Hardy because he said something about me! Peter had defended me! Then all of a sudden the words came into my mind without my thinking: "Defender of the—"

Now a queer thing happened. One of my lights came over me, and it seemed like it just shone all around and about and inside of me. It seemed to throw its rays over those years when high hopes were abandoned that the helpless mother and children should be rightly cared for; then it seemed to flash over the quiet figure sitting opposite me poring over the highest and best thoughts with so much love that his very own face fell into a likeness of the writers of them.

"Protector of the Helpless—Lover of the High and Good—Defender of the Fair," though of course I wouldn't call myself fair, but that's just a general name for all womankind, you know.

Then the light was gone, and I found myself on my feet starting toward the door. I didn't seem to breathe.

"Rose!" Peter's voice was very low and with something in it like a question. I stopped, but did not look at him.

"Rose!" he said again as he got up from his chair and laid his book down on the seat.

"Yes, Peter?" The words sounded strange in my ears.

He came near me. "Don't be frightened, Rose, at what I'm going to say to you. You don't need to answer right away either. Do you think, Rose, that you would be very unhappy if you were—married to me—to be my wife?"

My tongue curled right up against the roof of my mouth.

"I know," he went on, "it is a strange thing to you, but—I would be kind to you, Rose."

Then I looked at him straight and fair, and my tongue uncurled itself.

"Kind to me, Peter! Kind to me!"

For a few seconds we just stood there staring into each other's eyes. Then of a sudden Peter's face changed.

"Why, Rose! You couldn't—you couldn't love me!" I started to laugh, but a sob choked it off. Somehow I found myself right in Peter's arms.

"Oh, Peter—Peter!" I cried. "Love you? Why, I've never done anything else!"

I wonder how many of us live year after year with our ideals without recognizing them? How many of us are too dull to see the best when it is close to us and gaze at the clouds instead of at our right hands?



Then I saw a Peter I had never seen before.

walked with his shoulders thrown back, and his face was just a blaze of wrath. At the same time the man who had fallen scrambled to his feet. It was Dr. Sam Hardy.

"Why, Peter," I cried, "what is it? What has happened?"

He looked at me with a gaze like steel, as if he was looking at somebody he'd never seen before. Then he gave a short laugh and came on into the house.

Not a word did he say, and I never was the sort to

Let the Sun Do Your Work

Sterilizing Foods Under Glass Improves Their Flavor

By Charles Barnard

ONE day last March a friend from New York dined with us in our California home. The first thing served was a chicken broth flavored with vegetables. Our friend seemed to enjoy the chicken broth greatly and said it was delicious. Later in the meal he was served with creamed spinach, which he pronounced fine. Now, the curious thing about this part of the dinner was that the chicken and spinach had been in the house for months, which was also true of the carrots, onions, parsnips, and celery served in the broth.

It has been known for a long time that many kinds of food can be dried out of doors in the sun and can be cured or preserved for future use. When grapes, plums, or codfish are dried out of doors great labor is involved in protecting them from wind, dust, dew, rain, and the attacks of insects. Drying foods under glass has been tried also with limited success. It protects from rain and insects, but is not effectual as usually practiced.

Something New Under the Sun

The new dried food served on our table, and that has been served on many tables all over the country, is dried in the light of the sun under glass, but by a wholly new method and in an appliance that, when it was patented, was said to be wholly unlike any food-drying appliance ever patented in this or any other country.

It is simply a small box having three sides of glass. The bottom and inside of the wooden back of the box-like drier is painted white. The sunlight shining through the glass sides and roof strikes this enclosed surface and develops heat, the white paint serving as a reflector. The air inside the drier is thus rapidly heated and, in being heated, expands and tries to rise to the top of the drier and escape, and would do so if not held back by a valve that controls an opening, or outlet, at the very top of the drier. Along the sides of the drier at the lowest point are inlets for fresh air.

The principle on which this new food-conserving process is founded is very simple. The light of the sun whenever it meets anything on the surface of the earth develops useful heat. This heat is caused by radiation into the air, and the air is warmed and then expanded, and in expanding it rises, and unless intercepted is lost and wasted. If a portion of the air can be confined so that it cannot rise and escape it will absorb more and more heat and very soon reach a temperature where insects and germs of decay and the spores of mold plants are killed. This is sterilizing, and food that is sterilized will not under ordinary conditions decay.

A broiler placed out in the sun to dry would probably spoil before it could be

cured. By the new method a fowl in four days is perfectly cured and will keep in any dry place for a long time. It will be very nearly of its natural color and very light and brittle and yet, when soaked overnight in cold water, it returns to its original weight and appearance and can be cooked in a stew or be used to make a broth for an invalid's supper, for it will be of excellent flavor. This is true also of mint, parsley, celery-tops, and all medicinal herbs. By this method every kind of vegetable can be cheaply sterilized and preserved. Fresh sliced onions, carrots, turnips, parsnips, and beets can be dried in one day or, at most, in a day and a half. Sliced ripe tomatoes can be dried to perfection, keeping their original color and flavor, in four sunny days. Fresh grapes can be turned into superior raisins of exceptional flavor and juiciness in less than a week. Sliced apples are perfectly cured in less than two days and will be excellent even when eaten raw, and when cooked make a pie of remarkable flavor.

Nearly all foods placed in the drier remain untouched till dry. Tomatoes in drying are sliced and often, on the second day, the thin parts stick to the trays and must be turned once while drying. Vegetables, sliced apples, and all herbs, like parsley, celery, and spinach, dry without being touched. Thick fruits, like halved peaches and apricots, have sometimes to be turned; if cut smaller they need not be moved.

Spinach and celery-tops dry so quickly that after the second hour they must be tested to see if they are brittle and dry. Fruits are dry even if they appear to the touch to be soft and tender. Grapes are quite soft even when fully cured, and often softer than ordinary raisins. In loading the trays the food is packed only one layer deep and close together, for all vegetables begin to shrink within an hour after they are put in the drier.

Recently it has been found that foods can be sterilized in a few moments by making the fruit "boil up" once, and that the continued boiling need not be carried on, if we could only take out some of the water in which the fruit is cooked. This drier can be used to extract the water out of partly cooked preserves and thus save all the time, fuel, and wearisome labor of "boiling down preserves."

For instance, Satsuma plums were peeled and cut from the pits and run through a food-chopper. Then equal parts of sugar and chopped fruit were put in a preserving-kettle with one-fourth part of water, put on a fire, boiled up once, and then the whole was poured into a large platter till about one inch deep. The

platter was then put in the drier early in the morning and kept there two days and one night. By this time, with a stirring with a tablespoon once each day, the marmalade had lost nearly all its water by evaporation and was thick and syrupy and of a wonderfully rich plum flavor and of a beautiful color and consistency. It was then poured into clean, sterilized glasses and sealed with hot paraffin. The work of preparation was the same as if the marmalade had been made in the old way. After the boiling all expense stopped and the excess of water was perfectly removed without injury to the fruit. The food was sterilized three times, once over the fire, and twice (each day) by the heat of the sunlight in which it was bathed. Sunshine, we know, sterilizes food in a very short time, and it was in the sunshine two whole days.

Candied Fruits and Jellies

Candied fruits were made by boiling figs, pears, peaches, etc., in a heavy syrup till transparent. Then each piece was laid on a wire rack resting on a platter, the platter catching the drip from the fruit, and the platter and rack placed in the drier. On the morning of the second day the fruit was transferred to clean platters and the syrup saved to use again. The fruits dried in from two to three days, and when dry were rolled in sugar and packed in paper boxes.

Jellies were made by obtaining the juice in the usual way and putting through a jelly bag, then adding equal parts of sugar and boiling to dissolve the sugar, then pouring into jelly glasses. The full glasses were then put in the drier to "jell" or thicken by evaporation, which is finished in from two to three days. The jelly is then protected by paraffin.

In the opinion of cooks and expert housekeepers who have seen and tasted these sun-cooked jams, jellies, preserves, and candied fruits all have a beautiful color and a finer and more natural and delicious flavor than any fruit prepared in the old way.

The drier was first made and used in southern California, and, naturally, in such a warm and sunny climate it has been most efficient. Experience has shown that when food is placed in the drier early on a sunny morning it is perfectly sterilized by noon. After that the food is safe from harm, even if it is cloudy or rainy, for the next two days and nights. For this reason it is believed that the drier will be useful and will give good results in the Pacific States, in all the Southern States, and throughout the Middle West, though it may be less efficient east and north of Pittsburgh. How far it may be useful is yet to be determined by experiment.

An Umbrella Rack Which a Boy Can Make

Designed for a Narrow Hall
By A. E. Swoyer

AN UMBRELLA rack is almost a necessity either in the vestibule or in the front hall, but if the selected location is none too roomy—as is very often the case—the standard type of rack either takes up more space than can ordinarily be allowed, or else it interferes with the opening and closing of the door. This is because such a rack is nearly always of square or rectangular shape and designed to hold two rows of umbrellas, and the remedy lies in making it long and narrow to hold but one row. As that will make it too narrow to stand alone, it must be fastened to the wall either permanently with screws or else hung upon hooks.

Such a rack is shown in the illustration. It is two feet high and two feet long, and is designed to hold six umbrellas. While this is enough for all ordinary occasions, its capacity may easily be added to by simply increasing the length and thus supplying more compartments. The wood to be used is all half-inch material, with all pieces four inches wide. While some hard wood with a handsome grain, like chestnut or oak, naturally makes a handsomer piece of furniture, common yellow pine, properly finished, is not to be despised. The two end pieces are each twenty-four inches long, and may be rounded at

the top and cut out at the bottom as shown, or else left plain. The rounding adds to the appearance and is easily done by means of a keyhole saw. For the braces and the bottom of the lower box you will need six pieces, each two feet long, and for the crosspieces forming the compartments five strips, each three inches long. All of these are fastened together with small-headed nails, being sure to have the separate parts lined up true and even. The heads of these nails should be countersunk, and the holes filled up with putty in which has been mixed a little of the stain to be used in finishing.

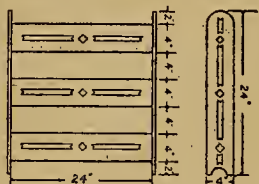
Before nailing up, however, you must decide whether or no you care to go to the trouble of making the decorative cuts shown in the illustration. They are not intended altogether for ornament, though, as they help to dry out the umbrellas more evenly and also tend to prevent the wood from warping. They may be easily made by boring a series of holes with bit and brace, and then working the openings to the shapes shown with mallet and chisel. If you do not care to go to this trouble you will find that the rack will be almost as satisfactory without them as with.

When put together the rack is to be smoothed as usual, and finished with wood dye of a shade to harmonize with other furnishings. Several coats of varnish should then be applied, allowing plenty of time to dry between each coat. The varnish-

ing is essential, as otherwise the dampness caused by the storage of wet umbrellas would warp the wood in a very little time.

Unless you are experienced in such work you will probably have to call upon the tinsmith to make the drip pan or tray which rests in the lowest rack. This will be two feet long, three inches wide, and two inches deep, and may be made either of galvanized iron or of sheet tin. The latter is cheaper, but will require several coats of thick paint to prevent it from rusting.

This completes the rack, and if properly made and placed you will find it a great convenience. Every boy feels a greater love for his home if he uses his hands to work for it.



Well, Why Should She?

Marion Harland, Mrs. Rorer and other famous cooks have been much interested in experiments with Jell-O for the purpose of learning whether a great deal of time and expense might not be saved by making desserts of

JELL-O

instead of preparing them in the old way. Mrs. Rorer sums it up when she says: "Why should any woman stand for hours over a hot fire, mixing compounds to make people ill, when in two minutes, with an expense of ten cents, she can produce such attractive, delicious desserts?"

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NEW HOME

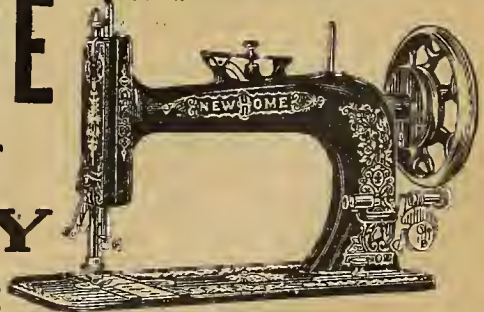
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What Women Are Thinking About

A Few Suggestions That May Help You to Make This Summer More Profitable

By Georgia T. Drennan and F. H. McLean

Rose Brakes North and South

TIME and use wear away land. Under certain conditions the whole aspect of the home site is detracted from by some worn-out or neglected piece of ground. Such places accumulate old tin cans, bottles, broken crockery, and trash indescribable. Gullied, washed-out hillsides, sandy or rocky lowlands too poor to cultivate, sometimes stare the landholder in the face, and in case the farm is for sale or rent seriously diminish its value.

There is an easy and inexpensive way to transform every such eyesore into a spot of green growth and beauty. Plant a hardy running rose or two, and it is incredible how bold and conspicuous the rose brake will be. "Brake" really means "overgrown," and roses can be depended upon to overgrow every gully, old stump, rock, and tin can, not only improving the tone and value of a farm, but binding the land and preventing washes and wastes.

The first thing to do is to dig holes and fill them with rich compost, or build up places to set the roses with upturned sod and stable compost, and with rocks or pieces of log placed so as to retain the rich soil and prevent washing away. All that the roses want is a good foothold.

Now for the roses. Get the Prairie Queen, which is the double, rose-colored, improved variety of the *setigera* or prairie rose, indigenous to Michigan and other Northwestern States. It is as hardy as the wild-grape vines, and blooms in great bunches of single roses. Then the Ramblers of every color, brilliant crimson, pink, white, and yellow, are hardy, free-blooming, and long-lived. No roses in existence are more truly beautiful. The *wichuraiana* or memorial rose is almost evergreen, and is especially good to cling to and bind soil inclined to wash away. It is ironclad in constitution, and blooms in pure white and bright pink varieties. The Cherokee is one of the best roses. It is rampant in growth, long-lived, and evergreen, blooming in sheets of snowy-white roses with bright yellow centers, succeeded by seeds of bright orange, which hang on all winter.

All these roses are ironclad far north, except the Cherokee, which may not be hardy beyond the mountainous regions of Tennessee and North Carolina. It is long-lived and hardy where the temperature falls considerably below zero, and I am of the opinion it would grow and do well farther north. The Cherokee rose is the state flower of Georgia, and in that State is spectacular in wild growth.

Plants for the Heat of Summer

WHEN forecasting for the flower garden it is well to take into account plants that are constituted to endure the heat of summer. It is not always convenient to water flowers regularly during the heat of summer. The great consideration in many instances is to have plants that will bloom with a limited amount of water and, still further, some kinds that flourish in hot sunshine without water at all. The



The night-blooming cactus

cacti are about the only class of plants that can be grown in any garden, and that will bloom without water all summer. There are many classes and an extensive number of varieties of the classes. Not all are desirable for garden culture, some are not even admissi-

ble; but there are more curious, interesting, comely, and even beautiful kinds than any one garden could well accommodate.

The cactus dealers understand exactly what is wanted if the orders are of the specific rat tail, crab claw, pincushion, star, hedge hog, Queen cactus, night-blooming cactus, coral, Old Man's Beard, rainbow varieties, *ad infinitum*. The botanical names are difficult for amateurs and are seldom used. For instance, *Echinocactus scopa candida cristata* has a name only equaled in length by the time it takes to grow. One in my garden grew one inch in three years. The common names are descriptive. *Phyllocactus latifrons* means broad-leaved cactus, and its common name, Queen cactus, truthfully describes its perfect beauty. Great flaring, creamy-white fragrant flowers expand after dark and are open all night. With the exception of the pure white night-blooming cactus, it is the most famous nocturnal bloomer in existence. But there are many other unique plants in the cactus group that are well worth study in the garden by the plant lover.

Cereus columbriunus is a still better all-around

night bloomer, as it blooms almost half the next day. Its flowers are as white as snow and sweet-scented.

Closely allied to it is *Cercus serpentinus*, which is a quick grower and good steady bloomer in white. The only really objectionable cacti are the opuntia, prickly pear or Indian fig, and the elk horn. The prickly pears number many very curious varieties, some of gigantic proportions, and they are all ironclad, resisting long-continued heat of deserts and cold forty degrees below zero. They are all covered with fine, hair-like spines that are dangerous to the flesh; it is impossible to handle them with safety without stout gloves for pro-



A Cherokee-rose brake in all its beauty

tection. Still more dangerous for stock, they are yet valued on the desert and arid plains of the West. The cattlemen burn off the dangerous spiny epidermis and feed the broad, thick paddle-shaped plants to stock. The elk-horn cactus, also under condemnation for gardens, has a fetid odor so staggering that no one goes near it except by accident. Blow flies frequent it as they do carrion, but its blooms are gorgeous.

Cacti are so readily propagated, so easily and cheaply grown, that no garden need be without them. Dealers supply both cuttings and rooted plants. Cuttings should be allowed to callous or dry for a few days and then be put into dry sand until roots form. Then moderate moisture must be given until the cuttings get plump and firm, when they may be potted in small-sized pots.

Always use small pots. Crowd the roots, with just enough sand and friable soil to prevent direct contact with the sides and bottom of the pot.

Turn the plants out into the open ground in June or July. Cast aside the old fallacy that a cactus must be seven years old before it blooms. Given suitable environments, cacti bloom the first year, and many of them are brilliant in deep yellow, bright scarlet, royal purple, maroon, buff, and pink. Bed the plants directly in the sun, and have the bed or border sandy and dry. No moisture must collect in the lower strata of the soil. Rockeries are very favorable. They are well drained, and the roots of the cactus penetrate in between the rocks, feeding on the soil, and growing like magic from the heat reflected from the rocks.

Peculiarities of Two Cacti

The top of a rockery is about the only place a prickly pear can be located to be out of danger to the cultivator. Once filled with plants the rockery needs no further care. Dew and rain, according to nature, do the plants no harm, as the succeeding sunshine evaporates all surplus moisture. Cacti have no evaporating pores like the leaves of all other forms of vegetation. The branch is the same as the leaf to the cactus, and every drop of moisture absorbed by the roots is retained by the plants, hence they are great conservators of moisture, able to resist the most powerful and unbroken heat of long summers.

The spines of many of the cacti are very bright and showy. Silver, gold, coral, and copper colors are common among them, and they cluster in rosettes upon some kinds, round and round, and in others are ranged in straight rows up and down the plants. The fruit-bearing cacti are striking and handsome. They bloom freely and then the fruit forms. People on the desert find the fruit palatable and refreshing. Even the low-growing pincushion cactus fruits heavily, the fruit being about the size of a filbert. The Indian fig is more like a pear than a fig, and is deep red in color. The bloom is yellow. The barrel cactus, in several forms, blooms in deep orange-yellow, and bears fruit variously of the size of a wine-sap apple or a Bartlett pear.

On the desert they are useful; many times man and beast have been saved from starvation by the fruit, and from fatal thirsts by the water the plants yield when cut and scooped out. The one shown here blooms in orange color, and bears fruit the size and color of a russet apple. It is easily propagated by slices, cut across, and subjected to the same treatment as the cuttings of other kinds.

How to Make Summer Boarders Pay

IN THESE days housekeeping and the keeping of boarders is an art and a trade which must be studied, but with a large amount of determination, a modicum of talent, and infinite patience it can be mastered. Above all, do not start out with the idea that you will not alter your habits and that the boarders must take you as they find you. The woman who does this might as well save herself the trouble of beginning and advertising.

The successful keeping of boarders can hardly be accomplished without an outlay of money in the beginning, and one of the most important questions is running water and a bathroom. By all means, if in any way possible, have this, because city people have become so used to this convenience that its absence is a constant aggravation, and how often have I heard women say, "Why should I go to the country and make myself uncomfortable when I have every convenience for comfort at home!" It is quite possible to utilize the windmill for this purpose and for running water in the kitchen. A septic tank for the sewage disposal could be made, whence it could pass through pipes for irrigating purposes. This would cause quite an outlay in the beginning, but it would soon pay for itself.

Another important thing is to have all the doors and windows screened, for flies are a torment and are impossible to keep out of the house in any other way with all the care in the world.

Make the parlor and sitting-room as attractive as possible. Have a number of comfortable rocking chairs, enough to accommodate all; some tables for books, magazines, and fancywork, and on each one a good, well-shaded, carefully kept reading lamp. For there will be many evenings when everyone will want to read or embroider.

The dining-room should be the most attractive room in the house. See that it is light and cheerful, cool and free

from dust, and the table large enough to seat everyone without crowding. An old-fashioned sideboard, which could be used as a serving table and also to keep the linen in, would make the serving easier; or, if this is not among your possessions, use a smaller table for this purpose. Have a sufficient number of tablecloths and napkins to change often enough to satisfy even the most exacting boarder. Have pretty dishes and plain white tumblers. Lay away all spoons, forks, and knives that are worn and get new ones in their place, for an attractive table will make your house more popular. In the evening, if necessary, have the dining-room well lighted, for no one enjoys eating in a gloomy room. Then, too, on stormy evenings the children and young people will like to utilize this room for games.

A Sensible and Delicious Table

Provide simple well-cooked food, but have a variety and do not cook all the vegetables in season at every meal, for a loaded down table is not conducive to an appetite. Two green vegetables and one starchy one is enough for dinner.

Above all, have good coffee, thick cream, bread and butter. Serve all cold things absolutely cold and all hot things very hot. I cannot think of anything more objectionable than hot things on a cold plate, and vice versa. Have the salads daintily dished, cold, and immediately served;



The barrel or fruit-growing cactus

do not put them on the table beforehand, for lettuce becomes wilted and other salads soft and warm. If you have plenty of milk and cream, fresh eggs and butter, vegetables and fruits in abundance, allowances will be made for the difficulty of getting good meats.

To be successful, manage instead of doing all the work yourself. No woman can take boarders successfully without help. If the rooms are not well cared for the boarders become dissatisfied, and the maid will forget the clean towels or water if the housewife is careless. If you undertake to do the cooking you will have to spend all your time in the kitchen and cannot attend to the rest of the house. It is better to have inexperienced help to whom you have to give constant orders until they learn, than to do without any.

The comfort of a person depends largely on his bedroom, and a good bed is very essential. The white-enameled iron beds with good springs and mattresses are very attractive and not at all expensive. Have the pillows large and soft and made of well-cured feathers. Have light-weight blankets which may be washed;

CAUSE AND EFFECT

Good Digestion Follows Right Food.

Indigestion and the attendant discomforts of mind and body are certain to follow continued use of improper food.

Those who are still young and robust are likely to overlook the fact that, as dropping water will wear a stone away at last, so will the use of heavy, greasy, rich food, finally cause loss of appetite and indigestion.

Fortunately many are thoughtful enough to study themselves and note the principle of cause and effect in their daily food. A N. Y. young woman writes her experience thus:

"Sometime ago I had a lot of trouble from indigestion, caused by too rich food. I got so I was unable to digest scarcely anything, and medicines seemed useless.

"A friend advised me to try Grape-Nuts food, praising it highly and as a last resort, I tried it. I am thankful to say that Grape-Nuts not only relieved me of my trouble, but built me up and strengthened my digestive organs so that I can now eat anything I desire. But I stick to 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.

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Foot Scraper and Cleaner—Needed on every porch and outside doorstep. Right now is the time to sell it—A winner. C. P. Draper, Mass., first order for 200. C. A. Johnson sold 40 in 1 1/2 days. W. W. Harpster, Pa., made \$27.45 in 4 evenings, spare time work. Write quick for terms and free sample. A postal will do. THOMAS CO., 2946 West St., Dayton, Ohio

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The Housewife's Club

A FINE CHERRY PUDDING may be made in this way: Mix a cupful of stale cake crumbs, a well-beaten egg, three tablespoonfuls of sugar, one tablespoonful of melted butter, half a cupful of milk and enough flour to make a stiff batter, adding a teaspoonful of baking powder with the flour. Put a thick layer of seeded cherries in the bottom of an earthenware baking dish, sprinkle generously with brown sugar, and pour over this the batter. Bake in a moderate oven for half an hour, and serve with a hard sauce flavored with almond extract.

STRAWBERRY PUDDING—Press one quart of hulled strawberries through a sieve, and add six tablespoonfuls of sugar and the beaten whites of six eggs. Mix lightly, pour into a buttered dish, and bake slowly for forty minutes. Serve at once with cream.

DEVIL'S-FOOD PUDDING—Cook half a cupful of milk, two squares of chocolate, grated, and the yolk of one egg till it is thick. Take from the fire, add one cupful of sugar, one tablespoonful of butter, half a cupful of milk, one teaspoonful of soda, and one and one-half cupfuls of flour. Bake, and serve warm with liquid sauce.

DELICIOUS DATE CAKE—One pound of brown sugar, one cupful of butter, or half butter and half lard, four eggs, one cupful of sour milk, grated rind of two lemons, two pounds of dates, stoned but not chopped, a little vanilla, three cupfuls of flour, one cupful of chopped nut meats. This cake is delicious and will keep for months.

BIRDS' NESTS—Bake any simple yellow cake batter in deep gem pans. When the cakes are cold remove the centers, and fill the cavity with sweetened fresh fruit (berries or peaches). Serve with thick cream and sugar. (Use the crumbs from centers in a custard pudding.)

CURRANT PIE—Have a rich pie crust baked. When it is cold whip one cupful of thick cream, sweeten it well, beat into it one pint of very ripe red currants, well sweetened. Serve at once.

CHEESE PIE—Line a pie pan with rich pie crust. Cut bits of strong cheese and put into it, also bits of butter sprinkled here and there over the crust. Beat two eggs light, and add to them one tablespoonful of flour mixed smooth in a little sweet milk and a pinch of salt. Add enough sweet milk to fill the pan, and bake. This makes an excellent breakfast dish and is a recipe brought from Switzerland in the latter part of the eighteenth century.

CHEESE AND BAR-LE-DUC—Epicures have devised a dish which consists of lettuce with French dressing, served with cream cheese and thick preparations of currants or other fruits preserved in honey.

Frozen Desserts

IF ICE is procurable there is no limit to the menu. The following is a good basis for home-made ice-cream; it can be varied by the change of flavors, by the addition of crushed fruits and by the making of sauces to pour over it at serving time. A chocolate sauce is liked by almost everyone, or a fruit sauce is delicious.

ICE-CREAM—(This makes one and one-half gallons.) Two quarts of cream, two quarts of new milk, whites of four eggs, yolks of two eggs, three cupfuls of sugar, one tablespoonful of gelatin, one tablespoonful of corn-starch, one tablespoonful of flour, one-half teaspoonful of salt, lemon and vanilla. Flavor it highly, as freezing makes the flavor less. Dissolve the gelatin in the cold milk, then scald milk. Mix flour, corn-starch and sugar together; dissolve them in a little milk, then add to the hot milk, then add the beaten eggs. When the mixture will form a coating on a spoon, remove from fire, strain, and let get cold. Then freeze it, and set it away for several hours. This is as fine grained as any confectioner's ice-creams.

FROZEN FRUITS—Six bananas, three oranges, one pint of crushed pineapple or strawberries, juice of six large lemons and three cupfuls of sugar. Add water until the whole quantity measures one gallon. Freeze as you do any ice, adding egg-whites to give body to it.

Okra and Its Uses

By Anna C. Chamberlain

OKRA belongs to the mallow family, and the culinary use of certain members of this family has been known from the earliest times.

Job mentions the use of the mallow in days of famine, as if it were a food not to be greatly desired; but Horace speaks of its use among the Romans and classes it with the olive as an esteemed dish.

Okra has seemingly but little popularity in our country outside of the Southern States.

The seed-pods are its only edible part, and these possess a mucilaginous quality which, although nutritious and wholesome, may be rendered repellent in the hands of a careless or ignorant cook, as it may give to the accompanying sauce or gravy a glariness which is anything but attractive.

The first and most important thing to be learned in the use of okra is that the surface of the pods is not to be cut or broken until ready for use.

They should then be placed at once in boiling salted water or hot fat, according to the recipe one is to follow.

The favorite uses of okra in this section of the South are as follows:

OKRA A LA ASPARAGUS—Take very tender young pods, wash and put into boiling salted water. Cook twenty minutes or more, or until quite tender, and then lift without breaking onto slices of hot buttered toast. Pour over all a small cupful of hot cream, sprinkle lightly with salt and pepper, and serve at once.

OKRA OYSTERETTES—Cut the pods when just a little beyond the button stage. Cook rapidly in boiling salted water until tender. Then take out carefully with a skimmer, drain quickly, put them one by one into a spoonful of batter, and fry a rich brown. Serve hot. Some like an accompaniment of catsup.

OKRA AND TOMATO—Larger pods may be used for this dish, but none which are woody or stringy. Cut into inch pieces, and place at once in boiling salted water. Cook quickly until nearly done, then skim into a pan of stewing tomatoes, and cook together for not less than fifteen minutes. Add salt and pepper and, if liked, a small grated onion. Thicken slightly with corn-starch, and serve.



Mrs. Skeptic—"Oh, go 'long, Anty Drudge! Telling me I don't need to boil nor hard-rub my clothes. Everybody I know *always* has washed clothes this way."

Anty Drudge—"No, they haven't. Some heathen places they beat them with stones to get them clean. Why don't you do that if you *like* the hardest way? But if you want the *easy* way, just use Fels-Naptha Soap."

What does washday mean to you? Standing all day, drudging over the wash-board, rubbing the dirt out of your clothes, and boiling them to pieces; filling your house with steam and smell, and making yourself tired out? Or Thirty minutes for the clothes to soak in cool or lukewarm water with Fels-Naptha Soap; a light rub with the hands, rinsing and hanging on the line in half the time, with less than half the trouble than ever before?

Fels-Naptha works for you in cool or lukewarm water.

Buy it by the carton or box. Full directions are on the Red and Green Wrapper.

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from *London Daily Mail*

Why is it that Government ownership and management of the telephones is practically always a failure? Why is it that throughout the length and breadth of Great Britain and the Continent hardly a single efficient long-distance service is to be found? Why is it that in York one...

from *Electrical Industries (London)*

There is a certain amount of satisfaction in the fact that Mr. Winston Churchill got so angry over the freaks of the telephone the other day that he flung his receiver on the floor. As a member of the Government which purchased the telephone system, he deserves all the torture that Post Office working can inflict. But his rage, and the delicate...

From *"Le Petit Phare de Nantes," Paris*

"But today I found I had to talk with Saint-Malo, and, wishing to be put through quickly, I had my name inscribed on the waiting list first thing in the morning; the operator told me—though very amiably, I must confess—that I would have to wait thirteen hours and ten minutes (you are reading it right) in order to be put through."

Herr Wendel, in the *German Diet*.

"I refer here to Freiberg. There the entire telephone service is interrupted at 9 o'clock p. m. Five minutes after 9 o'clock it is impossible to obtain a telephone connection."

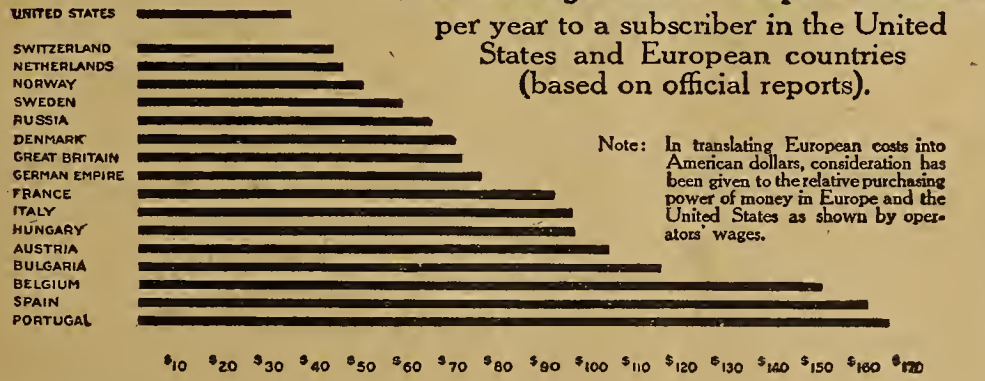
Herr Haberland, Deputy, in the *Reichstag*

"The average time required to get a connection with Berlin is now 1 1/2 hours. Our business life and trade suffer considerably on account of this lack of telephone facilities, which exists not only between Dusseldorf and Berlin and between Berlin and the West, but also between other towns, such as Strassburg, Antwerp, etc."

Dr. R. Luther, in the *Dresdner Anzeiger*

"In the year 1913, 36 years after the discovery of the electro-magnetic telephone, in the age of the beginning of wireless telegraphy, one of the largest cities of Germany, Dresden, with half a million inhabitants, is without adequate telephone facilities."

Real Average Cost of Telephone Service per year to a subscriber in the United States and European countries (based on official reports).



Note: In translating European costs into American dollars, consideration has been given to the relative purchasing power of money in Europe and the United States as shown by operators' wages.

These are the reasons why there are twelve times as many telephones for each hundred persons in the United States as in Europe.



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Sunday Thoughts for Weekday Living

The Community Builder—By the Rev. Harry R. McKeen

Chapter III

THE writer of this serial was called to the pastorate of an almost dead church in northwestern Oklahoma, situated in a community of about 825 people. At first he regarded the parish merely as a step to a more ambitious charge, but almost at once he became aware of the opportunities open to him where he was, and he started to reorganize the parish and to make it the center of a fine community life.

VISITS in the homes of the people had revealed an awful dearth of wholesome reading. The books found on the shelves and tables presented false ideals. The stories dealt with impossible people and impossible situations. The hero got rich quickly by the finding of great treasure somewhere, or else waded through blood, fire, and smoke, or maybe the heroine married a prince, lord, duke, or millionaire and lived happily ever afterward. Such literature comes in the guise of farm papers, home helpers, etc., and can be purchased at about ten cents a year, with a dozen roses or a post-card album thrown in. The worst phase perhaps is the advertising carried.

This kind of literature was reflected in the conversation of many of the young folks. The girls especially longed to have just such romances, and many of them dreamed so much about these stories that they refused to give countenance to young men of their own station in life.

This condition revealed the need of some good books that would be available for all. The suggestion was made that these young people start a public library. They were willing, but how get the money?

Book clubs were organized as a first step in the matter. It was thought not more than ten would participate at first, so a meeting was called and about thirty responded. The plan was that each member put \$1.50 into a book of his own choice. Each was to read his own book and bring it to the parsonage. The members could come there and exchange books. Three clubs were organized, and the plan worked pretty well, except that some folks read faster than others, and some others allowed their whole relationship to read the books before they were returned.

The success of the club suggested a larger venture—that of establishing a free public library, with these young people to back it. The question of finance again presented itself.

The preacher's wife suggested that the books of the last year's club be used as a nucleus, with such other books as could be donated. This was adopted and a book shower was planned. Invitations were issued to the people of the community to come to the shower and bring a book, the committee in charge reserving the right to return any books not found suitable. Circular letters were sent to friends in all parts of the United States. Books and money began to pour in. The U. S. Senators were appealed to, and responded with about fifty volumes of reference, history, and Indian legends.

The shower was a success. More than three hundred volumes were donated, only five of which were not available.

During the evening a short musical and literary program was rendered by the young people, and light refreshments were served. The social features of the shower were almost equal in importance to the intel-

lectual feast that had been spread for the library. A librarian was appointed, and a large bookcase with lock was built by a local carpenter at an expense of \$19.50. The books went like hot cakes all winter, and even during the summer. Something over one hundred families availed themselves of the privileges of the books during the year. Most of them took out books at least twice a month. The library has been added to now until it has something over five hundred volumes. Most of the books are fiction, but it has been carefully chosen, and every volume must have



The energy of a small boy cannot be restrained

high ideals or it is excluded. Nor were the social affairs of these young people neglected. They had gatherings at the homes about once in six weeks, at which they enjoyed various parlor games, or else the more strenuous outdoor games if the weather permitted. Thus sociability increased.

Educational meetings with a special program built about a special subject were held occasionally.

Some boys and girls organized a choir of twenty-six voices, and for a time had a six-piece orchestra. These musicians rendered a play for the entertainment course that made a tremendous hit and added a fine sum to the piano fund.

The old idea that pure fun and the devil were companions prevailed in this community. Every form of innocent amusement was frowned upon by the church leaders.

Another ancient notion was also prevalent—that of allowing the young people to sow their wild oats and then have a great "revival" and get them "converted." It was notable that the oat crop had been well sown, but the reclamation work had not been well done.

Abiding principles had not been laid down. They had no traditions. They had no great history to which to cling. The new pastor tried to show that Christianity meant more than merely being "converted" and "saved" for heaven, that it meant to be saved from something to something for something. That service was expected of them here and now, and that if they looked after the now properly the hereafter would take care of itself. They were taught, too, that no matter how much church history, theology, or Bible they knew it was of no real value to them until they used it, any more than any other education.

Without any undue emphasis on the evil amusements, except that if necessary the question was fairly and squarely met, a campaign for clean amusements was inaugurated. The preacher attended the ball games and umpired many of them, and was always treated courteously.

Thus the educational work was started through the study class; the community service through the socials and the public library.

But it is ever true that all work and no play is not the best with youth.

If direction is not given to the fun it will often go wrong. This is the cause of a large part of the harmful amusements. Old folks criticize and condemn, but are seldom willing to lead the youth into better things.

Like the little boy who received a diary and an air gun for a New Year's present—the entries in the book for the first three days were as follows:

- Jan. 1. Rainy and sloppy. Staid in the house all day.
- Jan. 2. Still rainy and sloppy. Notthin' doing with the gun.
- Jan. 3. Still rainy and sloppy. Shot Grandma.

Young people, like this boy, can just stand so much repression. They are wound up just like an alarm clock, and it is the business of the home, school, and church to help them run down without breaking the mainspring.

In small communities like this one, unless the church and its preacher lead the amusements in the proper direction, the young people will furnish them, and they are not apt to be so particular about the quality as they should be. This additional fact should be mentioned—that the social must be planned for young people and kept going every minute. Dull moments must be avoided. The socials of this church have been attended by over one hundred and fifty unmarried young people. [TO BE CONTINUED.]

The Child at Home

The First Chapter About the Opening of the School of Play in Fieldtown

By Helen Johnson Keyes

THE writer of these articles has adopted for six months a little girl, eight years old, named Rosaltha, whose mother is mortified by her dullness at school. She is discovered to be suffering from adenoids and tonsils, and is operated on for their removal. Her temporary foster mother finds this experiment so interesting that she starts a class of fourteen children from two and a half to seven years old, modeled on the Montessori theory, which she calls the School of Play.

IF SANTA CLAUS is any busier just before Christmas than I was during the week before my class opened I envy him, for I never had a better time in my life. You see my problem was to make, almost without cost, toys—the so-called materials—which should embody the same principles as the elaborate devices which Madam Montessori has constructed and uses for the education of her pupils. We decided to call the class the School of Play.

When the bright sun of that Monday in April shone into my house it looked upon an unusual scene, and as the children filed in at about half-past eight o'clock they seemed even more excited than the sun notes.

There were no desks, but half a dozen low tables had little chairs near them. Four cases made of four packing boxes, lined with chintz and set on their sides, stood about the wall and held the toys which I had made. Rosaltha was full of self-importance as my assistant. She had actually brushed her teeth without urging, and she looked very nice with the first hint of roses I had ever seen in her cheeks.

"It doesn't seem a bit like a school, does it?" I said. "And you and I must be careful not to be like teachers, for these tots are too young to be taught like that. You and I must just watch, and see what they do, so

as to work out a still better day for them to-morrow." "When I was a kid," sighed Rosaltha, "it wasn't so good to be young."

I restrained my smile, and advised her to pretend she was a child again and play with any of the materials that looked interesting.

"Now, children," I said, after they had taken off their wraps and laid them in individual piles on benches in the hall, "look in the boxes and see what you want to play with."

Mary Marvin, three years old, grabbed at once a box with five cookie cutters and started for a table. I followed behind her with a board two inches thick, in which I had had holes cut exactly the shape of the tins, and into which these fitted. We put our materials on a table, and Mary sat down while I showed her how she could push the forms into the holes. Of course she was incapable of carrying the shapes in her eye accurately enough to choose the right forms at first, so I took her forefinger and ran it around the holes, then around the corresponding objects, taking pains that the motion should always be made from left to right, in order to prepare her muscles gradually for the motion of writing. This operation pleased her, and

All inquiries will be answered by personal letters. Please send full name and address to The Fireside Editor, Farm and Fireside, Springfield, Ohio

very tentatively she continued these finger explorations by herself. In a few moments she was entirely absorbed by her effort, and had no need of me at all, for of course she knew whether she was getting it right or not, without the criticism of a teacher.

Up to the age of six years the eyesight of children is so defective that in order to arrive at accurate knowledge of objects they must supplement their vision by touch. We ought to remember this when we are irritated by the persistent handling of things, characteristic of children. Their little fingers have almost the delicacy of a blind person's fingers, and by fostering this sensitiveness we hold open to them one of their most important avenues to knowledge. But of course they must learn not to exercise it when they go out visiting or upon the precious bric-a-brac of their own homes. If we supply them with materials which they may profitably touch and handle it will be easier to make them understand and obey the restraint which is necessary at other times.

Several children were sitting on the floor playing with blocks. These blocks were of two kinds—long and cubical. The long ones were evenly graduated, so that the smallest was an inch shorter than the longest. In the case of the square blocks the same proportion was worked out in thickness. From these we built staircases and towers, and in order to make the task more difficult I scattered the blocks about the room, bidding the children remember the size which they should seek for the next step and then go to get it. I found their power to choose correctly greatly increased if they ran their fingers over the blocks to measure their proportions. They soon forgot me altogether in this game, and I left them to observe other groups.

A Christmas Letter

Philadelphia, Dec. 25. 1913

Emerson Piano Company,

Gentlemen:—I am writing these few lines on my own account and for no other purpose but to tell you something about one of your pianos, viz: As I have been repairing and tuning pianos for the last fifteen years I have come across some very old pianos, and I was given one of your pianos about five weeks ago to restring and put in playing condition. When I looked at the instrument it was nothing but a mass of rust and mould, and it was hard to say what was the matter with it; so I had it moved to my shop. I took the action out and found that all the felts, springs and so forth were very nearly as good as new. All of the bushings were fine, and I only had to put in new center pins and hammer springs. The hammers were fine after they were filed up and the action is as good as new. The wrest plank pins were in fine condition,—only had to take the rust off. The wrest plank has not a split in it, and the sounding board only had one seam open.

I wished to write this as this piano has a date on it of 1880, and the number is 32182; and as it is now finished it has a tone equal to the best made to-day.

This is a voluntary recommendation, as I am so pleased with the result that I could not resist to write and let you know about it, as it came up beyond expectations. I hope I get some more Emersons, and I can certainly say a good word for them. I beg to remain,

(Signed) W. H. CROSSLEY,
632 N. 56th Street

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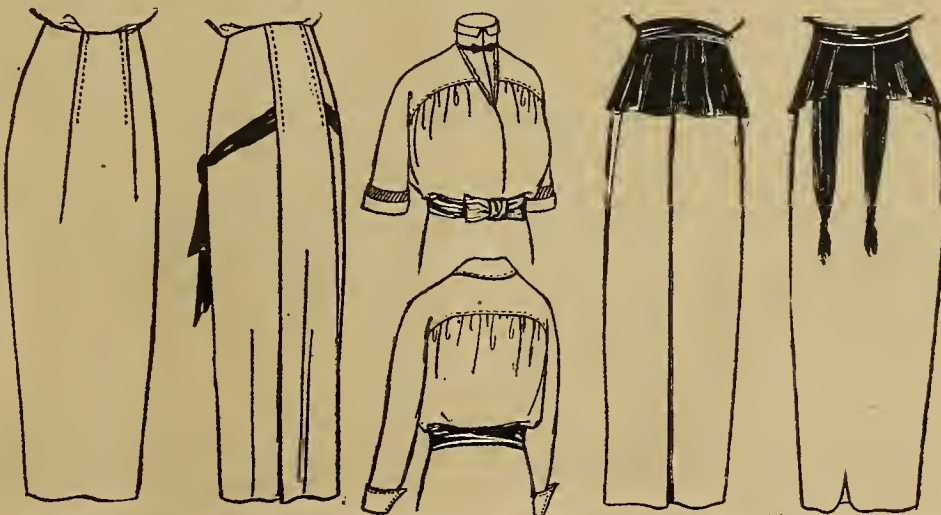


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The JUNE Number of
Woman's Home Companion

Incidentally there are one thousand two hundred and ten other ideas in the June Companion



Do You Want Hustler?

"Hustler," with his new rubber-tired buggy, nickel-plated harness, saddle and bridle, will soon be given away to some boy or girl who joins the Pony Club. You can become a member of this fine Club and have just as good a chance to be a Pony Winner as any other boy or girl.



Besides "Hustler" and his complete outfit, two other handsome Shetland ponies and thousands of dollars in other fine prizes will be given away to members of the Shetland Pony Club. Send your name and address to the Pony Man and he will show you how easy it is to become a winner.

Join the Shetland Pony Club To-day

"Hustler" is the third pony from the left in the photograph above. He is a beautiful light bay Shetland with a fluffy mane and tail, and full of fun and gentle as a playmate can be. "Hustler" is about 40 inches high and weighs 350 pounds. You have just as good a chance to win "Hustler" or one of his brothers as any child in America, but you should send your name and address to the Pony Man so that he can tell you how to join the Pony Club.

Cut Along Dotted Line

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Please tell me about "Hustler" and his two brothers and the other prizes. Also how I can win "Hustler." I do not own a Shetland and would like to join the Pony Club.

My Name

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How to Join the Pony Club

Farm and Fireside has already made dozens of boys and girls happy by giving away real flesh and blood ponies. But the Pony Man has never had a finer pony than "Hustler" to give any boy or girl. Write your name and address on the Pony Club Coupon and send it to the Pony Man to-day. The Pony Man will at once send you a Membership Certificate and tell you the easiest and quickest way to become a winner.

Every Club Member a Winner

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ESTABLISHED 1877

FARM AND FIRESIDE

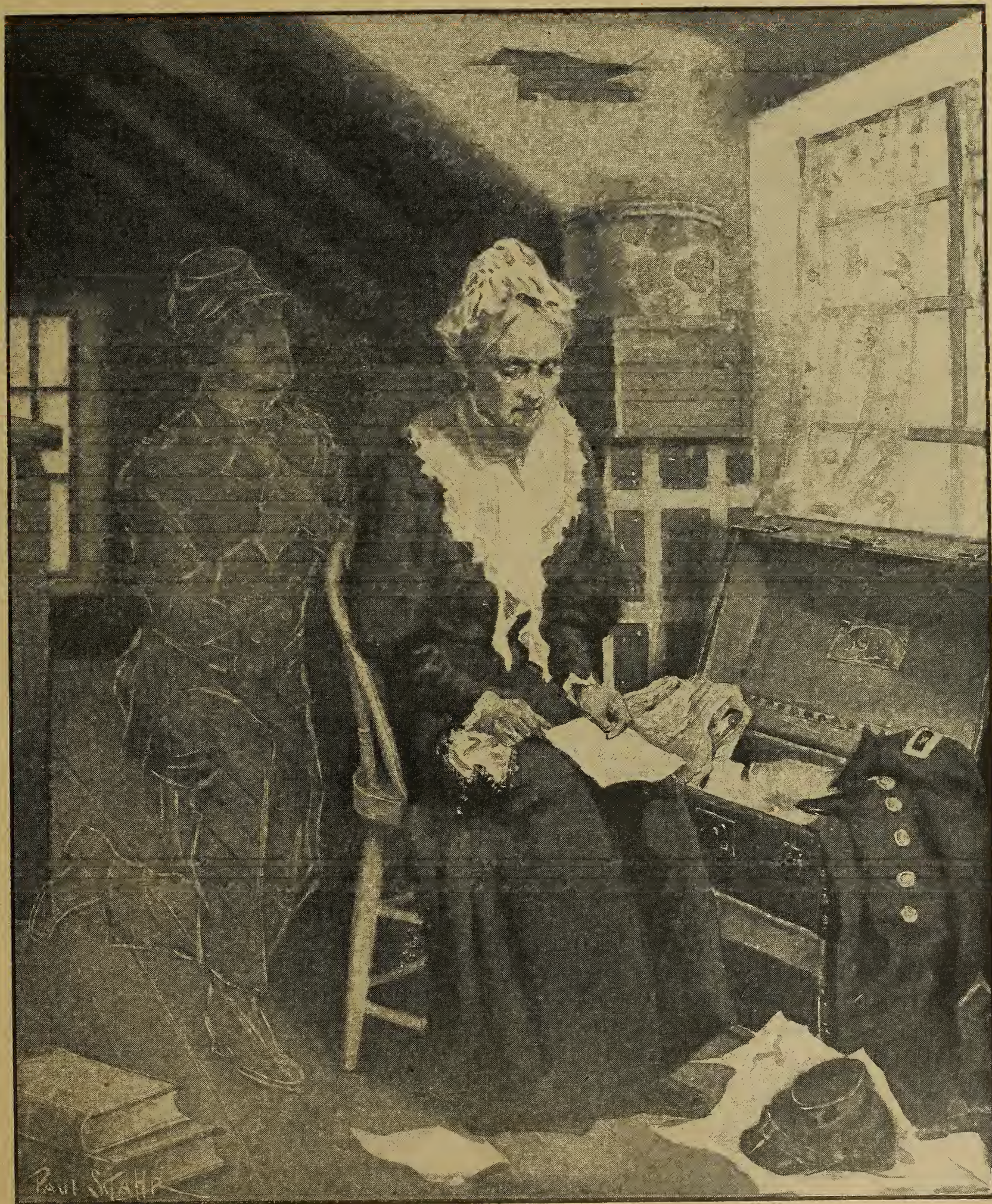
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WITH THE EDITOR



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How Much Money Do You Have?

That is rather a personal question, and of course will not be answered, but we believe that we are safe in assuming that most of us do not have all that we would like to have. It may be that at some time in the past we have been well to do, and then, because of circumstances which we could not control, have lost all the money we had. If you have ever been in that position you will remember that the first question which came to your mind was: "What shall I do?" David Buffum faced that situation several years ago, and he decided that he would go to farming. He did, and together with his son has made a success of it. He has seen the ups and downs of farm life. He knows where he would do differently if he were to take over a new farm and begin all over once more. He writes some of those things to the readers of FARM AND FIRESIDE under the heading "Shall Poorman Become Farmer?" It will come in the next issue.

The Birds Are With Us

And the most of us are glad and want to keep them. We want them to come around our gardens and fields to protect us from the enemies which it is impossible for us to get rid of with our own devices. But we do not do the right things, sometimes, to encourage them to come and stay with us. It is true that some of the FARM AND FIRESIDE family have written in, saying that they have no use for the birds; but that part of the family is very small as compared with the other part who because of their experience with birds love them and want to keep them. And to such Adiola Gray's account of how she befriends the birds will appeal. When dealing with birds it should be a plain case of doing to others as they do to us, and if we do we will keep many of the feathered tribe about us.

The South! The South! The South!

The U. S. D. A. has done a great amount of work in the South. The boys and girls have in their clubs exhibited to the world some of the possibilities of the country in which they live. The pens of the popular writers have been busy telling the people over the land many things about the South, some of which have been true and many of which have been false. It is difficult to get the real facts about lands that are popular. But J. William Hart will give us the truth in the next issue of FARM AND FIRESIDE when he discusses the cattle business as it is and as it may be in the South-land. Mr. Hart is traveling much of the time. When he is not traveling he is directing the work on farms in which he is interested. He has seen the rise of the silo in the South, and will relate his experiences. Whether you are in the North or the South you can not afford to miss this feature. It relates to your farm.

Ingenious Sewing

This is a season when girls graduate and brides bloom, and when mothers find that they have not prepared clothes enough for the children who are making mud pies and sliding down the shed roof. We shall have something to say about economical sewing, graduation dresses, and the planning of trousseaux.

Whot Kind of Zeol Does Your Church Have?

Have you ever realized that a church may be over-commercialized? that its zeal for raising funds may eat like a cancer into the religious life and interrupt the worship of God and the love of neighbors? This is what Mr. McKeen found to be the case in his congregation. His solution of the economic problem and the increase of the neighborly spirit which resulted make an interesting narrative.

Billy Bailey Enters the Story

We shall return to the School of Play in Fieldtown, and watch the children learning unconsciously through delightful games to control their muscles and sharpen their sense impressions in a manner to make them more useful to their parents in home work. A new character, Billy Bailey, makes his appearance. He is no less of a problem than Rosaltha, and Rosaltha herself—but we are getting ahead of the story. Read "The Child at Home" in the next issue.

The June Fashions

An automobile bonnet you will want and can make yourself, a practical apron, and other useful designs—all these will be shown on the fashion page in the June 6th issue of FARM AND FIRESIDE. Don't miss this page.

Our Great Neighborhood

That letter from the Woods County, Oklahoma, man who did not think he was able to subscribe for FARM AND FIRESIDE touched the hearts of so many of our readers that I am more than ever conscious of a warm feeling in my heart for the people of this greatest of all countries. From north, south, east, and west came letters enclosing money for the subscription of our Oklahoma friend. The people remitting, all seemed to feel that he is a neighbor. One man asked to have half of his own long-time subscription transferred to the Woods County man. Others sent a dollar for a three years' subscription. The whole neighborhood turned out to help—and the FARM AND FIRESIDE neighborhood is the greatest in the country.

Of course we couldn't let these people do this, and we sent back their money. The fact is that when we looked the whole matter over we found that we owed the Oklahoma subscriber for the letter we published, and when we settled with him his subscription was paid.

The People Who Minister

In France, a few years ago, the grape crop in the vicinity of Rheims was all destroyed by a bad season. The grape growers would have been unable to care for their vineyards, or raise another crop, had it not been for a system of mutual help which exists there. They have a rural credit system in France called the Crédit Agricole, which is a great confederation of little farmers' loan associations—not mortgage loans, but personal loans. The Crédit Agricole was not able to send the Rheims grape growers all the money they needed in that bad season, and so the Bank of France loaned the Crédit Agricole \$2,000,000, or thereabouts, which carried them through the distressful season nicely. They were able to make a crop the next year, and weathered the storm.

If we had a system of the sort, our Woods County, Oklahoma, man would not have been so poor. It was a bad season which put him in distress. If we had had a national Rural Credit Society like the Crédit Agricole, and a Bank of America like the Bank of France, he would have been furnished money, if his neighborhood is fundamentally sound, on low interest. The Senators and Members of Congress have been so busy with land-mortgage credit schemes that they seem to have forgotten about the man who wants to borrow money without mortgaging his land. If you feel that we need personal credit on a systematic plan it may be well to write your Congressmen and Senators telling them so.

Another evidence that this is a rather close-knit neighborhood of ours comes from Mrs. Thomas Chivers of Carter, South Dakota. Here is what she writes:

My husband and I went to town last week, thirty miles away, and among other things brought home some canned tomatoes. What was my surprise to see on the label "Coolfont Farm. Packed by the grower, Herbert Quick"! Do you know, I felt as if we had gotten them from a neighbor! And they were so good—the best we have had since I grew them and canned them myself when we lived in Missouri. Of course we shall try to get the same brand again.

I always read your editorials in FARM AND FIRESIDE, and most always get something good out of them. I have been a reader of FARM AND FIRESIDE for twenty-seven years, and this is my first letter to the Editor. I had to write a complaint to the paper, and I thought I would write a few good words also. There is always more good than bad to be said, and I wanted to tell you about the tomatoes anyway.

As between a testimonial to the tomatoes and a complaint about the paper, it would be hard to choose. The complaint never reached my desk, so I suppose it was something the people in charge of the mailing list could attend to. I'm mighty glad the tomatoes were good. They weren't very profitable to me. The fact is, we people who can't tomatoes are facing a very difficult problem. A good deal of the 1912 pack was carried over, and that made the price low this year. I think it will be low in 1914 also. Therefore, in view of the fact that we have twice as much as we can do to care for the orchard, raise feed for the horses and such live stock as we keep, and build a house, I'm going to let my cannery stand idle this season. And Mrs. Chivers will not be able to get any Coolfont Tomatoes next year.

We Must Keep Our Eyes Open

Recently I went down to Washington at the request of the Rural Credits committees of the House and Senate to talk with the Senators and Congressmen about the proposed legislation for a national system of land mortgages. Evidently some farmers are keeping tab on Congress. Mr. N. N. Sandager of Lincoln County, Minnesota, a reader of FARM AND FIRESIDE certainly is. He writes me in part as follows:

I have read your testimony at the hearing of the committees, and I want to thank you for it. All through history people have been obliged to fight for every step toward freedom, and I suppose it will always be the same as long as the world lasts. Therefore there must be loyal hearts, brave spirits, and souls which are pure and true. Then give to the world the best that you have, and the best will come back to you.

As a matter of fact, I was not conscious of doing anything very brave in standing up for what I believe in—a truly co-operative system of land-mortgage associations, and a wide-open market for farm loans. I have given my testimony all through my life to what I thought was truth, and it has become easy for me.

Besides all that, the Senate and House committees really seem to be trying to find out what is best, and meaning to do it. I believe that before a bill is passed—and signed by the President—it will be one to which no such objection as Mr. Lubin makes (of which Mr. Welliver has told you) can be advanced. I believe in Congress and the President and the Secretary of Agriculture.

Herbert Quick

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FARM AND FIRESIDE



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SATURDAY, MAY 23, 1914

Published Bi-Weekly

PROTECTING SHEEP FROM DOGS

By Herbert Quick

IN VIEW of the fact that there is scarcely any part of the United States where it is not admitted by shepherds almost universally that dogs constitute the greatest obstacle in the way of success, one might almost think that nothing could be done under present conditions to make things safer. That this is not quite true becomes apparent from the reading of our correspondence with sheep breeders all over the United States.

Although Mr. Wardwell of the Pinehurst Stock Farm, in Otsego County, New York, has met with loss from dogs, he believes that good woven-wire fencing offers a measure of protection. "Farms as a rule," says he, "are poorly fenced, but I have mine securely fenced with Page fencing, which stops the dogs in some measure." In discussing fencing, Mr. R. B. Rushing says: "A number of my neighbors are in the same line with me; they have built high and strong fences so we can continue keeping some sheep, while there are a great many farmers who have turned their sheep loose on account of the expense of building high, strong fences. It is quite a burden to have to put about twice the price of an average fence into fencing high enough to keep out the dogs when a much less expensive fence would keep the sheep." Mr. C. E. Cleveland of Multnomah County, Oregon, has had a flock chased and worried by dogs, but now has dog-tight fences and feels much safer.

Mr. Joseph E. Wing is one of the best sheep authorities in the United States, who recommends the Dorset sheep as being very much less likely than others to be injured by dogs. While they are not immune to this trouble, it is claimed that they are very much less liable to it than others. Mr. C. F. Brettell of the Fillmore Farms, Bennington County, Vermont, who keeps Dorsets, says: "Had we not had the Dorset breed of sheep I am sure our loss would have been much greater. The loss is always among the ewes. I have never once known the dogs to do much damage among our rams, for it takes a very good dog—or a very bad one—to face a Dorset ram."

It may be said in this connection that there is a belief that the keeping of goats in a flock of sheep gives some protection, as the goats are better fighters than sheep. One of the most unique plans of which we have learned is that of Mr. Orrin Frase of Summit County, Ohio. "We have found," writes Mr. Frase, "when we are compelled to pasture some of our sheep at a distance from the buildings, that a few big wild-western steers are a big protection for the sheep. If the steers are not accustomed to a dog (and we keep no dogs on either farm), and a dog goes strolling over our pasture, the steers will raise their heads high in the air and follow the dog to see what he is, and nine out of every ten dogs will drop their tails and make for the fence with the steers accompanying them. Steers have saved us many a loss."

Mr. A. C. Harlow of Lamoille County, Vermont, believes in the usefulness of bells on his sheep. "I always had a bell to every eight sheep," says he, "and always kept a shotgun loaded. My pasture was near the house, and the sheep lay every night within ten rods of my bedroom window. A good many times in the night these bells have started, and in about two minutes I was out there."

A great many sheep breeders believe in the shotgun as a proper medicine for stray dogs. Mr. Daniel Bryan says: "Our losses covered only one season, and if they occur again we will kill the dogs, for we will be there." Mr. George Schaap is quite optimistic as to conditions in his neighborhood in Oregon. "I think,"

THE importance of the dog peril has been pointed out by farmers from all sections of the country. They have likewise pointed out the kinds of dogs that do the damage and the way the dogs work. This, the fourth, article of the series gives, from the farmers themselves, the methods that are used to protect sheep from the attacks of dogs. How to protect sheep from dogs deserves the best thought of experienced men everywhere

says he, "that the sheep have a bad effect on the dog business." Probably the shotgun has something to do with this situation. Mr. J. Hawks of Kittitas County, Washington, says: "We shoot every dog, regardless of breed, that chases our sheep. Sheep in this country have the upper hand." Wherever there are large numbers of sheep in a neighborhood they do get the upper hand, as is shown by the letter of Mr. Paul H. Brown of Minnehaha County, South Dakota, who says that public sentiment in the near-by town is all against the worthless dog and in favor of the sheep. He concludes his letter: "We are safe here from dogs, and dog sentiment too." Dog sentiment is the cause of dog damages.

Mr. Harlow says: "I always kept a shotgun loaded. If a dog got into the habit of loafing around my premises when no one was around, I gave him a dose of

fear of damage from dogs, but is a great injury to the sheep, as they should be in pasture day and night. These yards are usually allowed to become filthy, and we believe this custom is one of the great causes of loss from stomach worms." Undoubtedly this last statement is correct. Mr. Harlow of Vermont says: "Since I began to keep pure-bred sheep I have put them into a dog-proof yard every night."

Anyone can see by a study of these facts that, while it is possible to reduce the danger from dogs by fencing, folding, and some other methods, all these methods are expensive and most of them are bad for the sheep. It would seem perfectly plain that all regulation of the matter must be exerted on the dog rather than on the sheep or the farmer. Nobody wants to exterminate good dogs, but there are hundreds of thousands of dogs which should be exterminated, and that very speedily. Most of them are not even objects of very much affection; and the man who would protest most strongly against the killing of his dog is quite likely to let the dog starve until he kills sheep in self-defense.

The secretary of the American Shropshire Breeders' Association asks this question: "Why not have a universal dog law? The citizens have a right to such protection, and if our flockmasters will only demand it they will receive the recognition they deserve." Even the best friends of the dogs, like Mr. H. N. Bartlett of Berkshire County, Massachusetts, would consent to this. Mr. Bartlett writes us an eloquent tribute to the dog, to every word of which we agree, and closes his

letter with this sentence: "Try to bring them under governmental supervision as you would a corporation that has become too big to manage itself, but please do not advocate exterminating them."

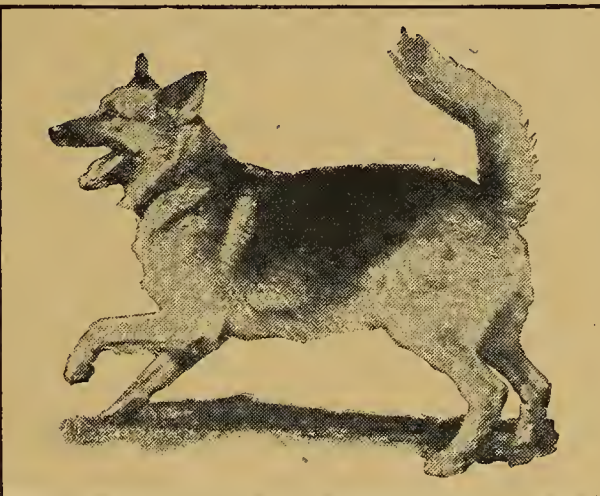
As a matter of fact, we have never advocated any such thing as exterminating any except the vicious or neglected or worthless dogs. The feeling that nothing can be done about dogs is a very harmful one. A great deal can be done. The Province of Ontario in Canada has a protective law which, we are informed by the

secretary of the Shropshire Breeders' Association, is satisfactory in that section. Mr. John Pickering Ross loves dogs so well that if he had to choose between sheep and dogs he thinks he would choose the dogs. He has kept dogs all his life, and has never had one which molested sheep. "My immunity in this respect," says he, "was due not to any special training or innate virtue on the part of the animals, for many of them were fierce and mean by nature; but simply because they never left their kennels, or were allowed to be unchained, save when in charge of someone competent to restrain them."

Mr. A. W. Heath of British Columbia is another champion of the dog, who has written us. Mr. Heath evidently exaggerates the mischief which FARM AND FIRESIDE contemplates to dogs, but he makes a suggestion which is well to consider: "I believe," says he, "that the English plan would cover the ground and not meet with much opposition. There all dogs, except sheep and cattle dogs, are taxed \$1 a year. The owner of live stock may keep one sheep or cattle dog to a given number of live stock on his farm. Every man is made responsible for the actions of all his animals, including damage to sheep by dogs."

Although Mr. Heath is a champion of the dog, he adds: "Any dog caught worrying sheep should be shot on sight and the owner be liable for damage caused as well."

NOTE: What laws affecting this subject should we have? That question will be discussed in the next issue.



BETWEEN the peaceful sheep and the troublesome dog there should be some effective barrier. Such protection as sheep have thus far received has been purely local in character, and so it has not stopped the evil done by dogs. Men have been able to protect their own sheep by one device or another, but why not have a plan that will actually make sheep-raising safe. This country needs such a plan as the evidence of these farmers indicates

shot and said nothing to anyone." Messrs. R. and W. Postle say: "We kill all dogs we find roving on our place, and so keep them pretty well cleaned out. We use a shotgun, and shells loaded with buckshot. We have killed some half dozen so far this year." Mr. J. C. Zinser, Marion County, Oregon, gives a very hopeful report from his neighborhood: "Very few sheep have been killed here for a long time. The reason," says he, "may be found in the fact that sheep are pretty generally distributed and no mischievous dog would live long." One man among our correspondents, having lost sheep by the work of dogs, put poison in the carcass and let it lie. Dogs never returned except to visit the carcass. The laws in some States, however, make it an offense to put out poison, although why a man who allows his dog to run over other people's premises should be permitted to complain if it is poisoned is a question for legislators to consider.

In connection with the matter of fencing it is interesting to note that the most successful sheep breeders are careful to have their sheep folded every night. While in some cases dogs will attack sheep in the daytime, especially if they are remote from the house, ordinarily damage is done at night, and a dog-tight fold is a considerable protection. The Bingham herd in Adams County, Pennsylvania, is folded every night, and the manager writes us as follows: "In every section most flocks are small and most farmers take their sheep to the barn for the night. Some stable them, others put them in yards. This is all done from

The Isolated Renter

One Thing Which Will Help the Tenant to Become a Landowner—A Viewpoint

By John Y. Beaty

IF YOU are a renter, do you feel lonesome? An actual census of a certain community in New York showed that out of 51 renters in the community 38 had no connection of any kind with any sort of social, educational, or religious organization in the community.

This is a plain indication that renters do not have as much to do with the life of the community as those farmers who own their land. It seems that the average farmer who rents does not plan for the future. He has the roving habit, and when he goes on to one farm he makes as little permanent improvement as possible because he is looking forward to the time when he shall find a farm that suits him better or when the owner asks him to vacate.

This habit—for there is no doubt but that it is a habit—is plainly a great drawback to the advancement of any community that has a large number of renters on its farms. It is a well-known fact among merchants that renters are not like owners, especially in the buying of permanent improvements. The machine dealers sell the cheaper machines to renters. When a renter is planning the crops for the next season, he usually plans for those that require the fewest and the least expensive machinery, and so it goes through the entire list.

It is not my purpose to show how bad renters are. I merely call attention to these facts so that you will appreciate more the suggestions that I shall propose.

An Organized Community

In the community about which I spoke in the beginning there are 27 organizations that center in the village where all of these persons included in the census do their trading. These 27 organizations consist of three churches, two Sunday schools, five religious societies (such as women's mission circles and young people's leagues), five fraternal orders for women, three fraternal orders for men, the grange, the academy, an academy corporation consisting of 30 men and women, four women's clubs (two for study and two for sociability), a library association, and a dairymen's association.

I think you will readily admit that this list of organizations is about as good a list as you would expect to find in any community. So you see none of these 51 renters can say that he belongs to no organization because there are not enough organizations to go around.

Another very interesting and a very outstanding fact learned in this census is that most of the renters live on back roads or in the sections where the soil is not so good. The reason is very plain. The man who buys a farm and expects to live on it himself chooses a location that is on the main road, and he chooses a farm with good soil. Thus the farms on the

back roads and those with sandy or rocky soil are left for those who must rent. That follows naturally.

Perhaps, then, if we want a reason for the isolation of renters we might conclude that the biggest reason is the location. This conclusion is borne out by another list of facts which show most of the farm owners who are not connected with any of the local organizations live on back roads or on poor farms. We can readily

along the road, and so he sees little of them during the week. Then again, the products he has to sell do not amount to so much as those on the farms with better soil, and so he spends less time in town in associating with other farmers. Perhaps, too, he feels that in his economizing he must not take the time or the money to belong to one or more of the organizations.

I do not have any figures, and I doubt if such figures could be secured, to show the actual money value to a farmer of membership in one or more of the organizations of the community. I need only to call your attention to farmers in your own locality, however, to show you that it is the men and the women who belong to such organizations who are the leaders in the community.

These are they who boost for good roads and get them. They cast their votes for local improvements and for better county officials. They make it possible for improvements in the town where they do their trading because they spend more money there. They increase land values because they keep their farms in better condition. Their children are likely to be more successful because they have a better chance if not higher ideals. They are brought up in a more prosperous and optimistic atmosphere, and they learn a great deal from their association with the children of other prosperous and optimistic farmers.

If I Am a Renter, What?

You can put your finger on dozens of such men in your community, and in every case, when you lift your finger, you will find that these are the men who own their farms.

But if you are a renter I can hear you say:

"What is the use of my buying improved machinery and keeping the farm up? I don't know what day the landlord will sell out to someone who wants to live here, and then I will have to move. When I move, the improvements that I have made here of a permanent nature will be entirely lost to me. If I have to move some distance I can discard my cheap machinery or sell it at auction and save the freight, while if I had expensive implements I would of course wish to take them with me, and the freight would amount to much more than I could afford."

That may sound plausible, but remember this: our lives are not built around a column of figures representing dollars. Our value in this world is not measured in bank accounts and automobiles. Neither is our prosperity measured by the dollars and cents we make or save this year. If the renter would make his plans for life instead

of for a year the total results of his life would be ten or fifteen times greater. Renters who take advantage of local organizations become landowners. Those who do not, continue to be isolated renters.



When the renter stops his team at the end of the row

see how living on a back road segregates one from the other farmers of the community.

When the renter stops his team at the end of the row for a rest there are practically no neighbors passing

How a Friend of Mine Figured the Profit

By E. C. Whitmyre

THREE years ago a farmer invested \$3,600 in the dairy business in a town of 3,000 population. He bought a small farm near the town for \$2,000, and spent the balance for twenty head of cattle, at an average cost of \$60 each; for wagon and horses for delivery; bottles, milk cooler, and other equipment necessary in his business. He gave his personal attention to the work from about 3 A. M. to 9 P. M., and was assisted by his wife, an eighteen-year-old son, and a sixteen-year-old daughter when she was not in school.

At the close of three years he found himself in debt to about every tradesman in the town who had trusted him, and "up against it" good and rocky. Instead of doing some serious thinking he sat down and wailed at his lack of success, and condemned everyone who had advised or assisted him in his business.

An interested friend approached him one day and said: "Jim, how much does it cost you to produce a quart of milk?"

"I don't know."

"How much does it cost you to sell a quart of milk?"

"That's a fool question to ask."

"How much does it cost you to keep a cow a day?"

"How can I tell?"

"What percentage of your sales do you fail to collect?"

"Say, my friend, what are you driving at?"

"Just this: You don't deserve to succeed. You haven't learned your business yet. You are a business menace. You are the type of a man who tears down the business of another without building one for yourself."

"Be just with yourself. Get your figure facts before you. Before you can succeed you must know all these things and more. You must keep before you the cost so that you know what your farm produces and what it earns; and when you sell your farm produce to your dairy business deal as if you were dealing with a stranger. Find what your overhead is, figure the

limit, where a cow ceases to be profitable—you have fine-looking cows; that gets nothing; you're selling milk not cows.

"Why, Jim, when you pay \$25 a ton for hay to feed a cow that eats two tons a year you certainly can realize that your cow costs you nearly a dollar a week for hay. And add to that 35 cents a week for grain, and add to her cost a proportion of the overhead, such as interest, taxes, insurance, depreciation (you realize that a dairy cow is good for only about seven years), and the bottles and wear and tear on wagon, the keep of your delivery horse, the wages you pay to feeders, milkers, driver, etc. There is a unit value somewhere that you can charge—isn't there?"

"What is a unit value?" (Jim growing interested.)

"A basis for your fixed charges. You have twenty cows. Against these twenty units you have to charge all your expense and credit all your revenues.

"For instance, your interest on \$3,600 at six per cent is \$216 a year. Your taxes are \$40. Your insurance is \$10. Your hay bill is \$600 a year. Your grain bill is \$200. Your wage bill for your son is \$300; for your wife, \$300; for your daughter, \$150. You yourself should be put on a salary, say \$600. Any one of you would earn more than this working as you do now, for someone else. Your depreciation of cattle is \$240. Your breakage of bottles and depreciation of equipment is fully \$50. Look a fact in the face, so it won't rise up later from a business shroud and look you in the face. Just offhand, without counting tickets, and bottle caps, and advertising, and the thousand and one leaks that you must consider, nor the loss from customers who don't pay, you can see that your cows have got to earn \$2,706 a year, or \$135 and better a year apiece. And that reduced to quarts of milk at six cents is 2,250 quarts per year, or between 6 and 7 quarts of milk per day.

"And so by getting your figure facts right, Jim, you find that a cow that gives six quarts or less of milk per day is a financial loss besides the labor she causes.

"Now if while a cow is fresh and for two months she gives 12 or 14 quarts of milk a day, and then for two months more 9 or 10, and then for two months 7 or 8, you will see that for the two months that she gives 5 and 6 and the two she is dry she is a loss, and if you will get your figure facts right you will find that you can afford to sell her at \$40 and buy a fresh one at \$60—and will know just when to do it.

"And you will know that your loss of collections is confined within certain families, and that by cutting off the trade of that class, and going after others, you will save yourself and your business.

"What you need, Jim, is a system, so that you can figure and reason and analyze without getting tired. You had better have twelve cows, fresh, and a system, than your twenty cows as you are now. You would have less work and more money, less worry and more leisure, and could enjoy life, for you would know your 'dead line' and could stop there, have a sure profit, and your whole life work would take on a rosier tinge."

Did Jim disregard his friend's advice?

You would hardly say no if you could visit Jim. In three years he has revolutionized his business. He knows at the end of every day just where he stands. If he has made a profit of \$100 he knows it. He knows himself, and he knows his business. It's just a case of building on a scientific basis.

To-day we are hammering away at the farmer for the lack of conducting his farming in a way to get the most out of it. Yet the development of the farmer has been wonderful. The farmer who conducts his place on a scientific basis is the man who rides to town in his automobile. He has learned what to plant, when to plant it, and how to plant it. He has machinery that saves him time and money. But has he learned the value of a strict watch on the financial end of his business? If he has he need not worry.

There's Money in Honey

So Say Several Iowa Men Who Have Had Much to Do With Bees

By Frank G. Moorhead

A HALF-DOZEN years ago a young tenant farmer stopped long enough to take stock of the situation. He was paying \$6 an acre annual rent for a quarter section of Iowa land. He was paying \$300 a year for help. At a conservative estimate, the wear and tear on his machinery and stock reached \$250 a year. Altogether it was costing him \$1,500 a year, in addition to his own labor and that of his wife, to make a bare living.

He was young, industrious, ambitious, with no bad habits, looking forward to the day when he would own a quarter section of his own and build a home with every modern convenience. That day was becoming more remote each year, for work as hard as he might he could barely hold his own. In fact, for the last year or two he had been slipping backward.

What was to be done?

That young tenant farmer did what many another of his class has been forced to do. He gave up. But the story in his case rests in the fact that he gave up to start all over again in an entirely different way.

To-day that young farmer is building a fine eight-room modern house possessing every modern convenience: furnace, electric lights, bathroom with all the accessories, stationary washtubs, and so on. The dream of years is being realized. The dream fails only in this: the house is not surrounded by a quarter section of land, but only by five acres. The dream is surpassed in this: the house is being built from the profits of those five acres for a single year.

What brought about the change from failure on 160 acres to success on five acres? The answer is simple: Bees.

Just a Few Colonies to Begin With

When B. A. Aldrich of Woodbury County, Iowa, decided to give up tenant farming on 160 acres he did his best to save what he could from the ruin. But the best was little. Enough, however, to buy a five-acre tract a mile or so from town, paying therefor \$450. With the residue of his meager capital he bought bees, just a few colonies to begin with, for it was an experiment and he had learned that failure often comes from going into things on too big a scale.

He knew about bees in a general way, having kept a half-dozen colonies on the farm, more for the home supply of honey than as a profitable side line. He knew how to handle them, but he did not realize the fine points—the artistry, it might almost be called—of their culture. That was to come later.

The few colonies proved profitable. They multiplied, and were added to by purchase. Altogether he had perhaps \$600 invested, where his 160-acre farm represented a capital of \$15,000 and returned him only a bare living.

What was he making from the five acres?

Again the young farmer stopped to take stock of the situation. That was in 1912. He had 200 colonies of bees. They had produced for him, at practically no expense whatever, 27,000 pounds of honey, bringing from 8 to 12½ cents a pound, according to whether he sold to the jobber or direct to the retailer. On an average of 10 cents his 1912 crop brought him \$2,700, more than four times the amount of capital originally invested in the bee business, fully 200 per cent annual returns on the present investment.

A year later he took stock again. With practically no increase in the number of colonies of bees or in his investment—save for permanent improvements, which add to the value of his property—he had harvested 36,000 pounds of honey at an average of 10 cents a pound, \$3,600 altogether.

It was when the 1913 returns were in that the dream house was begun, to include everything which seemed forever impossible in the days of 160 acres of general farming but which had been made possible in a single

then, consider the case of J. L. Strong of Page County. For the past twenty-six years bees have been the sole dependence of Mr. Strong and his family. Each of these years they have lived in comfort. Prior to this time existence was a struggle. Yet Mr. Strong was working at a trade which brings good money. He was a carpenter.

Like Mr. Aldrich, tenant farmer, Mr. Strong, town carpenter, took stock of the situation. There came a time when he was compelled to do so. He could no longer remain blind to the fact that he was not getting ahead. Wages were good, but work was scarce and uncertain.

Mr. Strong had always been interested in bees in an amateurish way, but interested nevertheless. There had always been a colony or two in his back yard, over which he potted when the carpenter work was slack. Mr. Strong decided to quit carpentering and try beekeeping.

The beginning was extremely modest. He rented a house and three town lots, bought two or three colo-

better his condition, turns to bees as to a Moses to lead him into the promised land? Do they present possibilities to him, or are the chances only for the reformed preachers, the retired carpenters, the renovated tenant farmers?

Come with me, for just a minute, to the city of Des Moines. It is the capital of Iowa, one of the richest agricultural States of the Union. It is a city of practically 100,000 population, presenting problems of living as vexatious, though perhaps not as immediately urgent, as are to be found in any of the larger centers. Come with me on the street-car line which runs from the heart of the city to the Army Post, where a thousand human drones live in marked contrast to the industry of the 125 bee colonies on the three lots of Bert Brown. From eight in the morning until six in the evening Mr. Brown is chained to a desk down-town. Sometimes, around the first of the month, he must work nights; perhaps, now and then, even on Sundays. For Mr. Brown is a bookkeeper in a large clothing establishment, and trial balances are as elusive there as anywhere.

On his three lots, well within the city limits, Mr. Brown keeps bees. He attends to them mornings before he goes to work, and evenings after he returns. They work for him while he works for the clothing merchant. Mr. Brown started the year with 80 colonies; they increased until the end of 1913 found him with 125 colonies. At the conservative value of \$5 a colony his working capital had increased \$225 in the year. In the meantime, however, his bees had produced for him honey to the value of \$1,362. All told, the bees on the three lots had added to the Brown annual income \$1,587, a sum which, at the scale of bookkeepers' salaries in Des Moines, we may confidently believe is in excess of what he receives for working nine hours a day, six days in the week, 52 weeks in the year. Now do you begin to see the possibilities of bee culture for the man who devotes himself exclusively to it, for the farmer who carries a few colonies as a profitable side line, and for the town or city man who finds an outside income almost imperative in view of the present high cost of living?

What the Optimists Say

Yet in view of all these facts, beekeeping has been allowed to become one of the neglected arts. Frank C. Pellett, state bee inspector of Iowa and president of the Iowa Beekeepers' Association, admits it, even while he persists in hoping for better times to come.

"But," says Mr. Pellett, "the success of a quartet of men like Mr. Aldrich, tenant farmer; Mr. Strong, retired carpenter; Mr. Pease, retired preacher; and Mr. Brown, city bookkeeper, will go a long way toward interesting others and putting the bee industry back on its feet. The federal census gives Iowa 29,000 beekeepers, but takes account only of those who keep bees on three acres of land or more. If we include those who live in town or on less than three acres, there are 40,000 beekeepers in this State, an increase in the last ten years of fifteen per cent. I look for a still greater increase in the next ten years."

Already stories are coming in so inspiringly that the number of beekeepers in Iowa alone is increasing at the rate of a thousand or more a year. Take the case of Frank Coverdale of Clinton County, sweet-clover expert and enthusiast, for instance. In 1913 Mr. Coverdale shipped 20,000 pounds of honey, an entire carload, from his farm, a clear profit of \$2,750 from a side line neglected altogether on all too many farms.

Or take the case of F. W. Hall of Story County, Iowa, an exclusive beekeeper, who has no other farming interests but finds a good steady income coming in year after year from his winged workers. Mr. Hall



Getting ready for summer. Box hives are to be recommended

nies, and proceeded to study the bee and its habits. The study was not only pleasant, it was profitable, for at the end of the second year Mr. Strong bought the place which he had rented for the experiment, bought it with two years' bee profits. That was twenty-five years ago. To-day Mr. Strong has 200 colonies of bees, bringing him in an annual revenue of anywhere from \$1,500 to \$2,500 a year, according to the seasons. In addition to his honey income he adds to the family fortune by selling bees, having sold 450 queens this year at a dollar each.

Although he had not a dollar to start with, he has attained independence on three town lots, a half acre altogether, while the bugbear of an improvident old age has disappeared altogether.

Likewise, take the case of F. W. Pease of Allamakee County, Iowa, retired Presbyterian preacher of Linn County, the same State. Perhaps it is the philosophical rather than the financial side which appeals to them, the fact remains that country preachers almost invariably have a hive or two of bees. They draw moral lessons from the bee's industry, its division of labor, its community of interests.

Are You Interested in Bees? This Man Was

Rev. Mr. Pease was no exception to the general rule. He was interested in bees. Naturally, when he retired from the ministry (do not ask why; preachers must eat, and salaries are not always large or even regularly forthcoming) his thought turned first of all to his bees. That was four years ago. To-day he has 290 colonies which have paid him at the rate of \$7 a colony each year; an annual income of \$2,000, payable in cash and not in donation parties or unredeemed pledges or Christmas slippers. It may be that the work of regenerating mankind is languishing of late, but the work and words of the Rev. Mr. Pease have their inspiration to-day, as he goes around his beehives, fully as much as in the olden days when he fulminated from the pulpit.

But these men, persist the still doubting Thomases, are devoting their entire time to the work: what of the young man who, eager to add to his income and



Fit for a king, and bringing in money, which is equally to the point and equally interesting

has 390 colonies of bees, which last year produced 39,000 pounds of extracted honey and 1,500 pounds of comb honey, more than 20 tons altogether. His honey income for the one year was \$4,000.

It is a foregone conclusion that the next few years will find many thousands more people considering the problem "how doth the busy little bee," and cashing their consideration into coin of the realm.



Mr. Hall's home, built with the profits from beehives—and there are many other homes so built

year of five-acre beekeeping. To-day Mr. Aldrich not only has his 200 colonies of bees, but he has a substantial honey house, with a gasoline engine and power extractor, enabling him to dispense with outside help and run the entire business by himself.

But, say the doubting Thomases, the Aldrich story is exceptional. It proves nothing more than that good luck comes to a man some time or another. Very well

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

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Ask Farm and Fireside for the names of commission houses who deal "on the square" in any city or town of importance in the United States or Canada. We will advise you whether any commission concern is financially responsible and trustworthy or otherwise. Tell us what you want to sell and the markets most convenient to you and likely to want your produce. Ask Farm and Fireside!

HERBERT QUICK, - - - - - Editor

May 23, 1914

The Chicago Conference

THE second National Conference on Farm Credits was held at Chicago in April in connection with the annual session of the Western Economic Society. It was advertised that the functions of grain exchanges and the conditions under which grain is marketed at the great terminal markets would be discussed. The Equity people and the independent farmers' selling agency at Minneapolis were ready to discuss all these questions from the farmers' viewpoint, but because the grain people of the terminal markets thought it best not to take part in the debate the whole discussion was suppressed.

This was the most important matter before the conference from the farmers' point of view, and its suppression was most unfortunate. It was not, however, a farmers' meeting. There were represented 46 farm papers and newspapers, 40 farmers' organizations, 26 colleges and experiment stations, 23 railroads, 11 labor organizations, 10 consumers' co-operative organizations, 8 express companies, 8 grain concerns, 12 banks. There were present 40 farmers out of an attendance of 300 people. The papers read were of a very high degree of excellence, and the work of the conference was well worth while, even though the most important matter scheduled was side-tracked for reasons which cannot be accepted as sufficient. The most important discussion was on the subject of rural credits, and the resolution passed opposing the Fletcher-Moss farm-mortgage bill. The resolution urges caution on Congress in rural credit legislation, stating that great interests are trying to gain control over rural credits, and recommends independent co-operative farmers' banks. It opposes any form of government loans. The "one man, one vote" principle in co-operation was endorsed. A resolution was adopted calling for the modification of the Sherman law so as to recognize and protect farmers' co-operative organizations. In view of the very high character of the membership of the conference and its conservative make-up these resolutions seem very significant.

"Not a Business Man"

A MAGAZINE writer asks why it is that the farmer, with the best security in the world, must stand in the money market "with his purse strings hanging out, waiting the pleasure and convenience of the lender" and pay the highest interest of any business while making the lowest profits.

His first answer is that the farmer, "as a rule, is not a business man."

We may resent this, but it is true. We have not made it a part of our business to procure cheap money. We have often asked the Government to furnish it for us, but we have never tried to get it in any organized way by our own

efforts. We have been individualists in the money markets instead of team workers.

The Government will soon pass laws making it easier for us to become business men in this respect. Whether or not these laws are successful will depend upon the extent to which we have the initiative and gumption to take advantage of them. All the Government will do, and all it should do, probably, is to point the way to cheaper money. Following the way pointed out is our business as business men.

A Dry-Farming Necessity

THE only really new tool for soil management invented within several decades seems to be the subsurface packer. All other new types of tool are modifications of former inventions, but the subsurface packer, when H. W. Campbell devised it about 1893, was something really new in principle.

In "Dry Farming in Washington," a new bulletin by Thom and Holtz, subsurface packing is urged as a necessity for dry farming, "immediately following all spring plowing." Says this bulletin: "A subsurface packer meets the need of just such conditions in that it packs the lower or subsurface of the furrow slice against the firm soil beneath, and at the same time it does not pack or fine the surface two or three inches, but leaves it loose, open, and granular, a condition that assures a very efficient mulch." It has been a source of wonder to the writer that subsurface packing has been so generally neglected by the people of the dry-farming regions. But perhaps the explanation is to be found in the following facts stated in this bulletin: "When subsurface packing is delayed even for a day or two after plowing, or until the soil has become dried out, the use of the packer becomes a decided disadvantage. Dry soil cannot be packed . . . and packing pulverizes the dry surface of dry soil, thereby increasing the liability to blowing.

"Many farmers have become prejudiced against the packer very largely for the reason that they have failed to use the packer immediately after plowing, but delayed until the soil has become too dry." Campbell's old rule is to pack all which has been plowed before going in for dinner or supper. The authors of this bulletin show the packer in an illustration which seems to be a pretty exact reproduction of the first machine built by Campbell. If spring plowing everywhere were given this treatment it would be a great safeguard against drought.

Cruelty to Calves

A GOOD woman in Ohio writes protesting against the cruelty which she thinks inherent in the shipment of calves. "I do not feel competent," she states, "to say what steps ought to be taken, but I do say that the shipping of live calves over long distances is inhuman and should be stopped." That there are good grounds for this protest no one who knows the live-stock market conditions can deny.

It may be that if proper regulations in the interests of humaneness were adopted they would tend to the conservation of the calf crop by making impracticable the sale of many very young animals now sacrificed to the great demand of the butchers. Whether the shipment of a calf is cruel or not is always a question of fact. After a certain age has been reached a calf can stand shipment quite as well as an older animal, and even better. In the case of calves not yet old enough to eat hay and grain and drink water the feeding regulations are not adequate, and the animals are starved from the time they are loaded until they are killed.

The meat of a starved animal may be affected by its sufferings, and ought not, perhaps, to pass inspection. But, in the main, the arguments must rest on the broad ground that we have no right to torture these young things in order that the veal business may prosper.

Canada Plans for Better Cattle

THE Provincial Government of Saskatchewan is concerned at the prospect of agricultural ruin if the "wheat after wheat" system is followed up. In order that the farms may be provided with cattle of good breeds the Government is arranging to sell foundation stock for good herds at cost to farmers, on credit, at a low rate of interest. Pure-bred sires and grade dams will be furnished, and the system will be extended to horses, sheep, and swine as well as cattle. This is "paternalism," but it will bring results. Under such a system our farmers might get some real service from the Government in solving the problem of furnishing beef and other meats. The time is ripe for some State to start the ball rolling in this country. The Saskatchewan authorities will furnish one dairy breed, one beef breed, and one dual-purpose breed to one association of breeders. Two breeds of sheep will be furnished. When the same system is launched in this country the call for dual-purpose cattle from our farmers will make some of our animal husbandmen wonder what the effect has been of their twenty years of earnest preaching of the single-purpose animal.

War Insanity

A FIGHT always requires two parties, but both may not want to fight. There are things which are worse than war, but we are facing no such worse thing in our relations with Mexico.

It may not be possible for a nation to turn the other cheek when smitten on the one. It may be that we should lose more by endurance of Huerta's insolence, even in the matter of peace, than we should gain by further forbearance.

A drunken man must be restrained—and Huerta is a drunken man. A criminal must be resisted—and Huerta is a criminal. A man may be forced to resist aggression lest aggressors multiply in an armed and violent world—and Uncle Sam is a man living in an armed and violent world.

But we are not obliged to pursue our assailant to the last ditch. Nor can we justly visit on sixteen millions of people the indignation we feel against their oppressor.

The strong man governs himself in his wrath. That is a proof of his strength.

Those who cry out in this country for the complete occupancy of Mexico by our troops are letting their passions loose. These passions differ in different shouters. In those who have great investments in Mexico, or who are influenced by such people, the passion is usually greed. In those who follow these shouters with no selfish motive the passion is that cheapest form of patriotism called jingoism. Our nation should be above these things.

All we have any right to do is to pursue the Mexican expedition far enough to make ourselves respected, and lessen the chances that our people in foreign nations will be molested in civil disturbances.

Our present territory is not half developed. We do not want any more. The possession of Mexico would weaken, not strengthen, us. It would give us another race question. It would lay on us the burden of amalgamating ten million hostile Indians. It would engraft on our society a cancer which would eat forever, like the negro question. It would enrich speculators and mine grabbers and land grabbers, but it would impoverish the rest of us.

These are things to think on when you hear people say of the Mexican expedition, "Do it in the big way!" "On to Panama!" "The flag must never come down!" and like cries of jingoism. Our President is not going crazy. Let us keep a sane public opinion behind him.



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"THIS voluntary endorsement is made by the secretary of a most progressive dairy farm, whose name we will be pleased to furnish on request. He says further:

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THE EDWARDS MANUFACTURING COMPANY
508-558 Lock Street, Cincinnati, Ohio

Live Stock and Dairy

Record Cow with Many Milkers

THE cow in the picture is Buckeye De Kol Pauline 2d, No. 94346, and is owned by the Virginia Polytechnic Institute. She is seven years old and is credited with an annual production of 20,784.3 pounds of milk, 927.61 pounds of butterfat, and 1,159.01 pounds of estimated butter. This production is about four times the production of the average dairy cow. The cow was milked entirely by students. The most interesting part of



She gave over ten tons of milk in a year, and had five different milkers

her record was the frequent change of milkers. One month the cow had four different milkers. Altogether five different men milked the cow at various times during the year, but there were a great many more changes than the number of milkers, as they changed back and forth frequently. A slight drop in the production was noted the first day of a change, but was overcome on the second or third day.

The great stress to be laid upon the remarkable performance of the cow under these changes was that all the milkers were good milkers. This experiment seems to disprove the old theory that a change of milkers is bad for a cow. The thing that seems really bad for the cow is to be milked at any time by a poor milker. Dallying over the work is always poor milking. Milk the cow quickly and quietly, without getting up from the stool to attend to other chores.

IF THE farm is supplied with water from a shallow well it's just an even bet that the family is drinking disease germs with every draft. At least that seems to be the case in Indiana, where Barnard analyzed the water from 5,000 wells and found half of them polluted. Does this concern you? The Chinese keep healthy while drinking polluted water by making weak tea of it and never drinking anything but the tea. The boiling kills the germs. But in most cases pure water may be got by some pains and a little expense. The other horn of the dilemma is sickness and death. It's an easy matter to choose.

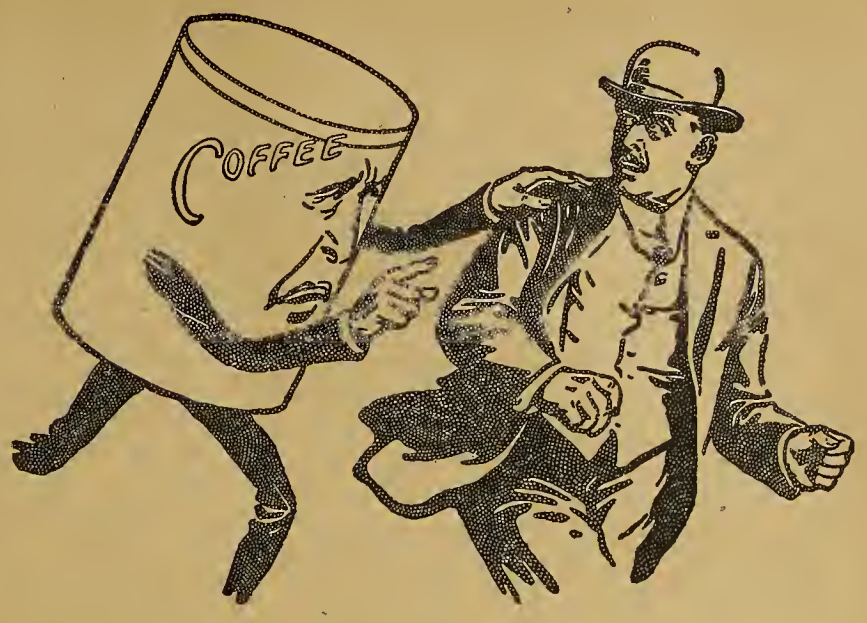
Shearing By White Eagle

ALMOST as soon as lambing is over it is shearing time. The old-fashioned hand shears are still used almost exclusively with us in Wyoming. Sheep-shearing by hand is as hard as it is dirty work, but at eight and nine cents per fleece the men make as high as fifteen and twenty dollars per day. They are boarded by the owner of the sheep. As each fleece is taken off it is tied with twine and tossed into the large bags



Part of the 1913 clip at one ranch

where a man tramps it tight—300 to 400 pounds in each bag. Buyers commence to arrive before shearing is over, testing the quality of the wool and offering prices, and a sale is often made before all the wool is off the sheep. The bags are loaded on ten- and twelve-horse freight teams, and hauled sometimes fifty miles to the railroad and shipped east.



When Coffee Gets You—

The experience will be like that of thousands who have ignored the fact that coffee contains a habit-forming drug, caffeine—about 2½ grains to the ordinary cup.

Some say, "Coffee don't hurt me," and seem to get on with it for a time. But there are few persons who can use coffee as a routine daily beverage and not sometime feel its effects—headache, nervousness, indigestion, biliousness, sleeplessness, heart trouble, or some other discomfort.

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The cost per cup of both kinds is about the same.

There's a mighty army of POSTUM users—the number is steadily growing—and

"There's a Reason"

Grocers everywhere sell POSTUM.

WHAT'S the use o' kickin'? The rain you don't want is doin' some feller's crops a heap o' good, an' th' fish allus bites better on dark days. Anyway, try a pipeful of VELVET, an' somehow th' weather's anything you'd like to have it.

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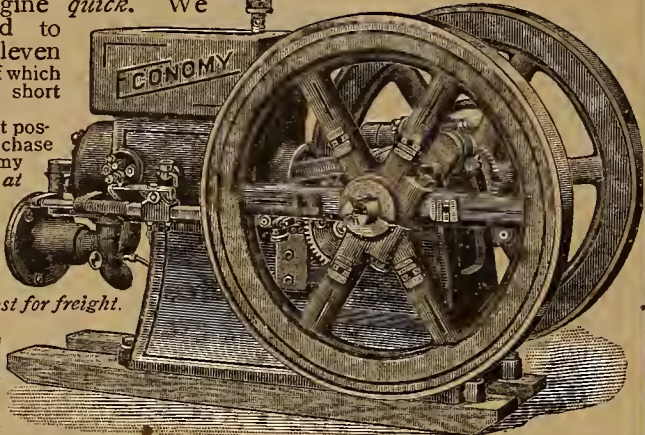
1. Milwaukee, Wis.
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Garden and Orchard

Moth Balls Saved Squash Vines

By Clifford E. Davis



Squash bug

FOR several years I had waged a losing fight with the long black squash beetle, the striped cucumber beetle, and the slender striped harlequin bug, and had lost all my pumpkin and squash vines. When I crumpled a dry leaf, myriad little demons would scatter in all directions. Last year I had a good stand of squash vines planted in fertilized soil among the potatoes. One day a visitor and myself went over all the vines, turning up every leaf and destroying both bugs and eggs. Dropping off to play "possum" on the ground did not help them. We made a clean sweep of the bugs, and I forget how many hundred were killed that day. Then I got a bag of moth balls and laid them at close intervals along each vine under the thickest leaves and beside each young squash. A heavy rain washed some away, but they were replaced. After a few days I saw and killed a few stray beetles, but those squash and pumpkins grew very large, and I saw no more beetles. Last fall I hauled home all one horse could pull on the sled, from a comparatively few vines, and I believe that it was the moth balls that saved them. I shall try the same again.



Striped cucumber beetle

curculio may also cause these failures. Spraying thoroughly at the proper time, with a carefully prepared spray material of the right sort, will control these two pests. The curculio is controlled largely by spraying with arsenate of lead just before the flower buds open. The adult beetle that lays her eggs in the fruit will be killed by eating the poisoned flowers and foliage. This arsenate of lead is mixed with the fungicide used for the brown rot.

Now the fungicide used may be either the self-boiled lime and sulphur mixed, or the standard Bordeaux mixture. Your letter seems to indicate that you did not prepare the lime and sulphur properly. The sulphur is allowed to "heat" in the slaking lime, thereby finely dividing it. The details of preparing this or the Bordeaux mixture can be secured from FARM AND FIRESIDE Service Bureau, or from your experiment station. I have had better success so far in using Bordeaux mixture for plums.

The second spraying should be done just as the petals drop, the third a week later, and a fourth often pays—a week or ten days after the third.

I would not advise you to pasture your orchard with sheep. Poultry would work in well. We have best results by breaking early in the spring and cultivating until the middle of summer, when we sow down to a cover crop. If cowpeas do well with you they would answer the requirements for such a purpose.

Apples in the Corn Belt

CORN is not the only thing in sight in the corn-belt States. In Illinois, for instance, a fruit expert, W. F. Perrine, preaches and practices apple production, and has the figures and cash to show that \$500 per acre per annum net are within the reach of any apple-grower who is willing to pay the price of protecting his fruit trees from insects and fungous diseases and supply the necessary plant food and culture.

Mr. Perrine also furnished figures showing gross incomes of over \$1,000 from several orchards in Richland and Franklin counties in 1911, and only a trifle less from the same trees in 1913.

A 13-acre orchard owned by Mr. Perrine and his brother in Marion County yielded apples that sold for \$10,000 in 1907; and from the same trees 2,500 barrels were harvested in 1913. The last-mentioned crop sold for from \$2 to \$2.50 per barrel, or over \$400 per acre.

Tomatoes as a Side Line

By L. E. MacBrayne

MANY greenhouses growing carnations for the market are empty for a part of May and the whole of the three months following. Yet if a side line can be utilized it will often pay the winter's coal bill. One of my neighbors cleared four hundred dollars in this way last summer, and hopes to do better this season. As fast as his carnation plants were taken out he set out little tomato plants that he had started in a corner of the greenhouse in April. These were trained up on the wire frames and bore ripe fruit for the Fourth of July demand, when prices run high. The soil being very rich and the sun supplying all the heat that could be utilized, moisture was about all that had to be provided.

Thirty-Five Plum Trees

A Case of Disease and What to Do

By A. J. Rogers

"I HAVE thirty-five plum trees about ten or twelve years old. Until one year ago the orchard was overgrown with briars and locusts so thick that I could scarcely get through them. For the last three or four years they have set fruit, but when the size of peas and a little larger they turned yellow and dropped off. The trees had no care until last year, when I bought the place. I cut out the briars and bushes and pruned and sprayed the fruit trees. I sprayed twice with lime and sulphur and arsenate of lead, five pounds each of lime and sulphur and three of lead to fifty gallons of water. I sprayed the first time just before bloom dropped; second time, two weeks later. I think first spraying was one or two weeks too late, for I noticed when spraying that insects had eaten through the bloom into the fruit. I had some experience but very little fruit. A few dozen plums matured, fine, large purple plums of good quality. I do not know the variety. I want to spray thoroughly this season, and would like to know just when to spray and what spray I should use. These trees are on the hill, in clay ground with blue grass sod. Would you advise breaking and sowing to cowpeas, or would it be best to dig around trees until sprouts are killed out by pasturing with sheep?" This is a part of a letter received from West Virginia.

There may be several factors which might cause the failures of this plum crop. Sometimes the fruit apparently "sets" when really no fertilization of the flowers has taken place. As you note, the size of these apparent sets are as large, or even larger, than peas, but the yellowish color is pretty good indication that no further growth can take place. Some plums demand cross-fertilization with another variety, which may explain the repeated failures. Cold rain or a frost at blossoming time might cause the same result.

The brown rot, a disease of the plum, and an insect best known as the plum

Deep Setting an Insurance

By Homer O. LeFevre

WHERE it is possible, and I think such is the case with nearly all growers, it is advisable to set some plants rather deep in the soil. In my garden (after the ground has been plowed and harrowed until it is thoroughly pulverized) I go through with the shovel and dig deep holes for the tomato plants; then I place the plant in the hole, pour in at least one quart of water and cover with rich, fine dirt at the roots, allowing only about three or four of the top leaves to protrude from the ground. Tomato plants thus set root at the joints as well as the bottom, so that planted in this way you are doubly sure of their growing.

In times of drought your plants are more secure, as they are below the surface where the moisture is longer retained by the soil. Then, again, the tender bottom roots are not subject to the ravages of bugs and insects which work just under the surface of the ground.

Three years ago I set about five hundred plants in this manner, losing only five or six which were too short to set deep, and which were cut off by grubs or died because of lack of moisture.

I select the very longest plants for setting. This deep setting does not seem to retard their growth as does shallow planting.

Garden Irrigation

THE ideal irrigation system for muck lands, as I have seen it in operation, is that known as the Skinner system. In most cases the water is forced directly into the pipe system, and any pump that will insure a pressure of 40 to 60 pounds per square inch will do the business. It is important, of course, that the openings in the discharging pipes are made true and in such a way that the water will be distributed evenly and regularly. The little nozzles which are devised for the Skinner system are not so very expensive, and they seem to be an essential part of the system, as are also the turning devices and the drill for drilling the openings for the insertion of the tiny nozzles. It is by no means necessary to warm the water to be used for irrigation. Any ordinary spring or well or pond water is good enough, providing it is free from clogging material. T. G.

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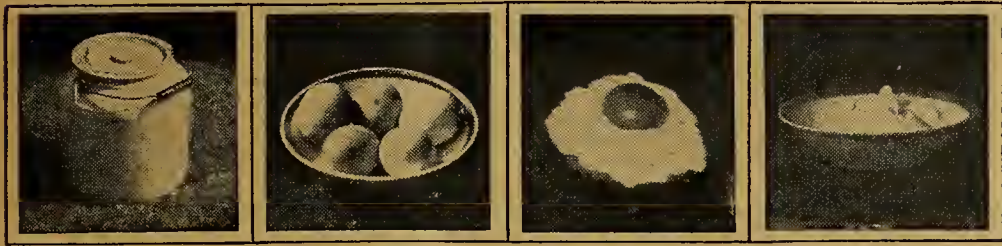
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F. S. STAHL, Box 883, Quincy, Illinois

Practical Ways of Preserving Eggs

How the Difficulties of Holding Eggs from Spring to Winter May be Overcome



Convenient egg jar Preserved eggs They poach well Whip nicely too

FIRST let's be frank and recognize that a strong market prejudice exists against eggs that are not "strictly fresh." We need also to remember that various food laws prohibit under heavy penalties the sale of stored eggs as "fresh eggs." So everything that follows is chiefly for the benefit of families who want to preserve eggs for their own use.

The properly preserved egg is a decided success. Though lacking the delicacy of flavor possessed by a new-laid egg, a preserved egg is better than the average winter-month grocery-store egg, and much cheaper. The two best methods of preserving eggs are with water-glass and lime solution. FARM AND FIRE-SIDE has thoroughly tested both of these methods and can recommend them. The photographs above are by the editors.

A series of interesting German experiments were published in the U. S. Consular Reports some years ago that tend to clear up many uncertainties in the practice of preserving eggs. Four hundred eggs were kept from July 1st to February 28th (8 months) by twenty different methods.

As reported by George C. Watson in his book "Farm Poultry," and with some changes in expression, these were the results:

METHOD OF PRESERVING	Per Cent Good
1. Preserved in salt water.....	0
2. Wrapped in paper.....	20
3. Preserved in solution salicylic acid and glycerin.....	20
4. Rubbed with salt.....	30
5. Packed in bran.....	30
6. Coated with paraffin.....	30
7. Varnished with solution of salicylic acid and glycerin.....	30
8. Dipping in boiling water for 15 seconds.....	50
9. Coated with alum solution.....	50
10. Kept in solution salicylic acid..	50
11. Varnished with water-glass....	60
12. Varnished with collodion.....	60
13. Covered with lac.....	60
14. Varnished with sward.....	80
15. Packed in unleached wood ashes	80
16. Treated with horic acid and water-glass.....	80
17. Treated with potassium permanganate.....	80
18. Varnished with vaseline.....	100
19. Immersed in lime water.....	100
20. Immersed in water-glass solution.....	100

Other methods sometimes used are packing in salt or oats, but the results are so uncertain we cannot recommend them. The chief objections to vaseline are the time required to coat the egg and the disagreeable greasy feeling.

There is little choice between the water-glass and lime water. Both are good methods. One quart of water-glass is ample for ten dozen eggs. Drug stores sell water-glass usually in the form of a syrupy liquid, though sometimes as a dry powder. Here is the formula for water-glass solution:

1 part water-glass (syrupy form).
15 to 20 parts of cooled boiled water.
The solution is of the right strength when perfectly fresh eggs sink to the bottom very slowly.

Put the eggs in a water-tight vat, tub, or jar and pour the solution over them. As the pores of the egg are sealed tight, always puncture the shell with a needle before boiling. This will prevent shell from cracking.

Here is the formula for making lime solution for preserving eggs:

1 quart (dry measure) fresh quicklime.
1 pound salt.
1/4 ounce cream of tartar.
2 1/2 gallons of water.

First slake the lime and allow it to cool, then add water and salt and mix well. To this add the cream of tartar which has previously been dissolved in a tumbler of water. Allow the entire mixture to stand twenty-four hours, after which pour off the clear liquid into stone jars. Put the eggs in carefully and have fully an inch of liquid over the eggs. Keep in a cool place where the temperature is uniform, and cover to prevent evaporation.

Eggs spoil because they have been infected by bacteria or molds and the infection has been allowed to develop. An infertile egg from a healthy hen is practically sterile when laid, but is easily infected by surroundings.

Egg shells are porous, but a thin dry

mucous coating on the outside of the eggs keeps germs out fairly well if the coating is not injured. If it is washed or rubbed off, the germs go through the porous shell like mice through loose hay. Clean *dry* nests, plenty of them, and frequent gathering of eggs all help to keep this protecting coating intact.

The value of any kind of storage, whether cold storage, storage in sterile air, or preservation in water-glass or lime, depends for success on, first, keeping germs out; second, preventing evaporation of the contents of the egg; and third, preventing the development of any bacteria that are already in the egg.

The first requirement is taken care of by the germicidal character of the water-glass and lime solutions. Evaporation of the contents of the eggs is impossible also, because the eggs are kept submerged.

The third essential, preventing the development of bacteria already in the egg, is the hardest to control. First of all start with good eggs. Be sure the shells are perfect and free from cracks or thin or weak spots. Do not use dirty eggs, as they are usually full of germs, because they have been in dirty nests. Try to get infertile eggs, as they keep much better. And do not try to keep eggs that come to the top of the preserving solution. That is a sign of a large air cell, indicating that the egg has dried out considerably.

Now for the last point, that of checking development of bacteria already in the egg. Nearly all germs found in eggs need warmth and air for growth. The preserving solution, by sealing the pores of the shell, tends to smother the germs on the inside. Smothering will not kill the germs, but it keeps them from growing and multiplying rapidly enough to make the egg spoil. If the air in the water used in the solution has been driven out by boiling, so much the better.

Naturally, the sooner the eggs are put in the preservative after they are laid, the fewer germs they will contain and the better they will keep. If the eggs are fertile the chick germ will begin to incubate as soon as the temperature exceeds 80° F.

So, even though a preservative is used, a fertile egg kept in a warm place will develop until it uses up all the oxygen in the air in the egg. Then the embryo chick will die and decay, making the egg unfit for use itself and giving off an odor that may spoil the flavor of the good eggs.

The safest way to tell the quality of eggs, if you do not raise them yourself, is to candle them and use only those without a germ, looking at the same time for any cracks or defects in shell and carefully sorting out all whose contents are not perfectly clear.

The germ in an egg appears as a tiny dark spot as big as a small pea, and is situated about halfway between the center of the egg and the large end. In brief, here are the chief requirements for perfect success in preserving eggs:

Use either a water-glass or lime solution made as directed.

Use strictly fresh eggs with hard, perfect shells. Infertile eggs are preferable. Eggs from flocks from which roosters are excluded are infertile.

Keep the vessels containing preservative and the eggs in a place where the temperature is above freezing, and not over 55° F. if possible, though good results have been obtained at as high as 70° F.

Use only clean eggs, and put them in the preservative within twenty-four hours after they are laid.

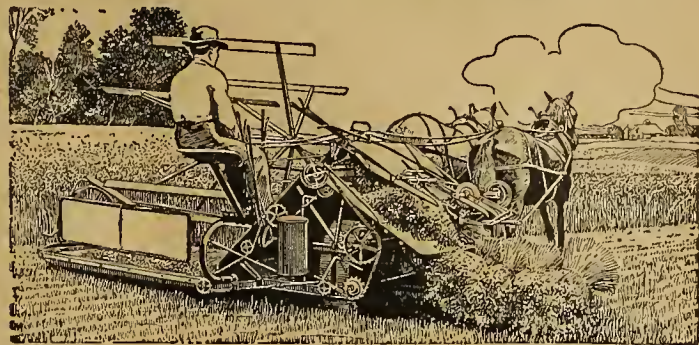
Preserve the eggs between April 1st and June 15th, since eggs laid in those months have the best keeping qualities.

Remember that the solutions merely seal up the pores in the egg and keep good eggs from becoming bad; they will not make bad eggs any better.

Eggs that have started to spoil cannot be kept successfully.

Use up the eggs within ten months from the time they were put in the solution and make a fresh solution every year. You may get good results even if you omit some of these precautions, but if you follow directions to the letter, perfect success is assured.

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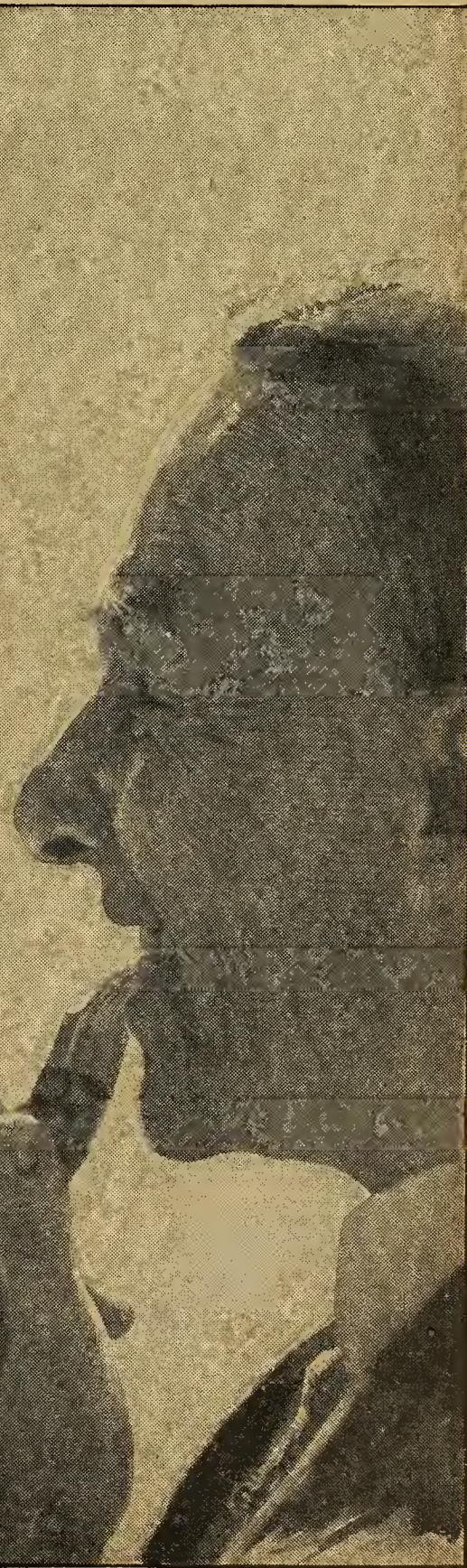
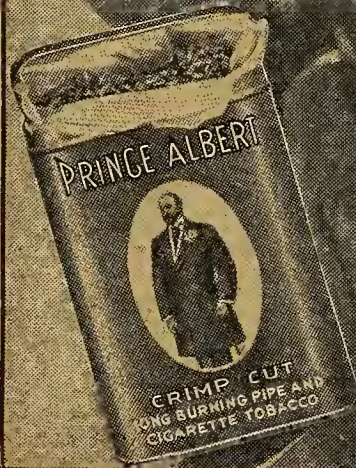
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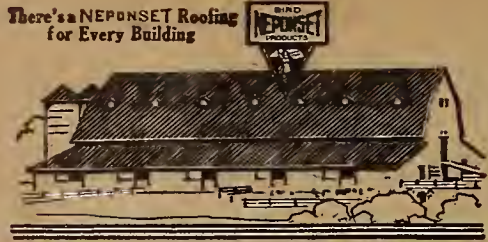
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Live Stock and Dairy

Mary's Lamb

The Editors sent to Mr. Ross the clipping from the "Sun." He "came back" quickly with two versions of a reply which follow.

MARY had a little lamb.
Observe the tense, we pray,
For with the prices that prevail
It couldn't be to-day.

—New York Sun.

Though Mary lost that little lamb,
She still retains its mother,
Who this spring dropped a sturdy ram;
So Mary owns its brother.

She says, "I don't raise lambs for fun,
And dearly love a dollar,
And since that first pet cleared me one
I see no cause to 'holler'."

Mary has her little lamb,
Though had is what you say;
For Mary's lamb is not for sale,
No matter what you'd pay.

—John Pickering Ross.

Pa is Never Late

By Mary F. K. Hutchinson

WHENEVER we are goin' off,
Pa's always ready first.
He says procrastination
Of all faults is the worst.
So Pa'll begin at twelve o'clock:
"Now do try this time, Ma,
To be all rigged at half-past one,
An' don't let's miss that car!"

An' when we finish dinner Pa
Goes off up-stairs to dress,
While Ma, she clears the table off,
An' I tend Baby Bess.
Pa hollers: "Where's my cleau shirts,
Ma?
I can't find any here!"
Ma runs up, tells him: "Second drawer,
In your own chiffonier!"

Twice more he calls her up to help
His cuffs an' ties to find.
Before she gits her dishes done;
But Ma don't seem to mind.
An' then she washes Baby Bess
While I spruce up a bit;
By that time Pa's already dressed,
An' almost has a fit!

He says: "It's time for that car now!
Gee whiz! Ain't you dressed yet?
You've only five more minutes; Ma;
We'll miss that car, I bet!"
Ma says: "I'm almost ready, John,
Jest keep an eye on Bess;
In half a jiffy I'll be down;
We'll catch that car, I guess."

But Pa begins to fuss an' fret,
An' don't watch Bess a mite.
So she falls where the sprinkler's been,
An' say! Ain't she a sight?
Ma puts her other white dress on,
An' tells her uot to cry,
Shuts winders, brushes mud off Pa,
An' straightens out my tie.

Pa says: "That boy is old enough
To dress himself. Come, Ma!
We'll miss it, jest as sure as fate.
Run, Bess! I hear that car!"
Ma grabs her gloves, puts out the cat,
Asks Pa if her hat's straight,
Finds my cap, locks three doors, an'
comes.
Pa says, "Almost too late!"

What is This New Disease?

KANSAS was sometime ago afflicted with an epidemic of horse diseases which threatened the whole State. The State was quarantined. No definite name was given the ailment, and no remedy was found.

Indiana is now afflicted by a similar set of diseases. The Indiana state veterinarian, Dr. A. F. Nelson, gives us the following statement concerning these mysterious outbreaks.

In the outbreaks in the extreme southern part of the State, the spinal infection seems to predominate, and the animals become paralyzed within a few hours and assume a comatose condition unless placed in slings and given stimulants. We have made bacteriological examinations of both blood and nerve tissue, brain and spinal cord, and have found associated with the other bacteria some of a kind called diplococcus. This has been present in the blood, spinal cord, and brain, and tallies with the description of the one causing cerebrospinal meningitis, but against this diagnosis all inoculations have proven negative, especially those of the blood. The spinal cord and brain have not been removed soon enough in most of these cases to prevent secondary invasion of putrefaction.

As to the second type of disease, the one that affects the air passages, these animals first exhibit symptoms of slight discharge from the nose. One or two have shown

some symptoms of griping pains, but this has been exceptional. The discharge from the nose rapidly increases. The mucous membrane of the nostrils becomes ulcerated, and ulcers develop which greatly resemble glanders. Inoculations from these have proven negative. Smears made from the discharge from the nostrils show all kinds of bacteria of the kinds called streptococci.

The consensus of opinion, after visiting so many of these animals, is that it is a form of forage poisoning. These animals have only lived from a period of one to about five days. They exhibit all the symptoms of obstruction of the air passages, but post-mortem lesions show no diphtheritic infection or congestion of the larynx or the respiratory tract. It is a very puzzling situation, and we are inclined to believe that the most of the trouble has occurred from feeding of straw which has been cut very close to the ground, and as all the fields were flooded last spring there is a probability of a development of some saprophytic bacteria which under certain conditions become parasitic and affect animals.

THE State of Pennsylvania, under the leadership of some legislator who supposed himself to know more than Mother Nature, offered such bounties for the scalps of hawks and owls that these birds of prey were so vigorously hunted that they became very scarce. Then came Nature's protest. Rodents and rabbits freed from their natural enemies in some measure became a pest. One winter great numbers of snowy owls, lured by the plenitude of prey, came in and helped restore the balance—and the law was repealed.

Good Animals

PROFESSOR SURFACE of Pennsylvania comes to the defense of the snake as a farmer's friend. His children are friendly with the snakes about the place. All Pennsylvania snakes should be protected except the poisonous ones; and of these we think there are only two in Pennsylvania, the rattlesnake and the copperhead. Snakes eat bugs, locusts, worms, and other insect pests; so do toads. Toads are probably of more value than snakes, and when a snake eats a toad he is doing more harm than if he swallowed himself. But it seems better to have two useful animals like toads and snakes struggling for survival than to carry on the war against insects in a snakeless and toadless world.

Let the Grass Grow

By W. S. A. Smith

THE careful seaman watches his barometer carefully, and although he may have clear skies overhead, a falling barometer always puts him on his guard. We have in this country at present a falling barometer, a feeling of uncertainty. Understand, I am not talking panic, simply that we have had a steady advance in farm lands and prices for ten years, and we are likely now to have things slip a little. We are up against a readjustment of farm lands and prices on farm produce. The old Scotch proverb "Many mickles make a muckle" has a good deal to it. Argentine beef may not alone affect the price of cattle, but when you import, as we are doing now, Argentine corn, beef, and mutton, Australian mutton, Canadian oats and wheat, Chinese eggs, and all kinds of eggs and potatoes from European countries, you can't convince me that it will not have a tendency to lower in the next six months the prices on all our farm produce.

And as our farm produce lowers in price our farm lands will not be likely to increase in value. Yearling steers of good quality are selling up to \$8.25 to go on grass, and yet it takes an awfully fat steer to bring \$8.25. What prospect is there for these yearling steers to pay out? A dry season and short grass would knock all profits. I don't think it's worth the risk at present.

Labor conditions do not improve, and the outlook is anything but encouraging. Every little country representative and Congressman who wants a little notoriety amuses himself hammering the trusts, railways, etc. No question but that they did need looking after, but we seem to be going to the other extreme now, and the consequence is falling dividends, a great many men already laid off and many more facing a reduction in wages. All of which, to come back to the old story, looks bad for any advance in beef prices and other farm produce. Just go a little slow for a few months and let the grass grow.

The Wool Problem

By J. P. Ross

WHY does American wool when it comes into competition with that of Australia and other great sheep-growing countries have to be content with lower prices than they can command? It is a question which certainly pertains to the marketing side of the sheep industry, and was made a prominent subject of debate in the recent Convention of the National Wool Growers' Association. The U. S. D. A. has had investigators

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considering our methods of marketing wool, and their preliminary report is in part as follows:

From 10 to 20 per cent of the value of the crop is lost annually through the neglect of a few simple measures. This handicap would be removed to a considerable extent if all growers would agree to do four things:

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.

Out of 2,369,005 sheep reported on by 383 growers in 1913 only about half the growers follow rule 1, about 60 per cent rules 2 and 3, and less than a half rule 4.

The report goes on to show that the price of the wool purchased in a certain locality is set by its general reputation already established; that buyers will not alter their prices for small individual clips, though they may be better handled, and therefore those who put up their wool properly suffer for the sins of their neighbors. It suggests that "the remedy is to raise the reputation of a locality by an agreement among growers not to permit poorly handled wool to leave the community."

Wool grading, sorting, and packing is a distinct and well-paid profession in Australia. Its followers, known as "wool classers," are employed by all wool growers. Classes under skilled instructors are maintained in the technical schools, the pupils afterward perfecting themselves as apprentices to wool classers already established.

Recently, on suggesting to Mr. F. D. Coburn, former secretary Kansas Department of Agriculture,—than whom there is no better authority as to the educational needs of our farmers,—that our colleges should adopt some such a plan, he wrote me as follows:

It seems strange indeed that after so much pains and expense to produce it the wool growers do not make more of an effort to put their wool in the best possible condition for its profitable marketing.

Surely our agricultural colleges could not do better than give complete instruction in a matter so important.

A Large Pig Crop

By L. K. Brown

DURING April both supply and demand in the hog market got to a low ebb. The receipts dwindled until they were the smallest in months, the demand from Eastern shippers was light, the needs of the fresh-meat channels were small, and Southern demand for cured meats was slow in appearing. Such a condition gave the packers but little competition, and they were able to keep the market at a standstill, and even lower it some. The fresh-meat consumption was the only compelling factor in their buying; hence they were somewhat indifferent buyers part of the time, and exerted considerable control over the shaping of the market. As long as this condition lasts the market may be expected to remain in the same rut.

However, prospects for the near future are more promising. Southern demand is increasing, fresh meat remains steady, and the Mexican trouble will cause a new outlet for cured meats (just how large cannot yet be calculated). As soon as demand for cellared stocks becomes strong the packers can be expected to support an advancing live-hog market, for this will enhance the value of their provision stocks.

According to the government report there are as many breeding sows in farmers' hands this season as one year ago. At this early date, however, this is no criterion of the size of the 1914 forecast of the fall and winter market. The percentage of loss during the next eight months, which is apt to be large, and the size of the corn crop and its price will frame that market. Weather so far this spring has been favorable for farrowing, and the loss has been light.

Lost People

MR. EDDIE LEAR of Winston County, Alabama, asks us to find the address of his sister, whose name before she was married was Lillie Lear. Her last letter was from Tennessee. Mr. Lear would also be glad for any information with reference to his brother Bobbie, who was in the army when last heard from, sixteen months ago.

Answers may be addressed to FARM AND FIRESIDE, and will be forwarded to Mr. Lear after examination in this office. We are able, owing to the very large and wide-spread circulation of FARM AND FIRESIDE, very frequently to find the addresses of what we may call "lost people." Sometimes people are not lost but only mislaid. We are always willing to undertake to reunite friends and families through these columns.

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IF HE WILL THEN TAKE FIVE minutes to compare the separating bowl construction; the size, material and finish of the working parts, particularly those subject to wear and requiring to be occasionally taken apart and put together; the manner of oiling, and everything which enters into the design and construction of a separator as a simple durable machine, he will still further see the difference.

IF HE WILL GO A STEP FARTHER and turn the cranks of the two machines side by side for half an hour, particularly running milk or water through the bowl, he will see still more difference.

AND IF HE WILL TAKE THE TWO machines home, as every De Laval agent will be glad to have him do, and run them side by side in practical use, the De Laval one day and the other machine the next, for a couple of weeks, he will see still greater difference in everything that enters into cream separator practicality and usefulness.

THE MAN WHO TAKES EVEN the first step indicated in seeing for himself the difference between the De Laval and other cream separators doesn't put his money into any other machine one time in a thousand.

THE COMPARATIVELY FEW buyers of other separators are those who merely read printed matter claims or listen to the argument of some dealer working for a commission, and who do not think it worth while to see the difference for themselves.

THE WISE BUYER OF A CREAM separator today does see this difference when buying his first separator, while the unwise or careless one usually finds it worth while to do so when he comes to buy a second cream separator a year or two later.

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Crops and Soils

The Corn-Root Aphis

By C. M. Weed

LOOK at almost any plant infested with plant lice, or aphides, and you are likely to find many ants running about upon the stems and leaves. These ants are likely to be most abundant where the plant lice are thickest. If you watch one ant carefully, you are pretty sure to see it lap up some liquid given out by the aphids.

These ants are indeed regular attendants upon the aphides. The latter have sometimes been called the milch cows of the ants.

In the case of some kinds of plant lice their relation to the ants is so important



Ants attending plant lice

that it is probable the plant lice could not live without the ants. This is not so true in the case of the species living on the leaves of trees and shrubs above ground as it is of those living on the roots underground.

A good example of the care taken of aphides by their attendant ants is found in the corn-root aphis which is often destructive to corn crops. This soft-bodied little creature lives on the roots of corn and other plants. It is not able, like the wireworm and the white grub, to make its way unaided through the soil. It requires instead little tunnels for its passage along a root, or from one root to another.

Fortunately for the aphids the little brown ant lives in colonies in the soil and adopts the aphids as a sort of foster child. It makes the tunnels along the roots and carries the aphides from place to place. And even more interesting is the fact that the ants take care of the eggs of the aphides which are laid in autumn. They care for them in the winter, and in the spring when the eggs hatch into little aphides they carry these to tunnels along plant roots where food is to be had.

In early spring, before the corn roots are present, the aphides are carried to the roots of weeds and grasses. Later they are transferred to the corn plants.

Fall or winter plowing is helpful in breaking up the nests of the ants and scattering the aphid eggs through the soil where the ants do not find them. Rotation of the corn crop is also helpful, and should always be practiced if a field has been badly infested.

Unpleasant Side of Irrigation

By Mrs. A. E. Wilcox

I SOON found out that irrigating wasn't all roses. But for the last fifteen years I had wanted to own an irrigated alfalfa farm. I thought when I bought my unimproved place here in northern California that it would require very little work to get it level, but before I was through with it I found I had been mistaken.

It was covered all over with deserted squirrel holes that thousands of barrels of water disappeared in when I began to irrigate. In leveling twenty acres—the size of my place—some of the checks have to be lower than others, and on those in high levels the gophers get in their work. They honeycomb those places with holes, and as soon as the

upper checks get filled with water it begins to run into those holes until it washes away that levee. Then that extra amount of water makes the next check too full and overflows it. The water never stops until it gets to the drainage ditch, and then it is gone for good, which is quite a loss if the water is raised with a pump.

A very important thing in an irrigated district is drainage. There are places in this project where the water stands from one irrigation till the next with no possible outlet—a dangerous proposition from a health standpoint. One of my neighbors dug an immense hole, thinking he could dispose of his waste water, but it was a failure. When the hole got water-soaked it held the water like a jug.

We are not allowed to drain any water into the road unless there is a place for it to run off. When I came here three years ago I never saw a mosquito. Now as soon as it is dusk they come in

swarms, and they are getting more numerous each year.

We irrigate here every ten days, which means to flood every inch of your ground to a depth of several inches. If it isn't all drained off at just exactly the right time the water gets hot and the alfalfa becomes as dead as a door nail.

If there is a single spot anywhere that is an inch too low, no alfalfa can be raised there until dirt has been hauled in and the place leveled up. On a twenty-acre farm there must be no bare spots, every foot of the soil must be utilized. If there are any bad weeds along the big ditches (and there usually are) they are washed all over the farm, and what weed one farmer has we all have.

The worst weed we have here so far is what we call slough grass. It comes with the water, and first thing you know it is dotted here and there all over the place, and if it isn't cut out with the hoe or pulled up, in two or three years there is slough grass and no alfalfa.

When alfalfa is constantly soaked with water the roots are always shallow. Then if one irrigation is missed the alfalfa begins to wilt, and then the crop is impaired.

In a country like this nothing can be brought through the summer without water, and lots of it. Consequently every crop, even sunflowers, must be on perfectly level ground where they can be plentifully watered. The earth mulch is all right, but it doesn't go very far. I am trying to grow two shade trees in my back yard, and to keep them moist enough to grow is a problem, for the ground all around them is dry and very quickly saps the moisture that I give to the trees. So I dug a hole around each tree six inches deep and six feet across. This hole I filled up with chips from the woodpile. When I irrigate I fill that hole full of water, let it stand full about three hours, then turn it off and let it soak in, which leaves the chips all wet, and they hold that moisture in the ground much better than an earth mulch.

The next day after I irrigate my garden I must be right on the spot with a hoe or a cultivator or it will be as dry as a bone and have to be wet again. The first year I was here I tried to raise a garden by watering once a week. Everything dried up for the want of a drink. Now I have a windmill, and I pour water on the ground two or three times a week.

The atmosphere is so very dry here

that I even have to water my spineless cactus four or five times in a season. If I don't it will all shrivel up. A great many garden vegetables don't grow well in a climate like this. For instance, peas don't amount to anything. The worms literally eat up the sweet corn. Beans are utterly destroyed by the red spider. Watermelons bake on the side exposed to the sun. Lima beans bloom themselves to death but seldom mature a bean. Even cowpeas turn yellow if they don't get a drink every day or two. A year ago last summer I tried squash: I had vines twenty feet long, leaves as big as a palm-leaf fan, but no squash.

Night Work and Day Work

There is much night work connected with irrigating. They have a man called the ditch-rider, whose business it is to notify each man when to expect the water. It comes often at night, which of course means a close vigil. The water at any time is liable to find a gopher hole. When a wide place is washed in a levee it's no small job sometimes to find dirt to use, as a shovelful or two means a hole somewhere else. In leveling a piece of ground great care must be taken to get just the right fall; if too much, the water runs to the lower levee and leaves the upper part above water; if too level, then the water cannot be drained off quickly enough, which means dead alfalfa. If one has money it is better to hire an expert to level the land than to try and do it one's self.

We have the same trouble with the gopher in the ditches as we do in the levees. Everything has to be watched with an eagle eye. If a ditch washes out and overflows the neighbor's almond orchard, that has to be all cultivated over the next day to keep him in good humor. If your drainage water runs on some other neighbor's land when he don't want it to, he can complain and you have to make other arrangements.

Soil that is continually flooded, as this or any other irrigation project has to be, is bound to lose its power of saturation. In fact, that is a statement made by a government expert, and why wouldn't it? My soil already looks like the bottom of a frog pond when the water is drained off. It has the same soggy, greenish look.

But there is soil in this project that is very different. To look at it one would think nothing would grow, for it looks just like pure gravel with some stones bigger than your feet. But alfalfa does much better on that soil than on mine, owing to the fine drainage. One of my neighbors used three feet of water on his gravel in his first irrigation in order to get it wet, after that it didn't take nearly so much. A good many of the gravel farms are leveled in long strips instead of in checks.

Irrigated alfalfa seems to have a worse effect on cows than the unirrigated. Some fifteen head of cows in this vicinity have died of bloat this year, and usually it's the best in the herd that are taken. Only one of mine was bothered seriously. I saved her by seeing her just at the right time. I put a gag in her mouth, gave her a drink of coal oil and made her run around the yard at a good smart gait until she began to belch. Unless the trocar is used just at the right time it does not save the cow.

My Experience with Alfalfa

Some of the ranches around here have quit pasturing their alfalfa, owing to the danger. The last time my cow was bloated was in the evening; she had been on a dry-grass pasture all day. About four o'clock I turned her on the alfalfa, and at five she could not stand still, she was so bad off. This explodes the theory that only alfalfa with dew or frost on it will cause bloat if the cow has an empty stomach.

In harvesting the alfalfa it has to be done between irrigating periods, and that means some tall hustling. I don't cut all my acreage at one time to get prime hay; that which I cut in the morning I rake in the evening and cock it as soon as possible, for the sun bleaches it badly if in the windrow. That does not hurt the feeding value but it does the sale price.

The water from overhead never worries us any in harvesting our crop: it's the water at our feet we have to watch, for we want all that is coming to us. If I had it to do all over again and could get electric power cheap enough, I would prefer it to being under a government ditch. I could get water then just at the right time,—in the daytime.

AN OKLAHOMA man claims to have lost several hundred dollars last summer by going at the threshing too soon. He wouldn't have been so badly ruined by the drought if he had plowed as soon as his small grain was harvested, and had disked the plowed fields to hold the moisture. If he had disked the stubble it would have helped some. It would have helped a lot. And a Kansas man insists that unless you lap half you aren't really disking. Some truth in that too.

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Coin Holder for Mail Box

A COIN holder for a mail box can be made this way. Get an oak or hickory stick squared to 1 3/4 inches and bore an inch-deep hole in the end large enough to hold a fifty-cent piece. Cut off the end with the hole in it so the block will be 2 1/2 inches long. Smooth the faces and paste a piece of white paper on each side. On one side print "2c Stamps;" on the second side print "1c Stamps;" on the third side, "Post Cards;" and on the last side, "Stamped Envelopes."

If you want two-cent stamps, have that side of the block facing the carrier as he opens the mail box. It is easy for him to get the money, and it saves watching for him, or writing what you want on a piece of paper.

MRS. FRANK WORTHINGTON.

Emergency Candle Lantern

THE sketch shows an emergency lantern which is handy when the regular one happens to be out of order. The materials are a tin can (a two-pound tomato can is about the right size), a piece of broom handle, a good-sized screw, and a piece of candle. Punch a hole in the bottom of the can and with a gimlet make one in the handle and fasten with screw. In one side make a hole in which a candle can be inserted. It must fit tight of course.

A circle of small holes on the opposite side of can gives the draft. You will be surprised to see how little the wind will affect the flame. The light can be thrown just where you want it. It is excellent for working around machinery, for going down cellar, and for any purpose where you want a light quickly.

MRS. R. B. BECKER.

Try Riding Horseback

IF YOU are driving a team and one horse balks, take up the reins and get on the back of the balky horse. Press the heels gently into the flauks, speak a few encouraging words, and then say, "Get up," as if going to ride. I have seen this tried many times and have never seen it fail.

JOHN H. COWAN.

To Bind Stalk Bundles

HERE is a sketch of an arrangement I used last season for taking the corn off shock fodder and tying into bundles. Take two 1x4 oak pieces (PP), 4 1/2 feet long, and bolt to wagon bed as shown in sketch. The crosspieces (AA and CC) can be made to fit together nicely by notching each piece at 1, 2, 3, and 4. L is a strong oak piece, 2 1/2 feet long, fastened to rope at R.

The rope should be about a foot long, depending on the size of the bundle you wish to make. Put your twine in a bucket at B. Throw your stalks on the rack and toss the ears into the wagon box. Place the bundles under rope and pull the lever. With this rigging you can tie the bundles as tight as you want them without blistering your fingers. You can tie them with your gloves on if you wish.

S. H. COBLE.

An Improved Pipe Wrench

HOW many times have you wished that you had a good pipe wrench? We can't have all the tools that we would like, and so we must do without some of those that are needed least. The average farmer does not need a pipe wrench more than once or twice a year, and so he does not make the investment. Here is a contrivance that will take the place of a pipe wrench under all ordinary conditions, and will do the job just about as well.

Wind a small piece of rope around the pipe to be turned, in the manner shown in the sketch. Take a piece of pipe or a good stout stick and thrust it through the loop as shown. By prying on this

loop the pipe will be turned. The ends of the rope of course must be held taut.

If a pipe begins to leak and no pipe wrench is at hand this device will tighten it. Leaking pipes, by the way, should always have their threads treated with white lead. Thick paint of most any kind will be of help if white lead is not at hand.

JOHN V. BEATY.

Good Pail from Separator Can

WE BOUGHT a new cream separator last spring, and our old one was thrown on the junk pile. However, we saved some of the more useful parts, and the large aluminum supply tank was one. We took out the faucet, soldered up the hole, and with rivets put on a handle from a discarded pail. This will outlast a number of ordinary pails. It is light and easily kept clean. It is a splendid water pail.

PAUL H. RUESS.

Try Two Front Braces

OFTEN a temporary fence is strung at a place that brings one of its terminals at a straight fence where a "dead man" can not be buried back of it, and a single front brace might cause it to swing to one side as the tension of the fence increased. In such cases the end post of the temporary fence can best be braced by using two front braces.

If these are spread sufficiently at the ground the post will be braced against side movement as well as forward movement.

P. C. GROSE.

Sling for Grain Sacks

WE ALWAYS carried our grain up to the bin in the mow by the old back-breaking method until we discovered this little device. It consists of a piece of 2x6, with a hole in each end through which the hay rope is passed. A knot is tied in the end of the rope as shown, and the sacks are placed in the loop. Any number from one to fifteen sacks can be taken at one load, and the horses do all the work. Use a tackle similar to that used for a hayfork.

In loading, the loop is made large, and laid down on the ground. Then the sacks are piled in a pyramid on the loop. Then the board is passed up over the top of the pile and the team started. When the team begins to pull, the rope tightens and the pile is lifted.

There is nothing to make but the holes in the board. The board may be most any length from fifteen inches to three feet, according to size of the average load. It is a good plan to have on hand boards of about three different lengths; then you will be ready for any job.

D. G. BEATY.

Right Way to Empty Silo

LOOSEN up only what is pitched out for one feed. Run the fork level over the top and take out a narrow row all around the edge next to the silo wall, about eight inches deeper than the surface of the silage. The outside will then keep moister and be better feed. This method of leaving a lower rim around the outer edge also seems to prevent freezing on the outer edge. My silage has never frozen since I have handled it in this way.

S. S. VERNON.

Door-Sill Wheelbarrow Bridge

THIS is a simple device for keeping boards up to a door sill of a barn so that a wheelbarrow can be run over it. First nail two cleats a little below the top of the sill. Take two boards of suitable dimensions and put them on each side of the door sill so that they rest on the cleats.

Then take two leather straps and nail them to each end of the boards as illustrated. This saves nailing the boards and they will stay in place perfectly. This bridge is easily put down, taken up, and stored away.

H. A. ROBINSON.

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The girls burned to death in England in that period of five years, in excess of the boys, numbered 1,620. If the same ratio holds true in the United States we are losing nearly a thousand young girls by horrible deaths every year by reason of their style of clothing. And in the civilized world the total is a very painful thing to contemplate. To ask if this is worth while is to insult the intelligence; but who is to change the style of dress?

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BRING your horse in cool and breathing easily. If he comes in hot he will sweat in the stable, and the sudden stoppage of hard work is bad for his feet.

How many of our readers have tried potato-growing by the mulch system? Just how did they do it? Why did they adopt the method? and with what success?



They ain't no accountin' for tastes. Hen Nevins' girl Mandy run off with a rich city chap, yet everybody knows that Hen often allowed her two gingham dresses a year

LAND PLASTER (ground gypsum) is recommended as a fertilizer for the soils of western Washington and Oregon. "It gives clover a green, healthy, and vigorous growth, while untreated clover on the same soil is often yellowish in color and of very unsatisfactory growth." Our forefathers in the Eastern States used this fertilizer generously until it ceased to act. Perhaps if they had used phosphates with it the benefits would have not come to an end. A hundred pounds to the acre is a sufficient application.

THE Wyoming rule for measuring hay in the stack will be found useful. For native hay 420 cubic feet make a ton after thirty days and up to three months after stacking. For alfalfa, after thirty days and up to one year, 512 cubic feet. For timothy and clover, after thirty days and up to one year, 450 cubic feet. To get the number of cubic feet subtract the width from the "over," divide the remainder by 2, multiply this by the length, and this by the width. Got it? In New York and Virginia fifty-five stacks measured and weighed after standing less than thirty days averaged 589.6 cubic feet to the ton, and thirty stacks which had stood from 74 to 155 days averaged 514.9 to the ton. You may get at it close enough by these figures; but what's the matter with having scales?

DID THE WORK

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"I tried one kind of medicine after another, but nothing seemed to help me.

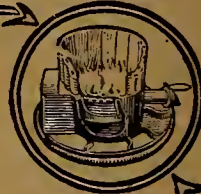
"Finally a friend suggested change of food and recommended Grape-Nuts. With little or no faith in it, I tried a package. That was eight months ago and I have never been without it since.

"Grape-Nuts did the work. It helped me grow strong and well. Grape-Nuts put new life into me, built up my whole system and made another woman of me!"

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The Farmers' Lobby



IT WAS suggested recently in the Lobby that the thing that makes the country rich is not the land, or the buildings, or the factories, or the railroads—but the people. The land wasn't worth a cent a mile when there were no people to live on it; and so kings and emperors gave the land away to people, back in colonial times, who promised to get folks to go out and live on it and thus make it valuable. When there's more land than people, land is cheap and people come high; that's why wages are high and land prices low in "a new country." Reversing it, when people get plenty and land scarce, people get cheap and land dear; so land prices go up, and wages tend, in proportion, to go down.

Yet all the time the people constitute the real element of value. The credit of the community of people, if it can be organized and unified, is the very best, because all the people represent all the producing power of the country. France has organized a system that accomplishes just that. I don't mean the French system of land-mortgage banks, because in that system the land, not the man, is the basis of the credit. I refer to the *Crédit Agricole*—the scheme of rural individual credit. We need such a system here.

That is the conclusion which men like David Lubin and other students of agricultural conditions have reached. They are trying to get Congress to understand what they want done. They have asked for legislation to help organize, to lead in organizing, our agricultural community in this manner. They don't want the Government to do the business, but to help the people to do it for themselves.

Instead of legislation to help carry this ideal into operation, Congress has been proposing a system of land-mortgage banks, which is a good thing, but a different thing. We need a system that will make land-mortgage credit cheaper; but in addition we need the organization and consolidation of individual rural credit. It is this latter project that has recently been claiming the attention of David Lubin, of R. C. Milliken, of a group of the advanced students of agricultural conditions, and—what is very much more important—of a big body of the farmers out on the farms, who have been reading and studying.

If you think this story is going to bore you because it's a financial yarn, forget it. I recollect that when I was seventeen years old I went away to sell books during vacation. Instead of accumulating coin, I got as far from home as my cash would carry me, and then got several hundred billion malaria germs in my system. They gnawed away at my interior furnishings until I realized that it was time to start for home. But I was broke.

After due and very solemn consideration of the inadequacies of our credit system I went to the bank in the town where I happened to be, about 600 miles from home, and told the cashier I wanted him to cash my check on the bank at home.

I mentioned that I had no balance there, but would be home in time to protect the check satisfactorily.

The man seemed edified, and, business being slow, he took time to question me. "You know, young man," he said very impressively, "that it's unusual to have a perfect stranger ask you to cash a check on a bank where he admits he hasn't an account."

I Borrowed \$20 and Loaned \$20

I conceded the possibly unique quality in the transaction, but, for want of a better argument, urged that I needed the money. After some more parleying the man decided that I looked honest, and said he'd take a chance. He let me have the \$20 I needed.

Fifteen years afterward that same man turned up in the town where I lived, and borrowed \$20 from me while he was awaiting a remittance.

This story about rural credit is about *your* troubles borrowing money. You're interested in it, and if you don't believe me I hope you may meet a less trustful cashier than the one I have described, next time you try to borrow.

But about the rural credit business. In France they engrafted the business of rural banking onto a system of rural co-operation in buying and selling. The co-operative marketing and merchandising concerns came first, and were very useful, just as they are wherever we have them in this country; and, by the way, they are now multiplying fast here. In 1884 they passed legislation to foster and facilitate the formation of these co-operative syndicates, as they call them. Ten years later the scheme of personal agricultural credit was formulated into law, and these co-operative syndicates were taken as the basis on which to build. A neighborhood group of people may organize a local bank with either limited or unlimited individual liability. That is, under the system of unlimited personal liability every member is liable for the full amount of any loss sustained through the bank's operation; under the other the personal liability is strictly limited.

Each of these banks, or societies, can receive deposits, loan money, and secure its proportion of the financial assistance the Government gives to the system. Suppose the local society, at a given period, finds it does not have money enough on hand to meet all the demands. A customer asks for a loan. The managers of the society, being his neighbors and intimates, know him and his reliability. They have all dealt with him. They recognize him as "good" and take his note. Being approved by the managers of the society this note receives the indorsement which indi-



It's the Farmers' Business, Isn't It?

By Judson C. Welliver

cates that approval. It goes to the regional bank.

These regional banks are the next higher-up stratum in the system. The regional bank's officers will look over that note. They will not be personally acquainted with the maker of the note, but they will be acquainted with the character and reliability of the local bank that has indorsed it; and on the strength of that indorsement the regional bank will again indorse it. Thus indorsed and guaranteed that piece of paper is regarded as of the highest quality; the Bank of France will invest in it, and the other great financial institutions of the country are not only willing but anxious to take it, because experience has proved that it is a highly desirable and liquid security.

That is in brief the system by which the French farmers are, first, banded together in local co-operative associations to help each other, and how these associations are later hitched up to the great Bank of France, the most powerful institution in the world.

I have described this French plan because it is

ciate this big federation into a national organization, and attach it to a great general banking institution, which he would call the Bank of America.

The local credit society would be organized on the basis of unlimited liability of members. It would have a very narrow territorial range of operations, so that the officers would be able to have personal acquaintance and familiarity with the credit and responsibility of everybody in the region. Milliken suggests that not over 50 square miles be included in the territory of a particular bank. He would have the officers do all their work free. Perhaps small fees would have to be allowed, but in any case the expense of management would be very small, as has been proved by the experience of Germany, France, Italy, Hungary, and other countries. Finally, he would not have these banks receive deposits at all. The system of deposit banking is very expensive and leads to piling up great financial resources in the control of the bank managers. This system would train people to become investors. An individual with a little free money, instead of depositing it in a bank and letting the bank manage the business of investing it for him, would, say, buy some of the commercial paper

which this agricultural credit system would constantly be putting out; perhaps he would buy the long-time mortgages which the proposed land-mortgage bank would issue. At any rate, he would get into the habit of buying securities direct instead of having his money deposited in a bank which would do his investing for him, and do it at great expense. Will it work? The answer is that it does work in other countries; that France has a model system for us, organized on a strictly national scale; and that that system has made France the financial capital of the world, while at the same time conferring immense benefits on French industry and agriculture.

The Bank of America would correspond in the American system to the Bank of France. It would be a regular commercial bank, like the old Banks of the United States. At the outset the Government would grant a loan of \$10,000,000 to the rural credit system; and this would be paid back out of the earnings of the Bank of America in excess of 6 per cent annually, exactly as the Bank of France turns over certain parts of its surplus earnings to the French rural credit system. Likewise, the Bank of America would be the apex of the whole system, as is the Bank of France in France. There would be a regional bank in each State, combining the interests and responsibilities of all the local societies or banks in that State; and these 48 state banks would be federated together again in the big national head of the system.

This is How We Would Borrow Money

Now note how under this system you would borrow money. Being a farmer, you might need five dairy cows. You go to your local society and state the case. The society officers decide that you are "good" for the amount. So you draw a bill of exchange against the association. The bill is not unlike a note of hand, but it states the purpose for which the money is to be used, indicating that you are buying five cows with that money. This makes the credit which you get productive credit; it is really working for the production of more wealth. If your credit is good and your proposed investment is approved, the local society indorses the bill and sends it to the regional bank in your State, which in turn indorses it again, sends you a check for your money, and offers your bill for sale in the general investment market. All the members of your local society are liable for the full amount of your note. That means, their officers will be mighty careful to see that you don't buy anything except the five cows with the money; and they will be interested to see that you take good care of the cows too.

This is in a very rough way the adaptation of the French system to American conditions. The substitution of the bill of exchange for the deposit banking system would be well-nigh revolutionary in this country. Perhaps we are so accustomed to deposit banking and its great convenience that Americans would be slow to make the change, but the manifest economies are strongly urged in its favor. As soon as one bill of exchange has been sold in the general investment market the money would be sent back to the local society, and would be available to buy another bill. Thus the actual money would go on and on, turning over and over as often as the general community's capacity for investment would enable it to take the paper.

Just one observation about this project. It would mean a vast change in the banking methods of a large element of the American people. But it is a system which is attributed very much of the improvement in the condition of the agricultural people of France and of Germany. It has done very much toward democratizing and strengthening the whole financial system of those countries. It would steady financial conditions in this country, would enable the great farming population to get money which it is not always able to get, and to get money for lower rates than now. It is a plan that, in some form or other, seems certain at length to be understood by the public, and, once understood, to be adopted because the increasing necessities of the country will force its adoption. Such a plan will be the means of quieting the just demands for credit because it will meet those demands in a way that will be satisfactory. It deserves the consistent thought of all American people, but especially the farmers.



Go, Mr. Farmer, your fetters are arguments in favor of it

the plan that is proposed to be adapted to American conditions, and brought here. This is what Lubin, Milliken, and others are bringing to Congress.

Mr. Milliken's project, which is indorsed as sound, feasible, and highly desirable by the best qualified students of finance, requires the establishment of some instrumentalities so big that they make these French institutions look puny. Naturally too, for the instruments of American agricultural credit would need to be big in proportion as American agriculture is big and important.

Just think of this; if our farmers were organized as are the farmers of Germany under their Raiffeisen system, and doing business in proportion, the business of our system of agricultural banks would amount to between fifteen and twenty billions of dollars a year!

We have observed that the agricultural credit system of France is thoroughly democratic, yet is appealed to the Bank of France. Milliken proposes first to organize the farming community in local societies; to federate these by states; and then to asso-

Dolly Second

A Story Wherein Sex Equality is Tested. In Two Parts—Part One

By G. Henry

"I AM the only one is spek English 'roun' here, so the boss is sen' me for see you," said Napoleon. He stood before her, hat in hand, a medium-sized, kind-faced old mau with twinkling blue eyes. Dolly had tried to talk with the big Canadian farmer and with his wife, but had failed dismally. They did not understand her school French; she did not understand their Lower Quebec patois. Therefore she welcomed the advent of Napoleon Le Blanc.

She smiled alluringly at him, and Napoleon caught his breath. He admired these tall, athletic, brown-haired American girls who upon occasion could use their eyes like French women.

"I am looking for a good driving horse," she told Napoleon. "I heard that these French Canadians had lots and lots of wonderful road horses as well as their great draft animals, and I want to see them."

"The boss have two, t'ree horse w'ich is very fas' on the road," said Napoleon. "I will talk with him 'bout you."

He motioned Dolly to a seat on the broad veranda, where she remained in cool comfort looking at the St. Lawrence a few hundred yards distant, while Napoleon went inside to consult with the Canadian farmer, Jules Lefevbre, who owned the biggest, richest farm in the very prosperous vicinity of Trois Rivières.

Presently Napoleon returned and beckoned to Miss Dolly to accompany him to the great barns which were situated some distance in the rear of the farmhouse.

"You are not ax me, made-moiselle," explained Napoleon as they walked through the grass, "but I will tell you how it is I am spek English when no yudder maus is spek English. I am a chef an' I have work on your country. That is where I learn your tongue."

Meantime three horses—a sorrel of uncertain age and her bay son and three respectively—had pushed their heads over a rail fence near the horse barn and were whinnying welcome to Napoleon.

"There it is," said Napoleon, pointing at the three. "There it is the old mare an' her children. One is Bon Homme, an' he is four year' old; an' the yudder is Celeste. Celeste she is t'ree year' old. The mother is the best horses ou Lower Quebec, an' his son an' his daughter is bettaire as her."

At which Dolly, irrepressible American girl, laughed musically. Looking into the eyes of the gallant old chef who seemed so out of place on the farm, she repeated after him: "The mother is the best horse in Lower Quebec, and the son and daughter are better than the mother. Truly, Mr. Le Blanc, you are a wonderful salesman."

"You are look' for good horses au' I am tell you the truth," Napoleon remarked in a matter-of-fact tone.

Dolly walked to the fence and was much pleased when the mother of Bon Homme and Celeste permitted her nose to be stroked, even resting her head on the girl's shoulder.

"She is very—very—" Napoleon hesitated for a word and Miss Robinson supplied it.

"Gentle," she suggested. "Yes, she is very gentle," said Napoleon. "She is not kick or bite. She is love ev'rybody an' ev'ryt'ing," he added with growing enthusiasm.

"And I shall name her Dolly Second," Dolly cried, throwing one arm around the mother mare's neck. "She shall be Dolly Second, and she shall prove a great truth, Napoleon."

As she patted the old mare's neck Bon Homme and Celeste approached. In a moment the American girl had three horses courting her favor. They pinched her pretty cheeks with their lips and nosed her until she was being pushed from side to side, delighted with her experience.

"Are you buy it, you t'ink?" Napoleon asked after a few minutes.

"If they are the wonderful road horses you say,—and I have no doubt they are,—" she assured him, "I certainly shall. I believe I'll buy them anyhow, if Farmer Lefevbre will accept a price within reason."

"I a'nt know the price," Napoleon said.

Miss Robinson did not reply. Instead she backed away from the fence and clapped her hands, whereupon newly christened Dolly Second, Bon Homme, and Celeste bounded away and stood with their heads lifted high, their ears pointing straight at the girl who had startled them.

"Now let's see you move!" cried the girl, again clapping her hands, and away whirled the three, galloping for a few rods. They all settled into natural road gaits, the mother pacing, the son and daughter trotting with a freedom of action that brought gurgles of admiration from the girl. "Graud! grand!" she cried. "See Celeste's stride, will you? And see the proud mother leading her family! I want those horses; I want that family, Mr. Le Blanc."

Napoleon was all smiles, and his eyes opened wide when the American girl gathered her skirts tightly and vaulted the low fence. In a moment she was whistling at the three horses and they ceased their

wild race across the pasture. For an instant they stood looking at her. Then all returned slowly to meet the girl, who was walking toward them with her arms extended. Napoleon was not idle. Running to the house he came back with several lumps of sugar and a handful of carrots which he handed to the girl. Miss Robinson seated herself on an old dugout water trough, utterly regardless of the damage to her fine clothes, and the equines and the girl held a love feast. When the girl first bit a piece of carrot and then gave Bon Homme a bite from the same vegetable, Napoleon whistled his approval.

"You know, Mr. Le Blanc," Miss Robinson said, "a woman has to flatter the male sex, even to horses."

"Bon Homme he is very gallant," said Napoleon when he observed the dainty way in which the colt nibbled the carrot.

Miss Robinson suddenly became businesslike. She looked over Napoleon carefully. Her face took on the expression of a business man who is about to make a proposition to another business man.

"Mr. Le Blanc," she said, "would you care to leave your present employer and go with me?"

"I am here because I have no yudder place, miss," Napoleon replied. "I am glad for go on the State again if I have a chance. I like much spek English."

"If I can make a deal for the horses I should like to

Dolly was writing a check. "Give this to him," she interrupted. "And ask him, Mr. Le Blanc, if I can't put up here for a couple of weeks. I'll not put them to any trouble; I'll do as they do. I would like very much to stay until I get acquainted with Dolly Second and Celeste."

After a few minutes Dolly heard footsteps, and turning she saw the farmer—a man over six feet tall, with immense shoulders, full beard, a typical habitant—who greeted her with a sweeping bow and an elaborate gesture toward the open door of his house. Napoleon explained the pantomime. "You shall be his daughter for as long as you please, say M'sieu' Lefevbre," he said.

In the evening they hitched up Dolly Second and Bon Homme, at the request of Farmer Lefevbre, who harnessed his own horse too and trotted just behind Napoleon and Dolly to watch the race. The girl drove Bon Homme, Napoleon held the reins over the mother of Bon Homme. The road was smooth. The moon was shining. The St. Lawrence, along which the road was built, looked peacefully beautiful. Miss Dolly could not resist the temptation to coax Bon Homme for a few links of speed. —Chef Le Blanc will never forget his ride. He often tells the story.

"Miss Robinson was in front. She pull on her line an' Bon Homme he stick up his nose. Miss Robinson she jes' touch Bon Homme his neck wit' her long whip, an', m'sieu', you ought for see Bon Homme! In one, two minute he is go lak the wind. Bon Homme his mother a'ut lak for see her son go so fas' from her, an' she too commence for go. I pull on the line, an' the more I pull the more the old mare pull an' go. That girl she is laugh an' laugh wheu she see me catch up when I a'ut want for catch up. Then the old mare is have her nose close on Bon Homme his wheel, she go a little faster, an' we pass by."

Miss Robinson was immensely pleased by the showing made by Dolly Second. The next evening they took out the brother and sister, and the girl chose to drive Celeste—and Celeste proved clearly that she was more speedy than Bon Homme, and Napoleon couldn't quite understand why Miss Robinson was so exceedingly jubilant over this, even if she did own the sister and not the brother.

There were tears in the girl's eyes when she sprang from her buggy to help Napoleon adjust a blanket over Dolly Second. "I'll never do it but once more, Dolly dear," she exclaimed, throwing her arms around the old mare's neck. "Just once more—and on that occasion you must beat a young horse that is as proud as his owner and master."

She turned to Napoleon. "We will start for my home Monday, Napoleon," she said. "You go into town to-morrow and arrange to ship the two horses." [TO BE CONCLUDED]



"She pull on her line an' Bon Homme he stick up his nose"

have you come with me," Miss Robinson said. "And you say you are a chef? Well, after we have—after we have accomplished our purpose with the horses, perhaps you can get a place in our city, or even in my home. Will that do?"

She named a price which seemed to please the old chef. "I am hope you mek it a bargain for the horse, miss, an' I shall serve you lak a Frenchman is always glad for serve a lady," he said, bowing extravagantly.

So they returned to the house, where Dolly remained on the broad veranda whilst Napoleon talked with Farmer Lefevbre inside. After a few minutes he came out to her and said, "M'sieu' Lefevbre he say he mus' know w'at use you mek of these horse' before he let 'er go."

"Tell him their home shall be even better than the home he has given them. Tell him I want them for myself, and you—to drive; that's all. They shall not work."

Napoleon was re-entering the house when the girl called to him. "Find out if they have any pedigree."

Once more Napoleon returned from a consultation with Mr. Lefevbre. His face was rueful; he seemed much disturbed. "I guess you a'nt want it the horse, miss," he said sorrowfully. "M'sieu' Lefevbre will not for sell the young Bou Homme. M'sien' Lefevbre he say he mus' have him to remem'er the family."

"Well, since I wouldn't have any particular use for Bon Homme, that doesn't matter. Did you talk price?" the girl asked.

"M'sieu' Lefevbre he say," replied Napoleon in slow, carefully chosen words, "that he t'ink much of his horses, of the mother anyway. An' he is ax six hundred dollar' for it, for the two. It's much money, but—"

entrance too large or the sparrows will drive Mr. and Mrs. Wren away as sure as anything.

I have a box on the woodhouse, and in the spring-time when the wrens built in it I derived real pleasure watching their energetic actions. The kitchen is arranged so I can wash dishes in front of a window, and truly much of the drudgery of dishwashing is done away with when I can watch the happy home-making of the birds.

I have found from experience it is best not to place a little platform beneath the door or opening, for the wrens can cling to the edge of the box and work long sticks in that little hole. They are skillful and it is wonderfully interesting to watch each step of the nest-building and the feeding and rearing of their family.

I have another box in a rose arch in front of the house, and when I am sitting on the piazza back of the vines I am greatly amused and delightfully entertained by the little birds going right on with their daily work.

I have a place arranged for water for them. I also have a platform built from one kitchen window to a bush, and after each meal the crumbs from the bread board and other bird food is easily placed on this grand stand for the birds, just by opening the window.

This idea is really a delightful one and I hope that many housekeepers will try it and get the pleasure from it that I do. It relieves the drudgery of kitchen work and makes a host of little songsters happy.

And then after all of this is said and you have given the birds credit for their beauty and their songs, you remember that they pay for themselves in the garden. They are incessant workers there and remove the insects that do harm. Keep the birds your friends!

Welcome the Birds

By Cora June Sheppard

IF YOU love the birds—and who doesn't?—try to help them. It is the best music one can enjoy to have the songsters around the home. Make boxes and put them up in proper places. The dear little wren is easily tempted to make a home in your dooryard. Do not get the

The Experience Bazaar

Editorial Note—Here is an open market for the exchange of experiences. Will you not bring your problems and leave them behind? Will you not give and gather the fruits of experience? To give freely and take gratefully is to live wisely.

DEAR FIRESIDE EDITOR: Many a dining-room is a dreary place with grimy walls and torn paper, the latter of a dark hue, and the food blackened with clustering flies. Some people think, "Oh, anything is good enough for the hired man!" and the place is hot in summer and cold in winter, with walls bare as a barn, except for the old garments hanging about on nails.

There are other dining-rooms built with a door at each end so that a cool draft can blow through in summer, yet on the warm side of the house for convenience on bitter days in winter. The walls are neatly papered with some light paper that makes the room brighter; the ceiling is high, and here and there on the walls are interesting pictures of animals or farm scenes. Even a free chromo is better than a blank wall, but gaudy frames detract from the picture. Screen doors, wire fly traps (baited with milk), and care keep flies from dishes and from annoying the person eating, and food eaten under such conditions is quickly and easily digested and the farm hand goes back to work in a peaceful frame of mind, while the visitor is sure to remember the meal pleasantly and will want to come again, if it be only a common, everyday bill of fare.

The kitchen should be next to the dining-room, large and cool, so that the cook can labor with comfort and the visitor be glad to don apron and help.

I have been not only the "hired man" on other farms, but cook, also, on my own. If you have a neat room and a welcome, you don't need a mat saying so.

C. E. D., Maryland.

DEAR FIRESIDE EDITOR: I have been a reader of FARM AND FIRESIDE for a good many years, and hope that I shall live to read your paper for a good many years more. I have read the serious questions asked by a certain Mrs. B. This woman has my hearty sympathy. A man should value a woman's work just as much as his own, if she does work. But some women only get married to be a very expensive luxury for their husbands. I approve very much of the reply Mr. Quick gave to those questions; in fact, I was ahead of Mr. Quick, because when I first got married I brought home my

earnings, and my wife could help herself to them, just the same as I, so long as there was any money left. In all dealings and transactions my wife was consulted, and I must admit that I never had to feel sorry for it. We had very few quarrels, and if we did have any the outside world never knew anything about them. We saved a little money, built a nice home, paid our debts, and raised children. But my first wife was called away from this earth. When she died I was left with quite a number of mostly small children. I had housekeepers, and I have the very same opinion of the American housekeeper that Mr. Quick has about the American restaurant cook.

I would do the same way that I had done before: turn over my earnings where both of us could help ourselves. But I suffered some bitter experiences. The money went a good deal faster than I could earn it. My wife kept money for herself and spent what she wished, never consulting me. The will I made was not satisfactory to her, as I made provision that she should have the use of the home only until my children were all of age. But I never learned anything about her will and what provision she made for me, if she made any. Finally we could not agree, and she has left me. I am not sorry about her leaving, but she is trying to make me responsible for her support. I am sorry that I married again. Marriage is a lottery, with many chances but very few prizes. I should like to have somebody's opinion on this case.

M. X.,
Pennsylvania.

DEAR FIRESIDE EDITOR: I want to tell you why we are farming to-day. I was raised on a farm and loved farm life. When I was married we moved to Jacksonville, where my husband was employed in railroad work. One day I noticed your paper offered as a premium, and we both read it until we left the city and came back to the farm to put into practice some of the things we had read.

We have twenty-five acres of land, eighteen under cultivation and the rest in wood, some of it so thick with pine trees that teams cannot pass each other. We have all the wood that we will ever want.

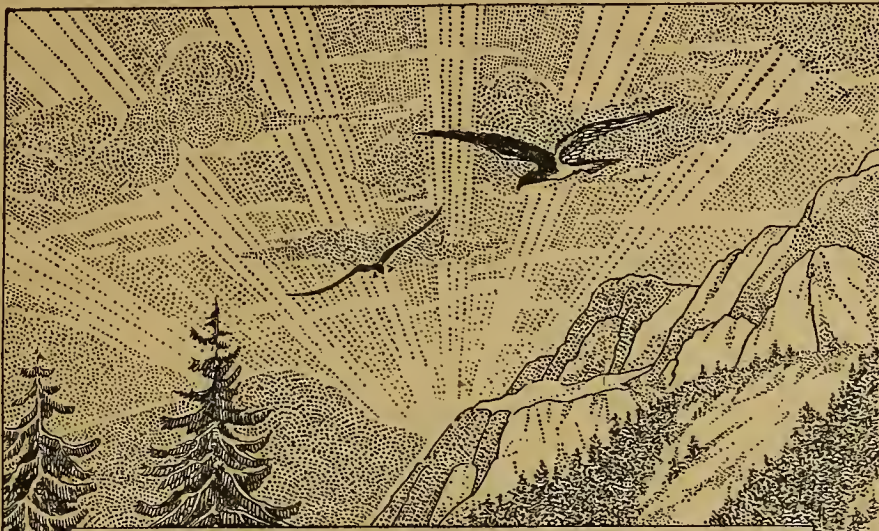
We have made a success with our farm and chickens. We plant sugar cane, cotton, peanuts, Irish and sweet potatoes, oats, and have something growing all of the time. We keep about six cows, and sell off some each year. Hogs, yes; we sell porkers, from forty to fifty head, that bring \$5 to \$10 apiece. We plant a patch of collards and gather the first leaves,

and then let them grow and the pigs feed on them.

We have good friends, and plenty of them. Our home is pleasant, at least our city friends say so. We raise lots of watermelons, and they say they love to come out and help us feed the pigs.

Your paper will always be on our table.

Mrs. J. C. B., Georgia.

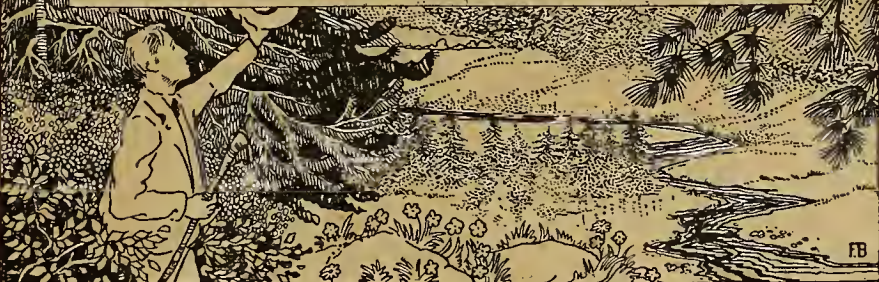


The Strength of the Hills

By Phila Miranda Parmelee

OH, YOU who feel your task too great to bear,
Who shrink in fear at Life's sore grief and ill,
Lift up your eyes and bid your hurt be still;
Possess your soul, nor yield you to despair,
But learn at need to live above your care.
The eagle buildeth high upon a hill,
Where purer vital air he wings at will;
Go, bare your soul amid silent places there.

For thus shall you against your hurt prevail;
For narrow vision finds the greater light
To see beyond the littleness at length,
And gain a power that will not let you fail;
Aye, in the stillness, Seeker on the Height,
The mighty hills shall give you of their strength.



I believe there are some good housekeepers, but they are hard to find. Finally I decided to marry again. We both had property, and both had children, about the same number and ages. We decided that each of us would hold his respective property for his own children, and should we accumulate any more it should be divided share and share alike. I thought

Housewife Club Recipes—Early Berries and Cherries

ABOUT the first available fruit for summer desserts is the gooseberry, which, though its sourness in its natural state makes the tongue pucker and the eyes water, is nevertheless capable of transformation into several very good dishes. England is the land of the gooseberry, and there one meets with it in every guise. One of the most familiar is gooseberry fool. To make this dish, top and tail the gooseberries, and cook them with a very little water until they are soft enough to mash. Put it through a sieve, sweeten it well, and to every cupful of pulp stir in a cupful of cream, adding it very slowly, or else it will curdle. Pour it into a glass dish, and serve very cold.

To make a baked gooseberry pudding, cook and strain the berries as in the preceding recipe, and to one pint of the pulp add three beaten eggs, two tablespoonfuls of butter, a cupful of bread-crumbs and sugar to taste. Beat the mixture well, and bake for about forty minutes; sprinkle thickly with powdered sugar, and serve.

Try these cherry puffs. Stone ripe cherries, and put a heaping tablespoonful in the bottom of each buttered custard cup. Make a nice biscuit dough of one pint of flour, a half teaspoonful of salt, a teaspoonful of sugar, a teaspoonful of

baking powder and two tablespoonfuls of butter, all rubbed together and sweet milk added until the dough is soft enough to drop from a spoon. Drop enough into each cup to fill it two thirds full, and steam for half an hour. These are delicious served with either hard or liquid sauce. If preferred these could be baked in the oven instead of steamed.

On a busy day some rice may be boiled and drained and pressed into a buttered bowl to mold it. After a minute turn it out on a dish, and pour around it a cherry sauce, made by cooking seeded cherries with sugar and a little water and just enough lemon juice to give it a good taste.

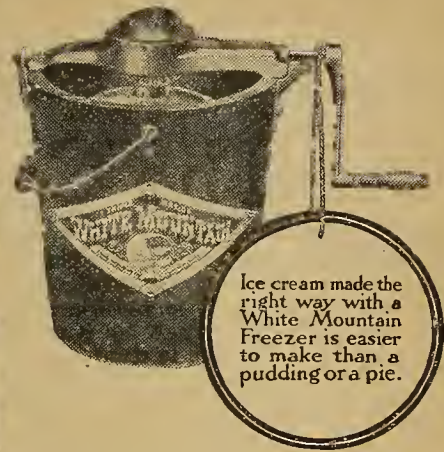
Another good dish is made by filling the bottom of a shallow baking-dish with a mixture of currants and raspberries. Pour over the fruit a custard made with two eggs, a tablespoonful of sugar, one and one-half cupfuls of milk and half a teaspoonful of vanilla. Of course the fruit must be well sweetened before the custard is added, and the whole is baked till well browned.

A very simple and easily prepared raspberry dessert is made with the fine tapioca. To a quart of berries, take a pint of water, and bring to a boil. Stir in three heaping tablespoonfuls of the tapioca, and let cook till it is clear, about

fifteen minutes. Stir in sugar to taste, and pour into a mold; when cold it should be served with cream.

Berry dumplings are made just like apple dumplings, and served with a hard sauce, into which is beaten as much crushed fruit as it will take.

A delicious and simple pudding is called "Rothe Gruetze," or we may call it a currant-and-raspberry mold. Cook red raspberries and red currants together till very soft, then press through a sieve, sweeten well, let it come to a boil, and thicken with corn-starch. Pour into a mold, cool, and eat with cream.



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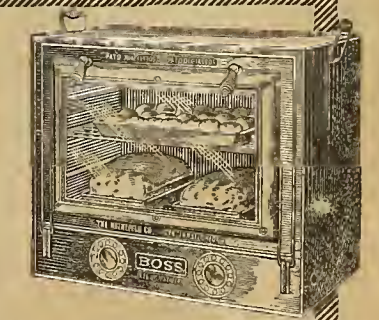
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Sunday Thoughts That Enrich the Week

The Community Builder—By the Rev. Harry R. McKean

SOMETIMES we hear that the country church is dead. These articles (this one is the fourth of a series) were written by a minister who does not believe it is dead, and who has done a great work in keeping it alive and in making its life worth while to the community.

ONE day one of the teachers of a class of intermediate girls came into the pastor's study and made this inquiry: "What are we going to do for the smaller young folks this summer? The school is out. The boys are loafing about the streets, and the girls have little to do." "What do you suggest?" was the query.

"A playground," was the answer. "There are five acres of land north of the church here that the owners have forgotten about. Why not use it?"

"But the money?"

"Mr. McKean, I believe the children of those four intermediate classes (two boys' and two girls' classes) will finance this playground themselves. I'm willing to try it if you will oversee the work."

So to work we went. The grounds were laid off, the children gave an ice cream supper or two, and a subscription was taken among the parents. Over sixty-five dollars was raised before the work was done.

Swings, teeter-totters, swinging bars, croquet and tennis courts were arranged, and the baseball grand-stand was moved to the new plot of ground. A fine light of 1,000 candle-power was purchased so that the grounds were nicely lighted at night.

Children came to the playground as early as 6:30 in the morning and remained until 9:30, the closing hour at night, going home only for meals.

The evening from 6:30 to 9:30 was the gala time. The usual number present was about one hundred, but on one special evening the countryside came to the number of three hundred and fifty.

Order was maintained by a monitor in charge—one of the teachers in the Sunday school, who had authority to send any misbehaving pupil home. This penalty was very seldom necessary.

Thus this church ministered to the spiritual needs of the young people through the preaching and class study; to the intellectual through the library; to the social through the gatherings at church and home; and to the social and



Children came to this church playground at 6:30 in the morning and stayed till 9:30 at night

physical needs through the playgrounds.

The result has been most gratifying. An average of more than 125 young people under the age of twenty-five attended services at this church every Sunday evening. Most of these were either directly or indirectly affiliated with some of the activities of the church. The pastor has counted as many as 163 young people under the age of twenty-six at the evening service.

To get them to join the church was a difficult problem. They were prejudiced by years of training under men who taught isms and dogmas about religion, whereas real religion means a good life.

Heretofore nothing had been expected of them. Everything necessary had been done, and they felt no burden upon their shoulders. That particular group of young people, save in exceptional cases, never will attain to the heights that

would have been possible had they started some years sooner along the lines indicated above. In fact, the group now coming into manhood and womanhood will surpass them as efficient workers in community development.

The thing that is true in this particular community is true in the large majority of the small communities all over this country of ours. If the church, school, or community of to-morrow is to do its full duty in being efficient, it must begin preparation to-day.

The church that depends entirely upon what is specifically called the "spiritual" to build character in the lives of either youth or mature persons will fail, because the individuals will not come to it.

The religion of the church must be taken into the social, intellectual, and physical. Every act of the individual really has a religious element. The attempt to separate religion from the ordinary events of life has wrought sad havoc with religion, and has weakened the church and in a way separated it from the world it would serve.

We had a Ladies' Aid Society. It was a good one. The principal business was aiding in raising the pastor's salary. Its share was something like twenty-five per cent of the whole budget. This kept the women so busy with serving dinners at public sales, giving chicken-pie suppers, holding ice-cream socials, bazaars, and quiltings that they had no time for real social enjoyment. They met every Thursday to quilt, and about ten of them put in at least four or five full afternoons to earn a dollar.

It is too bad that the energies of so many such bands must be devoted almost exclusively to raising money to pay salaries. Certainly that is not the way salaries should come.

These women made money. Indeed, their zeal sometimes led them to forget their morals, as this story illustrates:

Many a young man measured the church and its religion by the size and quality of the ice cream and cake served at the socials.

"Give small dishes and small pieces," said one woman; "it is for the church and folks won't care."

That same evening a young man was overheard to remark: "That looks like 'gospel measure,' doesn't it? That's the way with the church, preaching one thing and practicing another."

And—he was right.

The Little Kitten Waif—By Harry Whittier Frees

Copyright, 1913, by Harry Whittier Frees

AMONG the kittens of Kitty-cat-land was a dear little puss by the name of Dolly Darling. She lived in a beautiful home and had everything that any little kitten's heart could long for. Her favorite pet was Dancer, a dear little dapple-gray pony.

After supper was over one rainy day, Dolly sat in her playroom putting her dolls to bed. Suddenly there came a noise that sounded just like a knock on the door.

She went to the door and opened it, and there, just outside the door, crouched a tiny kitten no bigger than Dolly herself. The poor little stranger was wet to the skin and shivering with cold.

"You poor little thing!" cried Dolly at once. "Come into the house while I run and tell Mother."

"You poor little thing!" repeated Mother Darling as soon as she caught sight of the forlorn little visitor. "Where in the world do you live, and what are you doing out in this terrible storm all by yourself?" she asked.

"I have no home," replied the little kitten sadly. "I've always lived in an old tin can instead of a house, and when the rain came it filled the can with water. All day long I've been wet and hungry, and when I saw the light shining through your window I knocked on the door. Please—oh, please don't send me off!" Her voice was pitiful.

"Indeed we won't!" said Mother Darling kindly. "But first of all you'll have

to change your clothes, or else you'll catch your death of cold. I'm sure that one of Dolly's dresses will just fit you."

After the little stranger had put on a clean dress and had had her supper she was quite a different-looking kitten from the one that had knocked on the door a little while before, all wet and miserable.

"And what is your name?" asked Dolly finally, as she showed the little stranger her toys.

"My name is Cuddles," answered the little kitten shyly.

"I like Cuddles for a name," re-

plied Dolly. "And I like you too," she added, throwing her paws around her.

From that time on the two little kittens were the greatest friends. The next

morning Dolly took Cuddles to see her pony. They fed him a lump of sugar. "After dinner," said Dolly, "I'll hitch Dancer to his cart and we'll take a ride."

Cuddles had never had a pony ride before, and she was so delighted that she purred as hard as she could purr all the time.

"I think Dancer is ever so nice, and I like him ever so much," she confided to Dolly when they cuddled up in bed that night. "But I like you ever so much better," she finished. And these two little kittens went to sleep with paws

live with them always like a sister. "Oh!—oh!—!" exclaimed Dolly at once, so delighted that she hardly knew what to say.

And when Cuddles herself learned that she could always make her home with Dolly if she wished, she was as happy as any little kitten could possibly be.

One morning Dolly and Cuddles got up bright and early, and as soon as breakfast was over started away for a walk through the woods. Just as they came to a big tree they heard a peculiar buzzing noise and stopped to find out what it was.

"It's a bee's nest," declared Dolly finally, as she discovered the bees going busily in and out of a hole in the tree. "Wouldn't it be jolly to get some honey," suggested Cuddles.

So these two foolish little kittens decided to stick their paws in the hole in the tree and pull out a piece of honeycomb.

But they had hardly reached the tree before the bees got very, very angry and one of them stung Dolly on the ear, while another stung Cuddles on top of the head.

They both started for home as fast as their little legs could carry them. And after Mother Darling had wiped a way their tears they told her all about it.

"You silly little kittens!" said Mother Darling. "That all comes of meddling with things you know nothing about. Little kittens should never be inquisitive or they will get into trouble."



"My name is Cuddles"



Dolly Darling had everything



"I've always lived in an old can"



No. 2544
No. 2369

Interesting News About the New York Girl's Costume

The lingerie blouse appears this summer in such colors as lemon-yellow, Bermuda pink, green, tan, and tango red.

Hat trimmings of lacquered ribbon are very modish. This shiny varnished ribbon usually ornaments a straw hat equally shiny in appearance.

Roman stripes appear everywhere and on everything. Short jackets, tunics, sashes, collar, and cuffs are made of this popular silk, and even hats have crowns of Roman striped silk.

A taffeta silk dress, says Fashion, must be in every smartly dressed woman's outfit this summer.

Small fruits in bright tones are often substituted for the tiny flower trimming on hats and gowns.

The wide skirt, and much discussion about its revival, is occupying the minds of the big New York dressmakers. So far, however, it is only the long tunic that shows any great width at the bottom.

The long sleeve of tulle or net is often employed in the afternoon gown. It may be tight-fitting or in Bishop style; but one rule it must follow, and that is, it must extend well over the hand.

The high ruche of lace or net still finishes the neck of many blouses, though the wide flaring collar of linen in Gladstone, Incroyable, and Directoire effects is used on a great number of the summer frocks.

The crownless hat is a summer novelty prophesied to be very popular for warm-weather wear. It may be made of straw or silk combined with lace.

The wide sash, wider and looser than ever, trims gowns of silk or tub fabrics.

No. 2544—Low-Neck Yoke Blouse

32 to 40 bust. Material required for 36-inch bust, two and three-fourths yards of thirty-six-inch material, or one and three-eighths yards of fifty-six-inch material. This blouse is such a comfortable one to wear because the sleeves are set into large, roomy armholes. The price of this yoke blouse pattern is ten cents

No. 2369—Three-Piece Skirt: Front-Closing

22 to 30 waist. Material required for 24-inch waist, two and one-half yards of thirty-six-inch material, or two and one-eighth yards of fifty-six-inch material. Width of skirt at bottom in 24-inch waist, one and three-fourths yards. This skirt is wide enough to be very practical. Pattern, ten cents

Pattern Coupon

Send your order to the nearest of the three following pattern depots:
Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City
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Enclosed please find....., for which please send me the following patterns:

No.....Size..... No.....Size.....

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Shetland For You



"HUSTLER" WITH HIS PRIZE BUGGY AND NICKEL-PLATED HARNESS

YOU CAN WIN

DOES it seem too good to be true? Well it is an absolute fact because *Farm and Fireside*, The National Farm Paper, is going to give away three handsome Shetland Ponies to its boy and girl friends. "Hustler," the first-prize Shetland, is shown in the above picture. You or some other plucky boy or girl will soon own "Hustler" and his buggy and outfit. You have just as good a chance as any child in America.

Send Me Your Name

Please don't wait. Just sit right down now and send me your name and address. There is lots of time for you to win, but you should get an early start. Just as soon as I learn your name and address and know that you want to win a Shetland Pony, I will send you full particulars. You will be surprised how easy it is to win "Hustler" or one of the other Shetlands. You really have three chances to win.

Prizes for Everyone

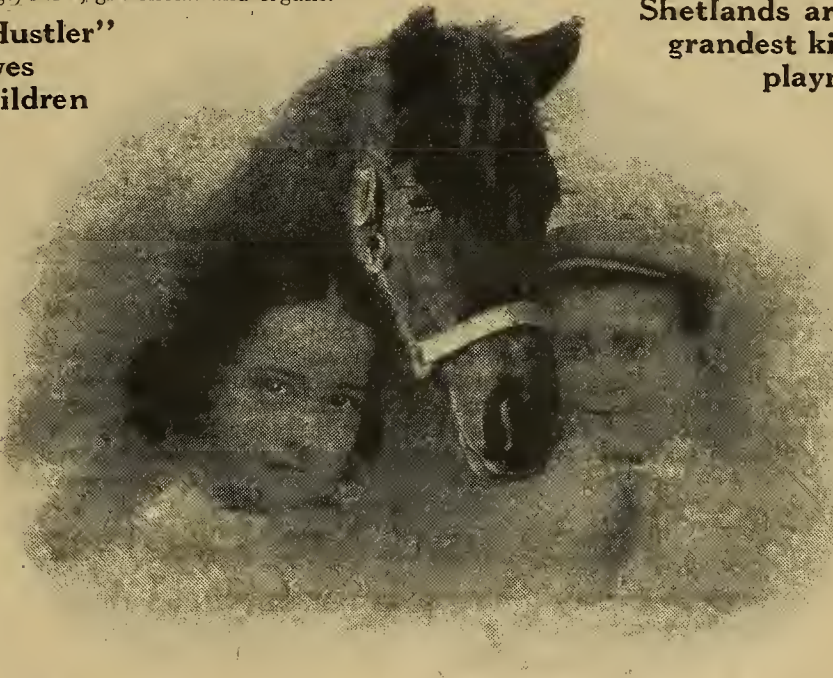
You are positively sure of a prize just as soon as you become a member of my Pony Club. You will be thankful all the rest of your life that you joined the Pony Club. In addition to "Hustler" and the two other beautiful Shetland ponies, hundreds of other fine prizes will be distributed to Pony Club Members, including such valuable articles as bicycles, gold watches, diamond rings, rifles, gramophones and organs.

How to Join

The Pony Club is not a new thing, because already hundreds of boys and girls have been made proud and happy by Shetland ponies and other fine prizes. Once you get a start the rest is easy. The way for you to get a start is to write your name and address on a post-card or a piece of paper and send it to me without delay. I will then show you how to win.

"Hustler" loves children

Shetlands are the grandest kind of playmates



The above picture shows "Hustler" and two of his very best friends. Boys and girls for miles around come to the Pony Farm just to see "Hustler." He is the most lovable pony imaginable and is never so happy as when surrounded by children

Lots of Lucky Pony Winners

Lots of boys and girls have won *Farm and Fireside* ponies. We haven't room here to print all their names and addresses, but will give you a list of the boys and girls who have won ponies quite recently. I have sent ponies to almost every State in the Union. We would not dare print the pony winners' names and addresses unless we sent them real flesh and blood ponies, because you can write to the addresses below and find out that every word we say is true.

- Duke—Won by Lurline Smith, Santa Rita, N. M.
- Colonel—Won by John Cutler, Jr., Sharpville, Pa.
- Comrade—Won by Hugh Metzger, New Philadelphia, O.
- Daisy—Won by John Kielen, R. 4, Madison, Minn.
- Beauty—Won by Wilbur Corey, R. 9, Auburn, N. Y.
- Dick—Won by Daryl Porterfield, Emlenton, Pa.
- Jack—Won by Virginia Jamison, Iola, Kan.
- Fuzzy—Won by Allen Webber, New Carlisle, O.
- Teddy—Won by Viva McNutt, Vandergrift, Pa.
- Wuzzy—Won by Marguerite Lawson, Hopkinsville, Ky.
- Pete—Won by Lena Purchell, Halcottsville, N. Y.
- Captain—Won by Howard G. Laidlaw, Walton, N. Y.
- Jerry—Won by Alf Erickson, Stanhope, Ia.
- Spot—Won by Tom Clarke Pennington, London, Ky.
- Ginger—Won by Robert Harrington, Amherst, Mass.
- Billy—Won by Herman Morton, Kernersville, N. C.
- Gipsy—Won by Leona Collins, Norwood, O.
- Tribe—Won by Irma Musante, New London, Conn.

Do This To-day. To-day is the time to get started. I want to know your name and address. If you really want a Shetland pony, sit right down this minute and let me hear from you. This is all you need to say:

Pony Man, FARM AND FIRESIDE, Springfield, Ohio.
I would like very much to win a Shetland Pony because I have no pony of my own. I will be glad to help you all I can and try to be a good member of the Pony Club.
My Name is
My P. O. Address is
State.....

Pony Man, FARM AND FIRESIDE, Springfield, Ohio

How to Make All Flour Good Flour

By R. W. Thatcher

Chief of Agricultural Chemistry, University of Minnesota

IN ENGLAND and most European countries it is the almost universal custom of families to buy their bread from commercial bakeries. Recent statistics show that eighty-six per cent of the bread consumed in Great Britain is baked in commercial bakeries. In the United States, however, it is the much more common practice for the housewife to bake her own bread, and not over ten per cent of the total bread eaten is baked in commercial plants. This leads to a wide-spread interest in the question of baking quality of flour, and an enormous variety of conditions and methods of baking.

A comparatively few home bread-makers have had the opportunities now afforded by schools of domestic science to learn the facts underlying the action of yeast upon dough, the effect of different temperatures upon yeast activities, the effect of different proportions of water in the dough upon its tenacity, rapidity of rise, etc., and are thereby able to vary their methods to meet the requirements of different kinds of flours.

The great majority of housewives have learned their method of bread-making from an experienced "master baker," usually the mother, or from long years of experience of their own.

Such experience often brings a high degree of skill in the making of bread from a familiar kind of flour, and disastrous results when a new and different type of flour is used. Each such bread-maker is then ready to declare that the familiar type of flour is a good one and that the flour with which unsuccessful results are obtained is poor or bad.

Flours Are Not All Alike

The purpose of this article is to point out the two essential facts with reference to the baking quality of flour: namely, that there are large differences in the composition and quality of flours of different origin, and that by using proper methods of handling the dough good bread can be made from almost all kinds of flour; in other words, to attempt to answer the oft-repeated question, "What is good flour?"

Wheat is grown in many different localities under widely different conditions. Of all the cereals, wheat is the most susceptible to environmental influences. It is inevitable, then, that wheat will vary widely in its composition. The wheat-grower, however, almost invariably chooses the variety or type which he shall plant from its ability to yield the largest crop per acre when grown under the conditions which exist in his locality, rather than from any accurate knowledge or serious consideration of the kind of flour which the wheat will produce. The growing of wheat of any particularly desirable, or undesirable, composition is, therefore, usually accidental rather than the result of any intention on the part of the grower.

The question as to what is the most desirable composition of wheat which is to be used for the manufacture of flour is still unsettled. Chemists and bakers do not yet know just what chemical composition will produce the best type of flour for the greatest number of different methods and conditions of baking. It is

certain, however, that some wheats will produce flours which will make better bread than others when baked under the same conditions. As a basis of comparison, therefore, it is becoming a common practice to adopt some standard method of baking and determine which flour gives the best loaf of bread by this process. This is virtually the same thing that the housewife does, except that where careful comparisons are desired the ingredients to be used are always carefully weighed out: the temperature of the water used, of the dough while it is "raising," of the oven during baking, and the length of time of fermentation and baking are all carefully controlled and kept uniform so that each flour will have the same chance.

When tested in this way, different flours will give very different loaves of bread. In general, flours from hard wheats will give better loaves than those from soft wheats. Hard wheats are those which grow in sections where the summers are hot and usually dry. Under such conditions the wheat ripens up very rapidly, producing small kernels which contain higher percentages of protein, the gluten-producing constituent, and lower percentages of starch than are found in soft wheats. The latter grow in localities where summers are cooler and the wheat ripens slowly, resulting in large kernels with high percentages of starch. Spring wheat is likely to be harder than winter wheat grown in the same locality because the grain which is seeded in the spring ripens later in the summer; when it is hotter and usually drier, than that which is sown in the preceding fall.

Fig. 1 shows a series of loaves of bread, all made at the same time, in exactly the same manner, but using flour from different sources. This indicates how great may be the variations in size of the loaf and texture of the bread due to differences in the flour itself. The housewife who obtained such results as this would not hesitate to pronounce the flour which produced the loaf numbered 7 in the illustration as bad, and those which produced loaves Nos. 2 and 4 as good.

Fig. 2 shows, on the other hand, that the flour which produced loaf No. 7 shown in Fig. 1 is not necessarily bad. All the loaves shown in Fig. 2 were baked from precisely the same weight of this flour, the only difference being in the amount of water used in mixing the dough and the manner of kneading the latter. The loaves shown in the upper row were made without any kneading other than that given when the water, yeast, salt, etc., were first mixed into the flour; in the second row the doughs received one thorough kneading after they had been allowed to rise; and in the bottom row the dough for the loaf at the left was mixed as stiff as it could well be worked, i. e., using a small proportion of water to make the dough; the next loaf was made from less stiff dough, or dough in which more water was added; the third loaf was from dough still less stiff, of the proper slackness for this kind of flour; while the loaves at the right of the picture came from dough which was so soft that it had to be handled with a spoon.

The Ingredients Were Carefully Measured

In each case the only variation was in the amount of water used. The loaves in the perpendicular rows received the same amounts of water also, the only difference between them being in the kneadings of the dough.

It would be quite easily possible for a home bread-maker who does not measure the ingredients which she uses, to vary them as much as they were varied for loaves Nos. 9, 10, and 11 in Fig. 2. In the event of obtaining bread like No. 9 she would undoubtedly

pronounce the flour bad, whereas if the proper amount of water was used to produce a loaf like No. 11 her verdict would be much more favorable.

In the bakings represented in Fig. 1 too little water was used to obtain the best results from flour No. 7, and perhaps others of the series. To decide that this flour is bad as a result of its comparison with the others of this series might, therefore, be wholly erroneous. A skillful bread-maker will, before passing final judgment on the merits of any given flour, vary the conditions of making the dough and preparing it for the oven until those best suited to that particular flour are found, before deciding upon its merits as compared with those of other flours which are available.

After the conditions for a flour have been found, assurance that the bread will always be good can only be had by always using the same proportions of ingredients and temperatures of working, and so forth. The housewife who trusts to her sense of feeling in determining the

proportions of water used, and to guesses as to the correct proportions of flour, yeast, salt, etc., is certain to get variable results with the same flour. Her success as a bread baker grows

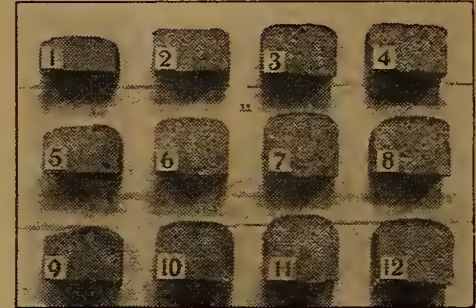


Fig. 2—Bread baked from the same flour, but differently mixed

with her experience in judging accurately the proportions of materials used, and methods of handling the loaf from the mixing of the ingredients to the final baking. Similar success can be achieved by far less experienced workers if the ingredients are accurately measured and the conditions of raising, kneading, and baking carefully controlled.

The Right Conditions Insure Good Bread

It is because commercial bakeries, working with large quantities of materials, are compelled to weigh and measure their ingredients, mix and knead by machinery which works always the same, raise and bake the loaves in ovens with temperatures properly controlled, that they are able to turn out a uniform product. For the same reason they are often able to use a flour which the home bread-maker might regard as a poor one, because under her own poorly controlled or unsuitable methods it did not yield satisfactory bread.

The commercial baker also recognizes that certain types of flour which may not give him the results which he wishes in bread-making are excellently adapted to the production of pastry. The housewife usually demands that the flour which she purchases shall be good for both bread and pastry—an almost impossible condition to fulfill, because of the different texture which the baked products ought to show.

In summarizing it may be said that there are real variations in the nature, or quality, of flours from different sources, but that a determination of the bread-making quality of a given sample can be made only when the conditions which are best suited to the production of bread from that particular flour are ascertained. Once these optimum conditions are known, the same results can be uniformly obtained if these conditions are always provided.

Trees and the Farmer's Home—By M. Roberts Conover



Fig. 1—The light has easy access to the house

WELL-GROWN trees about the farmhouse give it character as nothing else can do. Every older farmhouse has them if the owner has not cut them down. If one wants to sell his farm, patriarchal trees work toward high prices. In the immediate vicinity of the house deciduous trees are preferable to evergreens, especially in winter. Note the old farmhouse in Fig. 1. The old buttonwood before it gives a value which modernized shrubbery or tree-planting could not do. In Fig. 2 feel the tender beauty of the old homestead, because of its trees and the low picturesque masses of shrubbery. Most of the trees in Fig. 3 are south and west of the house, where they give just enough shade to prevent an uncomfortable glare under its wide restful veranda. Its location, overlooking a wide stretch of country, makes it cool in summer. Fig. 4 represents a side view of an old-fashioned farmhouse, which shows the old mode of shading the long front yard.



Fig. 3—A windbreak on the north would help



Fig. 2—Masses of shrubbery add to the beauty



Fig. 4—Then it seemed best to shade the long front lawn

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FARM *and* FIRESIDE

EVERY OTHER WEEK ~ ~ THE NATIONAL FARM PAPER

SATURDAY, JUNE 6, 1914

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GAP

A Matter of Domestic Economy

LOOK FOR
THESE GOOD THINGS
SOON TO COME!

WITH THE EDITOR



ADVERTISEMENTS
IN FARM AND FIRESIDE
ARE GUARANTEED

Good Butter—Bad Butter

In the average city home where much butter is consumed each week, and where the housewife takes some degree of pride in her cooking, the sentiment prevails that butter from the farm dairy is much better than butter made in the commercial creamery. The housewife will base her arguments on some butter she has received and found good. She does not talk about the conditions at large. Some good buttermaker has been favoring her, and that establishes a reputation for the general farm dairy. But have you ever thought how much bad butter gets to our local markets from the farm? Not as much as used to be the case when every farmhouse produced some butter, and yet there is much to be found on the markets even to-day. What are we going to do about it? What have you done about it? Is it not a fact that the production of butter on the farm is a troublesome operation to-day? If you are producing butter on your farm do you not desire to get away from it? And if you are one who has left it behind already, have you any desire to begin again? Why? Such questions does the writer of an article which is to appear in the next issue ask herself, and then she answers them to the best of her experience and ability. It is a plea for better butter, no matter where that butter happens to be produced. And we are all interested in good butter.

Plumbing in the Farm Home!

"It can't be done." Yes, it can. "How do you know?" Because it has been done. "Where?" In many places. James A. King, in the next issue, will tell about his experiences in equipping the farm home with running water and all of the conveniences that go with it. "But I live too far away from the city, and the cost of installing the outfit would be too great for me." Would it? Wait until you read what Mr. King has to say. These conveniences cost something of course, but then there are returns, lots of them. Anyway, withhold your arguments until FARM AND FIRESIDE for June 20th reaches you and you have had time to think over Mr. King's arguments. Of course his statements may not be true for your conditions, but the value of what he says lies in the fact that he speaks from experience, recent experience too. And added to this are his years of intimate acquaintance with general farm-engineering problems.

"Sorter Blind"

It is possible to be too kind—that is, to assist our family and our friends too zealously, thereby depriving them of their independence and the joy of doing for themselves. There is a story worth reading about a daughter-in-law whose affection was stronger than her common sense, and who at last learned the lesson that age does not wish to be wrapped in cotton wool and laid upon the shelf. It's coming!

Goblins!

All our children are delighting in Mr. Frees's inimitable stories and photographs of animals, dolls, and fairies. There will be a wonderful tale about a too inquisitive little girl who took the cork out of a goblin bottle and—but read it yourself and see what happened.

Cherries

Why are boys like robins, and both of them like grown-ups? The answer has something to do with liking cherries. We shall have suggestions about what to do with all those which the boys and the robins permit us to bring into the kitchen.

Now Who Was Most Surprised?

Do you remember the page entitled "Humane Methods of Starting Balky Horses" that appeared in FARM AND FIRESIDE a few issues back? Well, soon after that was published, a horse balked on the car tracks here in Springfield, and an employee of FARM AND FIRESIDE who was passing remembered the prize-winning contribution to that page.

"I didn't expect it to work," said this man speaking of the event afterward; "but they were giving the horse an awful beating and no one could start him. So I thought I'd take a chance by trying the FARM AND FIRESIDE method. I picked up the right forefoot and cramped the hoof against the forearm just two minutes while the crowd looked on. I expected to get hooted. Finally I let the hoof down, and I don't know whether the horse, the driver, or I was the most surprised: when I looked up, the horse was nearly a block away and going nicely."

SOMETHING seems to be troubling my friend R. A. Hazel of Wisconsin, but for the life of me I can't guess what it is. I think I had better just print his letter in full. Here is exactly what he says:

Your editorial "Using the Parcel Post" is probably taken for granted by those that don't know, because they have no other way to take it. Because the press, farm papers as well as the general newspapers, are sure of getting away with such statements, because the press never has nor ever will criticize or censure itself, public questions get about as fair hearing through the press as two opponents would have in a joint discussion where one was allowed to have full liberty of speech while the other must present his side of the question by his mute silence.

If we had an honest press that could do its duty to the public it would and could in twenty-four hours do something worthy of credit: but you dare not, and you know it. And I know why. Sure I know. Any block-head can tell an editor how to run a paper? Nevertheless there are a few with moss an inch thick who could with a little four-page paper do more good for humanity in six months than the whole press has in the last fifty years, if the power that controls the press and executive powers could be kept from throttling them.

You say the farmer is not making the best use possible of the parcel post, and follow it by saying it is a recognized fact. Show me that it is a recognized fact. Show me who recognizes it as a fact. Place yourself two or three hundred miles from a real city where high prices are paid for farm produce, as most farmers are. Then show me a profit in dribbling your produce out to Tom, Dick, and Harry in dabs, with necessary costs of packing, correspondence, parcel-post charges, and waiting around on mail-box corners for the rural carrier who has nothing but a little stuffy one-horse open buggy to take your butter twelve to twenty-five miles through dust and heat to the post-office. Before you are able to show me this you will recognize some facts that you probably never heard before.

Parcel post as now recognized is not practical for marketing farm produce for a majority of farmers, neither do I think it was intended to be.

Mr. Hazel evidently is a new reader of this paper. He probably didn't read our editorial in the issue of February 28th, in which we stated his position rather better, I think, than he states it himself. Here is what we said:

We must have something cheaper than the parcel post, too. Even in such matters as the sale of eggs, hampers, and mailable farm produce generally, the parcel post, while it offers a way out as against conditions of monopoly control, must always be too expensive for the great body of business between the farms and the homes of consumers. When eggs are selling at fifty cents a dozen the parcel post offers an avenue of communication. For special trade with special customers it always will. But the freight car is the carriage for the bulk of the trade, and must always be.

The idea that parcel post can ever be the chief method of marketing our produce is perfectly absurd. But that it might be used very much more than it is used is not absurd at all.

Parcel Post is Real Service

I don't believe that any law ever was more honestly drafted than the parcel-post law. When Mr. Hazel says that, in his opinion, "it was not intended to be" practical for marketing farm produce, he is probably right. Even Congressman Lewis of Maryland could not have expected that package delivery could ever compete with bulk shipments—and he is the prize enthusiast on parcel post. The farm papers of the country agitated for parcel post when the people from whom they get most of their profitable business were opposed to it. I have no doubt that it caused FARM AND FIRESIDE the loss of a great deal of money when it demanded a good workable parcel-post law in issue after issue. It took that position because it believed that the country people of the United States ought to have a parcel service to their mail boxes as city people have to their homes and shops. The parcel post is the farmers' express service. It carries his packages, but it cannot carry his crops to market. This must be done by railways and wagons and boats, and it is to this bulk marketing that the farmers must address their organized efforts if they expect to receive any larger portion of the consumer's dollar.

But why cry down the parcel post? It is a good thing. It brings packages to the door for which two years ago we should have had to drive to town. It carries packages away. Because it will not do the washing and the churning, keep the books, go after the cows, clean the stables and slop the hogs, and the like, there is no good reason for condemning it. And it will do a great deal more than we now make it do. It is a recognized fact—recognized by everybody who studies the matter—that we might make it do more than it now does. In a certain rural school in Cook County, Illinois, a "parcel-post club" has been organized. The boys and girls bring their eggs, green corn, radishes, butter, and other produce to school, put the goods in hampers, and ship by parcel post to a select list of customers in the city. They keep the records of this club as a part of the school exercises. They figure the profits and the losses. These young people are learning to use the parcel post, which people who condemn it as a whole are not.

Ten years from now this new agency of transportation will have been pretty well developed—not before.

The Farmers Who Read

And while I am on the subject of Mr. Hazel's letter I should like to ask him and all the rest of my readers what the four-page paper he speaks of could do for the people which the farm press has not tried to do. The farm press secured parcel post for the farmers of the nation. There has been no great national progress in the last generation which the farm press has not advocated. Such papers as FARM AND FIRESIDE make money for their readers. The Government has investigated the profits of 1,217 dairy farmers of whom 464 were readers of such papers and 753 were not. The reading farmers averaged \$14.54 per year profits from each of their cows, while the ones who did not read averaged only \$1.85 per cow.

This is what reading does for the farmer—and the farm press is furnishing the reading. This is a pretty good answer to the criticisms of our friend in Wisconsin.

Robert L. Shier

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CAN POOR MEN BECOME FARMERS?

MANY times in my life, and especially during the past few years, I have received inquiries from city dwellers asking what farm life had to offer to men of small means. Many of these inquiries were so pathetic in their unconscious telling of the land hunger, the yearning for the soil, that I believe nature has planted in the breast of every normal man a harking back, doubtless, to that younger world where man, like the animals, got his living directly from the soil and, like them, acknowledged no master and was free to work or play as he pleased. And in many cases this natural call of the soil had been made doubly strong by the sight of some small farmer who had but little of this world's goods, but who, nevertheless, on stormy winter days, sat reading by his fireside, and who, even in the long and busy days of summer, knew nothing of the monotony of perfunctory office work or the hated summons of the factory whistle.

Loving the soil as I do, I wish I could say to all these seekers for a better mode of existence that the country, with all its possibilities of breadth and sweetness and freedom, is always open to those who will come to it. But the advisability of so serious a change as the migration from the city to the country must always depend upon many other things than the mere wish for it. And it is with a view to throwing some much needed light on a matter that is of such vital importance to so many FARM AND FIRESIDE readers that I am now writing.

The inquirers, leaving aside all such matters as their present occupations, which cover a wide range, are rarely of the class that we commonly call "the poor." Almost all (indeed, I do not recall an exception) are earning wages upon which they live fairly well, though many are constrained to economies that are more or less irksome, and all feel keenly the grip of those social and industrial conditions which forbid their quitting the treadmill, or asserting their independence of a "boss," either individual or corporate. And it is this feeling of thralldom, far more, I believe, than any other one thing, that turns the minds of city dwellers farmwards.

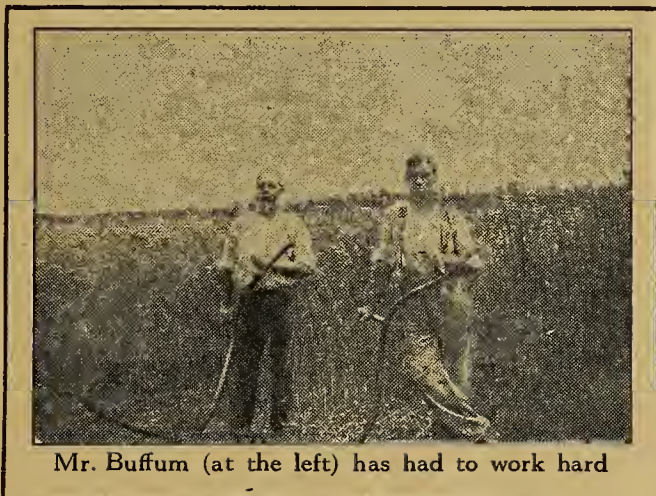
For the purpose of what I have to say we must divide these inquiries into two distinct classes—those who have saved up a little money and those who have not.

For the latter, much as I regret to say it, there is practically no opportunity to enter into farming as a regular vocation. For it takes some capital to start in farming, even in a small way. Not only must the farm be bought but the stock and equipment, to say nothing of that highly essential thing—working capital. It is true that the cost of buying may be saved by renting, and it is sometimes possible to run in debt for one's live stock and equipment. In many country localities there are cattle dealers who will sell stock for a note secured by a chattel mortgage—stock, however, that, it seems needless to say, is almost invariably poor in quality and high in price. Dealers in seeds and farm implements sometimes sell their products in the same way, usually with the additional security of a lien upon the resultant crops. Under such an awful handicap very few, even of those who are highly skilled in agriculture, could hope to win out; and the man who has the business of farming to learn besides has not one chance in a thousand of success. To attempt farming under such conditions is the sheerest and most consummate folly.

And yet the longing for the soil is as strong in those who have no money as in those who have, a fact that touches the deepest sympathies of those who know the real blessedness of the farmer's life; and so I am glad to say that if a sane and philosophical view of the situation is taken the door is not wholly closed even to the man of no capital. The wage-earner can often hire some little place in the suburbs or country within small car-fare distance of his work and, from the saving in rent thus effected, fit himself out with a little flock of hens, or perhaps a cow, while still at

By David Buffum

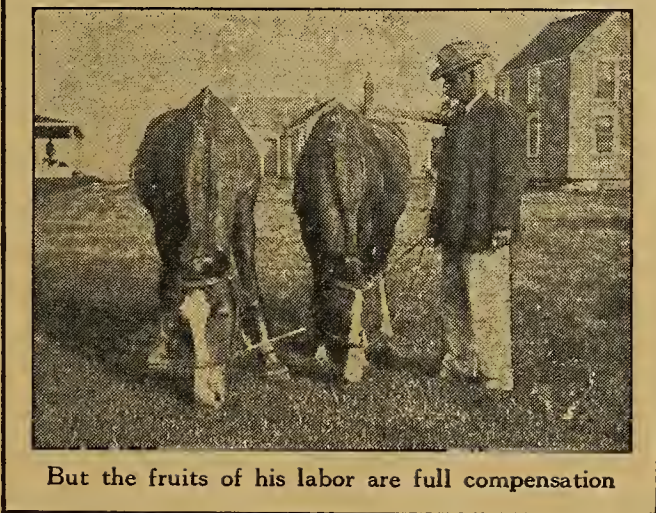
With Photographs from His Own Farm



Mr. Buffum (at the left) has had to work hard



His place was badly in need of repairs



But the fruits of his labor are full compensation

a farmer. Let us now consider the man who has enough capital to secure a little farm and the modest equipment of live stock and implements necessary to a start. For such a man the chances are good if he is willing to work hard and fully understands all that the situation implies. But take careful note of the limitations. For, strangely enough, almost all town dwellers who turn their attention to agriculture, even the most intelligent, expect to depend upon the profits of the farm from the start, and fail to realize that farming, like every other business, must be learned before it can be made profitable. Would you, without any previous knowledge of the calling, expect to succeed at tailoring, or storekeeping, or doctoring, or the practice of law?

Depend upon it, my friend, there is no royal road to success in agriculture any more than in anything else, and you must learn farming before you can make the farm pay.

This being the case, no town dweller should think of starting on a farm without a sufficient sum laid by, entirely apart from his working capital, to pay all his household expenses for at least a year—and two is better. He should also refrain, at first, from hiring much help. He should plan to do most of the work himself. And he must work hard—harder probably, at times, than he ever worked before. For although there are "slack times" on the farm—as in winter, when the farmer's work is easy and his hours short, or in the early autumn, which is proverbially the farmer's holiday—it is not so in "the busy season." His plowing, planting, and harvesting must be begun and finished each in its proper season or result in loss; and nature, with whom he is working in collaboration, takes no account of the eight-hour law or of whether he is tired or short-handed. There are times when he must rise before he is properly rested, and begin his day's work tired and sore; nor can he, as when a wage-earner, leave his work behind him on Saturday noon with no thought of it again till Monday morning.

I have laid the more emphasis upon the exacting nature of the farmer's work because so many city dwellers see in farming an easy way of getting a living, and, from being long accustomed to a taskmaster, forget that a man who is working for himself, if earnest and resolute and determined to

succeed, may find in the demands of his farm a harder taskmaster than he ever worked for before.

Do you think that I know what I am talking about? Let me tell you.

Some years ago, through the failure of a large concern in which much of the property of our family was invested, I lost my entire fortune, which included a beautiful farm and many thousand dollars' worth of horses and other stock, and, at the near approach of middle age, found myself obliged to begin life all over again. The details of what followed need not be given: I went to the West Indies, where, for some time, I was interested in an agricultural enterprise and made a little money, and later, returning to this country, was manager of some of the large city stables in New York. What is to our present purpose is this: It took years of earnest work and close economy to save up enough to again begin farming even in a small way. When we finally bought a farm (I say "we" because my son joined hands with me in the enterprise) we were obliged to stock and equip it insufficiently, and were handicapped by lack of capital. During the first three years we worked as we never had before and, I trust, as we may never have to again. All the buildings and fences were in need of repair and, to save expense, we became our own carpenters, stone-layers, and masons. We repaired our own wagons and harnesses, and even shod our own horses. And I recall days of farm work when, after coming in dead-tired to supper, we again went out and worked by lanternlight till ten o'clock. But we won out, and now we strike a [CONTINUED ON PAGE 13]

Befriending the Birds

by
Adiola Gray

IT IS nesting time, happy, home-making song time with the birds again, and I wonder how many of us have tried to make their homes safe as well as happy?

There are two or three ways to protect the nests in the trees from both cats and snakes, one of them being to wrap several strands of barbed wire around the tree so the barbs will be very close together. Another way, if it is several feet from the ground to where the tree branches out, is to fasten around the tree a piece of tin which is so wide a cat cannot reach over it. This should be taken off when nesting time is over, or it will be a harbor for insects. This last way would not keep a snake from climbing the tree, and as they often destroy young birds and eggs one should protect the nests against them as well as the cats if it is possible. Possibly the best way to guard against both is to fasten several long pieces of tin around the tree, letting them overlap one another so there will be no openings between them, then bend the pieces out at right angles, letting them stand out all around the body of the tree like an open umbrella. Then when puss or snake has climbed up under this tin umbrella, there he is and he can go no farther.

Hanging birdhouses to the tips of slender branches where the cats will not venture out makes their homes safer to some extent, but it is best to keep the cat out of the tree if possible, for it distresses the birds and hushes their songs if one is near. Of course one cannot blame the cat—it is just as much its nature to want the birds as it is the nature of the bird to build where the cat can get it. All we can do is to intervene and prevent, if we can, one of nature's tragedies.

If we had ever doubted the birds' appreciation of the homes we provide for them, a pair of wrens would have dispelled every doubt this spring. They had almost completed a nest in a barrel of lime under a shed by the side of the woodhouse, and, being where it was, we knew the cat would most surely get the nestlings, so a bottle-neck gourd with a hole in the side was hung up to a rafter under the shed, and we watched to see what the wrens would do. Never was a home deserted more quickly than that nest in the lime barrel. They could hardly wait until the coast was clear to examine the gourd. They would fly to it, perch on it and peer in; then dart inside and examine a bit, then out to the top of the woodhouse, and just sing as if their little hearts were bursting with joy, and in fifteen minutes the new home in the gourd was begun. Now the wee wife is sitting, and I know they are happy, for the other day (is it wrong to tell it?) when he thought no one was listening the devoted husband brought a nice fat worm to his little mate on the nest, and I heard him say to her, soft and lover-like, "Sweet, Sweet." Maybe you boys and girls wouldn't have understood if you had heard him, but you will some day.

Since we have been providing these homes for the birds we have learned two things: that the neck of the gourd should be filled up with something, or a little bird may crawl up in it and die; and that the birds will not use one nest all summer. Sometimes they will put a new lining in the old nest and use it a second time, but will desert a favorite spot rather than use it the third time; so as soon as the young ones have flown the houses should be made ready for the new nests by cleaning out the old ones and disinfecting to destroy the vermin. Most birds nest three times during the summer.

A Kindly Use for Cages

When birdhouses have been provided and the nests protected we may feel that we have done all we can, but we shall find that the birds still need us. Years ago we were persuaded, much against our wishes and best judgment, to capture and raise some young mocking birds. Finally we said, "Never again," and set the cage aside, determined never again to imprison a bird behind its bars, but since then we have found just the right use for a bird cage, and it has been the temporary home of several ill-fated birdies—from a crippled screech owl to young doves which had fallen out of the nest before they could fly. When I first saw our screech owl it was lying on its back defending itself from the cat with its claws. Although I can't say I ever had any love for the uncanny creatures, this one was putting up such a brave fight, in spite of its hurts, that I picked it up and took it into the house. Then I thought of our long unused bird cage and hunted it up, put a perch in it, and for a few days we had a very unusual pet. It would sit quietly through the day, taking grasshoppers and ripe plums from our fingers, holding them in its claws like a parrot while it ate them, but when night came it would grow very restless and pop its bill at us wickedly whenever we came near the cage. The second and third nights we had it we put it out in the snowball bush, and in the morning it would be a very meek, bedrabbled little owl we would find not far from there, very willing to be taken in again and fed. The next time we put it out we never found it again. Whether it had gotten strong enough to fly, or whether something caught it, we never knew; but whenever one turns its head sidewise and winks at me now I think, "Oh, yes, I believe you're that very little rascal!" And the cold chills don't go quite as far down my spine now, when I hear one of a night, as they formerly did.

In caring for the birds which need our care—the helpless ones—we learn many things about the habits that we should never know otherwise. No doubt many of you have read that if young mocking birds are caged and hung where the parent birds can feed them the parents wait until the young ones are large enough to fly, then if they are not liberated they will feed them poisonous insects and kill them. That is true; they do it. Twice we had young birds killed in that



way before we realized the parent birds did it. So if by any accident a young mocking bird needs your care it would be best not to trust it too long to the old ones' feeding or they might mistake your good intentions and poison it. Ripe berries, the yolk of a hard-boiled egg, plain-boiled Irish potato, cornbread without salt, and fresh water kept by it make a safe list of foods to feed a young mocking bird and, I think, almost any other young bird. It is best not to feed bugs and worms unless you know exactly the kinds the old bird would feed. A grown bird instinctively shuns an insect which would not be good for it to eat, but a young one has not learned the difference—and neither has a person unless he is a close student of bird life.

The Way to Feed Captive Birds

Can any reader of this article tell us whether or not any other kind of bird beside the mocker will poison its little ones if allowed to feed them? If not, I should always choose that way of feeding. Almost every kind will feed its young in a cage, and the fledglings will grow faster because they get their natural food and so can be liberated sooner. Another reason why this is much the best way is because the young birds can fly some time before they can make their own living, and if the old birds are allowed to feed them in the cage they will still feed them when set free. Hanging the cage where the branches are thick and leafy makes the parent bird less afraid to approach it, and we have sometimes tied leafy twigs to the bars to conceal the cage as much as possible, taking care to leave plenty of room for feeding. A rather small cage is best if you mean for the old ones to feed them. In a large cage they sometimes get out of reach, and that troubles the parents. The bars of the cage should not be too far apart either, or the little ones will creep through and fall to the ground. Last summer we found it necessary to use a wire rat trap in which to put young catbirds, because the bars of our cage were too far apart. Blackbirds frightened these out of the nest before they could fly well, and as the nest was in a tall tree we could not put them back. Even if we could, a nestling will rarely ever stay in the nest again once it has been out, so we cared for them a few days until they could fly. As the old ones could not hover them at night to keep them warm we would take the cage (or trap) into the house, and hang it out again in the morning. The old ones never failed to be on hand with their little ones' breakfast. In a short time we thought it safe to set them free in the treetops, and I like to think that the one singing under my window at this moment may be one of them.

Another reason why I should rather have the old ones feed their babies is that when you have loved and tended a bird from the time it was a downy little thing until the wings have grown strong enough to carry it out of danger it makes such a queer little ache in your throat when you set it free. If it soars up and up as if so glad, so glad to get away, you feel that it has already forgotten how you loved it, and if it sits in the tree as if it feels you have forsaken it, refusing the freedom you give it, you feel—well, you feel as though you had left your baby sister sitting there. To me the picture of utter loneliness is one of a dove sitting in a big elm tree, just where I left it one day last summer.

Its home was in an apple tree in the orchard but—the pity of it!—we had failed to protect the nest from the cat, and it got one of the little innocents. The other fell to the ground, and we brought it in and put it in the cage.

Now I would the old ones watch until whether or but at that afraid to ing it, so the "What does never seen their little



ones bugs and worms as other birds do. Then it occurred to us that doves are so much like pigeons that they must feed the squabs the same way. I am sure you boys and girls have read how pigeons eat the food themselves and it turns to milk in their crops and they feed it back to the young pigeons. When I thought of that I put some sweet milk in a can cover, crumbed a bit of cornbread into it, and put the birdie's bill in, and—well, you never saw a baby drink milk more hungrily than that baby dove! Not just one sip at a time, like a chicken, but one swallow after another without raising its head, just as you do when you are right thirsty. You see, we had happened to think of the very thing it lived on; not exactly the same kind of milk, but not so very different either, and the wee bird grew and thrived and got so gentle that if it were loose in the room and we called it it would come to us and would sit in its cage and talk back to us in its sweet, soft voice when we talked to it. When it could fly so well there seemed no excuse for keeping it longer it was so gentle we were afraid to put it in the orchard for fear the cat would get it after all, so I took it to the back of the farm and put it in the elm tree. To this day I can see it shrinking against the body of the tree, frightened at being out in the big, big world, refusing me even one note in good-by, and reproaching me with wide, solemn eyes for leaving it alone. I am not ashamed to own that as I turned away the sight of the forlorn little figure was blotted out by tears.

Sometimes I think it must have died from loneliness. Not a song bird was to be heard in the field, although there were trees there. As I walked back to the house these questions asked and answered themselves: "Why is it that, although the birds are shy of man, they love to nest and sing close to his home?" "And how does it happen that when each kind of bird comes back to us in the spring they do not stay flocked together, but are distributed as they are—a pair or two to us, a pair or two to our neighbor?" And then from out the silence of the field came the answer: "It does not 'happen': an all-wise Creator has willed this distribution, that we and our neighbor may be equally blessed; has willed that the birds love the orchards and yards best, so they may be near enough for us to hear their songs, the sweetest, purest, most divine of all earthly music."

And if, as the mocking bird teaches us, He has given them such a love of liberty that they choose death rather than a life of captivity, dare we defy Him by robbing one of them of its freedom? Not I! As we hope for safety and peace and happiness in our own homes let us consider each fragile nest a sacred trust, and insure the birds these same blessings by befriending them in every way.

What more appealing lesson in the inviolability of the home could children receive than that of guarding the nests of the feathered songsters which they all love instinctively? Preaching, texts, and maxims may all slip off a child's mind like water from the duck's back, while the little living experience of defending the nest of a bird will sink deep into his consciousness and spread out its influence through all his life, delighting him with the laws of nature. If he learns to live in tune with these he will never go far astray.

The Farmers' Friend

By Edgar S. Jones

ON NEARLY any cloudy afternoon in the summer or fall the short-eared owl (the prairie owl) may be seen starting in search of food from his home in the meadow, in waste grassy lands or from the marshy places along the small streams. He seldom utters any sound as he flies about, with the exception of a clicking that he makes with his bill. By making these afternoon journeys he is easily distinguished from the other members of the owl family, as they seldom leave their day abode until the approach of darkness. Another characteristic that makes it comparatively easy to tell him from any of his cousins of the woods is that his nest is always found in clumps of grass and resembles very much the nest of the prairie chicken.

This marsh owl, as he is often called, obtains the greater part of his food in the immediate neighborhood in which he lives. It consists principally of insects, rabbits, mice, ground squirrels, gophers, and now and then a quail, a grouse, or a water bird. His soft wing feathers allow him to fly without making any noise, hence his prey seldom hears him until he is quite close.

The prairie owl seldom frequents the small groves or underbrush, seeming to prefer the solitary life in the secluded spots of prairie. Should this owl be unexpectedly discovered in his grassy home, he does not make any attempt to escape by taking a rapid flight, but merely flies a few feet and alights upon a higher prominence of ground or grass. It is during and just after the hatching season that the male bird becomes the most active in securing food. Quite often a number of field mice and young rabbits are piled about the nest for the mother and for the young that usually number five or six. In many marshy places the nests or roosting places are often found in the burrows of the muskrat or gopher. During the late fall a number congregate in the same locality, apparently as a preparation for migration or for the selection of a feeding ground for the winter.

One of the marks of identification of this most numerous member of the owl family is that the ear tufts are very short. It may be said in behalf of this short-eared owl that more than 95 per cent of his food consists of destructive quadrupeds and insect pests. In appraising the yearly value of a single owl to a farmer it would not be amiss to make it thirty dollars.

The Southern Cattle Business

Recent Developments That Point the Index Finger to Greater Prosperity

By J. Wm. Hart

IN GEORGIA, the Empire State of the South, the interest in cattle, both for the production of beef and for dairy products, is increasing. The eradication of the cattle tick is being proceeded with at a rapid rate; not so rapidly, of course, as those who appreciate the immense damage caused by this pest could wish,—a damage estimated at \$6,000,000 annually for Georgia alone,—but more and more the most progressive classes of farmers are regularly spraying their cattle, or where the herds are larger or a larger measure of co-operation prevails are using dipping vats to permanently clean their stock of ticks. As a consequence we find that year by year the federal Texas fever quarantine line is being pushed further southward, and that whenever and wherever the tick is eradicated the interest in cattle both of the beef and dairy types naturally increases.

While the warfare against the cattle tick is successfully waged in many parts of the State, there yet remain extensive infested areas in south Georgia that will be difficult to deal with until the stock law has been adopted and the cattle are kept in fenced pastures. At present the cattle are running on open ranges and it is found difficult to convince the owners of these cattle, who frequently own very little land, of the benefits and justice of a law compelling owners to fence their stock in and hold them responsible for the damages when their stock break out. The time is coming, however, when these cut-over pine lands will be brought under the plow and the big swamps drained. Then the open range will go the route it has taken in the Western range country of a decade or so ago.

An Adequate Stock Law is Needed

The point I wish to emphasize is that where the open range exists cattle can not be rounded up regularly every two weeks and dipped or sprayed, hence they cannot be freed of Texas fever cattle ticks, and until ticks are eradicated there will be no improvement in the live-stock industries, either along beef or dairy lines. The first step toward more and better cattle, then, is to pass and to enforce an adequate stock law.

The writer has had unusual opportunity for studying cattle rearing and dairying in different parts of North and South America, and nowhere has he seen more favorable opportunities for engaging in these lines of production than are to be found in Georgia. Lands are cheap and labor plentiful, water is abundant and crops sure, natural pastures abound and shelter may almost be dispensed with. It must not be inferred, however, from the foregoing that it does not pay to feed and shelter cattle; the existence of droves of neglected half-starved cattle amply testify to the contrary. The fact is that with cheap shelter, good treatment, and inexpensive home-raised feed, supplemented with cotton-seed meal, the low cost of producing beef and dairy products in Georgia, together with the high price secured for the products, make this line attractive for investors. A few far-sighted men in different parts of the State are quietly taking advantage of the situation and herds are increasing in size and improving in quality.

There is another feature connected with the cattle industry in Georgia worthy of note, and that is the question of soil fertility. Owing to the short, mild winters soil bacteria are active practically over the entire year, and as a consequence the vegetable matter in Georgia soils is very rapidly decomposed and exhausted. The essential difference between the cultivated soils of the North and the South arises from the fact that our Southern soils contain less organic matter, and that little is rapidly exhausted. Live-stock husbandry furnishes the means of getting large supplies of cheap organic matter in the soil so essentially necessary in Southern farming. Southern farming to a far greater degree than farming in any other section of country depends upon live stock as a source of supply of soil fertility.

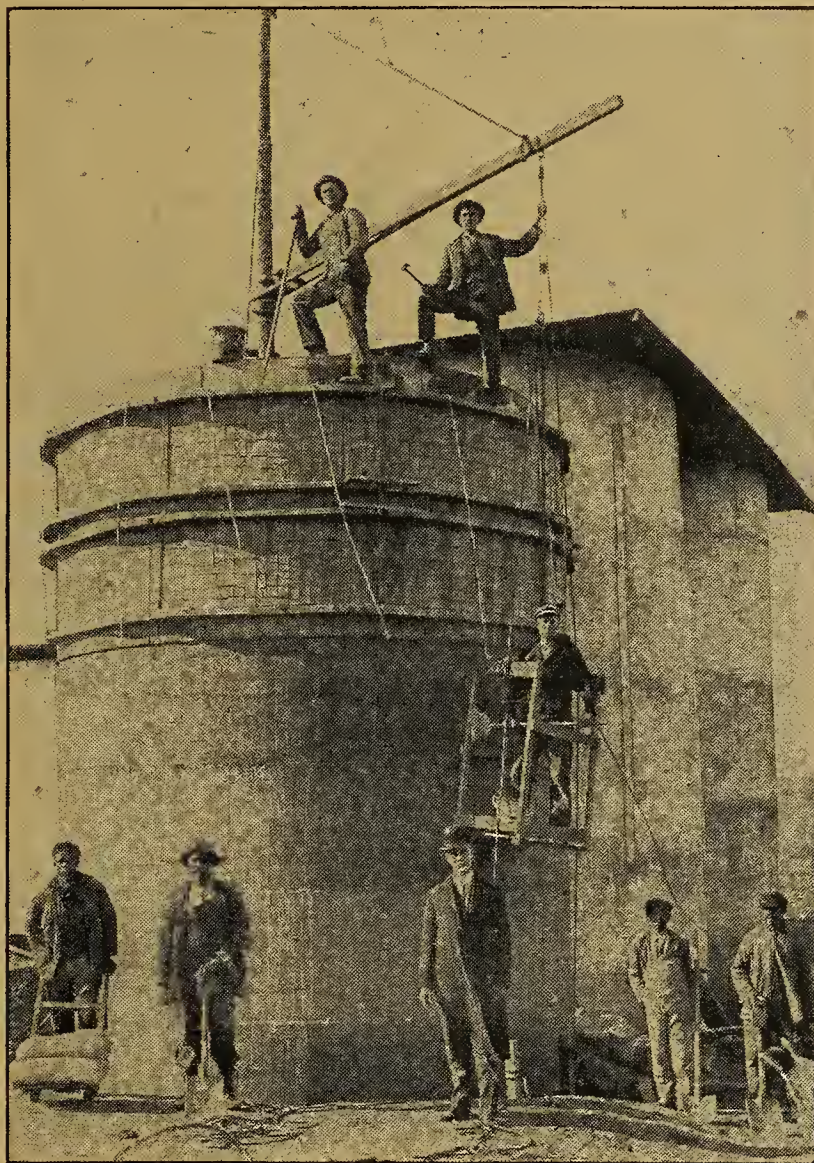
Nature Can't Do it All

The native cattle of Georgia are descended from cattle brought in by the early settlers, and resemble the common cattle still to be found in some parts of the United States. In south Georgia, near the Florida line, the type has been modified by the influence of cattle descended from the old Spanish stock on the Florida peninsula. In recent years herds of most of the different improved breeds have been used, and although these animals usually fell victims to tick fever they have left their impress on the stock of the country. Jersey importations have out-favored those of all other breeds and it is rather hard to find a herd of dairy cows that do not carry a strong infusion of Jersey blood. Quite recently, in herds where the tick has been eradicated, Holsteins have been successfully introduced in many localities. Much interest is being taken in beef production in some sections of the State, and a number of fine Hereford and Shorthorn bulls have recently been purchased.

Because nature has done so much in providing all the year around sustenance for cattle the owner has been loath to give his stock that feed and attention that will bring him the greatest profits. Many herds, especially in the extreme southern part of the State, get little or no feed beyond what they can gather for themselves on the open range. To form an adequate idea of the cattle industry of Georgia it must be

MR. HART is field agent in dairying for the Georgia College of Agriculture. His work takes him over a wide territory, and so he writes this article from experience with the conditions of the South generally as well as Georgia

remembered that Georgia is and has been essentially an agricultural State. Her farmers almost exclusively have engaged in the production of a single crop—cotton. This one-crop system exists because of climatic, social, and financial conditions that need not be discussed here. The fact cannot be too strongly emphasized that the exclusive attention given to cotton by the average Georgia farmer does not result from the unsuitability of soil and climate to other crops. In fact, all over the State we see magnificent crops of corn, sorghum, sugar cane, tobacco, peaches, sweet potatoes, garden products, and small grains, especially oats. So in considering the cattle industry the preponderance of cotton culture must always be kept



Silos are coming into their own in the South

in mind. The average annual production of cotton in Georgia amounts to about 2,000,000 500-pound bales—that is, about one sixth the entire cotton crop of the United States.

In the ginning of this enormous crop about 1,000,000 tons of cotton seed are separated. Taking 10 per cent as a liberal estimate for the seed needed for the succeeding crop, we have 900,000 tons of cotton seed to be used as cattle feed and fertilizer. The most of this enormous by-product is purchased by the numerous oil mills. If all the seed not wanted for planting were so purchased and milled the result would be the production of cotton-seed products in Georgia as follows: 36,000 bales "linters," 38,000,000 gallons of cotton-seed oil, 400,000 tons cotton-seed hulls, and 360,000 tons of cotton-seed meal.

Georgia, in common with all the cotton-growing States, suffers an immense economic loss through the fact that much of the cotton-seed meal is applied directly to the soil as a fertilizer. Year by year hundreds and thousands of tons of this most concentrated and valuable cattle feed are buried in the ground because of the lack of cattle to consume it. Because of its abundance many dairymen and feeders of beef cattle have been in the habit of keeping their stock in winter on an exclusive diet of cotton-seed hulls and meal.

This diet, however, has not been satisfactory in producing beef and dairy products of the highest quality, and recently the high prices of cotton-seed hulls and meal are causing many inquiries for other feeds. Year by year more home-grown hay and forage have been fed to cattle with better results at pail and block, and, as stated, the present high price of cotton-seed products is resulting in more inquiries in regard to home-grown feeds. Quite recently I sent to the patrons of the only creamery located in Georgia, which, by the way, is doing a business amounting to about \$4,000 per month, a list of questions. Among others this question was asked: "What steps do you propose

taking to make dairying more profitable during the ensuing year?" Their answers were substantially as follows: "I intend to grow more of my feeding stuff at home." These farmers are producing milk largely on cotton-seed hulls costing \$15 a ton, and meal at \$30 a ton, whereas the average price has until this year been about \$5 for hulls and \$24 for meal.

Unquestionably the cheapest and best home-grown feed for cattle, whether beef or milk be the ultimate object, is silage. The Georgia farmer, however, like the average farmer of the country as a whole, has been slow to adopt the silo as a necessary part of his equipment. There is this much, however, to be said in explanation of the attitude of the Georgia farmer towards the silo: first, that for him the silo would be necessary over a much shorter feeding period than with the Northern farmer; and second, that he could in a measure depend upon winter grazing to supply the succulent part of the animals' rations. He has now grasped the situation and realizes that his problem is to grow succulent feeds rich in carbohydrates to balance such home-grown feeds as hays made from cowpeas, velvet beans, Japan clover, alfalfa, soy beans, heggar weeds, vetches, and other legumes, as well as the great staple by-product of the cotton crop—cotton-seed meal.

As a consequence of these conditions silos are being built and filled and the silage is being fed with gratifying results to both beef and dairy cattle. The bewildering varieties of crops that are grown and successfully ensiled in Georgia reads like a list from a seedsman's catalogue. It is sufficient to say here that corn is the favorite crop for the silo, and the interest created by the work of the farm demonstrators and boys' corn clubs are causing many inquiries about the silo as the best means of caring for the increased corn crops being grown all over the State.

Sorghum Silage is Popular

I know of one successful dairyman in Georgia who fills his silo with well-matured corn of an early variety about the last of July. At this season pasture is usually on the wane, and the milk flow increases as soon as the silage is added to the ration. Sometimes in October, corn that has been grown after a winter oat crop is ready for the silo. Thus the silo is filled and emptied twice in a season and the land in each instance is cleared for the succeeding crop. It might be explained here that where corn silage is grown and harvested a winter grain crop can be sown, thus preventing the land from washing.

This system of double cropping will be more widely adopted in Georgia during the next few years. Next to corn, sorghum is the principal crop grown for silage, sometimes alone, but more frequently in combination with corn or cowpeas. Other leguminous crops, such as soy beans and velvet beans, are occasionally put in the silo. The best results are secured where these legume feeds form from one fifth to one third of the contents of the silo, being mixed with either corn or sorghum in this proportion. They keep perfectly and come nearer to being a balanced ration than corn or sorghum alone, and finally are greatly relished by the live stock. Silage of this character requires little grain feed to go along with it.

While the Southern stockman has had many natural advantages along the lines of cattle production, he has surely carried his cattle along from year to year in rather a haphazard, happy-go-lucky way. He is now waking up to the possibilities of the business and is setting his house and stables in order. He is a factor to be reckoned with before the scarcity of meats and dairy products shall be acutely felt. During the last State Fair held at Macon the United States Department of Agriculture in co-operation with the Georgia State College of Agriculture built a cement silo 10 feet in diameter by 27 feet high in order to show the farmers the methods used in putting up silos on their own farms. The materials were donated by different firms interested in getting the farmers to build and use silos. This exposition silo was built to a height of fifteen feet using molds. On top of this 6-inch wall a 2½-inch plastered concrete addition was placed, this part of the silo being 12 feet high. The cement plaster was used on 24-gauge metal lath. Arrangements have been made with the fair authorities to grow a corn crop on the exhibition grounds, having it ready in time to put in the silo during the State Fair this coming fall.

Real Silo-Filling on the Fair Grounds

Thus thousands of farmers who attend the fair will have an opportunity to see silage being prepared, and the exhibitors of cattle will be supplied with silage for their stock. A silo built in this way on account of the expense of staging is not advisable. As it is, the farmer in the northern part of the State, who can get plenty of broken stone or cinders for concrete work, can build a silo using molds, while the south Georgia farmer, who has sand in plenty but no stone, is shown how a reinforced plastered cement silo can be economically built.

Near Atlanta a farmer recently erected his fourth concrete silo. This is shown in the illustration. The man in the crate is preparing to wash down the wall with cement thinned with water to the consistency of paint. This fills the pores and improves the appearance.

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
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Ask Farm and Fireside for the names of commission houses who deal "on the square" in any city or town of importance in the United States or Canada. We will advise you whether any commission concern is financially responsible and trustworthy or otherwise. Tell us what you want to sell and the markets most convenient to you and likely to want your produce. Ask Farm and Fireside!

HERBERT QUICK, Editor

June 6, 1914

Time is Money—and Happiness

A STRANGER once told an Ozark resident that hogs of good breeds would get ready for market much quicker than do the native razorbacks. After thinking the matter over the Arkansas man disposed of the argument by asking, "What's a hawg's time wuth anyhow?" A sitting hen's time is proverbially of little value, though that matter depends a good deal on the hen. But a woman's time ought to be worth something, even if her health and happiness be not taken into account. If a woman's time is worth twenty cents an hour, the lugging of water from the well or spring will in a year amount to the cost of piping a supply into the house. This is rather a low plane on which to consider the matter, but it's worth thinking of in connection with such larger things as health, happiness, and a pleasanter home.

Paying Our Own Bills

IT HAS long been a source of regret to many of us that the United States Government has been receiving financial assistance from the Rockefeller Foundation in carrying on its farm demonstration work. Senator Kenyon asserted in the Senate that it is as improper for the salaries of farm demonstrators to be paid from private funds as it would be to have the Supreme Court justices remunerated in the same manner. The work was necessary, and the money expended has done and will do a great deal of good. The criticism is good too, for it will put us on a basis of paying our public servants out of our public funds. Which should have been done from the beginning.

Are Any Facts Useless?

ARCTIC and Antarctic explorations have often been condemned as useless. Men like Peary and Amundsen are accused of being seekers after empty glory. Artemus Ward might advise them that they had better stay at home and "till the sile." But is there such a thing as a useless fact? Sir Ernest Shackleton, the distinguished explorer of the Antarctic regions, states that the facts learned by his expeditions about the variation of the compass in the southern hemisphere will eventually save commerce from enough errors in navigation to repay the whole expense of the expedition. Within three hundred miles of the South Pole a huge seam of coal was discovered, and as the world's coal becomes exhausted we may return to this discovery for the purpose of mining fuel for an otherwise coalless world. When there is dense ice in Weddell Sea heavy rains follow in Chili and Argentina. It may be that the farmers and stock breeders of South America may sometime be able to adjust their farming operations by reason of knowledge of coming seasons of wet weather derived from facts discovered by Shackle-

ton and other Antarctic explorers. One of these days there will be an immense live-stock business in Alaska. The animals reared will be reindeer, probably crossed with the wild caribou. We owe the knowledge of these facts to exploration. Once a scientist who had discovered a new fact was asked by a "hard-headed" person, "What's the use of it?" "What's the use of a baby?" retorted the scientist. The answer was complete. A fact, like a baby, cannot show its worth until it grows up.

Use the Demonstrator

THE county farm demonstrator is rather a busy man if he does all he might do. Here are some of these things as shown by experience. He keeps lists of second-hand machinery which farmers desire to sell or trade. He keeps a record of farmers who have live stock or seeds for sale, or who wish to buy these things. In Seward County, Nebraska, the demonstrator had at one time several thousand bushels of alfalfa seed listed, and the Thurston County demonstrator knew where several hundred bushels of seed corn were to be had just before planting time. In his rounds the demonstrator visits schools and helps the teacher in her work of bringing the schools into relation with life. He acts as a go-between for farmers who have the same crops and wish to sell in a club or organization rather than individually.

He suggests crops which might be so grown and shipped. He looks after the matter of the home mixing of fertilizers, and knows where the ingredients may be bought. He finds enough farmers who want fertilizers to make a car lot. Sometimes he runs a little demonstration farm, and he nearly always has some demonstrations going forward on the farms of others. Gradually the farm demonstrator will come to be recognized as the greatest possible aid to the teachers and the county superintendent. The teaching of agriculture from books is a very poor substitute for the real study in the book of nature. The demonstrator should have the expert knowledge which teachers and superintendents are likely to lack, and if he does not place it at the disposal of the schools he will not be living up to his opportunities.

State Land Banks

PRESIDENT WILSON has set down as a part of the work of the present Congress the passage of a rural-credit law. Other matters of great importance have intruded themselves, or been intruded into the situation in Washington, and the rural credit plans may not be carried through. The States of New York and Wisconsin, however, are showing the country that the farmers are not dependent alone on Washington for loan legislation.

New York has passed a law providing for the organization of the building and loan associations of the State into a land bank, the sole power of which will be to negotiate farm loans. It is a state organization to do what the Ohio building and loan associations have voluntarily done, except that the loans will be issued in the form of land bonds endorsed by local associations of farmers and the State Land Bank.

The Wisconsin land-bank law provides for rural land banks to do the same thing independent of existing loan associations.

It is quite possible that, given a little time, the States could and would do the work of systematizing the farm-loan business quite as well as it can be done by Congress. Neither Congress nor the States seem to be making any headway with any plan for helping farmers to loans on personal credit. This is to be regretted.

It should not be forgotten that we need loans very often for the security of which we do not wish to give mortgages on farms, and that in Europe the Raiffeisen and Crédit Agricole loan systems have been even more beneficent in their effects than the land banks, and just as safe.

Wool and Mutton Prospects

FOR the first time in recent world's history the demand for wool has overtaken the supply. At least, Mr. R. B. Thompson of the National Wool Warehouse and Storage Company so states, and asserts that there is no surplus of wool to-day, and the problem of getting supplies at the mills is an acute one.

The world-wide shortage of meat has kept the flocks from increasing, even in South America, New Zealand, and Australia, while in this country the encroachments of farming upon the ranges have caused a startling decrease in the number of sheep in the great sheep-growing States. Bankers' estimates indicate a decrease of forty per cent in Montana, twenty per cent in Wyoming, ten per cent in Idaho, fifteen per cent in Utah, ten per cent in Oregon—a decrease of twenty-five million pounds of wool in these five States.

The farmer who can keep sheep successfully need have no fear, we think, of very low prices for wool. Mutton is gaining in popular favor, and seems to be sure of good prices. The transfer of the American wool and mutton business from the ranges to the farms is taking place slowly, and while it is going on the farm flock will be getting the benefit of what may be after all only a temporary scarcity in sheep and their products.

Willing Farm Hands

MR. LEONARD G. ROBINSON is the general manager of the Jewish Agricultural Aid Society of New York City. This association concerns itself with the placing of Jewish immigrants on farms, and their welfare after they get there. It is perhaps the most efficient organization in the agricultural life of the United States. Its co-operative marketing methods are excellent.

It has in successful operation a rural-credit plan set up without the aid of the Government, state or national; and it has a farm-labor bureau which is meeting with success the problem of finding laborers for the farms. Mr. Robinson in a recent bulletin calls attention to the failure of the efforts of the New York authorities to supply hands to the farmers. As has been suggested in these columns the effort was one which was foredoomed to failure.

But Mr. Robinson's labor bureau has not experienced any difficulty in getting good hands from the cities. He has not found it difficult to find among the city's unemployed, men who are both willing to work and able to earn good wages. "Their disinclination to work," says he, "has been very much exaggerated. All one needs to convince himself of this is to visit one of the farm-labor bureaus conducted by the national and state governments, philanthropic organizations, and private agencies."

At the office of his own labor bureau, he says, there are always plenty of applicants for work— young Jewish men anxious for an opportunity to work on the farms. "Some few have farming experience, while some possess none. But they are intelligent, sober, alert, and of good physique." He tells of the quickness with which these "greenhorns" learn farm work. One farmer says that the green hand sent him knew how to milk the cows on the third day, and to harness and hitch up horses. In conclusion Mr. Robinson asserts that the greatest difficulty his society experiences is to find places for the good men who want work, rather than to find the men. In his opinion there are more hands who would make good than there are jobs.

The Jew is a man of exceptional industry and intelligence. Probably Mr. Robinson has dealt with a class of men superior in these qualities to the average of our city unemployed. But his experience tends to prove that the real task is to get the right sort of hands to the right sort of farmers. It leads us to hope that the solution merely requires a consistent study of the problem.

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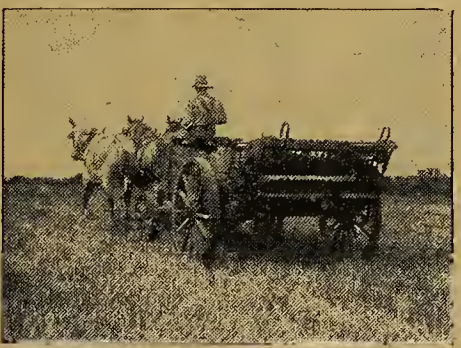
My Manure Spreader
By Bradley Hancock, Jr.

I HAVE known, since my days on the farm began years ago, that the way of hauling manure to the field in a wagon bed, to be distributed broadcast by the use of forks, was a wasteful and expensive makeshift. As soon, then, as I found a manure spreader which I thought possessed the necessary requirements I purchased one. In those days they were not as perfect as they are now.

I used three big mules on my first spreader, and it gave them a good, hard pull. I was pleased, however, with the machine, for one man was all that was needed where formerly two or three were required; and, besides, the machine distributed the manure far more evenly than could possibly be done by men and forks. The spreader also broke up all lumps and rendered the manure more quickly available as plant food. In handling manure by the fork-spreading plan, one has to move lively to handle twelve two-horse loads per day, but with a properly working modern manure spreader and a good team forty loads per day can be hauled out and distributed. Among the first tests I made in using the manure spreader was on growing wheat in winter.

What It Did for Wheat

I spread manure with the spreader on 25 acres of wheat—a medium top dressing; and on a 25-acre block adjoining—same quality of land—I spread the same quantity of manure from the wagons with manure forks. The plot of land on which the spreader had been used yielded 39 bushels per acre, while the other block averaged less than 25 bushels per acre, and the growth of the latter wheat was uneven and bunched, while the wheat on the other block was even.



I use my spreader for distributing fertilizer and straw mulch as well as manure

I apply yard manure to the grass lands late in the fall in preference to spring, for if there happen to be any lumps the frost will crumble them. The manure proves a protection to the grass roots too, and the melting snows will carry it down to the roots very early in the season, just when it is needed to make a quick and vigorous growth.

Time was when a manure spreader was regarded as an implement to be used only by the wealthy farmer, but it is now a real necessity to the poor man. I do not believe in a farmer going in debt, as a general thing, but if one were to ask me the propriety of going in debt for a manure spreader I would unhesitatingly tell him to buy it. I know of cases where the positive gain of 50 per cent was made by spreading manure on a hay crop with a spreader, against a 20 per cent yield when the manure was scattered with a four-tined fork. On corn the yield from land on which the manure was distributed by a spreader was 87 bushels per acre, against 55 bushels per acre on land where the manure was broadcast with forks. Labor is scarce and hard to get as well as expensive, but a good hand with a good team, associated with a modern manure spreader of the right kind, will effectively distribute 40 big loads of manure a day.

I once heard a farmer say, "If I did not have a manure spreader I would borrow money even if I had to pay 25 per cent interest, rather than be without one. The manure spreader is invaluable."

Sundry Uses for a Spreader

I use the manure spreader for various purposes. I can distribute broadcast or in rows, distribute lime and all kinds of commercial fertilizers, but in the last two cases named the machine should be adjusted to "slow feed," as the quantity should be less per acre than when manure is used. Then I find the manure spreader very useful to distribute straw, as I often wish to do, as it protects crops and land during winter and holds the moisture in the spring and summer, when it is often needed. Far better than doing without such an implement as a manure spreader it would be well for the farmers in a neighborhood to purchase a spreader together and use it as each one needs it. Keep the spreader in a rain-proof and sun-proof shed.

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of your farming operations and illustrate that record with Kodak pictures. An album of Kodak pictures, with explanatory notes on methods of tillage, drainage, fencing, building, breeding and the like will make a valuable reference work that will help you plan for the year to come. Experience is the best teacher—but you need records of such experience. Let the Kodak help.

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April 9, 1916

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We positively go on record and guarantee that the material in Aladdin houses, framing, siding, flooring, finish, doors, millwork, paints and hardware, are all of higher grade than any other manufacture of houses in America—we stand ready to prove it. And it's far better than the average grades carried by any lumber dealers anywhere.

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Condensed and Modified from Various Sources



Notice that politicians are mighty kind and gentle in handling the herd when they want to milk the public, but they're many a farmer that bangs his cow over the head at milkin' time. This fable teaches that there's somethin' to be learned even from a politician

SICK cattle in the Plains States are often said to be "alkalied"—that is, injured by the alkali in the water. The South Dakota Agricultural College kept cows for two years and a half on water from a well so strong in alkali that its owner dared not use it for his stock. It did not affect their milk or condition, and when killed their vital organs were healthy. Something else must cause the trouble called "alkali sickness," except where cattle drink from pools made abnormally strong by evaporation.

THE average price paid for pedigreed milking Shorthorns by Prof. Thomas Shaw on his recent trip to England was \$500. He brought back twenty-three cows and three bulls as foundation stock for the milking Shorthorn herd which has been established under the patronage of J. J. Hill.

A GERMAN company is making poles for the electric companies, of glass. They are free from decay, or the damaging work of insects or birds. They cannot be destroyed except by breaking. Glass is made of one of the cheapest materials known—sand. Where fuel is cheap glass should be cheap. Next to cement, glass is the substance which may be expected to have its uses most rapidly extended.

A NEW YORK man proposes to double the crops by impregnating the soil with carbonic-acid gas. He claims to have done it on a small scale. He laid pipes in the ground and allowed the gas to escape into the soil, but insists that there are cheaper ways to do the trick. Chemists say that this is a "pipe dream." Even if it should turn out to be true, all the gas could do would be to stimulate the use of nitrates and phosphates by the plants, and thus rob the soil of its fertility, make it possible for more things to be produced, lay on us an impossible task in the way of putting in phosphates, and finally bring on disaster.

A RAILWAY trestle was recently burned near the shore of the Great Salt Lake in Utah. The butts of the wooden piles on which it had stood for forty-three years were perfectly sound, although they were only of common pine. The cause of this endurance is the salt from the waters of the lake which had impregnated the piles. It would seem as if fence posts might be pickled in the strongest possible brine, dried, and then painted with creosote or some other water-proofing to keep the moisture in the earth from leaching the salt away and thus be preserved. The experiment would not be very costly if the treatment were confined to the butts of the posts up to a point a few inches above the ground.

FLIES are hard on all animals, but the colt seems to suffer most from the pests. A dark stable will make the colt bigger. And if there are one or two light windows to draw the flies, and plenty of fly paper to catch them, the colt will do still better. Good wire-screen traps and some sort of evil-smelling lure for the flies will be just as good. And why stop with protecting colts? Why not the cows, the horses, and the entire barn premises. Traps are not expensive. As for the house, we are addressing progressive people and will not insult them by assuming that they are neglecting the protections of screens, traps, sticky paper, and the other aids to the fly-swatter.

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come from the ovens to your table in tightly sealed packages—ready to eat when opened—with cream, good milk or fruits.

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Crops and Soils

Trouble With Alfalfa

By W. H. Arnold

I HAD a feedlot of about one acre that was very rich which I sowed in early spring last year to alfalfa. The soil was too rich, I think, to have fruited either the cowpea or peanut, as it had 40 tons of manure on it. With that amount of manure it would not have produced small grain, nor would it have produced sweet potatoes. The alfalfa was a perfect stand. It was never inoculated. It was yellow and spindling, and much of it died before fall. All it needed on that rich soil was the nodule.

Four acres more were sown in September. A part of this included a terrace that caught the black loose soil from a limestone hill covered with cedars and loose rock. There was very shallow soil on the limestone hill, and that was quite black and coarse. This was spaded to the depth of several feet against the terrace. Wheat has never stood to harvest on that particular area. There was a thorough preparation of the soil, and the crop reached a fair yield on the four acres before cold weather. I don't think anyone could have detected anything wrong with it. It reached eighteen inches and was thick. No sign of inoculation.

Next spring it was yellow, very sick, would not start to grow, and some of it was dying. Nitrate of soda was used on it about once every three weeks, or as fast as it lost its color. That promoted little or no growth, and the color it put in it leaked out again. It needed the nodule, though it was on fairly good alfalfa soil, the best I ever saw here. That brings me to the point I want to show:

The New York Experiment Station at Ithaca says in a bulletin on alfalfa: "Farmers should look well to the alfalfa organism, as alfalfa is a failure in New York without it." I am not surprised at the statement. The Experiment Station of my own State, Tennessee, says: "Alfalfa is a failure in middle Tennessee without the nodule regardless of the fertilizer used." I accept it, and believe it with all my strength.

But if it is true, then alfalfa can't take nitrogen from either soil or manure without the nodule. The manure is a loss, the nitrate of soda is a loss, all is lost without the nodule. There is no substitute for the nodule. In fact, if it is true that alfalfa is supplied with nitrogen by the nodule, then alfalfa must be classed as the poorest of all known plants to take nitrogen from the soil.

If it can grow in the arid West without the nodule it is no proof it can here, but I believe no one claims that it can grow there without the nodule.

Cultivation is Irrigation

THE Arizona Station tells its followers that "less irrigation and more cultivation is the proven result of many experiments and investigations in the irrigated sections of the country." In other words, the irrigation water can be made to do twice the good, perhaps, if the soil is kept stirred after each application of water. This is also a valuable lesson to those who farm in humid sections.

Water which falls from the sky can be economized in the same manner. The soil mulch three or four inches deep is a means by which droughts may be

Two Big Crops From One Soil-Feeding



THE history of this Maine oatfield is the valuable part of the picture. Here it is. Potatoes were on the field the year before. They yielded an average of 300 bushels per acre, and the owner of the place credits much of this yield to the ton of phosphate per acre which he applied. Without further dressing the oats yielded 70 bushels per acre. Who has had better results?

fought everywhere. A drought is merely a scanty supply of water. The cultivator and harrow will help out in case of a scanty supply of rain water, as well as when it is irrigation water, which is scarce.

"Even young alfalfa and grain crops," says an Arizona bulletin, "may be cultivated by using a weeder, or a spike-tooth harrow with the teeth set backward." A case is given of the harrowing of a field of young alfalfa with a loss of only one per cent of the plants. Twenty-five per cent of the water may sometimes be saved by cultivation, and frequently this 25 per cent means the difference between growth and failure.

Future Forests

IT IS just possible that a goodly portion of the future forest products will come from the Atlantic coastal plain—seven millions of acres of which are in the State of Virginia. It is mostly suited to agriculture, but not a third of it is cropped yearly. The forestry prospects of this area lie in the ease with which it may be used for the growing of trees. In the first place it tends to plant itself, though artificial seeding should not be overlooked. The Forest Service says, "Various native pines spring up readily and thrive." Markets of timber are close. Water transportation is available. The cost of keeping up a forest is insignificant, chiefly fire protection. One of the best pines known is the loblolly pine—otherwise known as the "Oldfield," "rosemary," or "slash" pine, which grows naturally in these regions. The Forestry people are of the opinion that owners of farms in this region would do well to dedicate portions of their lands to these trees. It takes from 20 to 40 years to make a crop, but it can be shown that without counting on rising prices for lumber a return of from 5 to 10 per cent can be expected on an investment of from \$5 to \$17 an acre. Men who plan for a long time ahead should be interested in this.

A SMALL yellow ant does great damage to the sprouting seed of Kafir corn and other sorghum crops of the Southwest. A study of the matter seems to prove that fields planted very early are not much damaged, seed planted near the surface not much hurt, and that seed dipped in crude carbolic acid or commercial dips and sprays—merely dipped, and not soaked—are protected to some extent. The Kansas Experiment Station at Manhattan has the best information on the subject.

Pumpkins in the Air

By Mrs. L. M. Wiley

AFTER getting away from the land and becoming telephone operators in an Atlantic coast city we couldn't quite quit farming.

We planted some good pumpkin seed along the borders of the chicken yard in the rear of our city lot and trained the vines on the wire fence enclosing the yard and over the chicken-house roof. The vines fairly swallowed the fence and chicken house whole, so luxurious was the growth, making a veritable billow of green and effectually screening the yard from a busy trafficking street. The great pumpkins (eleven of them) hung from fence, roof, and gables like great golden globes and pendants, and the vegetables grown in part of the yard not occupied by the chickens were a wonder to city-bred eyes.

This makes the second year that we have combined chicken-shading, street-screening, and pie timber with one operation. And I presume we will continue the practice, for we like it.



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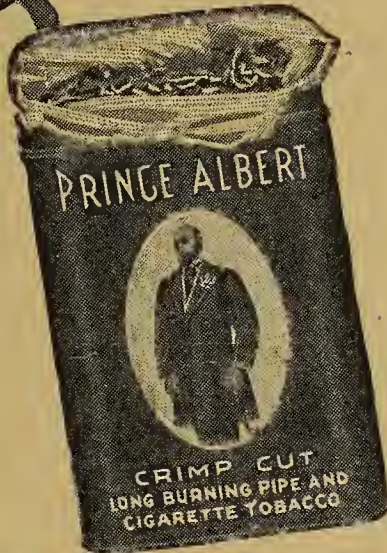
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If the stand and quality are bad you must do better. If they are good it will pay you to make them better. A better fertilizer will do it. The usual wheat fertilizers do not contain enough available

POTASH

See, too, whether your wheat is lodging. Potash stiffens the straw. If there's clover in the wheat, is the stand all you could wish? Many progressive farmers use Potash heavily on wheat followed by clover.

Study Your Wheat at Thrashing Time

If the ratio of grain to straw is too low, if the kernels are shrunken, your ground lacks Potash. Potash makes long heads well filled with plump, hardy grains.

Use a fertilizer with 6 to 8 per cent. available Potash, instead of 1 to 2, and balance the phosphoric acid of the bone or phosphate.

Tell your dealer now that you want such a fertilizer this fall. Write us today for our free book, "Fall Fertilizers."

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How Shall We Solve the Dog Problem?

By Herbert Quick, Editor

THERE are many reasons for the proper control of dogs, aside from their effects on sheep in the mere matter of worrying and killing. They disseminate the germs of hog cholera and other live-stock diseases from farm to farm. From their droppings the sheep are infected with the tapeworm eggs that result in measles in sheep. They kill and destroy poultry, calves, and hogs. The snobbing, thieving dog is a nuisance about back doors and about barns. They gather in packs about the homes and schoolgrounds and along the highways and byways with females of the species as the nucleus of the pack, and offend the taste and sense of decency of communities. We endure things from dogs which we would never stand from other live stock.

All these things indicate that these predacious animals should be confined and regulated, whether they are taxed more highly than now or not. But there is another reason, and that is that horrible disease hydrophobia, of which the domestic dog is ordinarily the sole source of infection. The strict muzzling of all dogs in all seasons of the year—for dogs run mad as often in winter as summer—has been shown to be an absolute preventive of rabies. It has been worked out perfectly in Great Britain since 1887. In that year and the two following, deaths from hydrophobia in Great Britain were respectively 217 for 1887, 160 for 1888, and 312 for 1889. In the latter a muzzling law was passed and enforced. In 1890 the number of deaths dropped to 129, and in the two following years to 79 and 39. In 1892 the ordinance was repealed by the dog worshippers. Deaths from the bites of mad dogs rose by the following steps in the years which succeeded: 93, then 248, then 672. Horrified by this sacrifice to unmuzzled dogs the law was passed and enforced again. In 1896 deaths dropped to 438, next to 17, to 9, to 6, to only 1 in all Great Britain; rose in 1902 to 13; and since that time not a single death has occurred in England, Scotland, and Wales from hydrophobia. The muzzling of dogs saves hundreds of tragedies every year.

All dogs should be muzzled for reasons of common humanity. If this were enforced the worrying of sheep would be largely a thing of the past.

The Master Would be Responsible

No dog should be entitled to his life if running at large out of the company and control of his master, whether muzzled or not. This regulation is enforced in many countries, and results in a sense of responsibility on the part of the owner of the animal. It is perfectly fair to say that when a man allows his dog to roam at will over the farms of other people the animal cannot be much of a companion to him, or very well trained or of much value to him. All dogs should be chained or confined if they have any tendency to roam, and unless there is a better reason than is usual they should be tied up at night. A chained dog is a better watchdog when tied than when running loose, and when turned loose in the night the chained dog knows that the law is off on the marauder whose presence he scents, and publishes by his barking. He can be chained so as to be easily unleashed by the pulling of a cord or wire from his master's bedroom, or by an electric button which any handy boy can connect up. If fed nowhere except where he is tied, as suggested by Mr. Ross, any dog will go to his place of confinement and ask to be tied after he becomes accustomed to it. There is no more cruelty in this than in tying a horse, and not half as much as in stanchioning a cow. Let us use a little common sense about this matter of confining dogs. Apply to them the same rules we apply to other stock. If a dog is valuable he is worth taking care of. If not, the sooner he is out of the world the better.

The Government, state, county, or municipal, should have a strictly kept list of dogs. The dog which is not the property of somebody is a public enemy and a public nuisance, and should be hunted down and killed. No matter whether there is a license fee or not, the dog should carry a tag with his master's name on it, and the number of his registration. This should be his only title to existence.

The following outline of a law to be adopted by all States is respectfully submitted to everybody interested:

Let there be a commission appointed in every State to have control of the administration of the law. Let the first duty of this commission be to take a census of all dogs and make a complete registration of them. Any citizen who harbors a dog about his premises shall be conclusively

presumed to be its owner. All owners shall pay a registration fee for each dog kept by him, and the fee for bitches shall be not less than five dollars. In addition to the registration fee an annual tax shall be paid. Any citizen failing to register all dogs owned or harbored by him after a reasonable time to be fixed by the law, shall be guilty of a misdemeanor, and punishable by fine or imprisonment, or both. This is to relieve the officers of the commission of the necessity of hunting out and running down the ownership of dogs; but the commission shall maintain a force of inspectors who may investigate and bring offending owners to justice. The registration fee should not be high, as the intention of the law is not to raise a large sum of money from dog owners, but to bring dogs under the law and properly regulate and control them. The evidence of registration shall be a tag which the dog must constantly wear as an evidence that he is not an outlaw dog. All dogs found without tags shall be outlaws wherever they may be found. And all dogs wherever found unmuzzled shall be outlaw dogs, except when led or under full control or confined by their owners or custodians, or when running on the premises of their owners. Any dog, whether registered or muzzled or not, shall be an outlaw dog if found running at large off his master's premises in the nighttime, unaccompanied by his master.

The Law Would Include These Things

The registration fee and the annual tax on dogs belonging to the original census and registry shall be so low as not to offend the sense of justice of the people of the State. In some States a tax will be willingly paid which would cause great discontent in others. Local conditions should be consulted as to this matter, and the fees and taxes so adjusted as to appeal to the sense of justice of good citizens who are the owners of dogs. But no person should be allowed to become the owner or harbinger of any dog after the first registration and census unless after a reasonable time, to be fixed by law, the newly acquired dog should be registered and licensed. The fee for registering the newly acquired dog should be not less than five dollars, and for bitches the fee should be still higher. Any newly acquired dog not registered and licensed should be regarded as an outlaw dog, and the owner punishable by fine and imprisonment for failure to register and license the dog. The annual tax on licensed newly acquired dogs should be not less than \$1.50 a year.

All fees and taxes under such a law should be expended, first, in paying for sheep lost through the depredations of dogs, and second, for the support of the commission. It is believed that after a few years the higher registration and license fee on newly acquired dogs would make the department self-sustaining.

We shall be glad to hear from our readers as to the plan outlined. It is not claimed that it is perfect. It is offered in good faith by a lover of dogs who believes that the dog business should be lifted to a higher plane. It is anticipated that many people will be angered and exasperated by the plan proposed, but there is no need for any dog lover to lose his temper.

The writer of this has no power, of course, to enact statutes: he can only suggest them. Let us discuss this very important matter in good temper, and try as good citizens to find a remedy for the dog menace without trenching on the feelings of dog owners.

Preparing for Christmas Lambs

By John P. Ross

AN ILLINOIS reader asks for information on preparing sheep for lambs that will come about Christmas. The ewes of the Down breeds, Shropshires, or Rambouillets are best for this purpose. Personally I prefer the Shropshires. But whichever ewes of these breeds may be chosen, a three-year-old Shropshire ram is unequalled as a sire of early lambs. The Dorset has a special faculty for early breeding, and is my second choice for the ram.

Give the ewes close attention and keep them in good condition. Their flesh should be solid, and they should be full of life and vigor. Fat is detrimental. Ewes that have had at least one lamb already are to be preferred: they have gained experience as mothers.

If on good pasture but low in flesh, they should have a ration of a full pound per day of two thirds oats and one third of a mixture of bran and linseed meal. This feed should be given morning and night. Corn is too fattening, as is also alfalfa. A little good clean meadow or clover hay is good, but feed no timothy or rye at this time; also give the ram all he will clean up of these foods. Let the sheep have plenty of exercise and constant access to pure water and rock salt.

Breed the sheep about the 20th of June, and, above all, keep them where they may be quiet and free from alarm. Avoid heavy feeding after conception till perhaps six weeks before lambing, when it may be renewed in moderation.

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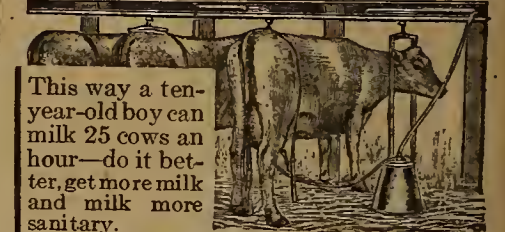
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The Market Place

Fence the Farm This Year

By W. S. A. Smith

HAVE you ever noticed how small the line is between success and failure? And in many cases of failure in farming it is not that the farmer fails through lack of energy or poor crops, but through neglect in figuring his business on an interest basis.

It takes around \$250 to make 160 acres hog and sheep tight. Where can any farmer invest \$250 which will pay such a high rate of interest as this will? I have my farm fenced in this way, and we shall, as soon as the corn is planted, spend a little time planting pumpkin seed in the corn, and at the last cultivation shall sow rape in most of the corn. Just as soon as the silos are filled we shall turn out the hogs to clean up, hog down the corn, and eat the rape and pumpkins. This means that without any labor whatsoever 360 hogs will get their own living and grow fat from September to Christmas, and a large part of their feed will be from rape and pumpkin seed that cost less than \$30. I am able to do this through having the farm hog-fenced.

This year I had 54 brood sows, and these were kept out of the cattle yards and allowed to roam over the farm and live on the alfalfa stacks all winter, right up to farrowing time. At night they were fed on an average two and one-half pounds of corn and one-half pound of linseed meal, mixed. I do not know how many pigs were born, but we have at this date of writing, May 14th, 350 strong, healthy pigs, and two sows to farrow. Last week I cut loose 250 cattle for the reason that the market does not show any signs of going on a higher basis, and as there was \$1.10 net margin between buying and selling price and 360 pounds gain on the cattle. I've just about made a good price for feed consumed, but we have 35 acres covered with a heavy coat of manure, and enough to cover 35 acres more; and to me that is worth a good deal. These cattle, instead of being confined in a small yard all winter, were turned out all day on a 15-acre hog lot, and although they did a lot of harm to the alfalfa through tramping they left it covered with manure, and it is surprising how much of the alfalfa survived. This ground has been disked and resowed to oats, rape, and alfalfa, and will make a wonderful hog lot this summer.

What rate of interest will I get this year on the \$250 invested in hog-tight fencing? Just figure a little on it. It's not too late to fix your farm this year. You will find there is more net profit from utilizing the waste than there is from the crop itself. But to utilize the waste you must have your farm fenced, and now is the time to fence it.

Better Wool Methods

IF BY taking a little trouble any given wool grower could lift the price of his wool three cents a pound, one would think him a bad shepherd if he failed to take the "little trouble." And yet the government experts say that if we would grade and put up our fleeces as carefully as the Australian growers do it would increase our price that much.

It is admitted that American methods are not what they should be. Australian and New Zealand wools are graded at the time of shearing. This grading is done by people who are familiar with the way wools are classified at the woolen factories—by experts. Every bale of wool is the same in grade all through. One bale of the same grade is as good as any other from the same flock. Often the fleeces are "skirted" by the removal of the wool clipped from the legs and belly. These competitors of ours also use twists of wool from the same fleece in the place of twine.

Few American shepherds do any of these things, and the wool sent in a mixed-up state so that the sacks have to be opened and every fleece examined, with tag locks and twine strings mingled with the lot, will easily sell for three cents a pound less than its real quality merits. It would seem that sheep growers may well take counsel together in this matter.

Prices Bound to Be Firm

By J. P. Ross

THE rather gloomy manner in which the "Merry Month of May" made its entry, together with heavy shipments of fat sheep from Texas and of lambs from Colorado, caused the prophets of evil to the sheep trade to brighten up their old tariff and frozen mutton weapons; but

its second week found top lambs reaching, and in some cases passing, the \$9 mark for the unshorn, and \$8.15 for the shorn, the latter, however, becoming daily less numerous. The heavy shipments of fat sheep from Texas easing up caused a strengthening of prices for that class, prime wethers and ewes, shorn, reaching up to \$6.25, and yearlings to \$7.10; and, at this present writing, it seems likely that prices will remain at or near these points for a time, as the demand for both mutton and lamb is good and the market firm.

It seems certain that the wool clip this year will fall considerably short of that of last season, and imports of both the raw material and of manufactured goods are unusually large. Prices both here and in London are firm and in many cases higher.

The cultivated pastures if too closely cropped by sheep get "sheep sick." If allowed to remain for weeks together on the same pasture, sheep cease to improve, and most likely get full of grubs and worms. It seems hardly necessary, then, to say to the thoughtful shepherd: "Give your flock the run of the weeds and rough herbage they crave, and give the pastures a rest."

Retail Prices Too High

By L. K. Brown

THE hog market has recently been passing through a period of depression. The main causes of this have been the industrial unrest and a small consumption of both fresh and cured products. While live-hog prices have declined about a dollar, retailers have maintained their original schedule, thus causing a slack demand. Eastern shipping and export demands have also been very moderate. With this condition packers have been indifferent buyers of more hogs than are daily required for fresh retail trade. With a downward revision of retail prices, demand should increase and provision trade should revive. As soon as there is a brisk trade in cured meats the packers will support an advancing market, for it will enhance the value of their stocks.

Opinion is divided as to the future market. Some expect a better provision trade, and hence a better demand for hogs, while others look for the market to remain slow and dull for some time.

Out in the country a good-sized crop of pigs is coming on in fine shape, but the danger of cholera hangs as a menace. Minnesota farmers wakened to a realization of the great danger, and a state-wide effort has been made to combat the disease. The governor decreed the week of April 17th to 25th as "Hog Cholera Week," and everywhere farmers' organizations co-operated with the Extension Department in preparation to control any outbreaks. Such effort is laudable, and should be an object lesson to the older hog-raising States of the corn belt. With federal aid, already obtained, and local co-operation we should be able, before long, to control this scourge.

SPEAKING of bees! There were 2,619,891 hives of them in Germany in 1912. Probably there are more now, for there is a government fund to promote bee culture, and an association of beekeepers in Silesia alone which federated in one body 163 societies with 7,300 members. Honey is the cheapest of the sweets to obtain, and the Germans are thrifty.

ARIZONA cotton growers must be feeling jubilant. They have produced about two thousand bales of Egyptian long-staple cotton—a new product in America. They have succeeded in selling at a price which nets the growers in the Salt River Valley 21½ cents a pound. The farmers there expect to grow only the one variety henceforth.

IN VENEZUELA there is no rain from November to May, and from May to November there is an abundance of it. Great crops may be grown in the rainy season, but the ranges are parched as soon as the moisture dries up. This causes a long feeding season for live stock. Our minister to Venezuela, Mr. McGoodwin, suggests that silos would solve a great problem for stockmen—and there isn't a silo in Venezuela.

THE Kentucky Experiment Station has established a live-stock exchange. People desiring to buy or sell live stock may write to T. R. Bryant, head of the Extension Department at Lexington, and list their "want ads." After the buyer and seller are once brought into communication with each other, the responsibility of the college authorities ceases. When the trade is made the party disposing of the stock must notify the exchange, or he will not be allowed to use the service again. It is hoped that this will develop into a service which will bring together people who wish to exchange implements, and perhaps to bring landlords and tenants together.



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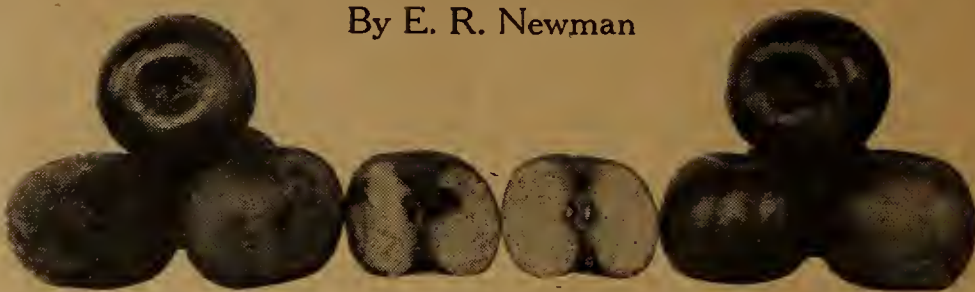
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A Farmer's Apple Experience

By E. R. Newman



Which came from the trees that were well cared for?

THE apple crop is not different from any other in regard to returning a profit in proportion to the care and study given to the trees.

Poor pruning and poor spraying may be justly considered the main causes of the average orchard, in a good orchard district, failing to furnish any net income to the owners. If it pays the large grower it will pay the small orchard owner to give the special care that is now indispensable to the production of good fruit which will keep sound and eatable till late in the winter.

As a test I stored two barrels of York Imperial apples in an ordinary house cellar which was kept at as low a temperature as possible without danger of freezing. One barrel was picked from the best tree I could find in an orchard that was allowed to grow as the average farmer cares for his trees. The other was picked from an average tree in an orchard that had been well pruned, cultivated, and sprayed.

To get the apples for the picture here shown I poured out both barrels and took ten apples from each barrel just as they lay, not selecting them. Then I picked one of the choicest from each lot of ten, then one of the poorest, then one of the medium, photographing them as shown.

Does the difference in the two lots as shown in the picture mean anything? Which do you wish to raise for home use and for sale?

Could you have examined the two barrels of apples you would have seen a greater difference than appears in the photographs. The fruit taken from the uncared-for orchard had over sixty per cent showing decay and infection. Those in the other barrel showed decay in only two apples, and infection in only nine apples.

I neglected to say that in filling the barrels I selected from trees the very best that I could find.

Kind as may be desired are often grown in the easiest way by sowing a little seed broadcast in the cornfield after the last cultivation in July or early August; that is, provided the land is a rich, loose loam. The production of first-class, brittle roots of rutahagas or Swede turnips (as often called) is not nearly so easy. I would not attempt to grow them unless on soil that is loose and well supplied with vegetable matter. This class of turnips requires nearly the entire season for growth, but the bulk of the growth of root should be made in the cool autumn weather. The soil should have a sufficiency of lime. Turnips will not thrive on sour soils, and lime applications are often of great benefit. So also may be applications of acid phosphate or superphosphate generally. Plenty of lime in the soil is also a good preventive of the disease known as club root of turnips, cabbages, and similar crops. Seed of the rutahagas is usually sown in June, sometimes in seed bed, and the plants transplanted a foot or more apart in the rows, with rows wide enough apart for convenience in cultivation. I once grew a good crop of Laing's Improved Purple Top Swede, one of the earlier turnips of this class, in an old strawberry patch, a piece of rich gravelly loam heavily fertilized with wood ashes, by sowing the seed in rows on the land freshly plowed shortly after the fruit-picking season, in the latter part of July.

Propagating Arbor Vitae

Some of the arbor vitae are quite useful for hedges, and easily submit to pruning. But their propagation is really a task for the professional propagator rather than for the amateur. However, if you wish to try to root cuttings that you may be able to secure from a neighbor, follow the practice of one of the large nurseries by taking the cuttings in October or November, using the entire season's growth, and cut to a heel, place them in sand in boxes kept in gentle heat, as is done in a regular propagating house. When roots are formed (say in February) the boxes are removed to a cool house, and kept in a temperature of about 50 degrees; then later on (about April 1st) remove to cold-frames outdoors, to remain until along in May. Then remove boxes to a shady place, and place on boards to remain until fall, when the plants are shaken out and heeled in in a cellar. The next spring they are planted out in beds, and given some protection from sun and cold for another year. T. GR.

The First Step to Fame

LIVES of great men all remind us That there's one unerring charm If a name we'd leave behind us— Just be "born upon a farm."

Tepee Trellis of Wire

By W. F. Henderson

THE illustration shows a trellis of wire so strong that no wind can blow it over, and it can be used many times. To clean it in the fall just pull up pegs and take wires from notch in top of pole; lay wires and dead vines in a pile, set



Of course you can have as many wires as you want

fire to them, and burn clean for another season. This tepee trellis can be used for all kinds of running vines, both vegetable and flowers. I prefer barbed wire, as the vines cling to it better than to smooth wire.

Of course if one desires, heavy cord can be used, in which case the supports will be new each season. In some cases this may be best.

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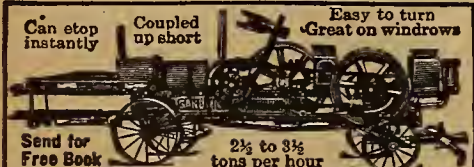
Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

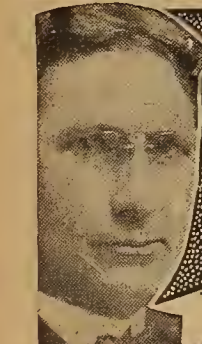
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Farm Notes

Improving Your Mail Service

By M. Coverdell

WITH the farmer's mail growing in bulk and greatly increasing in value, the mail question becomes more momentous every day. The United States Government is anxious to give every person the very best mail service possible, but it cannot do this unless that person assists by explaining his location and the conditions under which he now receives mail.

The writer once moved to a farm supplied with mail by rural free delivery from an inland village. This village was supplied with mail from a railroad city several miles away. The mail arrived so late that the village R. F. D. had gone, thus causing a delay of over twenty-four hours in the delivery of our mail.

Upon investigation we found that a star mail route, carrying closed pouches of mail from this inland village to another and different railroad city twenty miles away, passed our door. We requested our postmaster to send our mail out by this carrier, but he refused. We then asked the Post-Office Department at Washington what our rights were in the circumstances, and were promptly notified that we could have our mail from both the R. F. D. and star route if we wished.

The star route carrier delivered mail to our box at six o'clock in the morning. Going on to the terminal of the route he returned by way of an inland village supplied with mail from the same railroad city as our village. By having our address fixed at the other inland village instead of at our own, this star route carrier picked up our mail at that point and brought it out to our box at six o'clock of the same evening. On this trip he delivered the same mail that would have reached us at two o'clock the following afternoon by our old service. Strange to say, other farmers had lived and grown gray-headed along this route but did not know of its effective service.

Aside from the two daily deliveries of mail, note that our Saturday mail was not held over till Monday. Again, the star route service enabled us to answer letters the day they were received. We have a friend who has found that he can receive his mail from a star route at 7 A. M.; from his village rural route at 8 A. M.; from a route starting from another railroad city twelve miles away, at 1 P. M.; and from the return star route at 6 P. M.—four mails a day! Think of the great benefit these four mails will be to this farmer in handling parcel-post packages.

What an advantage it will give him over his competitors in handling pure-bred stock, poultry, and eggs for hatching. It enables him to answer all inquiries and fill all orders with more than ordinary promptness. Such arrangements never suit your nearest postmaster, since your sending mail out by other sources deprives him of the money received by canceling your stamps; but if you will apply directly to the Post-Office Department for information they will advise you just how you can get the quickest, most efficient mail service it is in their power to give you—a service that is justly yours.

Fever and Boll Weevil

"FEVER 'N' AGER" is catching. The right name for fever and ague is, of course, malaria, and we get malaria from other people who have malaria. The malaria mosquito carries the disease.

The U. S. D. A. finds that the malaria mosquito is the greatest helper the boll weevil possesses. Just at the season when the people would otherwise be making cotton by work in the fields, they are, in some localities, made unfit to work by the "shakes." Moreover, this disease undermines health and causes many deaths.

On a plantation of 3,540 acres in Louisiana three families out of every four last season had malaria. This plantation has 1,800 acres under cultivation, and the remainder is swamp. There are 200,000 square miles of the South where the conditions are similar, and they are not confined to the South by any means.

Living in houses built in the open fields is far more wholesome, under such conditions, than along the picturesque bayous or near the woods. On this plantation 23 people lived in houses in the open fields, of whom only 9 had malaria, losing a total of about fourteen weeks' time. But of the 43 who lived near the woods or along the bayou, 34 had malaria, and lost a total of seventy-five

weeks' work. Thus the people living in the houses in the open fields, away from the haunts of the mosquitoes, averaged only about four days' sickness each during the crop-making season, while those housed along the bayous and near the woods, where the mosquitoes were numerous, lost an average of nearly two weeks each of precious time.

The moral is: drain the swamps if possible; and if not, live as far from the bayous, ponds, lakes, rivers, and woods as you can, and stay indoors at nights. It is hard to compete with the boll weevil, and when the malaria mosquito joins with him it is almost impossible. Such things may help the doctors, but they are mighty bad for the man who makes his living by work. We all should take advantage of every opportunity to spread the information that malaria and the malaria mosquito go together. There are other kinds of mosquitoes—all are bad.

Spotted Sandpiper

By H. W. Weisgerber

THIS little snipe is so small (too small to shoot for its meat) that when it stands among the pebbles on the beach it cannot be seen without studying closely the stony shore and looking closely for a "tilting" motion beside some stone. Its legs are so slender as to be invisible from a short distance, and its bodily tints harmonize so well with



its surroundings that were it not for its "teetering" habit its presence could not be detected by any but the sharpest eyes.

Nature in her infinite wisdom designed a bird for every place; and so we find this little member of the snipe family doing duty in destroying such insects as it finds at the water's edge of the beach.

From the examination papers of an English schoolboy: "Much butter is imported from Denmark because Danish cows have greater enterprise and superior technical education to ours."

Can Poor Men Become Farmers?

[CONTINUED FROM PAGE 3]

easier gait. We rest a little on our ears.

This brings me to the question which all men of small means who think of going into farming must consider and consider earnestly and thoughtfully: Is all this worth one's while? To me it is. The privilege of doing one's lifework in "God's out-of-doors," of being one's own master, of being the autocrat of smiling acres and the lord of flocks and herds—to me this is worth all it costs, and more too. And yet all men are not constituted alike, and I know there are many who would not agree with me, many who would not be willing to pay the price.

One of the foremost of American poets wrote, "Earth gets its price for what earth gives us." And nothing truer was ever written. Think this over, for it has a very positive bearing on the question we are discussing. Is wealth your chosen goal? If acquired honestly, by the substantial output of brain or hand in any honorable field, it is surely a not unworthy aim. But, remember, it must be paid for in the devoted attention, the self-denial, and the wear and tear of nerve force that too often transforms the payment into the very stuff of which life is made. And if acquired by a shorter and easier road—the clever scheming or sharp practice that turns into one's hands a flow of money without contributing anything to the welfare of the world—it is still paid for in the coarsening of moral fiber, the lowering of standards, that, even if not realized, constitutes a real loss and a defraction from the satisfaction and joy of living. Do you want personal independence through life—freedom from the domination of others and the liberty to come and go as you please? Depend upon it, you must pay for it in hard work, in making your wants and your pleasures simple, and in doing without many of the unquestionable advantages that wealth only can give to a man and his family.

Of course very few of the city wage-earners to whom I have referred had had (at least for a long time) the attainment of wealth in view or, in their desire for country life, are making any great change in their aims or ambitions. Their thoughts are turned farmwards merely in the hope of making their lives and those of their families easier and more satisfactory. I have diverged a little from the real essence of the matter in question only to point out to the young man starting in life, no less than to the wage-earner with a family, what farm life really has to offer to those who enter upon it with small means. Nothing is ever gained by claiming too much for a thing; and to present its advantages and drawbacks in any other guise than as they actually are, not only hurts the cause we are trying to champion but leads many whose feet we ought to guide into the right path hopelessly astray. For examples abound of those who have failed through taking up farming without a clear understanding of what lay before them, and furnish a pathetic but pointed illustration of the Biblical text, "My people are destroyed through lack of knowledge."

And yet, while I would counsel the greatest caution in all who are thinking of taking up farming on small means, it is right for me to say that for a man who is resolute and resourceful, who has learned to know the real values of things, and who, from sureness of his fitness for the work and a careful weighing of his resources, can see his way clear to a reasonable chance of success, farming offers an exceedingly inviting field, and one that is worthy of both effort and self-sacrifice. For surely that is a good vocation which gives personal freedom and independence, whose rewards come only through that thought and labor which keep both mind and body in good working order, and which gives, more than any other, periods of leisure in which to enjoy the fruit of one's labor. To the right man, with the right kind of start, it is the best vocation in the world—and therein lies the pith of the whole matter.

HER MOTHER-IN-LAW

Proved a Wise, Good Friend.

A young woman out in Ia. found a wise, good friend in her mother-in-law, jokes notwithstanding. She writes:

"I was greatly troubled with my stomach, complexion was blotchy and yellow. After meals I often suffered sharp pains and would have to lie down. My mother often told me it was the coffee I drank at meals. But when I'd quit coffee I'd have a severe headache.

"While visiting my mother-in-law I remarked that she always made such good coffee, and asked her to tell me how. She laughed and told me it was easy to make good 'coffee' when you use Postum.

"I began to use Postum as soon as I got home, and now we have the same good 'coffee' (Postum) every day, and I have no more trouble. Indigestion is a thing of the past, and my complexion has cleared up beautifully.

"My grandmother suffered a great deal with her stomach. Her doctor told her to leave off coffee. She then took tea but that was just as bad.

"She finally was induced to try Postum which she has used for over a year. She travelled during the winter over the greater part of Iowa, visiting, something she had not been able to do for years. She says she owes her present good health to Postum."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs.

Postum now comes in two forms: Regular Postum—must be well boiled, 15c and 25c packages.

Instant Postum—is a soluble powder. A teaspoonful dissolves quickly in a cup of hot water and, with cream and sugar, makes a delicious beverage instantly. 30c and 50c tins.

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America's Telephones Lead the World with the Best Service at the Lowest Cost.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ASSOCIATED COMPANIES

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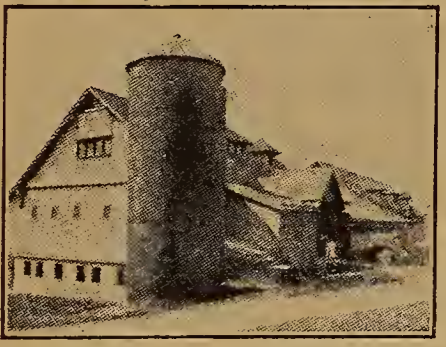
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E. A. Strout Farm Agency, Station 2699, 47 West 34th Street, New York.

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Poultry-Raising

If the Hen Lays, She's Happy

By L. H. Cobb

LAYING hens are contented hens. This is not saying that all contented hens are layers, or that all layers are contented, for there are exceptions to all rules.

There are many ways to make your hens discontented. We are apt to give very little attention to this point, and go on with our methods irrespective of whether the hens like our way or not, and they have only one way of bringing us to time: they can refuse to lay.

A hungry hen is not a contented hen. I have seen flocks that one would think at first sight were a healthy, energetic bunch, but close observation soon showed they were rather a hungry bunch. Not just a little hungry, but very hungry. Probably their existence had been about the same as an aged missionary from India said of the peasant class there. He said that these people never had a good square meal, but only could earn enough to keep down the fierce pangs of hunger, and many of them never knew what it was from youth to old age to be anything but hungry or very hungry. A hungry flock is not a laying flock.

A flock that is fed at any old time is not a contented flock. If the hens are fed at a certain time every day they soon learn when it is, and they will never expect to be fed between times. During the time between feeds they will go about their business with contentment, scratching, dusting, laying, sunning themselves, but never standing around as near the direction the feed comes from as they can get, and clamoring for something to eat, probably eating but little when they get it. They will get the "piecing habit" just the same as the children if you teach it to them, and the habit does not make for contentment.

An injudicious method of turning the flock out to graze is another very common cause of discontent. If you let them out all day one day and keep them shut up the next, you will have a pretty serious case of restlessness the second day. In fact, it will take them a week to get over their unrest and become satisfied with their lot. If you select a certain hour in the evening and let them out regularly at that hour you will have no trouble. In a few days you might go into the lot almost any time in the day and they would never make any attempt to get out, but when that hour arrives you will find them all eagerness, and if you open the door they are coming out or know the reason why.

A vermin-infested flock is not a contented flock. Give them a good dusting place where the ground will be dry at all times. Keep this dusting place dug up deeply, and add ashes with all cinders and charcoal sifted out. Sprinkle sulphur, air-slaked lime, tobacco dust, and insect powder lightly over the surface every little while. I have sometimes saturated some soil with kerosene and mixed it thoroughly with dust until it would sprinkle, and scattered that over the dust bath pretty thickly.

Hens are like human beings in another respect. If they are shut up in a small lot with nothing to do to keep them busy, just the regular routine of eating, drinking, and sleeping, they either fret their lives out wanting to be somewhere else, or settle down to a lazy, listless existence, sitting on the roosts or lying around in the sun accumulating fat, but laying no eggs. Give them a good deep bed of scratching material and they will dig in it if they find but little in it except a means of passing away the time.

The Late-Hatched Pullet

By Anna W. Galligher

AS A RULE, late-hatched pullets are not considered as good as early ones for winter layers. But there are some other things that should be taken into account as well as the time of hatching.

Much depends upon the variety of chickens kept, and a great deal more upon the care they receive. However, there is no denying the fact that large, slow-maturing birds are no good at all

for winter eggs the first year unless they are hatched early.

On the other hand, some of the smaller varieties, such as Leghorns or Hamburgs, will give as good if not better results when hatched late.

We keep the Leghorns for winter eggs, and hatch them all during the summer (usually June and July) under large hens. They are very small when hatched, and cannot endure much cold. Therefore it is better to hatch them after the weather is settled. They grow much faster and will begin laying nearly as early as those that were hatched while the weather was still cold.

We have tried both ways and have found that the early-hatched Leghorn pullets will nearly always lose the larger feathers late in the fall, and of course this partial moult retards the production of eggs.

Last year our July-hatched pullets began laying in December.

One of the most important things is to keep the chicks free from lice and disease so that they will grow steadily and naturally until well matured. If chicks are kept growing and free of lice they are less liable to become victims of disease.

The Damage Wrong Feeding Will Do

Indigestion is nearly always caused by wrong feeding, although incubator chicks are liable to have some such malady almost as soon as they are hatched. When this is the case the



These inexpensive houses in use at the Oklahoma Experiment Station are found well adapted for housing the chickens. They furnish an abundance of ventilation and safe protection from storms. Kafir is finding favor as a poultry feed at this station

cause can usually be traced to careless methods of operating the incubator. Few of the commercial chick feeds are suitable for newly-hatched chicks. They cannot be induced to eat enough grit to grind whole grains, of which these feeds are largely composed.

After the little chicks get a start on other feeds, such as dry bread, cracked wheat, rolled oats, etc., they may be given a little chick feed occasionally. Later they will thrive on it alone if they have free range and are not overfed.

Some of the commercial chick feeds now on the market are not to be recommended. These are the inferior brands which are composed of cheap materials not at all suitable for chicks to eat. In case this stuff must be used it should be thoroughly cooked before being fed to the chicks.

We killed a fine lot of chicks several years ago by feeding a so-called chick feed dry. Then we tried boiling it. This was the way it could be fed, apparently. No more chicks died of indigestion that season. Overfeeding and indigestion nearly always go together. Overfeeding has always been our failing, and we find it much easier to overfeed chicks when the grains are dry than when cooked.

However, we mix the feed ourselves nowadays, and have learned just how much to feed. We use a mixture composed of 40 per cent cracked corn, 40 per cent whole wheat, and 20 per cent coarse steel-cut oatmeal. Sharp grit should be added or kept within reach.

Why Change Males Constantly

OF LATE there has been insistent interest in breeding chickens for greater production of eggs. This unusual interest has developed in a large degree as a result of egg-laying competitions and experiment station work along egg-production lines. Inbreeding and line-breeding are two important factors now being depended on to perpetuate the characteristics and endowments most desired by those working for this definite purpose.

Views on Inbreeding

The following views of a practical experienced poultryman, Mr. E. E. Whitney of Michigan, are of interest:

It is a common practice among farmers to secure male birds from other flocks

nearly every year. This is done to avoid inbreeding, which is believed to be detrimental.

If inbreeding invariably tended to lessened vigor, smaller size, ill shape, and more disease, it would be well to avoid it. There are, however, successful breeders of fowls who permit close and continuous inbreeding, and who declare that no ill results follow.

Stop and think what this frequent changing of males means. It means out-breeding. It means the practical elimination of the original flock. The first generation after a change is one-half blood; the second, one-fourth; the third, one-eighth, and so on until there is but a minute fraction of the blood of the original flock in any bird.

A laying strain or a distinct type can never be built up by such constant introduction of new blood. Male birds are secured from one flock one year and from another flock another year. Even if all were pure-bred, one may have been bred for one characteristic and another for a different one. There are antagonistic blood lines which do not blend harmoniously; they do not tend toward a definite end. Desirable characteristics are obliterated instead of augmented. There is no certainty—not even a probability—as to what the next generation will be.

The male birds are usually selected for individual merits. Seldom is there inquiry as to pedigree. There is no history of the transmitting of desirable qualities for successive generations. Even if males had this desirable backing, of what benefit would it be if next year's males from elsewhere are used?

The usual result of this practice of annually changing males is to multiply the types in a flock instead of building up one,

thus tending to diversity instead of uniformity, discarding instead of maintaining and strengthening.

If inbreeding does tend toward decreased vigor and more liability to disease, it is not the most common cause. Unfavorable surroundings, lack of proper food and care, neglect, artificial methods, close confinement, overfeeding, and coddling are all predisposing causes.

You can avoid breeding brother with sister, parent with offspring, by putting the newly purchased male with a few hens for a few months, setting the eggs from that pen, marking the little chicks so they may be known at maturity, and

then saving the most desirable cockerels to mate with the general flock the following year.

It may be said that the average farmer has no time to do even this. Then he had better purchase his males from a breeder who can give him each year those which are not closely related to the ones sold him the previous year, yet are the same strain, type, or bred for the same characteristics.

And do not expect to secure desirable males for about the same price they would bring for meat. It costs the breeder twice or three times as much to raise such birds as the common farm roosters cost. The breeder must discard, cull, and send to the butcher a good many of his birds, and he must have extra pay on the others to pay for the extra care and study which he devotes to his flock to produce extra specimens.

Some of the most intelligent and scientific breeding authorities now contend that inbreeding does not have the same deteriorating influence noticed in mammals when it is used with animals (such as birds) that perpetuate their kind by means of eggs expelled from the animal before the life germ becomes active. In the case of mammals the young becomes a part of the blood and life of the mother, and as a result partakes more fully of the parental characteristics. Unquestionably there is evidence to show that the inbreeding of poultry as practiced by station poultrymen has accomplished wonders in establishing hens with extraordinary laying capacity.

We previously showed that the champion layer of the world was quite closely inbred, the sire of this 303-egg hen being her son. In the wonderful performance of this hen we have the most convincing evidence of her remarkable vigor. No hen except one having vitality and strength in a maximum degree can withstand the tax that such a laying feat puts on every vital organ of her body.

The lesson for the average poultryman from these recent experiments is that inbreeding and line-breeding (and cross-breeding as well) can be employed with safety and advantage by those who have knowledge and judgment to know just when and how far inbreeding can be practiced. Mr. Whitney's note of warning is none too strong. Where would our breeders of the best families of dairy stock be should they practice such indiscriminate changing of sires and out-crossings as do the majority of breeders of pure-bred poultry?



The Farmers' Lobby



THIS year, if we may accept the crop-reporting service's forecast, the country is going to produce the biggest pile of wheat that was ever harvested from our soil. That is the first reason why American farmers should be interested in getting the passage of a piece of legislation that just now is tied up in the Senate, and that seems likely to be denied a hearing.

I refer to the measure providing for federal inspection and grading of grains. That legislation has been discussed a good many times in FARM AND FIRESIDE. The Lobby has had occasion more than once to tell about it. Yet after ten years and more of effort which falls within my observation of things in Washington, we have to-day the prospect that another Congress will pass without getting a vote on a measure that nobody has at any time within those ten years outspokenly opposed.

The methods by which legislation is prevented in Washington are vastly more interesting than those by which it is passed. The truth is that the chief business of grafters nowadays is not to get steals passed through Congress, but to prevent the passage of legislation that will stop the old steals.

Every farmer knows that his grain sells on a grade that is fixed by "inspection." Not many of us know exactly what that inspection is, and the reason why we don't know is that the people who make the grades don't themselves agree. When you sell your grain it will grade low, and when the dealer sells it it is very likely to grade higher. That is, you, the farmer, are skinned out of the difference between the grade allowed you and the one your grain ought to be given.

A number of years ago the wheat growers in the Dakotas, convinced that they were getting a rough deal, stirred up so much protest that the Bankers' Association of the State took it up and appointed a committee to investigate. This committee, knowing that the grain from the Dakotas went mainly to Minnesota markets, studied the workings of those markets. It got a report from one terminal elevator, showing the bushels of wheat received and the number shipped out in a period of three months. The tabulation of what they found out is highly edifying:

	RECEIPTS	SHIPPED OUT
	Bushels	Bushels
No. 1 Northern	90,711	196,288
No. 2 Northern	141,455	476,664
No. 3	272,047	213,459
No. 4	201,267	None

Much of still lower grades was also received.

Observe that when the farmer was selling his wheat he had only 90,711 bushels of No. 1 Northern, the highest grade, commanding the highest price. But when it was out of his hands it instantly raised its grade: more than twice as much of that grade went out of the elevator as went into it. Which means, plainly enough, that the farmers sold a lot of grain into that elevator that was graded, for the purpose of buying it, below No. 1, but that, for the purpose of selling it, graded up to No. 1. The showing is even more striking as to the next grade. Grain was arbitrarily graded below its real quality in order to buy it cheap; then it was graded up to its real quality for the purpose of selling.

The North Dakota committee made a careful calculation of the profit that the elevator enjoyed by reason of this magical transmutation of low-grade grain into higher grades. It found, taking the prices prevalent at that time, that there was a profit of \$83,206.89. This is aside from the charges for handling the grain and the price received for screenings.

We Must Open Our Eyes, That's All

The point of all this is that if there were a uniform and scientific way of grading grain—uniform at every market, and always respected—the farmer would sell his grain on exactly the same grade that the miller or the foreign grain user would buy it. The farmer would get what it was really worth, rather than what the middleman chose to give him for it.

But that is not all. This North Dakota committee corresponded extensively with Eastern millers, asking what they thought about conditions. This developed some unexpected revelations. The Eastern millers have their various grades of flours. They want to buy grain and do their own mixing. But they cannot do that. In order to carry on their business of jobbing the farmer, the elevator people find it necessary to mix the various grades before sending the wheat out of the elevator. So the miller at Rochester or Buffalo who wants a certain amount of straight No. 1 Northern, of No. 3, and of No. 4 to mix in producing a particular quality of flour he is turning out is unable to buy in that way: he must take the mixture that is prepared for him at the big elevator and be content with it. This adds to the difficulty of the milling end of the business, and tends to shave a little more off the price of the grain. But it goes still farther than this—and always to the end of skinning the farmer.

Senator McCumber of North Dakota, who is and has been for many years pressing the legislation for a federal system of grading and inspecting grain, told me this story:

In Baltimore, at one time, a big effort was made to boom the town's grain trade. It was an important railroad and ocean shipping terminal, and wanted



When Will We Get Federal Grain Inspection?

By Judson C. Welliver

more of the business. So the Baltimore people decided to boost business by being "lenient" in their grades. They would get more grain in by this process, and the foreigners would have to take it as Baltimore graded it!

The scheme worked magnificently. The grain came in all right, but when it came to selling it to the foreigners on these exaggerated grades the foreigners, who are not all fools, even if we farmers are, declined to stand for the grades that were certified to them.

Boston had an experience, at another period, not unlike this. As a net result of these things American grain grades came to mean nothing in particular abroad. And of course the producer was the person who bore the ultimate loss.

What I Did From My Farm

Just to give a personal illumination of how this thing works. My own farm in middle Maryland is tributary to the Baltimore market. Distance, the adjustment of freight rates, and other considerations make it natural for our grain to go to Baltimore. But when selling time came last year I was advised to get quotations from the Richmond, Virginia, market, and sell to it, because experience had shown that the Richmond buyers were less likely to skin us out of a cent, or two cents, or three cents per bushel on grades. And so our wheat actually did go to Richmond.



He will hold down the lid as long as he can

Now let me go back and point out that these conditions which I have been describing as to the wheat business obtain also as to corn, oats, barley, flax, and the rest of the cereals. They have been obtaining, and notoriously, for a long term of years. Time and time again legislation has been reported to Congress, favoring the establishment of federal grading and inspection, so that standards would be the same everywhere, and would be honest. Yet the legislation doesn't pass. Why?

Just a few days before the date of this writing Senator McCumber called up in the Senate his bill,

which has been reported from the Committee on Agriculture, to establish this federal system. He finally got consideration, and it was defeated; decidedly defeated, too. In the votes against it were numbered the two Senators from Massachusetts, which has the grain export market of Boston; of New York, which has the grain market of New York City; of Maryland, which has the grain market of Baltimore; of Illinois, of Missouri, of Minnesota, because of the grain markets of Chicago, Kansas City, and Minneapolis and Duluth. In short, the Senators from all the grain-market centers were organized against any legislation to interfere with the present game.

The McCumber bill looks to establishing federal standard grades, and then to administering these at the big markets of the country, by federal inspectors. It has been calculated that perhaps 800 inspectors would have to be hired to do this work. One objection to the legislation has been that it would "necessitate hiring an army of government employees to do the inspecting." Nothing of the sort. That objection is unfair. It is true that the McCumber measure would place the inspection officers

on the federal payroll and give them federal commissions. They would be made directly and immediately responsible to their one and only boss, who would be Uncle Sam. If they did any humorous work, such as grading No. 2 Northern "rejected" when it went into an elevator, and then hoisting it to "No. 1" when it went out, they would be fired; perhaps they would even be locked up. Well, why not? We are getting quite in the habit of punishing frauds in this country; if we did more of it we would get along just as well.

The facts are that the McCumber measure would charge certain inspection fees for this federal attention, and these fees would go into the national treasury. These charges are already made, and made against the farmer's wheat; it would be no change at all. It has been carefully calculated, in fact, that the Government could do the work at a modest saving which would ultimately accrue to the farmer.

But no; this McCumber bill interferes with the arrangements of the terminal market people, and they will have none of it. They have a measure of their own, and if they must have any federal inspection and grading they want this measure. The measure provides for federal grades, but for private inspection. The inspector would be licensed by the Government but paid by the big grain dealers. In that case, whom do you think he would work for?

The bill that ought to be passed is the so-called McCumber measure. The administration, however, has got behind the Lever bill, which is the measure introduced by the chairman of the House Committee on Agriculture, Mr. Lever of South Carolina. This Lever bill is commonly understood to be the substitute which the big grain dealers, the elevator people, and the terminal markets prefer. If they must have legislation they want the kind that will least interfere with their control of the business; and this is to be had through the Lever bill.

Senator McCumber's bill was forced to a vote in the Senate and defeated; then the Senator undertook to force a vote on the Lever bill, on the theory that half a loaf was better than no bread. Moreover, he figured that if this measure could be passed it could later be amended into a better law.

Mr. McCumber is Fighting for Us

But there was opposition once more from the grain-buying interests, and to the time of writing it has been impossible to get a vote. Senator McCumber announced on the Senate floor that he would object to all unanimous consents, would insist on a quorum being present at all times, and would, in general, filibuster in every way he could until he got consideration of some legislation on the subject.

If, however, you find yourself reading anywhere that McCumber is a wicked and vicious filibuster who ought to be suppressed, don't believe it. He is making the fight of every farmer, for honest legislation, in the only way it can be made when things reach such a crisis as this. The thing that nobody can explain is how the administration has managed to get itself on the wrong side of this question. For many years the Department of Agriculture has been urging this kind of legislation. It has spent about half a million dollars investigating the whole subject, and had about perfected a system of grading grains that would give the nearest possible approximation of absolute uniformity. Until very recently it was the enthusiastic advocate of the McCumber measure. But soon after the administration changed there was a change of front about this legislation. Friends of the McCumber measure go so far as to insist that there was a big gathering of grain dealers in

Chicago a few months ago, at which the general plan represented by the Lever bill was indorsed; and that since that time this has been the maximum that the grain interests would accept. As to that detail it is not possible to be positive at this time, but it is certain that the Congressional representatives of the real farming interests want the McCumber plan, and that the representatives dominated by the big grain market cities oppose it, and want, first, to prevent any legislation; and second, if they cannot accomplish that, then they want something as innocuous as possible, and apparently that innocuous something is the Lever proposal.

Dolly Second

A Story Which Convinces the Hero of the Equality of the Sexes

By G. Henry

Synopsis of Preceding Chapter

In Two Parts—Part Two

DOLLY ROBINSON, a rich American girl, has bought in Canada at a large price two racing mares, a mother and daughter named Dolly Second and Celeste. These she has brought home with her, together with a French Canadian expert horseman, Napoleon, who enters with zeal into all Dolly's plans.

IF NAPOLEON was surprised upon their arrival in Dolly's home to be introduced to young gentlemen and young ladies as "Mr. Le Blanc, an expert horseman I met in Canada," he said nothing. His experience with the impulsive girl had taught him to look for unusual things. He found Miss Robinson's home a magnificent one, and he soon learned that the family was inclined to treat him very well indeed. This young lady's word was law; she won all hearts. In the home barn his labors were lessened. He had his two charges, to be sure; but his was advisory work principally. There were three hostlers about the place. Mr. Robinson was himself a horseman and kept several speedy animals.

On the second day Napoleon was asked by Miss Dolly to prepare for an evening spin, "As we did in Trois Rivières," the girl said laughingly—only now he found two rubber-tired sulkies placed at his disposal.

"You will take out Celeste and I shall drive my namesake this evening," the girl directed as she disappeared in the mother mare's stall to pet her. The friendship between the girl and Dolly Second was beautiful, Napoleon thought.

There were many people driving on the speedway. Nearly all of them recognized Miss Dolly Robinson. Several young gentlemen appeared to want to drive beside her to talk, but she affected to be so absorbed in her conversation with Napoleon—who had become a sort of mystery in local horse circles—that they desisted and trotted on grumpily.

Napoleon noticed that one particularly fine-looking big young man—the young man held the reins over a magnificent black stallion that looked a true equine aristocrat—seemed quite crestfallen when the girl merely nodded to him as he drove up beside them, and immediately resumed her conversation with Napoleon. The young man bowed stiffly and drove away, his black stallion swinging into a pacing gait that verily ate up the road.

Also Napoleon was quite sure that Miss Dolly cast several furtive glances after the flying figure as it disappeared down the speedway. But she said not a word as to who he was, which was strange, for she had been quite voluble in her explanations of who this horseman was, what this horse could do, and so forth.

A moment later she tightened the reins over Dolly Second, and ever-watchful Napoleon did the same over Celeste. The mother and daughter were ready, impatient even for the fray. They were well recovered from their ride in the stuffy box car. The speedway looked tempting. Soon they were both moving fair and square, each with an almost perfect gait. Miss Robinson glanced at Napoleon and nodded, the signal for Celeste to be let out a trifle. Celeste's old mother needed no urging. In a moment she was throwing her legs in masterly style; she was the perfect pacer. Celeste, younger, more nervous, higher strung, was thrown out of her stride for a moment. She tossed her head several times, appeared once as if she would break into a run. Then looking ahead she saw her mother and, straightening out, gave chase.

Both drivers, looking up from their tasks at the same instant, saw far down the speedway the magnificent black stallion coming toward them.

And the driver of the black stallion rubbed his eyes in amazement ten seconds later when the girl and Napoleon flew past him, traveling at what must have been nearly as fast a pace as he had ever seen a horse travel.

"Dolly has surely made a find this time," he muttered as he drove slowly homeward.

Miss Robinson appeared very serious the next afternoon when she sought out Napoleon. "I want to talk with you, Napoleon," she began.

"It is always a pleasure, mademoiselle," said Napoleon, bowing. "I am your servant, mam'selle."

"You are a flatterer, sir," Miss Dolly said. She became serious again. She knew that Napoleon's pleasantries were pleasantries pure and simple. She respected this old man who treated her as if she were his daughter.

"Napoleon," she resumed, "you know how busy my father is? He has no time for anything but business and an occasional drive behind one of his horses—and he doesn't even know the horses' names. So I want to talk with you. Do you believe in woman suffrage, Napoleon?"

Napoleon Le Blanc looked hard at his employer. He must be tactful. "Sometams, yes; an' sometams, no," he replied diplomatically.

"But I do," snapped the girl. "Always! It is all nonsense, this pretended superiority of the male. Dolly Second and Celeste have beaten Bon Homme. They

are wonderful, Napoleon. Don't you acknowledge it?"

"Yes, yes," replied Napoleon good naturedly.

"Is not a good man a good man, Napoleon? and is not a good woman a good woman?" she demanded.

"It is true, miss," responded Napoleon.

"Well, Napoleon, that man who drives the black stallion—Mr. Kaites—believes in votes for men only, believes in the superiority of the male, man and beast. Now, I do not. I've read books and I know it is all nonsense. So this evening I want you to take Celeste,



Suddenly Napoleon heard the whir of wheels at his elbow

a female, and if you meet the black stallion, will you beat him, and beat him hard, Napoleon, for my sake?"

The girl's earnest purpose was so genuine that it inspired Napoleon. "As you please, mademoiselle," he agreed. "There is no horse as can beat Celeste when we ax her for do her best, I am sure."

"Thank you, Napoleon," the girl replied. Her eyes were shining. "Thank you so much. I shall take out Dolly Second and watch the race. You go alone. I won't appear to be with you."

Napoleon did some hard thinking during the next half hour. "Oh, it is a pretty kettle of fish," he grunted. "But me an' Celeste, we shall beat it, the black stallion—or die."

He entered the speedway, and the first sight to greet his eyes was the black stallion, driven by the handsome young man who had sought to speak to Miss Dolly the previous evening. Napoleon was rather direct in his methods. He did not hesitate to make his way straight to the vicinity of the black stallion, dropping in behind him, and jogging along at the same pace the black stallion maintained. Two or three times the young man driving the black stallion turned his head and frowned. But Napoleon only smiled. Celeste was on the *qui vive*. A second stallion came up behind them.

Thus they worried along for perhaps a quarter mile, when the young man became impatient at the persistent dogging, and spoke sharply to the big black. Celeste, too, heard the word of command. Her head flew high. The big black's back began to sway gently, regularly, as he increased his long pacing stride. The driver behind him settled back on the reins. Evidently the black stallion had a hard month.

Celeste? Celeste was exactly the same distance behind the black stallion's sulky that she had been three hundred yards further up the speedway, and behind her about the same distance trotted the stranger. Napoleon reached forward into the stirrups of his reins. His long whip was raised in the air so that Celeste might see it. Celeste detested whips. She did not intend that it should ever be necessary to use a whip on her.

With each stride the pace grew faster. The big black's swinging gait was growing more and more beautifully regular. Celeste's pursuing clatter was becoming sharper and sharper. She remained the same distance behind. The driver of the black stallion turned his head to look, and Napoleon could not resist sticking out his tongue at him.

Napoleon was sure he heard the young man ejaculate, "Curse you!" At the same instant his whip came down on the black's back and the race was on.

"You shall win or you shall die, *sacre bleu!*" hissed Napoleon. He threw himself into the task of defeating the big black stallion. The black was flying over the ground. Celeste also was flying over the ground. The young man was urging his horse. Napoleon was certain that Celeste had a link or two left. Napoleon reined a little to the left. He would pass this black antocrat.

All three drivers were so intent on their struggle that they did not hear the sound of wheels behind them. Napoleon reined out further, and surely, surely Celeste nosed her way, inch by inch, gaining on her big male rival. Napoleon was smiling, confident. He steadied

Celeste and spoke to her, and Celeste responded nobly.

Celeste had crept up until her head was even with the driver of the black stallion. Suddenly Napoleon heard the whir of wheels at his elbow—and, turning his head slightly, he beheld Dolly Second, her mouth wide open, her proud old head high in the air, Miss Dolly hanging on the reins with all her strength.

The mother mare had taken matters in charge. She was bent on defeating her daughter. The mother mare came upon them as if they were standing still. In a half second Miss Dolly was beside Napoleon, and she called out: "Dolly Second took it into her head to come with you. I was watching from beside the road."

And now did the black stallion extend himself. Even Miss Robinson had to acknowledge that although a male he was a game animal. His owner laid the whip on him cruelly, mercilessly, but the black never wavered. It appeared that he would drive his hoofs through the earth's crust, so hard did he pound. Celeste? Napoleon swears that Celeste laughed. She even allowed the strange horse to gain on her. It was all right to be outstripped by one's mother if one were beating a big black stallion.

An instant later and Dolly Second was on even terms with the big black. Another instant and she had passed him. The driver of the aristocratic horse will never forget the sight of the old sorrel mare as she drew alongside and outpaced his great horse which he thought invincible. Neither will he ever forget the picture the pretty girl made, so self-possessed, guiding a pacer at a two-minute clip. As Dolly Second drew away from her daughter she shook her head, threw her nose still higher in the air, and with wide open mouth struck into a burst of speed even more terrific. And peals of ringing laughter came back to the ears

of the two men drivers and to the stranger behind.

With the old mare rapidly leaving them the three young horses continued their struggle for mastery; but, try as they would, the stallions could not hold their own against the roan filly, who slowly but surely drew away, and finally began a desperate vain attempt to overtake her mother.

Far down the speedway Miss Robinson brought Dolly Second to a walk. As she sprang to the ground to throw a blanket over the mother of Bon Homme and Celeste the latter came thundering along. Napoleon's face was wreathed in smiles.

"I saluted the ladies," he said, raising his whip hand. He was busy coaxing Celeste to slacken her gait, and could say no more.

With her hand on Dolly Second's bridle rein Miss Dolly started back to meet the black stallion, whose speed had now been reduced to a walk. The big black carried his head low, as if he felt his humiliation. The young man pulled up his horse and sprang to the ground, hat in hand, when he approached the girl and Dolly Second. The strange rider disappeared with a laughing salute.

"Allow me to congratulate you," Mr. Kaites said.

"But these are females, sir," Miss Robinson replied. She tried to look stern, but there was mischief in her eyes. "This mare, Dolly Second, is nearly twenty years old. Celeste, there," pointing down the speedway, "is her daughter."

"I wish I could trade Julius Caesar for either," said the young man.

"Then you acknowledge that there is nothing to your talk of male superiority?" demanded the girl.

"Nothing, nothing, when a twenty-year-old mare can beat a horse like this," replied Mr. Kaites, patting his horse's neck. The big black stallion was trying to reach Miss Dolly's side. He remembered the caresses she used to shower upon him when his master and the pretty girl were together on the speedway.

"And won't you please, please forget our differences, Dolly?" pleaded the young man.

"Yes, now that I have demonstrated my theory," agreed the girl.

Napoleon reached the scene just in time to see the girl and the young man standing very close together between the horses.

The Model Farm Home

To be Erected at the Panama-Pacific Exposition

THE International Congress of Farm Women is hoping to build at the Panama-Pacific Exposition a model farmhouse which shall show to all the peoples who visit San Francisco in 1915 the American ideal of a rural home. The house is being built by the contributions of women so loyal to agricultural life that they want to see it adequately represented at the great Exposition, taking its place as it should by the side of the great industrial and art exhibits.

Mrs. Belle v'D. Harbert, president of the International Congress of Farm Women, solicits contributions for the building of this model house. Send her anything you can, from ten cents up, and ask your neighbors to do so, addressing her at 340 Century Building, Denver, Colorado. Every contributor will receive a stickpin button, and recognition at the Exposition.

Economy with Scissors, Needle, and Thread

Ingenious Sewing

By Jessie I. Carpenter

IN CONSIDERING ways of reducing the high cost of living, clothing is one of the first items to perplex the home-maker of limited means. A wise solution of this problem and a judicial saving of unnecessary expense will do much toward helping out with other important household necessities. By making the most of what we have we may save enough to go far toward paying for such articles as we must buy.

An Empire nightgown, made from two plain white muslin undershirts, was one of the most gratifying feats I ever accomplished in "making over." From one skirt I cut the waist and bishop sleeves for my gown. From the other skirt I cut off the band at the top; closed the opening in the back and opened it down the front; joined the skirt to the waist with a band of hand-made insertion one and a half inches wide; ripped out the wide hem at the bottom of the skirt to secure desired length; faced it with the remaining portions of the skirt from which the waist and sleeves were cut; finished around the neck and down the front with inch-wide lace matching the insertion—and I had a garment simple, attractive, and serviceable.

Upon receiving an invitation to spend a week with my former school chum, necessitating an hour's ride on the train, it dawned upon me that my four-months-old baby would have to be provided with a cloak and bonnet suitable for the occasion, and as the time of year was January they must be warm. I had a heavy white wool dress skirt which was entirely good, but out of style. The front and back gores of the skirt furnished ample material for a long cloak cut perfectly plain, using the front of the skirt for the coat back, and the back gores for the front portions of the coat. A cape long enough to reach well down over the shoulders, a round collar which could be turned up, and bishop sleeves were cut out of the two side gores of the skirt.

A very attractive little bonnet was evolved from a soft silk tie six inches wide and a yard long, which had lain in my trunk for two years without once being worn, and which now seemed very appropriate for my need in a form for which I am sure it was not originally intended. The tie was a beautiful shade of pale pink, the baby a boy, and, as it proved on trial, the combination could hardly have been more pleasing. From one end of the tie I cut the little round crown for the back of the bonnet; the remaining silk was gathered softly over the bonnet lining, which was of fine white flannel, a left-over piece. A yard of half-inch silk ribbon for ties, a yard of fine narrow lace which I gathered around the face of the bonnet, and half a yard of small white silk cord completed the bonnet at a cost of twenty-one cents.

When Aunt Mary sent me a jacket of the old-fashioned tight-fitting type, with small, snug-fitting sleeves, I wondered what use I could ever hope to find for it. But the material was good, so I ripped it up and laid it away for future reference. When I wanted an overcoat for my little three-year-old boy I began to see the possibilities in the jacket. Being double-breasted, I found it would furnish sufficient material for the front portions of the little coat. Each front portion, however, was slashed by a long dart which at first looked hopeless; but as the material was very thick, with a nap on the right side, I drew the edges of the cut together, catching them in place with fine thread and continuing to sew back and forth on both sides of the slit but always on the wrong side of the material, until the joining was firm and strong and no sign of the cut could be detected on the right side. In order to make it stronger I covered each of the places with a strip of binding tape sewed flat on the wrong side of the goods. I had no difficulty in cutting the sleeves and back for the coat from the corresponding portions of the jacket. For the large collar required I used the upper part of a velvet sleeve which had previously been used for remodeling a jacket when huge leg-o-mutton sleeves were in vogue. As the cloth of which the overcoat was made was too thick for

a neat hem, I bound the bottom with braid of the same color, and faced the front portions with velvet like the collar. Six buttons at five cents each covered the entire cost of the little coat.

A Handy Sewing-Room Device

By S. R. Quigley

A DISCARDED spool case—which may be obtained from a dry-goods or general store at a dollar or so—makes a most convenient cabinet for the sewing-room. It is 22 inches long, 18 inches wide, and 15 inches high. It contains four nicely made drawers, which are 2½



She enlisted the help of a friend

inches deep. It may stand on one end of the sewing table, cabinet style; or it may stand on a low frame, when the top will serve as a small table, with the drawers below.

Planning the Trousseau

By Esther A. Cosse

THE question of bridal outfits is one that presses hard on the young women of moderate means. Daintiness is much to be desired in all bridal outfits, and the girl who is preparing for her wedding wants this desirable quality first of all. A girl who is handy with her needle can supply herself with the daintiest of garments at a very low figure. If she herself is handicapped it may be possible for her to enlist one or more of her friends who are capable of doing the work for which she feels incompetent.

One bride of my acquaintance who had little money to spare for her trousseau arranged her buying in a very economical way. First for her lingerie she procured a twelve-yard piece of nainsook, which was very fine, for \$1.25. Then watching for a sale on Valenciennes lace she bought two pieces of edging about an inch wide, three pieces of insertion, and two pieces of beading at twenty-five cents per piece of twelve yards. Then after buying three patterns at ten cents we started to work.

First a nightdress was made with three yards of material. It was cut with a square neck. Small tucks gave the garment the fullness. Two yards of insertion were used by making a circular scrollwork through the tucks. Then the yoke was formed by one row of insertion, one of beading, one of insertion, one of beading and the lace on the edge. The sleeves were made in the same way. This took six yards of insertion, two and one-half yards of lace, and four yards of beading.

Next we made an outside skirt of three yards of nainsook, leaving us but six yards for the rest of the set. For the top flounce we arranged the same design of scrollwork. First two rows of lace edging sewed together with one of insertion and a ruffle below. Three pinhead tucks came next, the insertion, three tucks, one insertion, then the scroll. To finish off the eighteen-inch ruffle we used the beading. The dust ruffle had two rows of lace sewed together for an edging. These ruffles were two and one-half

yards wide. To make this we used nine yards of edging, fourteen yards of lace, and two yards of narrow beading.

Next came the combination suit. For this we also used three yards of nainsook, leaving us three yards. The skirt was made tight-fitting, with a ruffle made of two rows of lace edging on the two-yard ruffle, one of insertion, three pinhead tucks, one insertion, three tucks, and one row insertion. This was also finished with beading. The waist was made like the top of the nightdress, only with a round neck, the scroll coming plain over the shoulders, with one row of insertion, one of beading, and the edging. The armholes were trimmed with one row of lace and one of insertion. For this we used eight yards of lace, twelve yards of insertion, and four of beading.

Next came the drawers, which took but one yard of material. We cut them narrow, as the wide ones are not used with the narrow skirts. The ruffles were made with two rows of lace edging, one of insertion, one of beading, and one insertion. This took six yards of lace, six yards of insertion, and five yards of beading.

With the two yards of material left, we made another pair of drawers and a corset cover.

The set complete took but thirty-three yards of edging, twenty-four yards of insertion, and fifteen yards of beading, and cost her but \$3.30 for a set that could not be bought for \$15.

Graduation Costs

By E. I. Farrington

EDUCATORS say that many girls fail to complete their school courses because they cannot afford the expenses of graduation. This presents a problem that country teachers and superintendents are trying to solve. Often this subject of graduation gowns is the topic of conversation for weeks preceding the eventful day. Sometimes more attention is paid to the matters of dress than to the preparation of commencement-day papers. Of course all this has created a spirit of rivalry and jealousy which has been the cause of many heartburnings, and which is distinctly un-American.

Snobbery has no place in our rural schools, and yet it is being created by a tendency to make a dress parade of commencement day. The girl whose parents cannot afford to give her rich gowns feels that she is shut out from the pleasures of her companions who have ampler resources. Investigation in rural high schools has shown that bright girls deliberately leave school before the end of the term in order to avoid appearing on the platform in cheap dresses. One instance is cited of a girl who was near the head of her class, but who sacrificed her diploma by feigning illness.

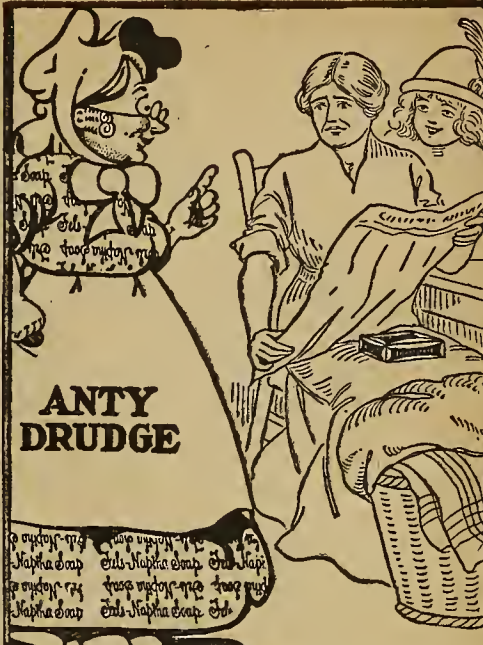
The desire to remedy this condition has resulted in a number of experiments, one of which has proved very satisfactory in country towns. The plan is simply to hire caps and gowns, the sum required being very small. Then each member of the class is dressed like all the other members, and there is no occasion for jealousy or envy.

In a Massachusetts school last year the girls made their own graduation dresses, each of which cost but four dollars. Here are the materials used: 4 yards of white marquisette, at 25c, \$1; 25 Irish crochet medallions, at 10c, \$2.50; Irish crochet ball trimming, 25c; white girdle, 25c; making a total of \$4.

When such a plan is followed, a new kind of rivalry is created which is much more creditable to the girls and to the school than that which is based merely on the possession of material wealth.

Another expensive feature of commencement day in many country towns is the dance or party which is held in the evening, and for which each member of the class is assessed whether he or she attends or not. Many pupils cannot afford this assessment, but pay it to avoid criticism and ridicule.

Still another expense comes in the exchange of photographs. This amounts to considerable if the class is a large one, for each member is expected to exchange photographs with every other member. This is all wrong; the requirements of graduation should be adjusted not to the richest but to the poorest of the pupils.



Mrs. Shiftless—"I'm ashamed to have you catch me reading when I ought to be washing my blankets. But I sent Mary to the village for some soap that wouldn't shrink wool, and the storekeeper wrapped it up in this newspaper that has such an interesting story in it. I just couldn't resist a look at it for a minute."

Anty Drudge—"Well, the storekeeper knew his business. He sent you Fels-Naptha Soap. Now if you'll spare me a few minutes I'll show you how to use it in lukewarm water. You can get through in no time, and then you can finish your story with an easy mind. Fels-Naptha is grand for all kinds of woolens, it makes them as soft and downy as when new."

Fels-Naptha will get your clothes on the line in a couple of hours, after breakfast, and you can start ironing Monday afternoon, feeling rested and refreshed. That will make your Tuesday's work easier, too.

Fels-Naptha Soap works best in lukewarm water, and little rubbing is necessary. Your blankets will be soft and white.

Buy Fels-Naptha by the box or carton. The easy directions on the Red and Green Wrapper should be followed.

Fels & Co., Philadelphia



The Community Builder

By the Rev. Harry R. McKeen

Practical Ideas as a
Basis for
Sunday Thought

MR. MCKEEN says: "There is but one vital question anywhere—character. All other questions circle about this as the spokes of a wheel. I say, solve aright the problem of building character and all the other problems will automatically solve themselves." This series of articles is the story of how Mr. McKeen developed character among the old and young, the well-meaning and the evil-minded, in a feeble parish in northwestern Oklahoma.

Chapter V

THE activity of this aid society had led also to two conditions that were to be deprecated.

One was among the men of the church. They saw how well the women did and some of them tightened their purse strings accordingly. They said: "The women can take care of that; we'll just let it go."

On the other hand, outsiders complained that the church was always howling for money, and they wondered what it did with all of it. "It takes a heap," they cried, "to support a big lazy preacher."

This constant coming before the public with suppers and money-making socials does have a tendency to take away the dignity and power of the church.

The money had to be raised and this particular society did not have any time for study or real social culture. The reading among the women, as with the young people, was of a superficial kind. A very few standard or even popular authors were read and only a few good magazines taken.

Missionary was an unknown field except as it came to them in the occasional sermon from the pulpit. The real social life of the community was insignificant, and because they knew nothing else the affairs of their neighbors and friends made up the themes for social discussions. Gossip is a child of ignorance.

These women knew but little of the great world movements. Asia was unknown; the problem of the city, the Southland, the mountain, and even the country church were as Sanskrit to them. They had no definite missionary training, and even their own field, pregnant with latent possibilities, was not understood.

Yet this was a fine society, composed of some of the most splendid women that ever banded themselves into an organization for aiding a church. Nor were they to blame for conditions. They were part of a system that is burdening thousands of other such societies. They were justly proud of their attainments, and so was their church. Money-making stood out so prominently and was such a necessity that they discouraged or looked askance at any suggestion that would enlarge the scope of their work. They would say, virtually: "We're so busy raising money that we have no time for anything else."

The preacher made his line of attack not upon the women but upon the men. They were plainly shown that the responsibility for the church finances rested upon their shoulders. That it was a man's job, and that money to support

the church should be paid, and that it was not a gift until the debt was paid.

The leaven began to work. The men put away the paper elephant they had in the church and which had been partially auctioned off at the annual meeting, and got out with a subscription paper, first having adopted a budget showing the expenditures for the year. This elephant was a pasteboard animal divided into sections. Each subscriber to the church funds was supposed to buy a portion of the animal. For instance, the trunk brought \$10; the head, \$75; a foot, \$5; an ear, \$20; the body segments ranged from \$5 to \$25, and the tail brought \$2. A large part of the animal remained unsold when the new pastor came. The church thus really had an elephant on its hands, at least financially. This budget was raised in three days, the women taking \$225 of it.

The ladies began to breathe a little more easily, and the idea of having edu-

cated president and a campaign of larger things launched enthusiastically. The first thing done was the adoption of a new constitution that divided the society into three parts—business, social, and educational.

An amendment was made in the by-laws of the church, making every married woman in the church an active member of the society by virtue of her church membership, and others could join as associate members.

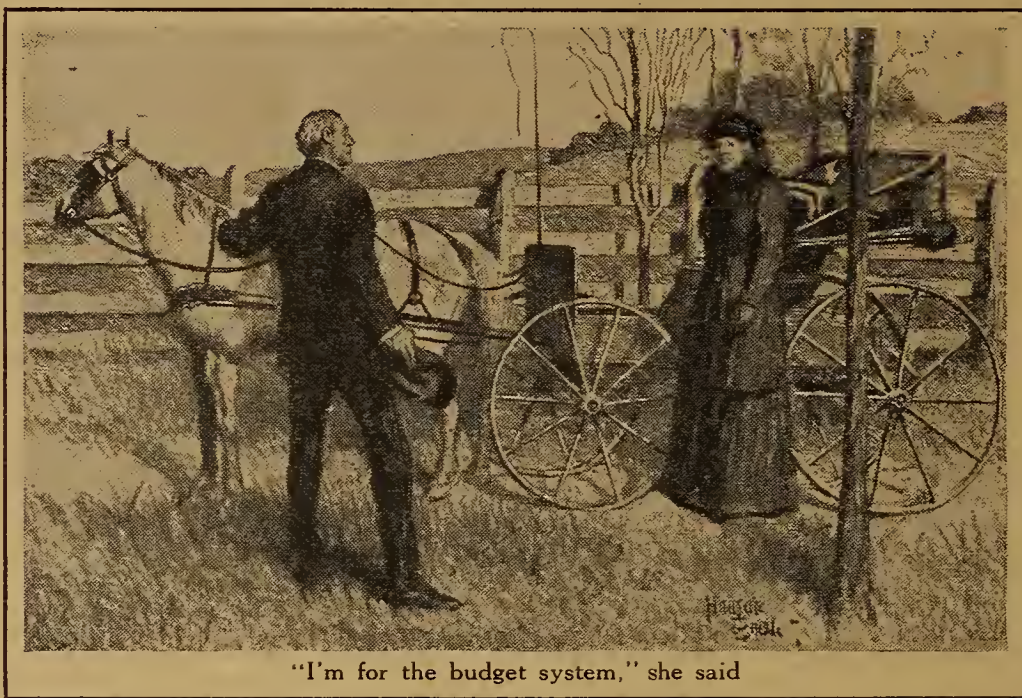
The basis of this society again was in the Sunday school. Two classes being made up of the married women. There were of course some few who were not in the Sunday school who were members of the ladies' society.

Some objected at first to what they termed "forcing" membership in the aid on them, but they soon took hold and did their part.

Soon the several departments with carefully chosen heads were doing their work energetically and systematically.



Mr. McKeen believed in working out both the spiritual and physical problems



"I'm for the budget system," she said

cational meetings was taken up and met with more or less ready response. These meetings were held occasionally the first year.

In the second year a woman of rare executive ability and determination was

They co-operated, and soon a series of socials with the money part eliminated were held and the church began to awake to its social possibilities. The social and educational committees co-operated in their work. Light refresh-

ments were served and a short musical and literary program was rendered. These programs, whether public or just for the members, always had three objects in view: to teach about the world at home and abroad, to develop some home talent, and to help in some things about the home itself.

At the close of the second year's work the minister suggested that the women adopt a budget system also—that each woman pay four dollars a year into the society treasury and have all socials and suppers free. This met with some spirited opposition at first. One good woman declared: "I never can afford to pay four dollars a year; I just can't."

"Now," said the preacher, "let us do a little figuring. You have been very liberal in giving to this work. How many chickens did you give last year?"

"Five."

"How many pounds of butter?"

"At least four."

"How many cakes did you bake?"

"Three."

"How much milk, cabbage, and potatoes?"

"I suppose about two dollars' worth."

"Now let us see. Five chickens would be worth two dollars and a half; four pounds of butter at least a dollar; three cakes at a dollar each, that's three dollars more; and two dollars' worth of other stuff. That makes about eight dollars—doesn't it?—besides your time."

"I'm for the budget system," she said as she jumped into her buggy, and so was practically every other woman in the society when the matter was presented from a financial basis.

One or two women were unable to pay the money, and it came from those well able to pay double.

Those church socials were a delight. As the young people had their own good times, it was the smaller children and grown-up folks that came. Sometimes there were as many as 250 present.

They came from every direction. It was a gala time as they gathered. They would come together in groups, talk a while, separate only to gather in other groups and talk again. It was the only real enjoyment many of these women ever had with their neighbors. Many of them lived miles from the church, and they came just hungry to talk to somebody. Good cheer and fun ran riot for an hour, then came the program rendered by the speakers and singers of the community. This not only entertained but it trained the folks. Then came the refreshments and the good night. Men and women went home happier and with a better opinion of their neighbors because of these gatherings, and then, too, that church became a real thing to them. That good time on a week day made them want to come back and hear what that preacher had to say on Sunday, and in a little while they had acquired the churchgoing habit.

In this way this church went into the lives of the people. It made them feel as though they were a part of it—that something was expected of them, and above all that they were welcome.

[TO BE CONTINUED]

The Child at Home—By Helen Johnson Keyes

Synopsis of Preceding Chapters

FOURTEEN children between the ages of two and a half and six years have come to a class called the School of Play, which the writer has organized upon the principles, so far as possible, of Madam Montessori. The account of the opening of the class was published in the issue of May 9th. Rosaltha is an eight-year-old girl whom the writer has adopted for six months, with the hope of developing her sluggish mind and heart. The first step toward this result was the removal of her adenoids and tonsils. The installments of this department have appeared in the issues of January 3d, 17th; February 14th, 28th; March 28th and May 9th.

The Continuation of the School of Play

LOOKING behind me I found that two little boys had discovered a washtub full of water, which I had set securely on two benches and had half hidden by a screen. Already they were plunging their hands into it and pushing about several little tin boxes of different sizes and some dolls' dishes which I had placed upon the bench. I put a couple of raincoats on the boys and told them to go ahead. For an hour they picked up water in those utensils, emptying it out

again and pouring it back and forth, and weighing the results in their hands. I knew that by doing this they were learning how to adjust their muscles to moving light and heavy weights, and were therefore acquiring a power which would be very useful to their mothers, that of carrying safely hot dishes and the best china from the kitchen range to the dining table.

In an attic trunk I had run across a pair of old-fashioned gloves with six buttons. These I had stuffed with sand and set upon blocks. Leaving the buttons unfastened I put them upon a table, two tiny button hooks beside them. Soon I saw Rosaltha busily engaged in the task of buttoning one glove. She was joined by one of the five-year-old girls, and the infinite patience of little children was revealed to me as I watched their efforts.

Presently I brought in a bushel-basketful of the most extraordinary heterogeneity: vegetables and fruits of many kinds, some stoves, and also a variety of fabrics—silk, velvet, cotton, net,

flannel, balbriggan—paper, sandpaper, fur, leather, tin. I called all the four-year-old children around me.

"Which of you want to play a blind-fold game?" I asked, giving them just a peep into the basket.

They all jumped up and down, crying, "I do! I do!" and whirling about.

I blindfolded them, and then I took one object after another out of the basket, handing one at a time to one child and bidding him guess, by touch, what it was, always guiding the fingers from left to right in order to accustom their muscles to the direction required for writing. This led to wild shouts of excitement and a number of errors.

The color sense I found very undeveloped in most of the children. I had taken black, white, blue, green, brown, yellow, and red sewing silk and wound a little of it off on cards like drawing-wool cards, one for each color. Of each color I had secured as many shades as the neighboring villages supplied. Then I had cut in long strips of cardboard holes into which the cards fitted, as many

holes in each strip of cardboard as there were shades on hand of the given color. Above each hole I had put a dab of paint indicating the exact shade required, graduating them from lightest to darkest.

Rosaltha found great delight in this toy, although her color sense was incredibly crude. She could not build up her color scale, but she handled those cards with absolute joy.

In that joy I knew there was a great chance for her to learn. I began to see the results of the School of Play.

I felt satisfied as I looked at my Farm Children's House so absorbed and happy. Only one straggler had entered in the little army of fourteen. He was a five-year-old boy, Billy Bailey, who, immediately upon removing his hat and coat, had established himself in a sulky heap on one end of a sofa and had followed no occupation except that of chewing a corner of a cushion. I remembered that Madam Montessori never urges a child, and as long as he was doing no harm to anything except my sofa cushion I decided to leave him alone indefinitely.

All at once—but Billy Bailey is the next chapter.

All inquiries will be answered by personal letters. Please send full name and address to Mrs. Helen Johnson Keyes, Fireside Editor, Farm and Fireside, Springfield, Ohio



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One cup
Milk

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No. 2560

No. 2392
No. 2393

No. 2436

No. 2436

No. 2589—Automobile Bonnet

Cut in one size only. Quantity of material required, three-fourths yard of twenty-seven-inch material. This automobile bonnet may be made of a number of different materials. If you have a tan linen, pongee, or silk coat, a pretty idea would be to have the bonnet made of the coat material. The rosettes may be of a contrasting material if preferred. Pattern, ten cents

THE apron, No. 2436, shown on this page is an especially practical one because it completely covers the dress, and then it can be made in many different practical ways.

THE practical summer dress must be simple, and that is just what the two dresses shown on this page are—very simple but pretty. They may be made of any wash fabric.



No. 2436—Work Apron in Three Styles

32, 36, 40, and 44 bust. Material for 36-inch bust, four and five-eighths yards of thirty-two-inch, with five-eighths yard contrasting material. For short sleeves one-fourth yard less, for sleeveless apron one yard less is required. The price of this pattern is ten cents

No. 2559—Buttoned-in-Front Long-Shouldered Waist

34 to 48 bust. Material required for 36-inch bust, three yards of twenty-seven-inch material, or one and five-eighths yards of forty-two-inch material, with five eighths of a yard of contrasting material for collar, cuffs, belt, and the trimming bands. The price of this waist pattern is ten cents

No. 2392—Double-Breasted Waist: Large Armholes

32 to 46 bust. Material for 36-inch bust, three yards of twenty-seven-inch material, or two yards of forty-five-inch material, one fourth of a yard of satin, three eighths of a yard of lace, and three eighths of a yard of net or fine lace for the chemise. The price of this waist pattern is ten cents

No. 2560—Three-Piece Tunic Skirt: Front-Closing

24 to 38 waist. Material required for 24-inch waist, four and one-fourth yards of twenty-seven-inch material, or three and one-fourth yards of forty-two-inch material, with three eighths of a yard of contrasting material. Width at bottom in 24-inch waist, one and one-half yards. Pattern, ten cents

No. 2393—Three-Piece Skirt: Side-Closing

22 to 36 waist. Material for 24-inch waist, four and three-fourths yards of twenty-seven-inch material, or two and one-half yards of forty-five-inch material. Width of this skirt in 24-inch waist measure, one and three-fourths yards. The price of this three-piece skirt pattern is ten cents

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Who Wants a Birthday Basket?

Play-Work for Little Fingers: Something That Will Please the Children

By "Big Sister"

WELL, I have hunted all over the house for a box from which to make a paper basket. I wanted a candy box about six inches long and three inches wide—but did not find what I wished, so let us make one. A piece of pliable pasteboard will be fine. Cut a piece seven by ten inches. Then scratch lines with a big needle where you expect to bend it, and cut as is shown by the center picture.

Bend it up along the scratches, glue the corners, and stick a pin through both thicknesses of pasteboard and our box is ready for the trimming as soon as the glue is dry. Cut two strips of pasteboard three fourths of an inch wide and eight inches long for handles. Cut a piece of white crepe paper just like the pattern we used for the box, and, putting a little paste on the corners of the bottom of the box, set it on the paper and turn up the sides and paste to the top of the box, trimming off all that sticks up over the edges. Then cut another piece of pink paper a little larger, and cut out the corners. Put paste into the four corners of the inside and on the bottom of the box, and press the pink paper down inside to line it, pressing down the extra width on the outside and pasting it in place. Cut two strips of white long enough to go all around the box, one as wide as the box is high and the other a little bit narrower. Pull out the edges in a little narrow ruffle, put a row of paste dots all around the box, and press the wide strip of paper into the paste, letting the box sit on the table as you work, so the strip will go on evenly. When this is dry put on another row of paste and press the other strip into

place over the first one. Next, cut a strip of pink, crossways the roll, and, turning under the edges, fasten one end at the side of the box with paste and a pin. If it will not reach clear around your box fasten on the opposite side and cut another strip for the other half. Make bows of pink by folding the bow and wrapping thread around the middle and tying. Then cover it with a band of paper. Wrap the handles in white paper and fasten to the sides, as shown, with glue and a pin. Finish with a pink bow. By making some of the sides higher and the bottoms different shapes, and using different colors, you can have some lovely and different gifts for all the people you want to surprise on special days.

have no drawing paper you can cover the pasteboard foundation with ruffles of crepe paper (the basket to the right), or put a ruffle around the top and make a bottom of pretty ceiling paper with the upper edge scalloped. Cut a round piece for the bottom, and with a little paste on the edges slip it inside and let it stick where it fits. Make the handles of wire or strips of pasteboard wrapped with paper and glued to the sides of the basket. Use a pin to hold the ends in place, but do not forget to pull out all the pins when you have finished.

Gather some wild flowers or else fill your little baskets with shavings of bright-colored paper, in which hide a little note for "Best Wishes." Who would

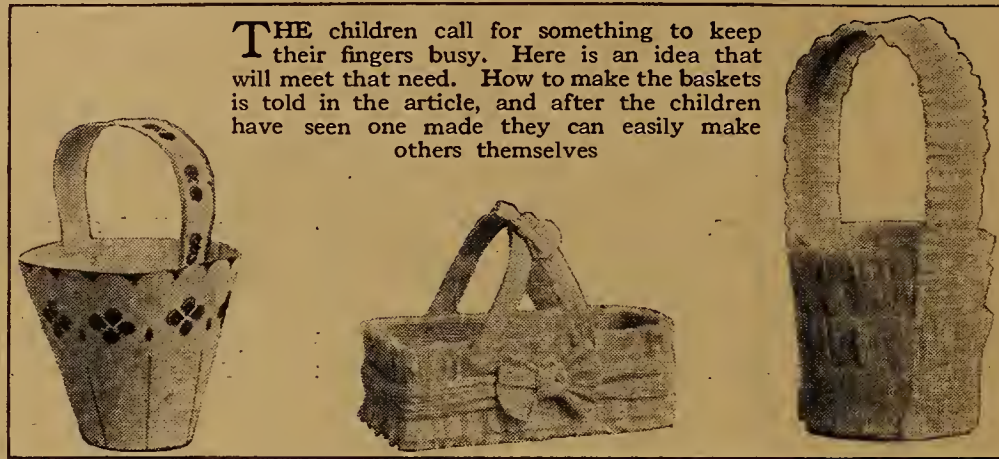
How to Fit Your Hat

By Esther A. Cosse

IN BUYING a new hat, people do not seem to realize that they must arrange their hair to suit the model. Women employed as models by milliners have their hair arranged in the latest fashion. The more hair the style calls for the more they use, hence when we go to buy our hats they almost fall over our ears. To remedy this, round bands have been used. In some instances that is all right, but in others it raises the hat too much from the head, giving the head a bad line. A very simple change sometimes makes a big difference in the becomingness of a hat. Occasionally all that is necessary is to gather the lining and draw it up tighter. Then again, as I have done this year, one may take a piece of ordinary tissue paper and tack it under the lining. This will often raise the hat just enough to make it more becoming, whereas any kind of a band would spoil it.

Most children have bows on their hair, consequently the models have their hair dressed that way, so if a child wears no ribbon on top, the head size is often too large. Shurr up your lining and it will be more satisfactory.

Sometimes we find after securing a hat that there is an open space at some part of the head. Well, the hat doesn't fit, nor does it feel comfortable. Take a piece of ordinary cotton and cover it with black velvet or of the same color as the hat and sew it up in the crown, under the lining if possible, but otherwise outside, taking care it does not show.



THE children call for something to keep their fingers busy. Here is an idea that will meet that need. How to make the baskets is told in the article, and after the children have seen one made they can easily make others themselves

Here also is a design for your crayolas. (Note the basket to the left.) You may copy the basket from the picture. If you

not like one of these for a birthday gift? Don't you think it is fun to do special things on special days?

Worth Remembering by the Housewife

Moth-Proof Bags Again

By Mary B. Bryan

THE other day I ran in next door to borrow a pattern from Mrs. Stryker. I was greeted, as the door opened, by a whiff of acrid, pungent odor that I knew came from those innocent-looking white balls or that pure and sparkling powder for sale at the druggists'. Mrs. Stryker was in her attic storeroom, surrounded by the winter clothing of her household, and was strewing preservative into every trunk and box as she folded away her goods. It turned out that not she but Mrs. Dodge, the neighbor on the other side, owned the pattern of which I was in search, so I escaped quickly and turned toward Mrs. Dodge's, taking deep breaths of the soft air as I went. For May was going out with a whiff of blossoms, and the world was full of sweet fragrance and tender color.

Mrs. Dodge called to me from the stairhead, "Come up if you don't mind. I'm putting away some woolens." I went up, by no means eager for another chat among moth balls, but realizing that I myself must soon make my choice between that cheap and sure, if disagreeable, safeguard and the more expensive camphor, or cedar boxes, or the bothersome wrapping of everything in tar paper.

Mrs. Dodge's windows were open to the gentle breezes of that early spring day, and there was no choking red pepper, no suggestion of a chemical laboratory or an apothecary's shop. "I thought you were putting away woolens?" I said, surprised.

"So I am, but only those we surely do not need again. It's so easy to put away a few at a time," and as she spoke she popped a bundle of her boy's heaviest underwear and his thickest sweater into an unbleached cotton bag, wound a string tightly about its neck, tied a bow knot, slipped a tag through the loops, and tossed the bundle on the shelf of a large closet.

"Don't you put anything in to keep moths out?" I demanded as I watched this swift and easy disposal.

"Oh, no. Moths can't get through that bag, and there are none in the things when I put them away," and Mrs. Dodge unfolded an army blanket by the window and scanned its surface carefully as she talked.

"The underwear is right from the wash of course," she explained, "and everything else has been brushed and sunned and looked over carefully."

"And you never have things eaten?"

"Never," she said, folding the blanket and making it into a compact roll before slipping it into another bag. "These bags I run up on the machine. The

cloth is very cheap and lasts for years. I have a few large ones for rugs, and I once bagged a whole carpet and left it for years. It came out, when finally I wanted it, as good as ever. I don't like these preparations. I always want to stay home from church the first cold Sunday," she laughed. "What with pepper and cedar and camphor, and tar and moth balls, it's hard to discover the odor of sanctity."

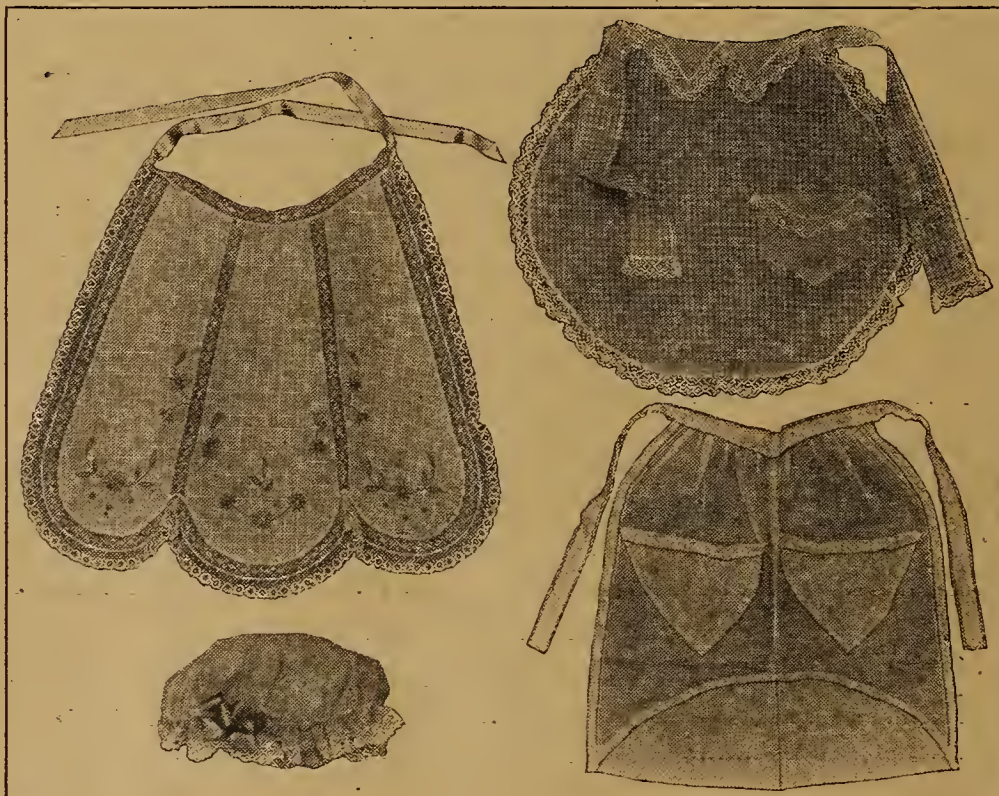
"I took my pattern and went home thinking. When we drove to the Center the next day, instead of going to the druggist and laying out my money in all sorts of evil-smelling compounds that last but a season, I bought a few yards of unbleached cotton. Things that had to be kept smooth went into boxes, and bags were slipped over these. No good day had to be given up to this annual fight against moths, for whenever it seemed well to put something no longer needed into safety all there was to do

was to see that the article was in good condition, untie a bag, drop the goods in, tie the bag again, and add another article to the list on the tag. Moths had always been a burden on my mind, but they have vanished, being starved to death, I suppose, and I am at peace through the summer, confident of the safety of all those plump white bags out of our way upon the upper shelves.

Keep the Cellar Sweet

By Kizzie Hays

WHEN summer comes do not leave the cellar for the last place to clean. Throw it open when the first warm days come, and let the sun and air begin the work while you are busy at some other task. Later give it a thorough cleaning. Take everything out you possibly can, at least move everything. Use some disinfectant freely and then leave doors and windows open for the summer.



THE aprons and the cap here shown are dainty, but they have not been made so at the expense of their usefulness. These aprons were made to use, and anyone who desires to combine utility and beauty will find both in these patterns. It is the aim of the Fireside Editor to select from time to time such designs as this which will make the work of the farm woman easier and at the same time give charm to her appearance. These aprons were planned especially for Farm and Fireside women. If you desire the directions for making them, simply send four cents (the cost of printing the directions) and a self-addressed stamped envelope. Address your letter to Evaline Holbrook, Farm and Fireside, Springfield, Ohio

Seasonable Desserts

BREAD CUSTARD PUDDING—One quart of sweet milk, one cupful of fine bread crumbs, four tablespoonfuls of sugar, three beaten eggs, and one teaspoonful of vanilla. Bake until the custard sets, and serve very cold.

GELATIN FRUIT PUDDINGS—By the use of gelatin with fruit juices innumerable dainty puddings may be procured. Try a clear lemon gelatin with red cherries or strawberries in it. Or a red gelatin with white peaches or sliced bananas.

RASPBERRY MOLDS—To each pint of the sweetened fruit juice add one level tablespoonful of corn-starch dissolved in a little cold water. Cook in double boiler until thick. Pour into small cups. Serve very cold with whipped cream.

WILD FRUITS—Wild cherries make a nice syrup to be used for flavoring in winter, when fresh fruits are scarce and expensive. And every housewife who has tried them knows that wild grapes are always to be preferred for grape juice and jelly, there being, in fact, no comparison between the jelly made from the wild "fox" grapes and that made from a dark cultivated grape. Fox grapes just a little underripe make a jelly quite equal to black currants, and they may also be used for grape juice, marmalade, and for grape vinegar to serve on salads.

MOCK CAKES—Into one pound of flour put a heaping teaspoonful of baking powder and a pinch of salt. Sift twice, then rub in with the fingers a quarter of a pound of either butter, lard, or drippings. Now add a quarter of a pound of sugar, one ounce of candied peel chopped fine, a quarter of a pound of seedless raisins and the grated rind of a lemon. Beat up an egg, and pour into a hollow made in the center of the mixture, adding only enough milk to form the whole into a very stiff paste. Drop on a well-greased tin in small cakes, each of the same size. Bake in a hot oven for twenty minutes, and when baked spread them on a platter so that the air can pass all around them. Eat cold, with whipped cream.

DEEP PIES—When making a deep pie without an under crust, the baking can be hastened and the upper crust will be less likely to burn if the baking pan containing the fruit (with a little water added) is covered and set in the oven while the crust is being prepared. It should be thoroughly heated through by that time, and the cooking begun. The same is true of a batter pudding where the batter is poured over the fruit.